Project #U-19-033

Viridity Energy Solutions, Inc. (VESI) 10, LLC

Tierra Buena Battery Energy Storage System (BESS) Project

Initial Study & Proposed Mitigated Negative Declaration

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LIST OF ACRONYMS

AB— Assembly Bill
AB 32—California's Global Warming Solutions Act, Assembly Bill 32
AC Paving—Asphalt Concrete
ADT— Average Daily Traffic
AG— Agriculture
AG-20— Agricultural 20 Acre Minimum
ANSI—American National Standards Institute
APCD—Air Pollution Control District
APN—Assessor's Parcel Number
ASME—American Society of Mechanical Engineering
ASTM—American Society for Testing and Materials
BACT—Best Available Emission Control Technology
BMP— Best Management Practices
BP—Before Present
BPS— Best Performance Standards
BESS—Battery Energy Storage System
CAA—Clean Air Act
CAAQS— California Ambient Air Quality Standards
CAIOS— California Independent System Operator
Cal/EPA— California Environmental Protection Agency
Cal/OSHA—California Occupational Safety and Health Agency
CalRecycle— Department of Resources Recycling and Recovery
Caltrans— California Department of Transportation
CARB— California Air Resources Board
CBC—California Building Code
CCAA— California Clean Air Act
CCAP— Climate Change Action Plan
CCPS—Center for Chemical Process Safety
CCR—California Code of Regulations
CD—Community Design
CDFW—California Department of Fish and Wildlife
CERCLA— Comprehensive Environmental Response Compensation and Liability Act
CERCLIS-NFPRA— U.S. EPA Comprehensive Environmental Response, Compensation, and Liability Information System - No Further Remediation Action Planned List
CEQA— California Environmental Quality Act
CESA— California Endangered Species Act
CFG— California Fish and Game Code
CFM—Cubic Feet per Minute
CFP—California Fully Protected (species)
CFR—Code of Federal Regulations
CH— Critical habitat
CHMIRS— Chemical Hazardous Materials Incident Report System
CHSC— California Health and Safety Code
City—City of Yuba City
CIWMB— California Integrated Waste Management Board
CNDDB— California Natural Diversity Data Base
CNEL— Community Noise Equivalent Level
CNPS— California Native Plant Society
CO—Carbon Monoxide
CO_2—Carbon Dioxide
Corps— United States Army Corps of Engineers
CORRACTS list—Resources Conservation and Recovery Act Corrective Action List

County—Sutter County
CSC— California species of concern
CSFM— California State Fire Marshal
CSUS— California State University System
CTR— California Toxics Regulations
CUPA— Certified Unified Program Agency
CPUC— California Public Utility Commission
dB—Decibel
dBA—A-Weighted Decibel
DFMEA— Design Failure Mode and Effects Analysis
DHS— Department of Homeland Security
DOD—Department of Defense
DOI— Department of the Interior
DOT— United States Department of Transportation
DSP—Development Standards Plan
DTSC— Department of Toxic Substances Control
EMD—Emergency Medical Dispatch
EDR— Environmental Database Report
EIR—Environmental Impact Report
EPA—United States Environmental Protection Agency
ESA—Environmental Site Assessment
ERNS— United States Environmental Protection Agency Emergency Response Notification System
FAR— Floor Area Ratio
FE— Federally endangered
Fed/ OSHA— Occupational Safety Health Administration
FEMA— Federal Emergency Management Agency
FESA— Federal Endangered Species Act
FIRM— Flood Insurance Rate Map
FMMP— Farmland Mapping and Monitoring Program
FSP— Facility Security Plan
FT— Federally threatened
GAMAQI— Guide for Assessing and Mitigating Air Quality Impacts
GHG—Greenhouse Gas Emissions
GIP— General Industrial Permit
GPM—Gallons Per Minute
Great Valley— Great Valley geomorphic province
HAP—Hazardous Air Pollutant
HCFC—Hydrofluorocarbons
HCP—Habitat Conservation Plan
HMRIS—Hazardous Materials Incident Report System
HR—Hour
HSWA— Hazardous and Solid Waste Act
HWCL— Hazardous Waste Control Law
Hz— Hertz
IS—Initial Study
IS/MND – Initial Study/Mitigated Negative Declaration
ISR— Indirect Source Review
KOP— Key Observation Point
KV— Kilo Volt
KW—Kilo Watt
LB—Pound
L_{dn}—Day/Night Equivalent (sound measurement)
L_{eq}— Equivalent Continuous Sound Pressure Level
LLC—Limited Liability Corporation

LOS—Level of Service
LESA—Limited Environmental Site Assessment
MBTA—Migratory Bird Treaty Act
MCE—Maximum Credible Earthquake
MEI—Maximum Exposure Individual
MOO— Must Offer Obligations
MOU— Memorandum of Understanding
MRZ— Mineral Resource Zones
MSDS—Material Safety Data Sheet
MSL—Mean Sea Level
MW—Mega Watt
Na. RC— National Research Council
NAAQS—National Ambient Air Quality Standards
NAHC— Native American Heritage Commission
NCR—Natural and Cultural Resources
NFPA—National Fire Protection Association
NHPA—National Historic Preservation Act
NIH— National Institute of Health
NMFS— National Marine Fisheries Service
NOC—Notice of Completion
NOD – Notice of Determination
NOI— Notice of Intent
NOP—Notice of Preparation
NOx—Nitrogen Oxides
NO_2—Nitrogen Dioxide
NOAA— National Oceanic and Atmospheric Administration
NPDES— National Pollutant Discharge Elimination System
NPS— Non-Point Source
NRC— National Response Center
NTSB—National Transportation Safety Board
O_3—Trioxygen
OES— Office of Emergency Services
OSBL—Outside Battery Limits
OSHA—Occupational Safety Health Administration
Pb—Lead
PCE – Passenger Vehicle Equivalent
PFS—Public Facilities and Services
PG&E— Pacific Gas and Electric
$PM_{2.5}$—Fine Particulate Matter
PM_{10}—Respirable Particulate Matter
PPM—Parts Per Million
PSI—Pounds Per Square Inch
PRC—California Public Resources Code
RACT—Reasonably Available Control Technology
RCRA— Resource Conservation and Recovery Act
RCRA-LQG— Resource Conservation and Recovery Act Large Quantity Generator
RCRA-SQG— Resource Conservation and Recovery Act Small Quantity Generator
REC— Recognized Environmental Condition
RMP— Risk Management Plan
ROG—Reactive Organic Gasses
ROW—Right of Way
RSPA— Research and Special Programs Administration
RTTM— Real Time Transient Model
RWQCB— Regional Water Quality Control Board

SB—Senate Bill
SCADA—Supervisory Control and Data Acquisition
SCH—State Clearinghouse
SCP—Source Control Program
SE— State Endangered
SIP—State Implementation Plans
SCEHD—Sutter County Environmental Health Department
SO_2—Sulfur Dioxide
SO_x—Sulfur Oxide
SPCC— Spill Prevention, Control, and Countermeasures Plans
SR— State Rare
SRRE— Source Reduction and Recycling Element
ST—State Threatened
SWPPP—Storm Water Pollution Prevention Plan
SWQCB—State Water Quality Control Board
SWRCB—State Water Resources Control Board
TAC— Toxic Air Containment
TFV—Threshold Friction Velocity
TMDL— Total Maximum Daily Load
TOP—Take Over Point
TRIS—Toxic Chemical Release Inventory System
TSA— Transportation Security Administration
TSD—Treatment, Storage, and Disposal Facilities
UBC—Uniform Building Code
UFC— Uniform Fire Code
UNS—Unified Numbering System
URBEMIS—Urban Emissions
USC—United States Code
USCG—United States Coast Guard
USDA—United States Department of Agriculture
USGS—United States Geological Survey
USFWS—United States Fish and Wildlife Service
V—Volt
Valley—Sacramento Valley
VDE—Visible Dust Emissions
VESI—Viridity Energy Solutions, Inc.
VOC—Volatile Organic Compounds
VRU— Vapor Recovery Unit
VTS— Vessel Traffic Service
WDR—Waste Discharge Report
WQCP— Water Quality Control Plan

1.0 INTRODUCTION

This Initial Study and proposed Mitigated Negative Declaration have been prepared by Sutter County Development Services Department/Planning (Sutter County), as the Lead Agency under the California Environmental Quality Act (CEQA), for Project #U-19-033, the Viridity Energy Solutions, Inc., (VESI) 10 LLC, Tierra Buena Battery Energy Storage System (BESS) Project with technical assistance from Sierra Geotech, DBVE, Inc. VESI 10, LLC, is proposing to develop a BESS facility on approximately14,000 square feet or 0.32 +/- acres on a lease area 730 feet north of the intersection at Tierra Buena Road and Pease Road in Sutter County, California, north of Yuba City; Assessor Parcel Number 10-250-060; Street Address 3025 Tierra Buena Road. VESI 10, LLC, proposes to construct a battery energy storage system facility consisting of a battery energy storage system (BESS) that would store 5 megawatts (MW) or 20 MW hours of electricity for dispatch into the local Pacific Gas and Electric (PG&E) grid via the existing adjacent PG&E Pease Road power substation. The proposed BESS facility would connect to the adjacent PG&E electric power distribution line which would both provide energy to recharge the battery storage system and would dispatch energy stored by the battery storage system. The proposed BESS facility would reduce greenhouse gas emissions associated with gas-fired power generation facilities by storing energy during off-peak hours (lower energy usage/demand times) and dispatch energy on an as-needed basis during peak demand hours. The BESS facility would respond to California Public Utilities Commission Resolution E-4909 authorizing PG&E to procure energy storage to address local deficiencies and ensure local reliability.

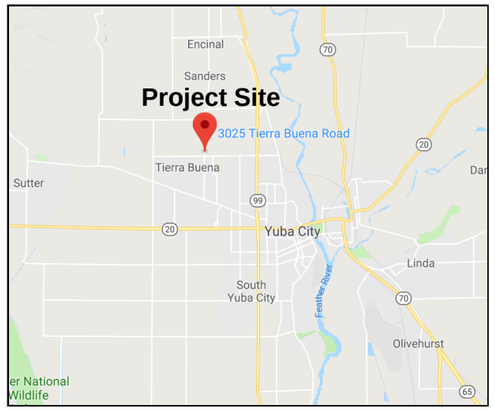
The project's location adjacent to the PG&E electric power distribution line and approximately 730 feet north of the PG&E Pease Road power substation, would enable connection to the existing grid. The California Independent System Operator (CAISO) would control the dispatching of electricity from the proposed project. See *Figure 1.0-1: Vicinity and Location Map* of the Lease Area for the proposed VESI 10 Tierra Buena BESS facility and See *Figure 1.0-2: Use Permit Site Plan and Figure 1.0-3: VESI 10 Tierra Buena BESS Layout Plan* for the *Use Permit Site Plan and Layout* for the proposed VESI 10 Tierra Buena BESS facilities.

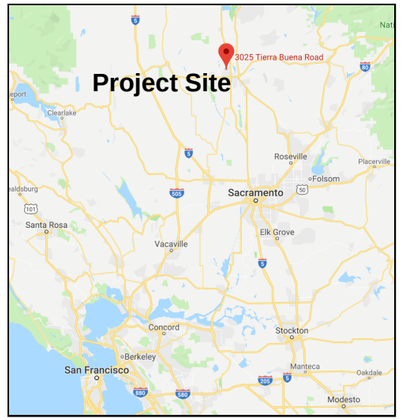
This Initial Study and proposed Mitigated Negative Declaration have been prepared to identify and assess the anticipated environmental impacts of constructing and operating the proposed VESI 10 Tierra Buena BESS project. This Initial Study analyzes the potential impacts of the proposed VESI 10 Tierra Buena BESS project with regard to the following environmental topic areas: (1) Aesthetics, (2) Agricultural and Forestry Resources, (3) Air Quality, (4) Biological Resources, (5) Cultural Resources, (6) Energy, (7) Geology and Soils, (8) Greenhouse Gas Emissions, (9) Hazards and Hazardous Materials, (10) Hydrology and Water Quality, (11) Land Use and Planning, (12) Mineral Resources, (13) Noise, (14) Population and Housing, (15) Public Services, (16) Recreation, (17) Transportation and Traffic, (18) Tribal Cultural Resources (19) Utilities and Service Systems, (20) Wildfire, and (21) Mandatory Findings of Significance.

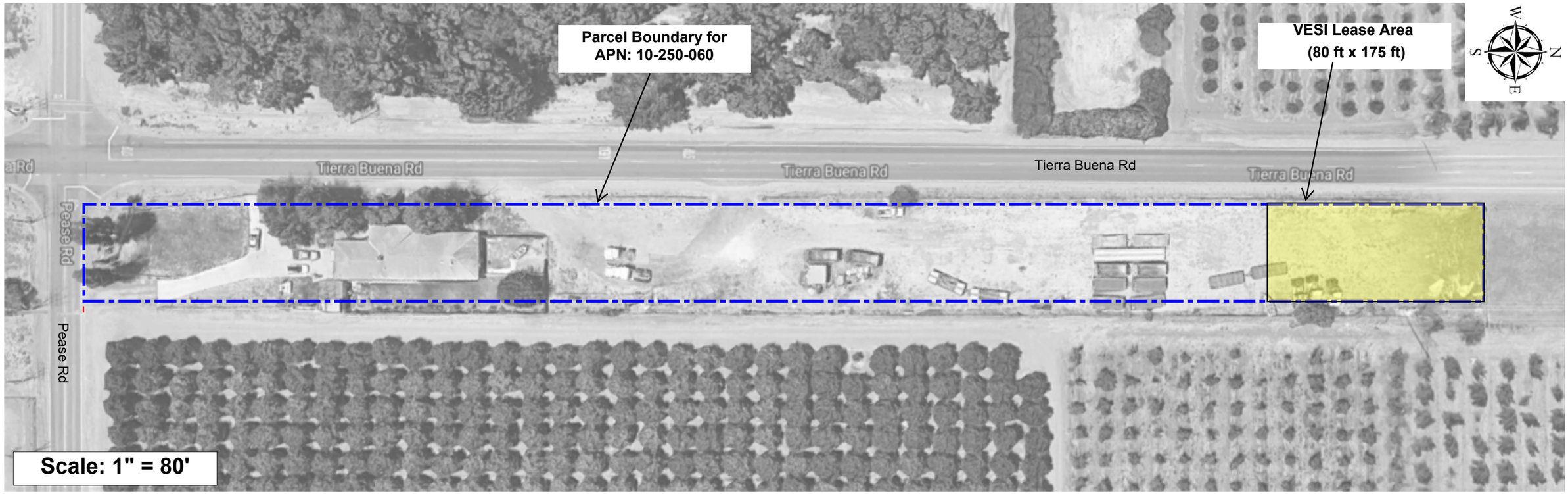
Sutter County has reviewed the proposed VESI 10 Tierra Buena BESS project and has determined that the proposed project, with mitigation measures, as identified in the attached Initial Study, would not have a significant effect on the environment. Thus, an Environmental Impact Report (EIR) is not required pursuant to the California Environmental Quality Act (CEQA) of 1970 (Sections 21000, et seq., Public Resources Code of the State of California).

The Initial Study is a public document used by the decision-making lead agency to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to either use a previously prepared EIR and supplement that EIR, or prepare a subsequent EIR to analyze the issues at hand. In reviewing the site-specific information provided for the above-referenced project, Sutter County found no substantial evidence that the VESI 10 Tierra Buena

BESS project or any of its aspects might cause a significant effect on the environment, and consequentially a Mitigated Negative Declaration is the proposed CEQA document for this project







PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: Vicinity and Location Map

DATE: 11-17-2019	SCALE: 1" = 80' (11"x17")
BY: SCV	FIGURE: 1.0-1

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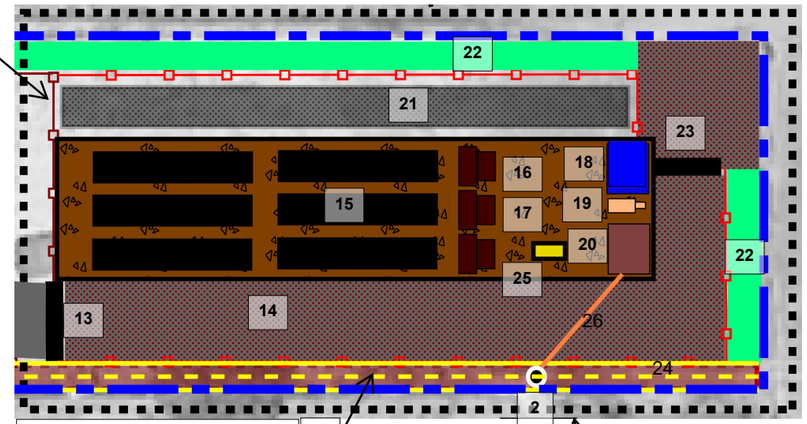
Legend

1	Existing Well and Water Irrigation Line
2	Existing Power Pole (PG&E)
3	Valdez Family Residence
4	Existing Septic Tank
5	Primary Leach Lines
6	Backup Leach Lines
7	Vegetative Hedge (Area Highlighted in Green)
8	Existing Gravel Paved Access from Tierra Buena Rd
9	Valdez Agricultural Truck Yard Zoning Clearance #M-19-036
10	Fence Around Valdez Truck Yard
11	Gravel Paved Ingress/Egress and Easement to Truck Yard and Bess Facility
12	PG&E Easement & Pease 1103 Feeder

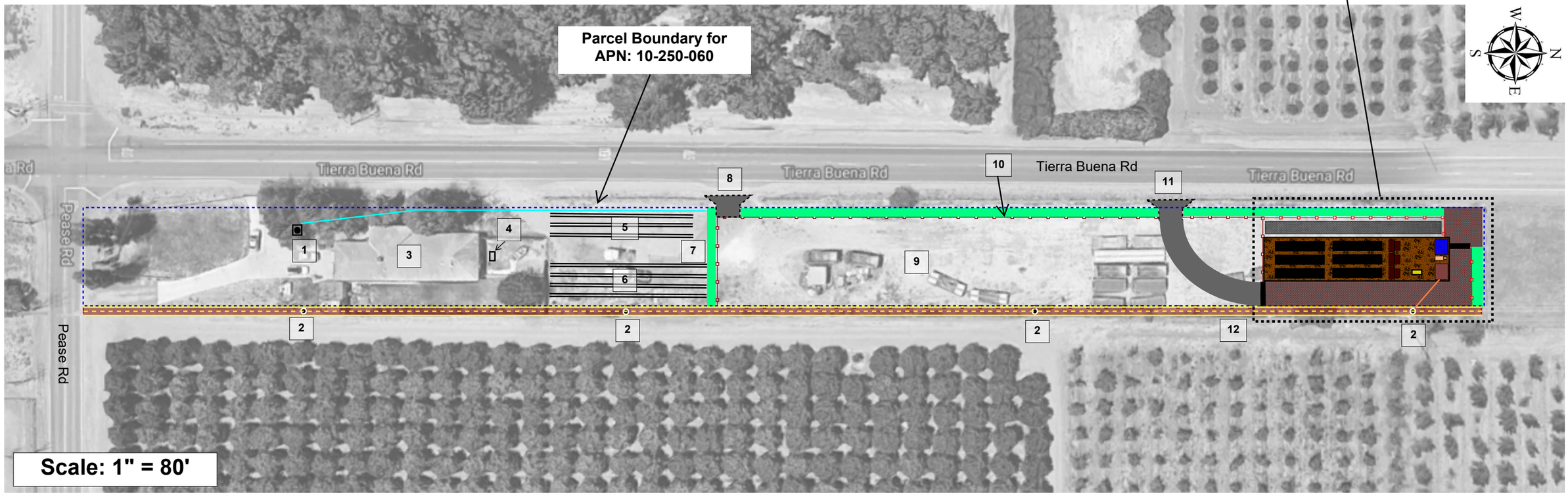
13	Main Gate for BESS Facility
14	Gravel Paved Access Road
15	Battery Storage Enclosures
16	Reinforced Pervious Concrete Slab
17	Electrical Transformer
18	IT Cabinet
19	Power Conversion System (PCS)
20	Switchgear
21	Stormwater Detention Area
22	Vegetative Hedge (Area Highlighted in Green) 5 ft wife planters of photinia (*Photina Fraseri*) planted at 5 feet on center
23	EMS Access Roadbed and Gate
24	PG&E Easement & Pease 1103 Feeder
25	Power Inverter
26	Generation Interconnect

"VESI Lease Area (80 ft x 175 ft)

INSET OF BESS FACILITY



Scale: 1" = 60'



Scale: 1" = 80'

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: Use Permit Site Plan

DATE: 11-17-2019	SCALE: As noted above (11"x17")
BY: SCV	FIGURE: 1.0-2

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LEGEND

13	Main Gate for BESS Facility
14	Gravel Paved Access Road
15	Battery Storage Enclosures
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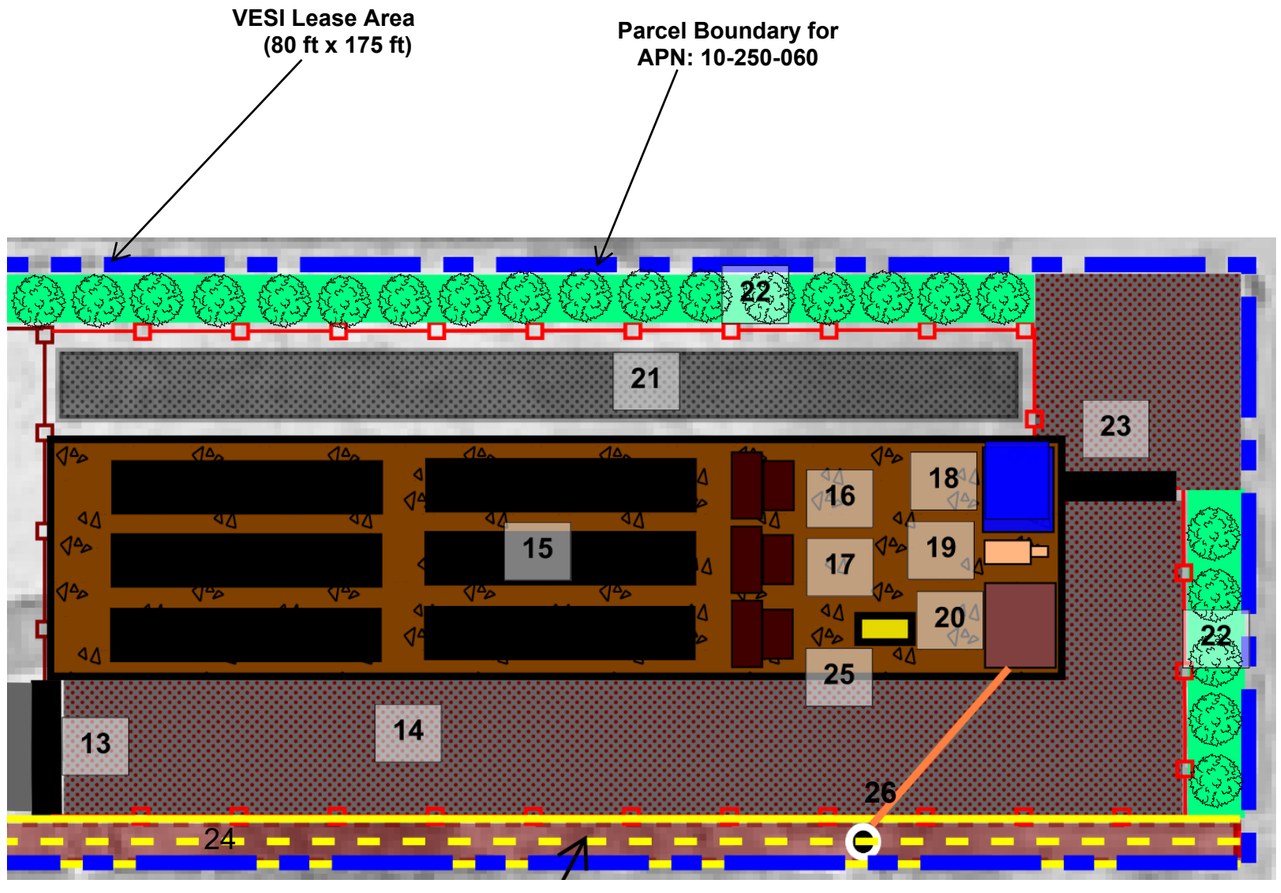

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: VESI 10 Tierra Buena BESS Layout Plan

DATE: 11-17-2019	SCALE: 1"=20' (11"x17")
BY: SCV	FIGURE: 1.0-3

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All mitigation measures as identified in the project's Initial Study, as well as all project components described in the Initial Study, are included in the Approval, and incorporated into the project. The development and operation of the proposed VESI 10 Tierra Buena BESS facility is a conditionally permitted use within the zoning classification of the project lease area, Agriculture (AG), and the lease area is designated as Agriculture-20 land use designation by the Sutter County 2030 General Plan adopted March 29, 2011.

Sutter County is soliciting views of interested persons and agencies on the content of the environmental information presented in this document. Due to time limits mandated by state law, your responses must be sent as soon as possible, but no later than the 30-day review period ending on August 5, 2020.

Written responses should be sent to:

Mr. Casey Murray, Associate Planner
Sutter County Development Services Department
1130 Civic Center Boulevard, Suite A
Yuba City, CA 95993
Phone: (530) 822-7400 ext. 245
cmurray@co.sutter.ca.us

2.0 ENVIRONMENTAL REVIEW AND APPROVAL

2.1 REGULATORY GUIDANCE

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the Sutter County Development Services Department/Planning (Sutter County) to evaluate potential environmental effects of the proposed VESI 10 Tierra Buena BESS project, located on approximately 0.32 +/- acre lease area 730 feet north of the intersection at Tierra Buena Road and Pease Road in Sutter County, California, north of Yuba City; Lease Area Northern Portion of Assessor Parcel Number 10-250-060; Street Address 3025 Tierra Buena Road. This document has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et seq.).

An Initial Study (IS) has been prepared by Sutter County as lead agency to determine if the VESI 10 Tierra Buena BESS project may have a significant effect on the environment (State CEQA Guidelines Section 15063[a]) and to determine the appropriate environmental document. In accordance with CEQA Guidelines Section 15070, a "public agency shall prepare … a proposed Negative Declaration or Mitigated Negative Declaration … when: (a) The Initial Study shows that there is no substantial evidence … that the project may have a significant impact upon the environment, or (b) The Initial Study identifies potentially significant effects but revisions to the project plans or proposal are agreed to by the applicant and such revisions would reduce potentially significant effects to a less than significant level." Sutter County, as the lead agency, has prepared a written statement describing its reasons for concluding that the proposed VESI 10 Tierra Buena BESS project would not have a significant effect on the environment and, therefore, the proposed project does not require the preparation of an Environmental Impact Report (EIR). This IS/MND conforms to the requirements set forth in CEQA Guidelines Section 15071.

This IS/MND evaluates the environmental effects of the proposed VESI 10 Tierra Buena BESS project. This IS/MND formalizes the County's preliminary analysis to determine whether an EIR or Negative Declaration must be prepared. The IS/MND is based upon the CEQA Guidelines checklist which illuminates the various environmental impacts which may result from development. The checklist, however, is only part of the IS/MND. The IS/MND also explains the checklist findings and provides references and resources relied upon in its preparation, complying with the CEQA guidelines, statutes, and current case law (see: *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296). The IS is not intended to provide the full-blown analysis expected of a complete EIR (see: *Leonoff v. Monterey County Board of Supervisors* (1990) 222 Cal.App.3d 1337 and *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1996) 42 Cal.App.4th 608).

This IS/MND includes specific technical studies which examine the potential significance of an anticipated environmental effect. It also includes references to previous environmental documents or other information sources. This IS/MND is a crucial part of the record supporting Sutter County's determination to prepare a Mitigated Negative Declaration.

CEQA requires that the Lead Agency, through the IS, to review the whole of a project. A project must not be broken into smaller parts, each of which alone might qualify for a Negative Declaration, in an attempt to avoid preparing an EIR (*Association for Sensible Development of Bishop Area v. County of Inyo* (1985) 172 Cal.App.3d 151). The decision to prepare an MND must be grounded in an objective, good faith effort on the part of the Lead Agency to review the project's potential for significant impacts (*Sundstrom v. County of Mendocino*, supra).

An MND is subject to the consultation and notice requirements as follows (see Sections 21080.3, 21091, and 21092 for details on current requirements). Sutter County will consider the comments it receives during the review period (30 days) prior to adopting the proposed MND. If these comments include substantial evidence that a potential environmental effect may occur despite the project revisions or

mitigation measures included in the MND, Sutter County will either require further revisions to the proposed VESI 10 Tierra Buena BESS project which would effectively avoid or mitigate that effect, or if that is not possible, Sutter County would prepare an EIR. If new mitigation measures are required to decrease impacts to a "less than significant" level after the 30-day review and comment response periods, Sutter County will recirculate the revised MND for review prior to acting on the proposed VESI 10 Tierra Buena BESS project and adopting the document. This process ensures that the public will be afforded the chance to review the new mitigation measures as well as the revised project (see: *Leonoff v. Monterey County Board of Supervisors* (1990) 222 Cal.App.3d 1337 and *Perley v. County of Calaveras* (1982) 137 Cal.App.3d 424). VESI 10 LLC, must propose, or agree to, any additional project changes prior to recirculation of final the MND.

Upon adopting a Mitigated Negative Declaration, Sutter County must make both of the following findings:

1. Revisions in the project plans or proposals made by, or agreed to by, VESI 10 LLC, before the proposed MND and IS are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur.

2. There is no substantial evidence in light of the whole record before the public agency that the proposed VESI 10 Tierra Buena BESS project, as revised, may have a significant effect on the environment. (Sections 21064.5 and 21080(c)).

The purpose of this IS is to evaluate the potential environmental impacts of the proposed VESI 10 Tierra Buena BESS project to determine what level of additional environmental review, if any, is appropriate. An MND has been prepared because the IS illustrated that there is no substantial evidence, in light of the whole record, that the proposed VESI 10 Tierra Buena BESS project may have a significant effect on the environment.

2.2 SCOPE OF INITIAL STUDY

Based on the analysis presented in this IS, Sutter County, as the lead agency, has determined that the proposed VESI 10 Tierra Buena BESS project, herein described, would not result in any potentially significant impacts that cannot be mitigated to a less than significant impact. The analysis contained in this IS concludes that environmental impacts from the proposed VESI 10 Tierra Buena BESS project would be as follows: (1) no impact; (2) less than significant impact; and (3) less than significant with incorporation of VESI 10 Tierra Buena BESS project specific mitigation measures. Under these circumstances an MND is the appropriate level of CEQA documentation.

Since none of the conditions described in CEQA or the CEQA Guidelines calling for preparation of an EIR have occurred, this Initial Study includes mitigation measures to reduce all identified potential impacts of the VESI 10 Tierra Buena BESS project to a less than significant level. The analysis in this IS supports the proposed adoption of an MND.

2.3 PUBLIC AGENCY AND REVIEW

This Draft IS and proposed MND will be circulated for public and agency review from July 7, 2020 and August 5, 2020. Copies of the Draft Initial Study are available during normal operating hours at the Sutter County Development Services Department/Planning, 1130 Civic Center Boulevard, Yuba City, CA, 95993. Comments on this Draft Initial Study must be received by 5 p.m. on August 5, 2020 and may be emailed to cmurray@co.sutter.ca.us or mailed to:

Mr. Casey Murray, Associate Planner
Sutter County Development Services Department/Planning
1130 Civic Center Boulevard
Yuba City, CA 95993
Phone: (530) 822-7400 ext. 245
cmurray@co.sutter.ca.us

The IS/MND is being circulated for public review and comment for a review period of 30 days. After comments are received from the public and reviewing agencies, Sutter County will consider those comments and may (1) adopt the MND and approve the proposed project; (2) undertake additional environmental studies and require additional mitigation measures; (3) require an EIR; or (4) reject the project. If the project is approved, Sutter County will be responsible for enforcing all mitigation measures.

After public review of the IS/MND, the proposed VESI 10 Tierra Buena BESS project will be considered by the Sutter County Planning Commission. The Sutter County Planning Commission shall consider the VESI 10, LLC, Tierra Buena Battery Energy Storage System Project Initial Study and Mitigated Declaration and the VESI 10, LLC application for a Use Permit at a noticed public hearing. A date for the public hearing at the Planning Commission has not yet been set.

Should you wish to challenge the environmental document in court, you may be limited to raising only those issues you or someone else raised in written correspondence delivered to the Sutter County Planning Commission or in a public hearing on the proposed VESI 10 Tierra Buena BESS project.

2.4 PROJECT INFORMATION

Project Title: Project #U-19-033, Viridity Energy Solutions, Inc., (VESI) 10, LLC, (VESI 10) Tierra Buena Battery Energy Storage System (BESS) Project

Project Location: Street Address: 3025 Tierra Buena Road, Yuba City, CA 95993; Located approximately 730 feet north of the Pease Road and Tierra Buena Road intersection on the east side of Tierra Buena Road, Sutter County, California. The proposed project lease area is located on the northern portion of Sutter County Assessor's Parcel Number 10-250-060, Sutter County, California.

Lead Agency Name and Address: Sutter County Development Services Department/Planning, 1130 Civic Center Boulevard, Yuba City, CA 95993

Project Sponsor's Name and Address:

Viridity Energy Solutions, Inc., 10, LLC
VESI 10, LLC – An Ormat Company
6140 Plumas Street
Reno, NV 89519
Or
1801 Market Street, Suite 2701
Philadelphia, PA 19103

Contact Persons and Phone Numbers:

Ms. Connie Stechman, Vice President - Finance
Viridity Energy Solutions, Inc., 10, LLC
VESI 10, LLC – An Ormat Company
6140 Plumas Street
Reno, NV 89519
(775) 356-9029 Extension 32203
cstechman@ormat.com

Location of the Administrative Record for this Project: Sutter County Development Services Department/Planning, 1130 Civic Center Boulevard, Yuba City, CA 95993

2.5 ORGANIZATION OF THE INITIAL STUDY

This Initial Study is organized into the following sections.

Section 1.0 - Introduction: Provides summary background information about the proposed VESI 10 Tierra Buena BESS project, including project location, lead agency, and contact information.

Section 2.0 - Environmental Review and Approval: Includes regulatory guidance of CEQA, purpose of the IS, the scope of the IS, public and agency review information, and an overview of the document's organization.

Section 3.0 - Project Description: Includes a description of the proposed VESI 10 Tierra Buena BESS project.

Section 4.0 - Environmental Factors Potentially Affected: Identifies which environmental areas, if any, the proposed VESI 10 Tierra Buena BESS project would cause 'Potentially Significant Impacts' as indicated by the analysis provided in the CEQA Environmental Checklist.

Section 5.0 - Determination: Indicates whether impacts associated with the proposed VESI 10 Tierra Buena BESS project are significant, and what, if any, additional environmental documentation is required.

Section 6.0 - Discussion of Environmental Setting, Potential Impacts, and Mitigation Measures: Contains the Environmental Checklist form for each resource area. The checklist is used to assist in evaluating the potential environmental impacts of the proposed VESI 10 Tierra Buena BESS project. The checklist identifies potential project effects as follows: (1) New Potentially Significant Impacts; (2) Less Than Significant impacts with Mitigation Incorporated; (3) Less Than Significant; (4) No Impact. This section also contains an explanation of all checklist answers and recommended mitigation measures.

Section 7.0 – Fish and Wildlife Determination

Section 8.0 - References: Lists references used in the preparation of this Initial Study.

Section 9.0 - Agencies and Persons Contacted: Provides the names of individuals contacted in preparation of this document.

Section 10.0 - Report Preparers: Lists the names of individuals who assisted in the preparation of this IS/MND.

Appendix A – Proposed Mitigated Negative Declaration
Appendix B – Mitigation Monitoring and Reporting Plan
Appendix C – Sutter County Zoning Clearance #M-19-036 for Valdez Trucking
Appendix D – BESS Equipment Specifications
Appendix E – Project Lease Area Legal Description, Title Report
Appendix F - Cultural Resources Documentation
Appendix G – CalEEMoD Version 2016.3.2 Emission Data Model Spreadsheet
Appendix H – Geotechnical Report
Appendix I – Phase 1 Environmental Site Assessment-EDR Data
Appendix J – El Centro BESS Noise Study

3.0 PROJECT DESCRIPTION

3.1 PROJECT NAME

Project #U-19-033, Viridity Energy Solutions Inc.,10 LLC, (VESI 10) Tierra Buena Battery Energy Storage System (BESS) Project (*VESI 10 Tierra Buena BESS project*)

3.2 PROPOSED ACTION

VESI 10, LLC is requesting from Sutter County a Conditional Use Permit to construct and operate a battery energy storage system under the Sutter County Zoning Code Article 5, Chapter 1500-05 on leased land from Mr. Luis Garcia Valdez, property owner of the proposed VESI 10 Tierra Buena BESS project lease area of approximately 0.32 +/- acres located on the northern end of Sutter County Assessor's Parcel Number 10-250-060 or street address, 3025 Tierra Buena Road within Sutter County. The current zoning classification for the proposed project site is Agriculture (AG) with a general plan designation of Agricultural 20 (AG-20). The proposed VESI 10 Tierra Buena BESS project is considered a "Community Facilities and Services" within Table 1500-05-1: Allowed Use Types in the Sutter County Zoning Code and is defined as a "*Major*" facility which requires a Use Permit be issued by Sutter County as a discretionary action.

The proposed project requires a public hearing and approval of the project from the Sutter County Planning Commission with findings for such action, and adoption of the appropriate CEQA document to support the action. The Sutter County Planning Commission must hold a public hearing and consider the Planning Staff recommendations, public testimony, and certify the proposed Initial Study and Mitigated Negative Declaration, adopt a Mitigation and Monitoring Plan, and conditions of approval for the proposed Conditional Use Permit (CUP) to allow development of the proposed VESI 10 Tierra Buena BESS project. After Sutter County Planning Commission approval and certification of the CEQA document VESI 10, LLC, will have administrative clearances (i.e., Post-discretionary Land Use Permit, building permit, grading permit, electrical permit, fire permit, etc.). No other permitting is required for the project. (See Figure 3.2-1: *VESI 10 Tierra Buena Layout Plan*)

3.3 REQUIRED PERMITS AND APPROVALS

Many laws and policies have been adopted at the federal, state, and local levels to protect environmental resources and ensure that development is appropriately planned and managed. *Table 3.3-1: Applicable Compliance and Review Requirements*, summarizes the principal laws, regulations, and policies with which the proposed VESI 10 Tierra Buena BESS project must comply.

LEGEND

13	Main Gate for BESS Facility
14	Gravel Paved Access Road
15	Battery Storage Enclosures
16	Reinforced Pervious Concrete Slab
17	Electrical Transformer
18	IT Cabinet
19	Power Conversion System (PCS)
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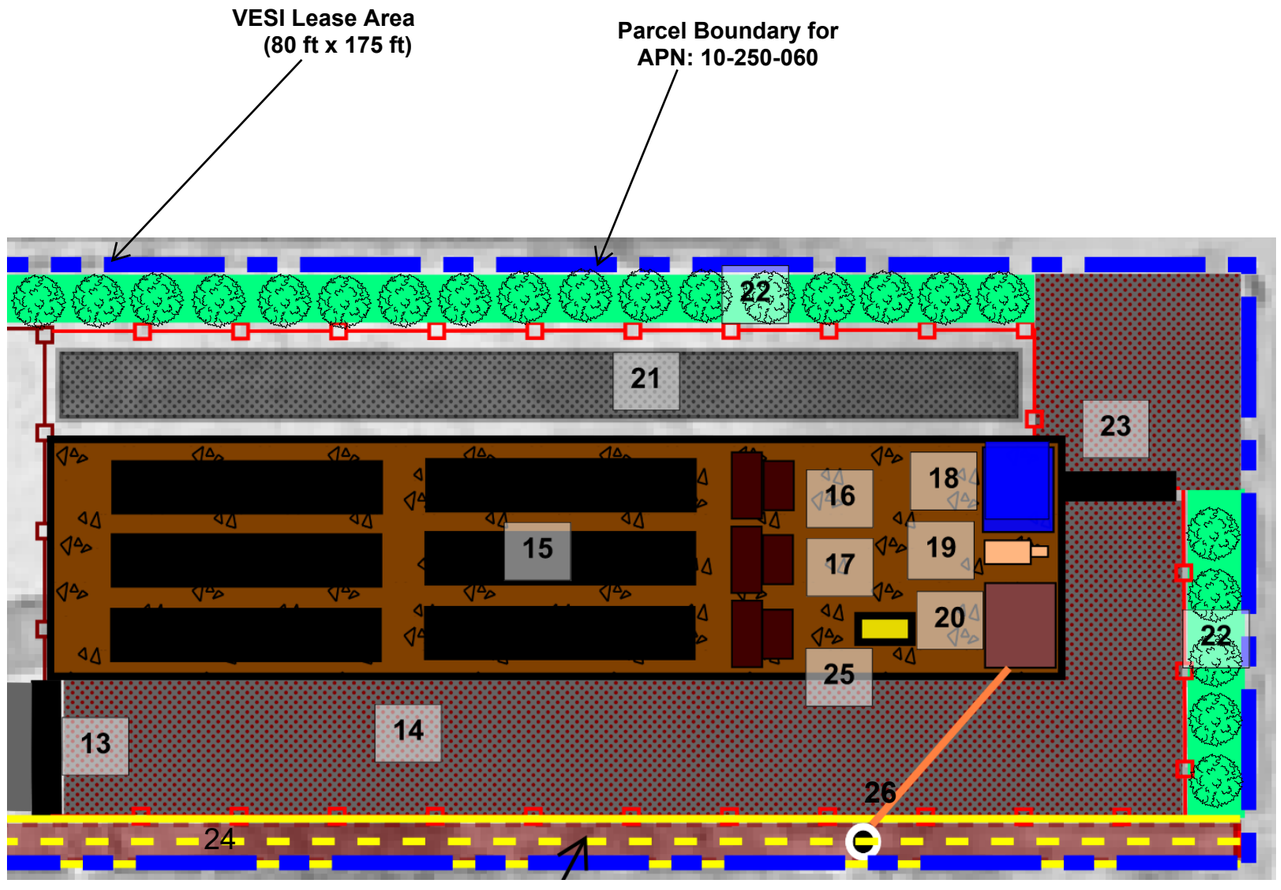

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
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FIGURE: VESI 10 Tierra Buena BESS Layout Plan

DATE: 11-17-2019	SCALE: 1"=20' (11"x17")
BY: SCV	FIGURE: 3.2-1

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Table 3.3-1: Applicable Compliance and Review Requirements

Resource Area	Compliance Requirements
Aesthetics	• Sutter County 2030 General Plan • Sutter Buttes Overlay Zone Ordinance
Agriculture and Forestry Resources	• Williamson Act Regulations
Air Quality/Greenhouse Gas Emissions	• Federal Clean Air Act and Clean Air Act Amendments 1990 • California Clean Air Act (Section 112(r)(1))—Requires the facility operator to identify hazards that may result from accidental releases • New Source Performance Standards (40 CFR 60) • Feather River Air Quality Management District Plans • Feather River Air Quality Management District, Authorities to Construct and Authorities to Operate • Greenhouse Gas Pre-Screening Measures for Sutter County, Adopted June 28, 2016 by Sutter County Board of Supervisors • Greenhouse Gas Emissions, Screening Tables, Sutter County, Adopted April 2011 • Sutter County Climate Action Plan • California Global Warming Solutions Action 2006 (AB32)
Biological Resources	• Federal and State Endangered Species Acts • Federal Migratory Bird Treaty Act • Federal Bald and Golden Eagle Protection Act • California Native Plant Protection Act • California Fish and Game Code
Cultural Resources/Tribal Cultural Resources	• California Public Resources Code Sections 5020, 5024, 21074, and 21080 • State Historic Preservation Office Requirements • Native Americans: California Environmental Quality Act (AB 52) 2014
Energy	• CPUC Resolution E-4909 adopted January 11, 2018 • (SB100) to source 100% percent of retail electricity by 2045 from renewable sources. • PG&E's Self-Generation Incentive Program (SGIP) • AB2514, mandates utilities procure over 1.3GW of behind-the-meter storage
Geology and Soils	• Sutter County Building Permit • Alquist-Priolo Earthquake Fault Zone
Hazards and Hazardous Materials	• California Code of Regulations Title 22 • California Hazardous Materials Release Response Plans and Inventory Act • Sutter County Environmental Health Division is the CUPA and regulates hazardous materials • California State Fire Marshal • DOT Hazardous Materials Regulations (amended by Homeland Security Act of 2002)—Requires the Implementation of a HM 232 hazardous materials plan • Design Failure Mode and Effects Analysis (DFMEA) • Sutter County Code of Ordinances Title 700 Health and Sanitation
Hydrology and Water Quality	• Federal Clean Water Act • Porter-Cologne Water Quality Control Act • California Department of Health Services requirements for potable water facilities • State Water Resources Control Board, General Industrial Activity Stormwater Permits • California Regional Water Quality Control Board, Construction Activities Stormwater General Permit • California Regional Water Quality Control Board, Industrial Activities Stormwater General Permit

Resource Area	Compliance Requirements
	• Central Valley Regional Water Quality Control Board—NPDES and SWPPPP • 40 CFR 112 (Requirement for a Spill Preventions Control Countermeasure Plan)
Land Use and Planning	• Sutter County 2030 General Plan • Sutter County Zoning Code Article 5, Part 2 District Specific Regulations, Chapter 1500-05 et. Seq.; Part 5 Process and Enforcement, Article 22 Permit Application and Completeness, Article 23 Review and Action, Article 24 Post Action Procedures, Article 25 Permit Types and Findings • California Government Code • Sutter County building permits and encroachment permits
Mineral Resources	• California Surface Mining and Reclamation Act of 1975
Noise	• Sutter County 2030 General Plan • Sutter County Noise Control Ordinance (Zoning Code Article 21.5)
Population and Housing	• Sutter County 2030 General Plan • Sutter County Housing Element • Regional Housing Allocation Plan
Public Services/ Utilities and Service Systems	• Sutter County 2030 General Plan • Environmental Enforcement and Training Act of 2002 • California Education Code Sections 52080-52086 • California Public Utility Commission, Energy Division, Resolution E-4909, January 11, 2018 • California Public Utility Code, Section 701, and Section 380 • Federal Power Act 16, U.S.C. Section 791 et. seq. • Energy Policy Act of 1992, Section 714, 16 U.S.C. section 824
Recreation	• Sutter County 2030 General Plan
Transportation	• Sutter County 2030 General Plan • Sutter County Code Section 900 Roads-Bridges-Vessels • Sutter County Code Section 1100 Traffic • Sutter County Encroachment Permit
Wildfire	• California Public Resources Code Section 21083.01 • California Code of Regulations Title 24, Part 9 • Sutter County Code of Ordinance Chapter 600
Battery Storage System Industry Design Standards and Regulations	• Inverter – UL 1741 • CARB GHG annual inventory documentation (to be submitted to CARB—17 CCR 95121) • IRS Form 637 (Excise Taxation form for certain activities) • Interconnecting Distributed Resources with Electric Power Systems – IEEE 1547 • Seismic Rating – IBC/CBC Zone 3 • Communication – FCC Part 15B Class A • National Electric Code – NEC 2011, ANSI/NFPA 70 with regards to wire sizing, fuses, and circuit breakers. • Sizing of Halon Fire Suppression System – NFPA 2003 • Transportation – UN Manual Section 38.3, DOT, PHMSA Class 9 • Harmonic Control in Electrical Power Systems – IEEE 519 • Signage for Hazardous Materials and Emergency Response – NFPA 704 • Produce Safety Signs and Labels – ANSI 2535 • Transformer Standards – ANSI C57 • Surge Withstand Capabilities – ANSI C37 • Battery Cell Safety – UL1642, IEC62133, EN62133, UN38.3 • Battery Module Safety – UL1973, UN38.3 • Facilities and Quality Procedures – ISO9001, ISO14001, OHSA18001 Lithium Ion Transportation of Batteries – 49 CFR 173.185 – DOT Pipeline and Hazardous Materials Administration

3.4 BACKGROUND AND CONTEXT

VESI 10, LLC, is proposing the construction of a battery energy storage facility on land owned by the Mr. Luis Garcia Valdez. VESI 10, LLC has entered into a lease agreement with Mr. Luis Garcia Valdez. The lease area for the proposed VESI 10 Tierra Buena BESS project is located some 730 feet north of intersection of Tierra Buena Road and Pease Road on the east side of Tierra Buena Road at 3025 Tierra Buena Road, on the northern portion of APN 10-250-060, Sutter County, California. The proposed lease area for the project site consists of approximately 0.32+/- acres just north of the PG&E Pease Road power substation and adjacent to the PG&E electric power distribution lines. (see Appendix E: *Project Lease Area Legal Description, Title Report*).

VESI 10, LLC, is responding to PG&E's approved plans by the California Public Utility Commission (CPUC) to develop four cost-effective energy storage projects totaling approximately 567 MW. CPUC Resolution E-4909 adopted January 11, 2018 authorized PG&E to procure energy storage to address local deficiencies in the Pease sub-area of the public grid system in Sutter County and ensure local reliability. The Pease local sub-area surrounding the PG&E Pease Road Substation north of Yuba City was one of three specified local sub-areas by the CPUC.

In November of 2016 Calpine Corporation which operates two peaking power plants (Feather River and Yuba City) in the Pease local sub-area, sent a letter to the California Independent System Operator (CAISO) stating Calpine's desire to terminate the Participating Generator Agreements (PGAs) The claim for termination of the two plants is that they are no longer economical to operate at current energy and Resource Adequacy (RA) capacity prices. Additionally, Calpine claimed that the CAISO's capacity procurement mechanism (CPM) does not provide enough planning period for Calpine to make major maintenance, budget, and company planning decisions. Calpine requested that the CAISO conduct reliability studies for the two plants to determine whether they are needed to ensure local reliability. CAISO performed the studies, per Section 41.3 of the CAISO Tariff.

In March 2017, the CAISO determined the Calpine Yuba City Energy Center peaking unit was needed to meet a local capacity need in the Pease sub-area located within the Sierra local capacity area (LCA) and includes Sutter County. The CAISO then designated the peaker plant as reliability must-run resources (RMR) under tariff section 41. The Yuba City Energy Center is a 47.6 MW facility that has been designated to fulfill a CAISO-determined capacity shortfall of 18 megawatts (MWs) in the Pease sub-area.

Use of RMR to ensure reliability has been declining for more than a decade, since 2006. In 2006, the CAISO announced that it was reducing the use of RMR agreements by sixty percent for 2007. CPUC staff expressed concern that the historical procurement process was not followed leading up to these RMR agreements with Calpine. The CPUC became concerned about impacts to Sutter County ratepayers if the RMR contracts with Calpine were executed and extended. These Calpine peaker plant contracts were developed outside of the normal resource adequacy process and the CAISO's Capacity Procurement Mechanism (CPM) was not initiated.

CPUC determined that a lack of competition for these RMR contracts could lead to market distortions and unjust rates for power. Ultimately, this concern lead to the CPUC's passage of Resolution E-4909 under its procurement authority to authorize PG&E to conduct a limited solicitation for resources to fill the local deficiencies and address issues identified by the CAISO. The VESI 10 Tierra Buena BESS project is responding to CPUC Resolution E-4909, by providing new battery storage resources, thereby eliminating the need for the Calpine RMR contracts for the Yuba City peak power plant, or renewal in subsequent years. In addition, the proposed VESI 10 Tierra Buena BESS project will be subject to must offer obligations (MOO) in the wholesale energy markets for Sutter County. In contrast, RMR contracts cover the full cost of keeping the facility available, but the facility is only called upon to serve load if the specific contingency occurs and is not subject to a MOO. In all other time periods, RMR designation can cause ongoing market distortions because it may serve as a disincentive to a peaker plant from regular participation in the energy market.

Several areas of California law give the CPUC authority to act to ensure a safe and reliable energy supply for the state as well as just and reasonable retail rates for such services. The CPUC's authority over utility regulation and supervision arises from the California Constitution, state law and court decisions as well as federal law including, but not limited to, the Federal Power Act, 16 U.S.C. § 791 et seq., and section 714 of the Energy Policy Act of 1992, 16 U.S.C. §824(g). (General Order 167, Section 1; see generally Southern California Edison Company v. Public Utilities Commission (2014) 227 Cal.App.4th 172, 186-196.) Several state statutes direct the CPUC to assure the long-term reliability of California's electric energy supply. Section 380 of the California Public Utilities Code 9 requires the CPUC to establish and enforce resource adequacy requirements to assure "development of new generating capacity and retention of existing generating capacity that is economic and needed." (Section 380, subds. (b)(1); see also subds. (c)-(f).).

The CPUC also exercises authority over electric utilities and in state generation facilities. Section 761.3, subdivision (a) provides that the CPUC "shall implement and enforce standards for the maintenance and operation of facilities for the generation of electricity . . . located in the state to ensure their reliable operation." The CPUC shall enforce the protocols for the scheduling of powerplant outages of the Independent System Operator." The Commission designed General Order (G.O.) 167, *Enforcement of Maintenance and Operation Standards*.

Battery energy storage systems are recognized by the CPUC as fast-responding and reliable and may be constructed in a short timeframe. BESSs are procured at increasing levels to meet local reliability requirements including capacity shortfalls, in lieu of conventional generation. The proposed VESI 10 Tierra Buena BESS project is a direct response to the CPUC Resolution E-4909, and the plan to mitigate increasing electrical rates for Sutter County ratepayers.

Data presented in this document reflect relevant data from conceptual BESS plans based on existing, equivalent BESS facilities. These BESS production models were used to determine potential impacts in accordance with CEQA guidelines. VESI 10, LLC employs a cutting-edge battery storage technologies and processes to produce peaking power in a manner that exceeds traditional production efficiencies. The final facility design would ultimately be provided by VESI 10, LLC and exact input/output consumption values may vary from assumed values provided herein for purposes of CEQA evaluation.

Sutter County would have primary jurisdiction over the proposed VESI 10 Tierra Buena BESS project and will act as the CEQA lead agency. The federal regulatory agencies that may have jurisdiction over this project include the U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (Corps), and U.S. Fish and Wildlife Service (U.S.F.W.S). State and local regulatory agencies involved in the permitting process include the California Department of Fish and Wildlife (DFW), Feather River Air Quality Management District (FRAQMD), and Sutter County.

3.5 PROJECT NEED

3.5.1 Reduce the Need for RMR Calpine Contracts and Electrical Costs

PG&E must coordinate with the CAISO to ensure that its proposed portfolio will contribute to reducing or eliminating the local sub-area deficiencies in the Pease subarea. Without the proposed VESI 10 Tierra Buena BESS project, PG&E and CAISO will be forced to pay high costs to continue the Calpine Yuba City Peaker Power Center operations, which higher costs will be passed on to Sutter County ratepayers. The proposed BESS facility has been evaluated by CAISO and determined to reduce, or eliminate, the local sub-area deficiencies at a reasonable cost. The proposed project development schedule allows for on-line and operational status on or before a date sufficient to ensure that the RMR contracts for the two peaker power plants – Feather River Energy Center and the Yuba City Energy Center – will not be renewed in any year from 2019 through 2022.

3.5.2 Reduction of Greenhouse Gas Emissions

Battery storage is used to reduce greenhouse gas emissions associated with gas-fired power generation facilities by storing energy during off-peak hours (lower energy usage/demand times) and dispatching this energy on an as-needed basis during peak demand hours. This technology reduces the amount of fossil fuels consumed during peak hours and maximizes usage of energy from renewable sources such as wind and solar facilities that may not be able to produce energy during times of peak demand. The proposed project would increase local electricity peak power storage supply, thereby supporting the stability of the local electrical grid and removing off line the old gas fired peaker power plants in Sutter County (Calpine Feather River Energy Center and Calpine Yuba City Energy Center). The proposed project's location across the street from the PG&E Pease power substation allows the proposed BESS facilities to service the deficiencies created by the shutdown of the gas-fired peaker plants and enabling connection to the existing grid. Benefits of the proposed BESS facility include integration of solar, reduction of the need to ramp up polluting gas plants in the late afternoon, increased local reliability in an area that is currently highly reliant on gas-fired generation, ultimately pushing gas off the system and moving a step closer to a decarbonized grid in Sutter County and California. The CAISO would control the dispatching of electricity from the project. Electricity dispatched from the battery storage system would supplement the existing peaking capacity available to the CAISO system.

3.5.3 CPUC Adopted Energy Renewable Plan-Goal of 100% Retail Electricity

CPUC approved the proposal by PG&E, one of California's three main investor-owned utilities (IOUs) to deploy large-scale energy storage to replace peaking natural gas plants statewide. CPUC issued its approval of three capacity contracts and one power purchase agreement (PPA) for 567.5MW of energy storage capacity to be built across four large-scale battery storage systems in California. Significantly, each system will store energy for four hours, making them viable capacity resources to replace gas plants. California has been among the fastest adopters of energy storage in the world, partly due to its prolific adoption of solar energy in past decades. The state now has a policy in place (SB100) to source 100% percent of retail electricity by 2045 from renewable sources. The proposed project supports PG&E's compliance with new regulatory and policy measures, such as the Self-Generation Incentive Program (SGIP), which offers support for solar-plus-storage purchases, and AB2514, which mandates that utilities procure over 1.3GW of behind-the-meter storage by the early 2020s and adds energy storage into utilities' long-term Integrated Resource Planning (IRP).

New state energy policies are ensuring that net metering policies are on their way out and increasing application of time-of-use rates, resulting in the increase peak demands. Generating, then storing power for use at peak demand times (when power becomes expensive) is more financially viable than injecting the power into the grid for diminishing returns. BESS facilities achieve these goals by creating aggregated virtual power plants (VPP) through inter-connection of several BESSs, which pools the capabilities of several such systems and offers more economic, reliable services.

3.6 PROJECT OBJECTIVES

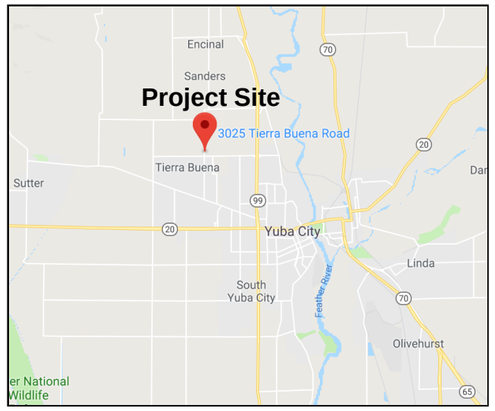
The proposed project would provide operational support and a more secure electrical power system for the PG&E distribution and transmission system as a whole, in addition to providing local capacity reserves and energy security benefits for the immediate surrounding Sutter County and Yuba City area. With a ready supply of dispatchable reserve energy, PG&E could reduce its reliance on gas-generation peaking power plants to serve peak power demands or possible loss of transmission capacity due to earthquake, landslides, or wildfires within the Pease electrical service sub-area. The following objectives have been identified for the proposed VESI 10 Tierra Buena BESS project:

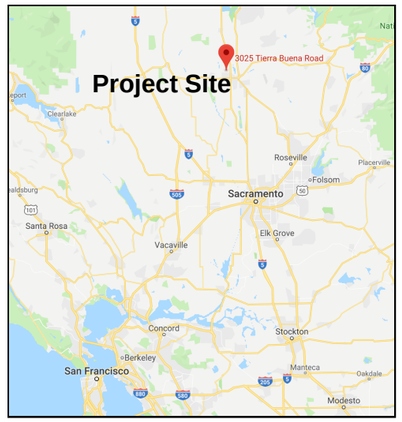
- Operational support and more secure electrical power system for PG&E distribution and transmission system.
- Provide local capacity reserves and energy security benefits for immediate surrounding Yuba City area.

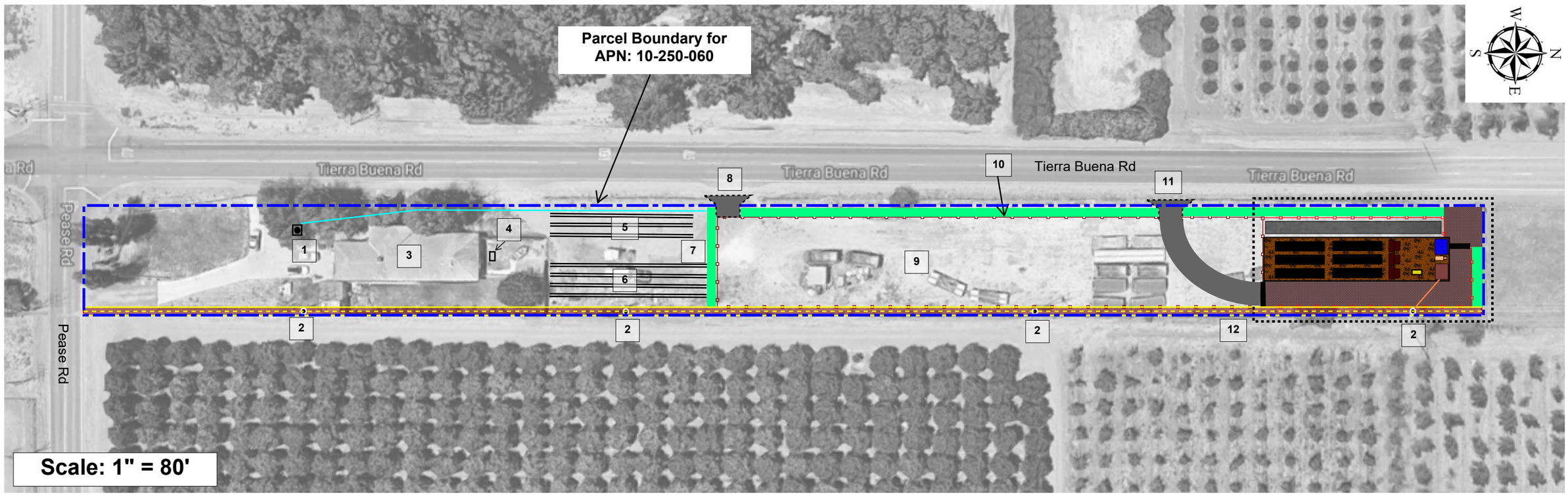
- Ready supply of dispatchable reserve energy, PG&E can reduce its reliance on gas-generation peaking power plants to serve peak load demands or possible loss of transmission capacity.
- Assist the State of California in achieving the Renewable Standard (RPS) and greenhouse gas (GHG) emission reduction objectives by constructing a Battery Energy Storage System (BESS).
- Improve energy reliability for the Yuba City Area and Sutter County.
- Locate the BESS as close as possible to existing transmission and substation facilities.
- Locate on property that is zoned to allow utility and electrical infrastructure to minimize conflicts with other land uses in the County.
- Minimize environmental effects by locating the project on developed or disturbed land.
- Use technology that is demonstrated and proven.

3.7 REGIONAL CONTEXT

The proposed VESI 10 Tierra Buena BESS project is located off Tierra Buena Road, 730 feet north of Pease Road, the Sphere of Influence Boundary (the Sphere of Influence is the planning boundary outside of an agency's legal boundary) for the City of Yuba City. The immediate vicinity of the proposed project site is characterized by agricultural industrial land uses, public utilities facilities (PG&E Pease Road Power Substation) and agricultural orchard land uses. (*See Figure* 3.7-1: *Regional Location Map* and Figure 3.7-2: *Assessor's Map*). The proposed project site has historically been used as an agricultural truck yard and staging area for orchard operations within the region. (See Appendix C – Sutter County Zoning Clearance #M-19-036 for Valdez Trucking) The PG&E Pease Road power substation is the regional substation which services north Yuba City and Sutter County. The project lease area is serviced by State Route (SR) 99 via Pease Road to W. Onstott Frontage Road to go south to the Queens Avenue/SR 99 Interchange and E. Onstott Frontage Road to go north to the Eager Road/SR 99 Interchange. The project lease area is approximately 2.8 miles from the Queens Avenue/State Route 99 interchange in north Yuba City area, and also 2.8 miles from the Eager Road/State Route 99 Interchange. The nearest urban residential development is located at the intersection of Pease Road and Butte Vista Lane approximately 0.65 miles east of the proposed VESI 10 Tierra Buena BESS project lease area. The Feather River is located east of State Route 99 and 2.61 miles east of the proposed project lease area.







PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: Regional Location Map

DATE: 11-17-2019	SCALE: 1" = 80' (11"x17")
BY: SCV	FIGURE: 3.7-1

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Tax Area Code 51-121 **10-25**

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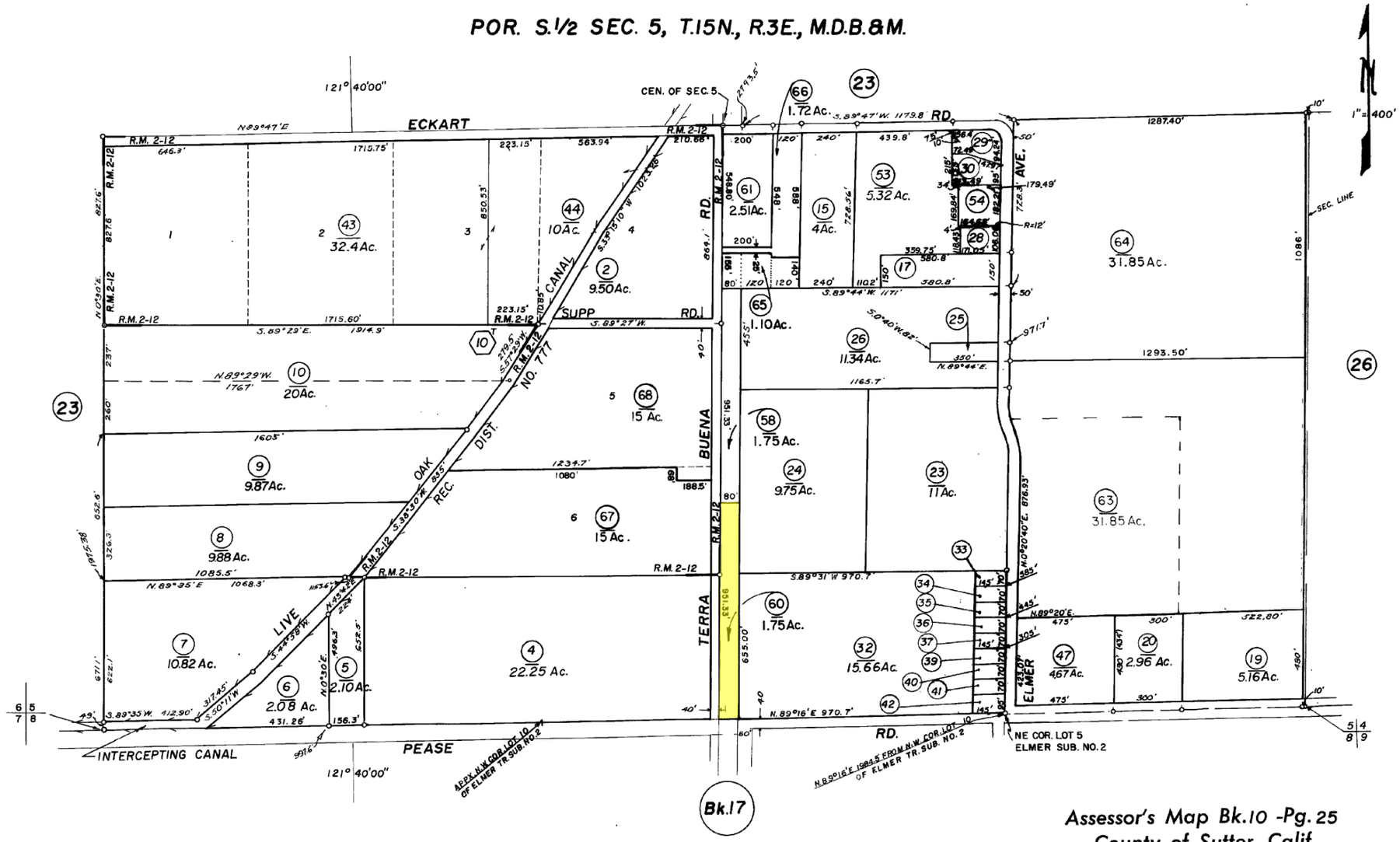

Eckart Wilbur Tract, R.M. Bk.2, Pg.12

TRANSITORY UNIT

NOTE - ASSESSOR'S BLOCK & LOT NUMBERS SHOWN IN CIRCLES

Assessor's Map Bk.10 -Pg.25
County of Sutter, Calif.
2007 - 1

Indicates the Parcel where the Project Site is Located

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

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FIGURE: Assessor's Map

DATE: 11-17-2019	SCALE: NTS
BY: SCV	FIGURE: 3.7-2

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3.8 PROJECT SETTING

The proposed VESI 10 Tierra Buena BESS project is located 730 feet north of the Pease Road and Tierra Buena Road intersection on the eastside of Tierra Buena Road, in Sutter County. The lease area's shape is rectangular measuring 175 feet by 80 feet and is approximately 0.32 +/- acres in size within the parcel identified as Sutter County Assessor's Parcel Number (APN) 10-250-060. Adjacent to the subject property, are the following properties and associated land uses: North: Utility Out Buildings and a Single Family Residence; South: Valdez Trucking Yard, Single Family Residence and the PG&E Pease Road power substation; West: Agricultural equipment storage yard, agricultural out buildings, orchards and Single Family Residence; East: Orchards, PG&E electric power distribution line and PG&E high-power transmission line. The entire project lease area for the proposed VESI 10 Tierra Buena BESS project is relatively unimproved, with only a barbed-wire fence surrounding the parcel. The terrain is primarily flat throughout the entire property with a very slight slope to the west/southwest toward Tierra Buena Road. The parcel is approximately 61 feet above sea level on the eastern boundary and slopes to approximately 58 feet along the western boundary along Tierra Buena Road. (See *Figure 3.8-1: Project Setting*, shows the surrounding land uses) Along the eastern boundary of the project lease area is a PG&E electric power distribution line located on a 10-foot utility easement, which will be used to connect the BESS facility to the PG&E Pease power substation. Approximately 275 feet east of the project is a high-power transmission line which runs north and south and parallel to the lease area for the proposed VESI 10 Tierra Buena BESS project. Valdez Trucking will remain on the parcel between the proposed VESI 10 Tierra Buena BESS project and the Valdez Residence which faces Pease Road with the address of 3025 Pease Road. Photographs of the view of the proposed project lease area are provided in *Figure 3.8-2: Views of Lease Area/Project Area Photo Log*.



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

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FIGURE: Project Setting

DATE: 11-17-2019	SCALE: NTS
BY: SCV	FIGURE: 3.8-1

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Figure 3.8-2: Views of Lease Area/Project Area Photo Log



View of Garcia Residence from portion of parcel where Valdez Trucking will operate from, just north of the residence.



View from Garcia Residence looking north at Valdez Trucking Yard. VESI 10 Tierra Buena BESS project will be beyond Valdez Trucking on north end of parcel.



View from VESI 10 Tierra Buena BESS project site looking east toward adjacent orchard and PG&E transmission tower and lines.



View from VESI 10 Tierra Buena BESS project site looking southeast toward adjacent orchard and PG&E Pease Road Power Substation.



View of VESI 10 Tierra Buena BESS project site looking from northwest corner of parcel on Tierra Buena Road toward the southeast with PG&E Pease Road Power Substation, Distribution Lines, and Transmission Lines in the background.



Aerial View of VESI 10 Tierra Buena BESS project site looking north from Pease Road. Red line indicates lease area for proposed BESS. Valdez Trucking will occupy space immediately south of BESS Lease Area.

3.9 DESCRIPTION OF PROJECT FACILITIES

The following describes the major components of the proposed VESI 10 Tierra Buena BESS project. An overview of the proposed VESI 10 Tierra Buena BESS project elements is provided below along with the operational parameters.

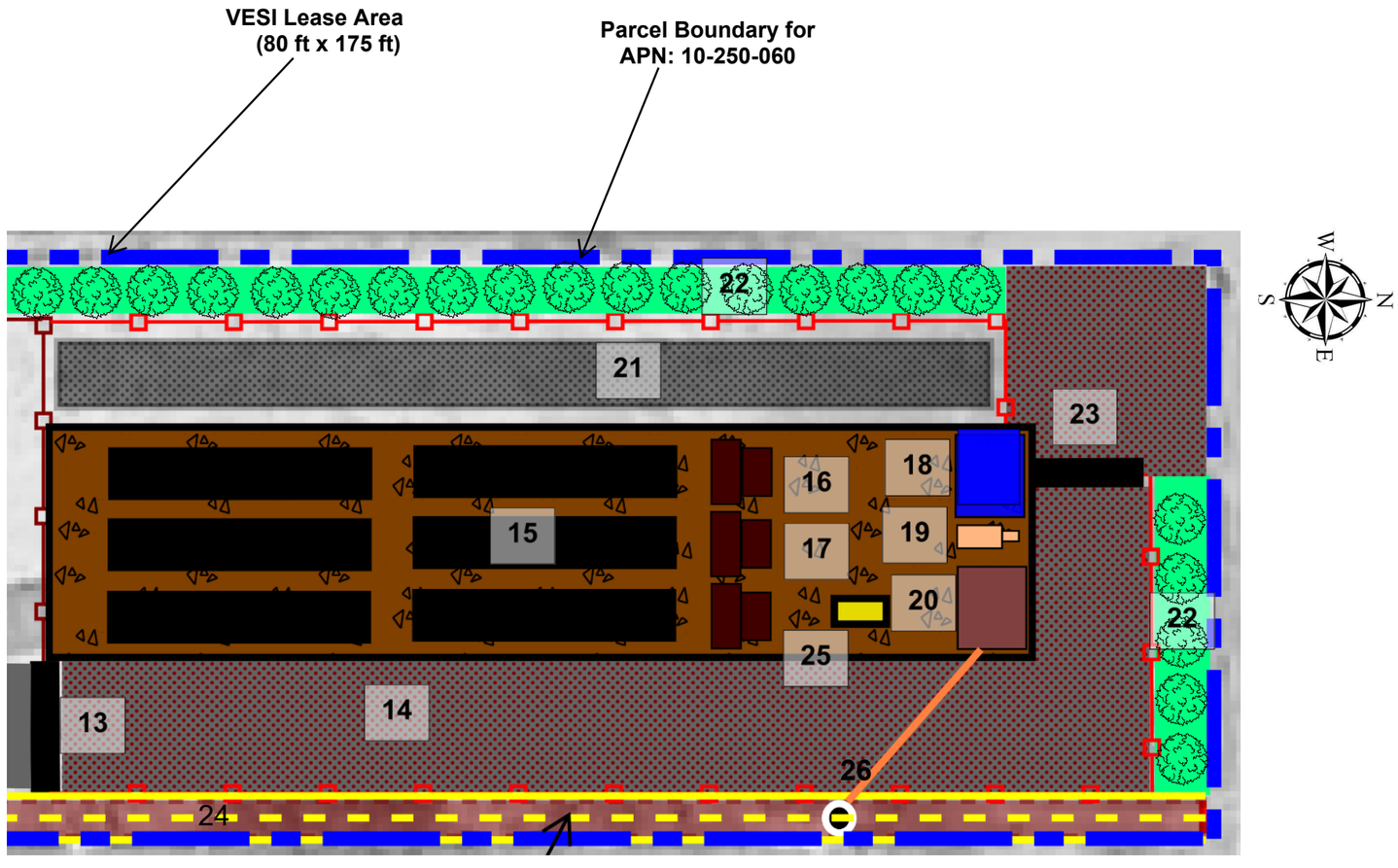
3.9.1 Overview of VESI 10 Tierra Buena BESS Facility

The proposed project consists of a battery electrical storage system (BESS) that would store up to 5 megawatts (MW) or 20 megawatt hours (MWh) of electricity for dispatch into the local PG&E grid via the existing adjacent PG&E Pease Road power substation. At complete buildout, the BESS would consist of several fully enclosed battery storage enclosures that would each house battery modules mounted in racks and associated electrical equipment. Each battery storage enclosure would have separation to allow for maintenance and inspections. The lease area for the VESI 10 Tierra Buena BESS project would be fenced for security and to restrict access.

The VESI 10 Tierra Buena BESS project would be constructed in one phase. It is estimated the construction of six battery storage enclosures (i.e., 5 MW of power) will occur over a 3 to 5-month period. The BESS modules and associated infrastructure (e.g., power inverters, transformers switches, MV switchgear, SCADA enclosure, IT & PG&E equipment, etc.) would be serviced on an intermittent basis by technicians. The existing agricultural truck yard and storage (Valdez Trucking) on the proposed project lease area would be removed and cleared of all debris and truck yard equipment and then remain in operations on the southern portion of the parcel just north of the residence in accordance to Sutter County Zoning Clearance #M-19-036 (See Appendix C). The proposed BESS layout plan is shown on Figure 3.9-1: *VESI 10 Tierra Buena BESS Layout Plan.* A typical BESS module elevation is shown in the following figures: Figure 3.9-2: *Elevation Views (Conceptual Artistic Renderings);* Figure 3.9-3: *Conceptual Artistic Renderings (Isometric Views*); Figure 3.9-4: *Conceptual Artistic Renderings (Isometric Views);* Figure 3.9-5: *Conceptual Artistic Renderings (Isometric Views);* Figure 3.9-6: *Conceptual Artistic Renderings (Isometric Views);* Figure 3.9-7: *Conceptual Artistic Renderings (Isometric Views).*

LEGEND

13	Main Gate for BESS Facility
14	Gravel Paved Access Road
15	Battery Storage Enclosures
16	Reinforced Pervious Concrete Slab
17	Electrical Transformer
18	IT Cabinet
19	Power Conversion System (PCS)
20	Switchgear
21	Stormwater Detention Area
22	Vegetative Hedge (Area Highlighted in Green) 5 ft wife planters of photinia (*Photina Fraseri*) planted at 5 feet on center
23	EMS Access Roadbed and Gate
24	PG&E Easement & Pease 1103 Feeder
25	Power Inverter
26	Generation Interconnect



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

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FIGURE: VESI 10 Tierra Buena BESS Layout Plan

DATE: 11-17-2019	SCALE: 1"=20' (11"x17")
BY: SCV	FIGURE: 3.9-1

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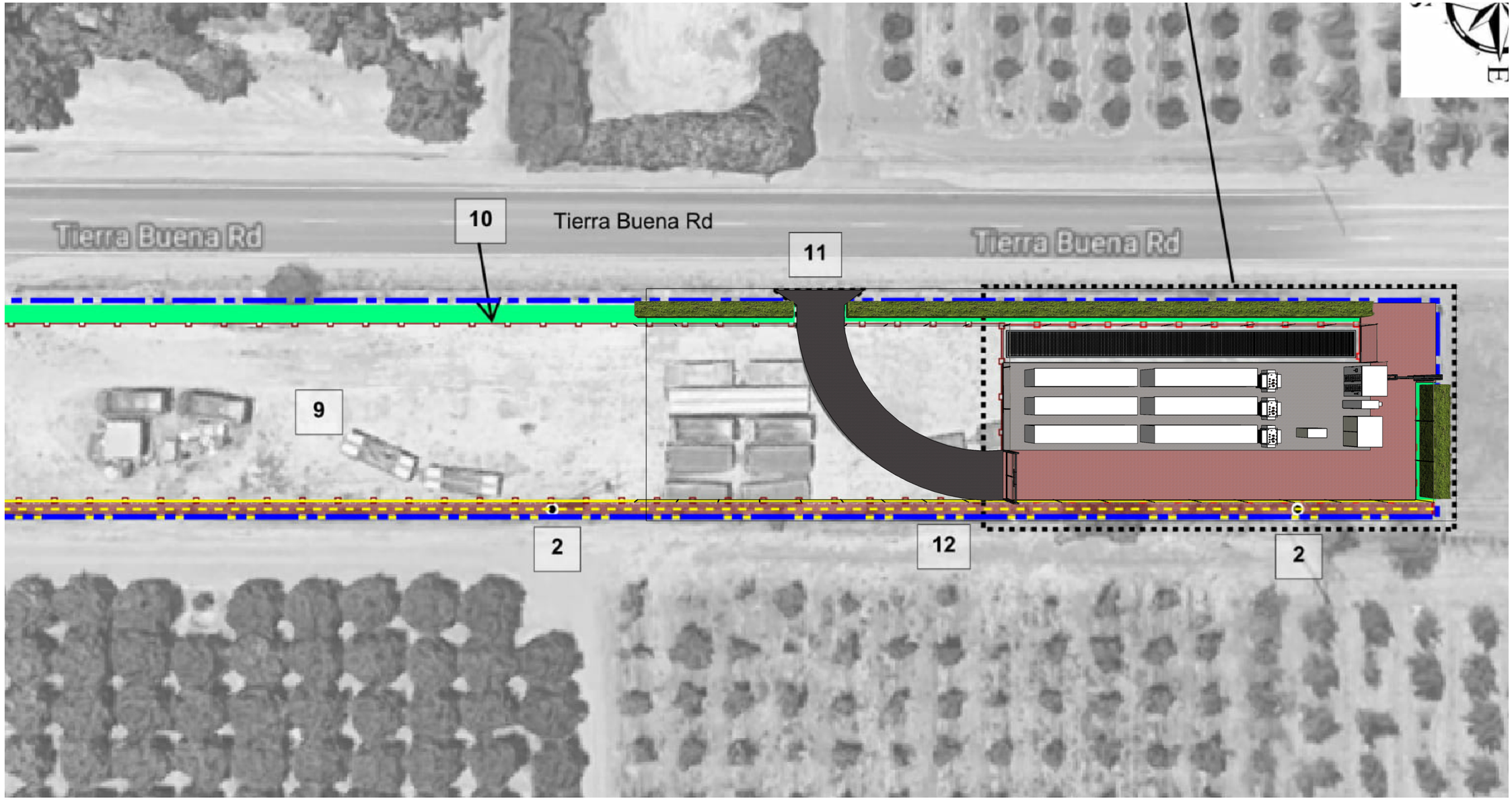
Conceptual Artistic Renderings



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY		0	Issued as Final	SCV	BLM
3025 Tierra Buena Rd Yuba City, CA 95993	APN: 10-250-060	REV.	DESCRIPTION	BY	APP. CHKD

FIGURE: Conceptual Artistic Renderings (Isometric Views)

DATE:	11-25-2019	SCALE:	NTS
BY:	SCV	FIGURE:	3.9-2

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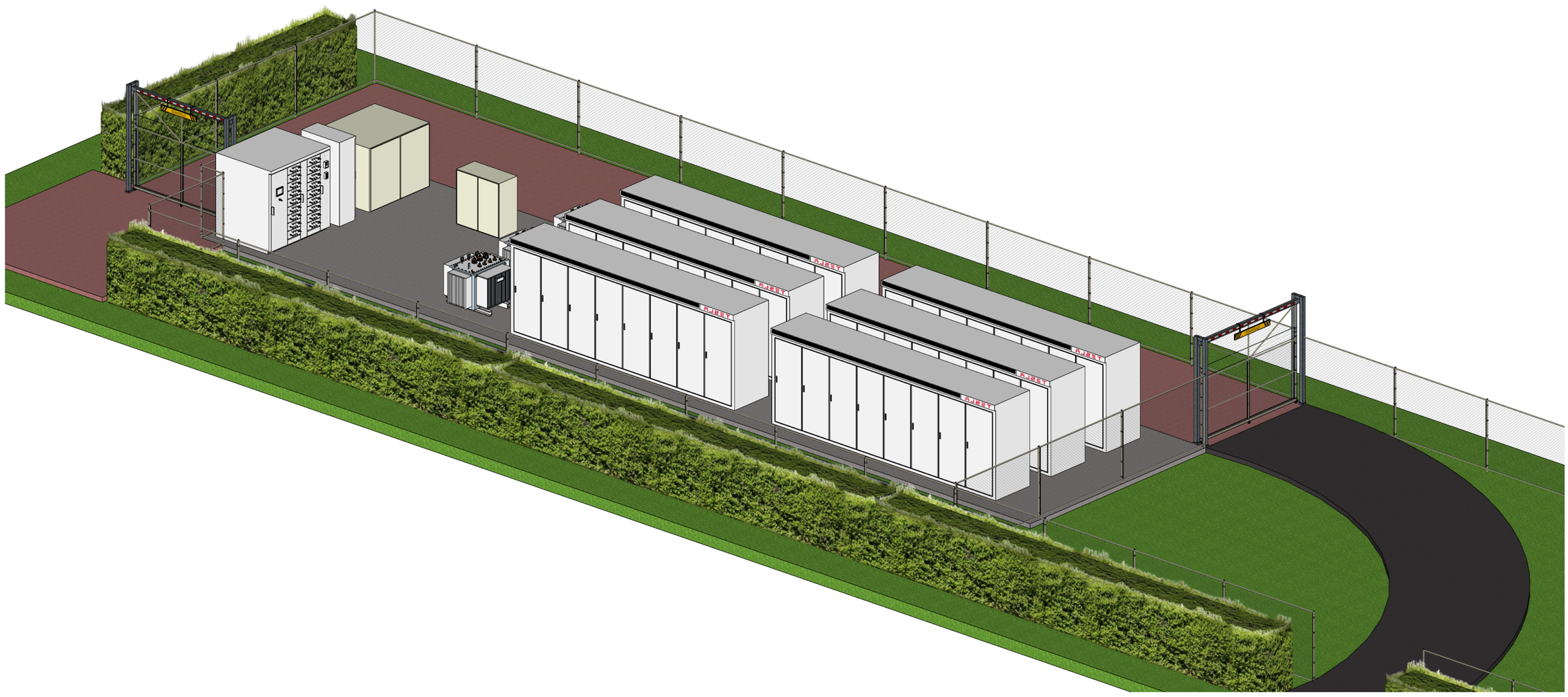
Elevation Views (Conceptual Artistic Renderings)



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

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REV.	DESCRIPTION	BY	APP.	CHKD
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FIGURE: Elevation Views (Conceptual Artistic Renderings)

DATE:	11-25-2019	SCALE:	NTS
BY:	SCV	FIGURE:	3.9-3

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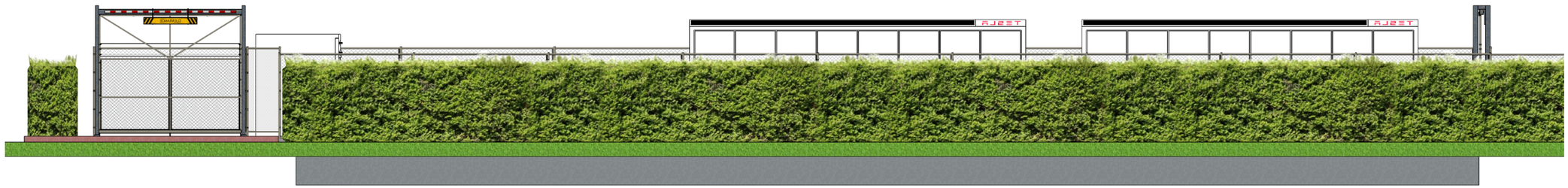
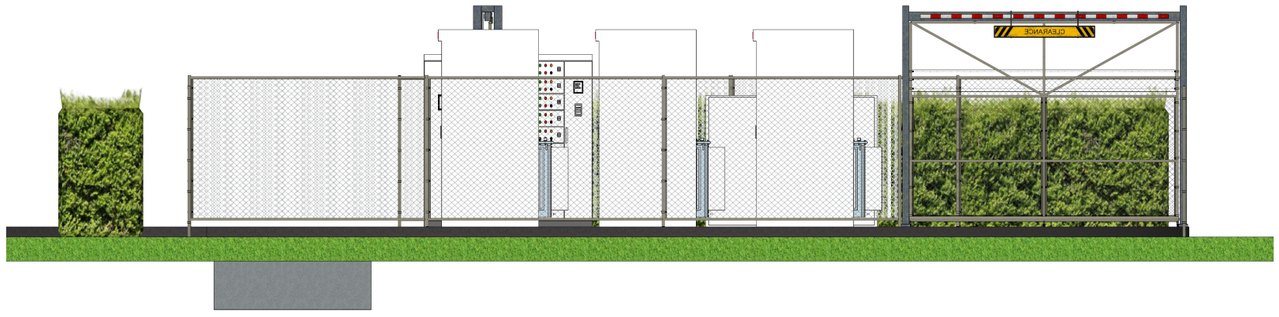
Conceptual Artistic Renderings





PROJECT: VESI 10 TIERRA BUENA BESS FACILITY		0	Issued as Final	SCV	BLM
3025 Tierra Buena Rd Yuba City, CA 95993	**APN: 10-250-060**	REV.	DESCRIPTION	BY	APP. CHKD

FIGURE: Conceptual Artistic Renderings (Isometric Views)

DATE:	**11-25-2019**	SCALE:	**NTS**
BY:	**SCV**	FIGURE:	**3.9-4**

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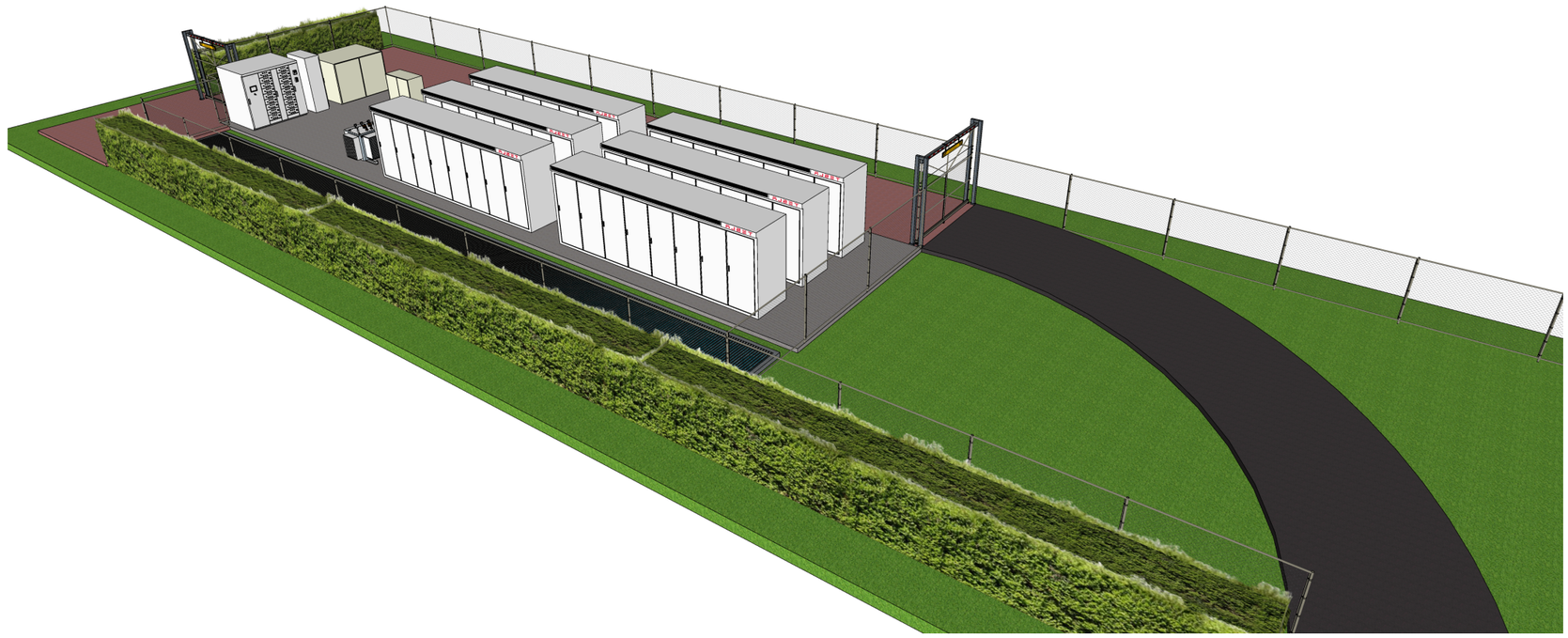
Conceptual Artistic Renderings



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY		0	Issued as Final	SCV		BLM
3025 Tierra Buena Rd Yuba City, CA 95993	**APN: 10-250-060**					
		REV.	DESCRIPTION	BY	APP.	CHKD

FIGURE: Conceptual Artistic Renderings (Isometric Views)

DATE:	**11-25-2019**	SCALE:	**NTS**
BY:	**SCV**	FIGURE:	**3.9-5**

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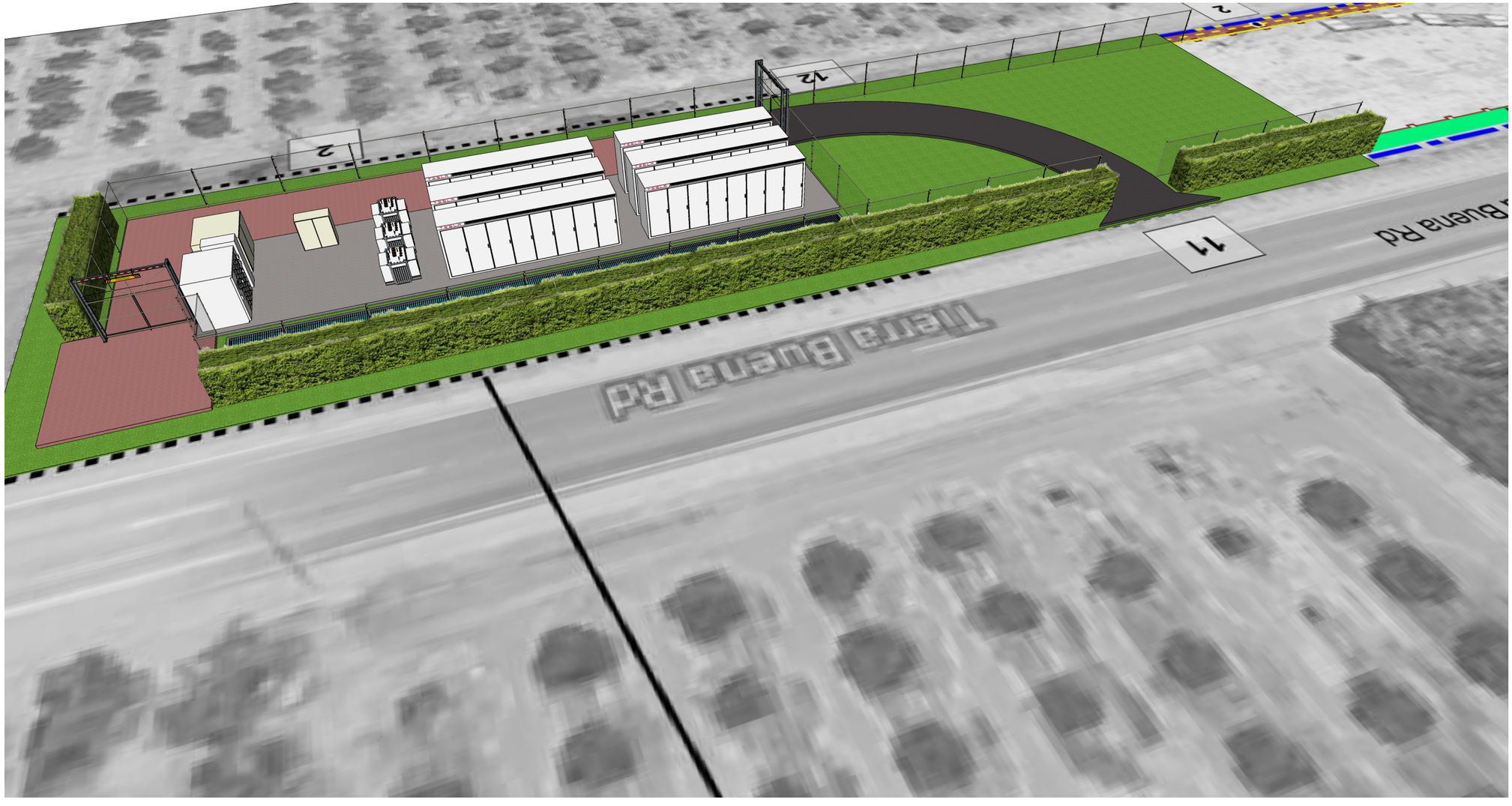
Conceptual Artistic Renderings



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY		0	Issued as Final	SCV	BLM
3025 Tierra Buena Rd Yuba City, CA 95993	APN: 10-250-060	REV.	DESCRIPTION	BY	APP. CHKD

FIGURE: Conceptual Artistic Renderings (Isometric Views)

DATE: 11-25-2019	SCALE: NTS
BY: SCV	FIGURE: 3.9-6

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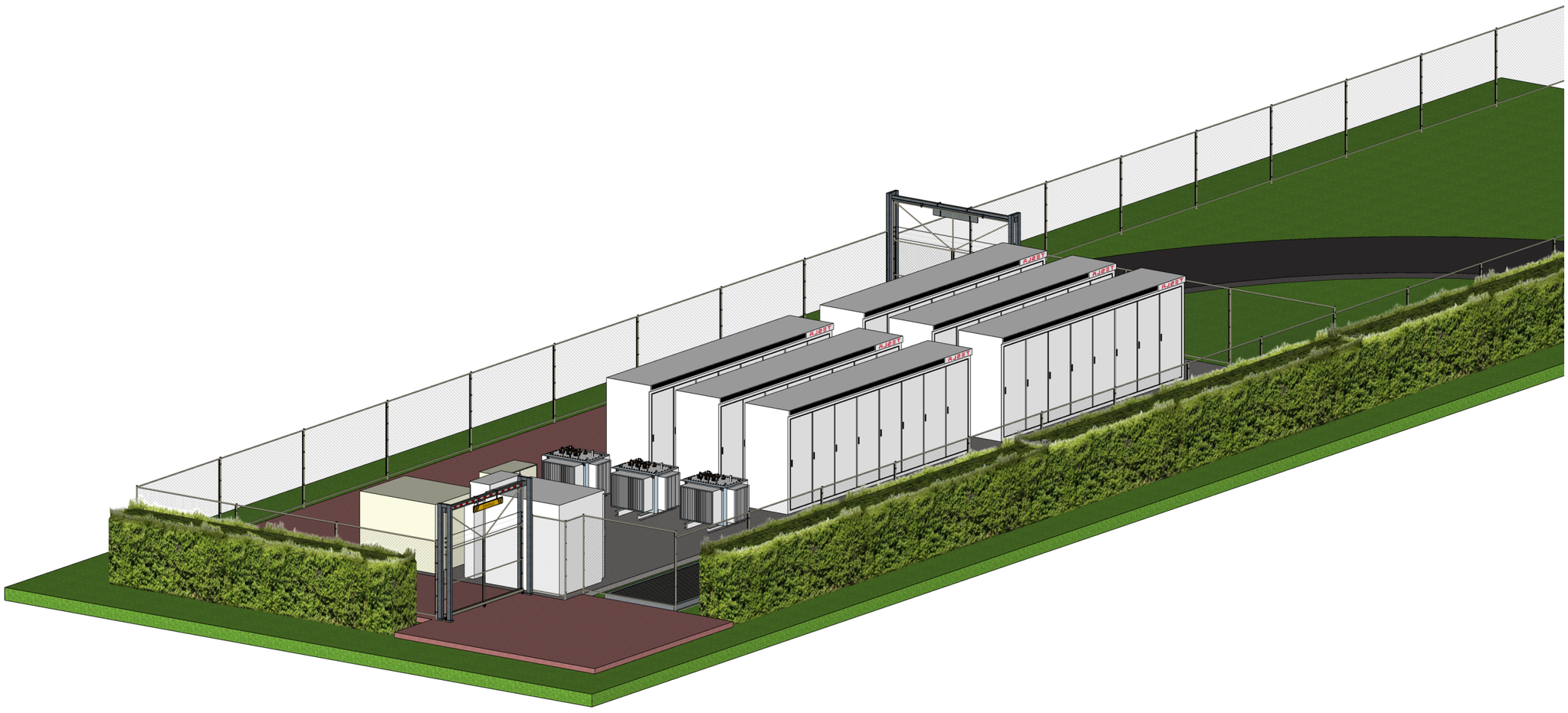
Conceptual Artistic Renderings



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY							
3025 Tierra Buena Rd Yuba City, CA 95993	APN: 10-250-060	0	Issued as Final	SCV		BLM	
		REV.	DESCRIPTION	BY	APP.	CHKD	

FIGURE: Conceptual Artistic Renderings (Isometric Views)

DATE:	11-25-2019	SCALE:	NTS
BY:	SCV	FIGURE:	3.9-7

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3.9.2 Battery Modules, Lithium-Ion Battery Technology, and Fire Protection

Each battery storage enclosure would be located within a metal frame storage enclosure, which will have insulation, air-conditioning, and fire suppression with separate enclosures for the electronic controls, inverters, and rectifiers. Due to the positive pressure required within each storage enclosure to ensure functionality of the fire suppression system, the enclosures would not be vented. Each storage enclosure would utilize a supply and return thermal management system; this system has a fresh air closed loop system. The mechanics of this type of thermal management system make it compatible with a positive pressure environment and do not require venting. The primary storage components would consist of self-contained electrochemical battery systems using conventional storage technologies with proven safety and performance records. The battery storage enclosures are designed such that the periodic maintenance and replacement of underperforming battery components can be easily performed on an as needed basis without replacing the entire module.

The lithium-ion battery is a high-density battery that is rechargeable. Due to the energy density levels of lithium-ion batteries along with their charge and discharge profiles, these batteries are ideal for a project of this size and proposed project lease area. These batteries will allow a safe and effective installation into an enclosure and be able to perform well under rigorous demand should the need arise.

The proposed BESS facility could use a built-in fire protection system, utilizing suppression through cooling, isolation, and containment which is widely used in the industry. Each battery storage enclosure would include a gaseous fire suppressant agent (e.g., Stat-X® Aerosol Fire Suppression) and an automatic fire extinguishing system with sound and light alarms. Stat-X® fire suppression is an advanced aerosol technology that protects enclosed special hazards. Aerosols are an effective new alternative to traditional special hazard fire protection. Stat-X fire suppression is currently used worldwide in many critical applications. Stat-X fire suppression is an approved halon replacement and hydrofluorocarbon (HFC) alternative. Stat-X® is an environmentally friendly automatic fire suppression product line.

- US EPA Snap Listed for Normally Occupied and Unoccupied Spaces
- Insignificant Global Warming Potential
- Zero Atmospheric Life
- Zero Ozone Depletion Potential
- Non-toxic

The system would be designed in accordance with National Fire Protection Association (NFPA) safety standards including an automatic shut-down system for fans that keep the enclosure sealed when the fire extinguishing system is activated. The fire suppressant agent is released by a releasing panel that uses an aspirating smoke detection system and has a manual release. The aspirating smoke detection system provides for four levels of signaling before release of the fire suppressant agent. A disable switch would be provided for maintenance personnel to allow for work on the enclosures without accidental discharge. In addition, this BESS facility will incorporate passive fire containment methods through engineering design of the cabinets and enclosures for battery storage, which further mitigates fire hazards associated with the BESS facility.

Direct current electricity would be collected from the batteries via a battery management system (BMS) and conveyed to the inverters. Each battery module would be connected with a BMS to form a rack mountable module assembly. Multiple module assemblies are then combined into a rack, or battery-integrated cabinet (BIC) to optimize battery voltage and battery current. A number of series circuits are combined together to form an individual parallel circuit; parallel circuits are grouped together in individual BICs which are sized appropriately, and each BIC contains a rack-level BMS. The number of BICs would vary according to final project specifications and can be sized to accommodate electrical design. BICs combine multiple parallel circuits through a fused bus system to collect the energy into one set of direct

current collection cables. The fuses within the BICs create another line of protection from overcurrent. These cables run from the BICs to the inverters, where they would terminate in the direct current side of the inverter.

The proposed BESS facility would have a Supervisory Control and Data Acquisition (SCADA) system that would allow for remote monitoring and control of inverters and other project components. The SCADA system would be able to monitor project output and availability, and to run diagnostics on the equipment. The project would also have a local overall plant control system (PCS) that would provide monitoring of the BESS facility as well as control of the balance of facility systems. The microprocessor-based PCS would provide control, monitoring, alarm, and data storage functions for plant systems as well as communication with the project's SCADA system. Redundant capability would be provided for critical PCS components so that no single component failure would cause a plant outage. All field instruments and controls would be hardwired to local electrical panels. Local panels would be hard-wired to the plant PCS. Wireless technology would be considered as a potential alternative during final project design. See Appendix D BESS Equipment Specifications.

3.9.3 Project Design and Layout

The proposed VESI 10 Tierra Buena BESS project would include several modular battery storage systems (6) situated in a cluster of enclosures which measure overall 40 feet long, 8 feet wide, and 6.6 feet high per enclosure cluster. This enclosure cluster would house arrays of lithium ion (Li-ion) batteries and associated wiring and controls. The battery enclosure would be the most dominate structures on the VESI 10 Tierra Buena BESS project lease area and will be behind the perimeter screening fence, which will measure seven feet high. Actual visibility will depend upon final engineering/grading and the angle of view. Some new screening landscaping (vegetative hedge) is proposed as part of the project lease area improvements. Existing vegetation along the lease area perimeter would not be modified.

The battery storage system cluster enclosures would be placed in the southern portion of the proposed project lease area with an access road twenty (20) feet wide to provide vehicle access to the cluster enclosures. The battery storage system cluster enclosures would be placed on a pervious concrete slab foundation which will measure 36 feet wide by 150 feet long to support the six-battery storage system cluster enclosures and other BESS equipment. The auxiliary equipment would also be mounted on the proposed reinforced pervious concrete pad foundation described above (MV switchgear; SCADA enclosure; transformers; power Inverter; IT/PG&E equipment; DC wiring and below ground wireway; point of interconnection).

The project site is level and would require no grading to install the battery storage equipment, reinforced pervious concrete slab, or roadways. Some minor grading would be associated with a stormwater drainage detention basin. Earthwork would be limited to excavation of the pervious concrete slab, stormwater detention basin, and electrical conduit banks. Total excavation would be approximately 90 cubic yards of soil. Additional external project features (civil, structural, and electrical) include:

- Access roadways, security and screening fencing, gates, and stormwater drainage detention basin, underground vault for conduit to allow interconnection to PG&E distribution line.
- Two low-voltage yard lights installed to illuminate the battery storage equipment during nighttime hours.

3.9.4 Battery Storage System Components

3.9.4.1 Batteries

Individual Li-ion cells form the core of the battery storage system. Cells are assembled either in series or parallel connection in sealed battery modules. The cells would have an operating direct current (DC) voltage ranging from two to six volts, while the battery modules would have a DC voltage range between 40 to 60 volts. The battery modules would be installed in self-supporting racks electrically connected either in a series or parallel to each other. The operating rack-level DC voltage ranges between 700 and

1,000 volts. The individual battery racks are connected in series or parallel configuration to deliver the battery storage system energy and power rating. See Appendix D BESS Equipment Specifications.

3.9.4.2 Battery Storage System Enclosures and Controller

The battery storage system enclosure would house the batteries described above, as well as the battery storage system controller. The battery storage system controller is a multi-level control system designed to provide a hierarchical system of controls for the battery modules, PCS, medium voltage system, and up to the point of connection with the electrical grid. The controllers ensure that the battery storage system effectively mimics conventional turbine generators when responding to grid emergency conditions. The battery storage system enclosure would also house required heating, ventilation, and air conditioning (HVAC) and fire protection systems. See Appendix D BESS Equipment Specifications.

3.9.4.3 Power Conversion System

The PCS consists of an inverter, protection equipment, DC and alternating current (AC) circuit breakers, filter equipment, equipment terminals, and connection cabling system. Electric energy is transferred from the existing power grid to the project batteries during a battery charging cycle and from the project batteries to the power grid during a battery discharge cycle. The PCS converts electric energy from AC to DC when the energy is transferred from the grid to the battery and from DC to AC when the energy is transferred from the battery to the grid. The energy conversion is enabled by a bi-directional inverter that connects the DC battery system to the AC electrical grid. The PCS AC operating voltage would be 480 volts AC nominal and the DC operating voltage would be between 700 and 1,000 volts with a power rating of 500 kW. See Appendix D BESS Equipment Specifications.

3.9.4.4 2232 kVA Transformer

The 2232 kilovolt amp (kVA) transformer is a pad-mounted transformer that transforms the AC side output of the PCS to medium AC voltage in the range of 16 kV to increase the overall efficiency of the battery storage system and to protect the PCS in the event of system electrical faults. One or more PCS units would be connected to the discharge transformer either in a two-winding or three-winding configuration. The rating range for the discharge transformer is 2232 kVA. See Appendix D BESS Equipment Specifications.

3.9.4.5 Power Inverter

The 3000-kVA power inverter is a pad-mounted inverter which is 5 feet long, 9 feet wide, and 7.5 feet tall and will be located on the north end of the pervious concrete slab next to the switchgear. The power inverter is an electronic device or circuitry that changes direct current (DC) to alternating current (AC). See Appendix D BESS Equipment Specifications.

3.9.4.6 Medium Voltage (MV) Switchgear

The MV switchgear for the battery storage system would connect the battery storage system to the existing 16-kVA power distribution system and provide the required level of protection during electrical faults in the system. See Appendix D BESS Equipment Specifications.

3.9.5 Electrical Distribution

PG&E maintains 16-kV electrical distribution line that runs in a north to south alignment along the east side of the proposed project lease area within an existing PG&E easement on the Valdez parcel, to the PG&E Pease Road power substation, connecting the proposed BESS project to the electrical grid and providing service to the Pease sub-area. These lines and associated conductors are supported on wooden poles.

The proposed battery storage system would deliver power to the PG&E system at distribution voltage (16 kV). No new above-ground electrical transmission or distribution lines would be required for the proposed VESI 10 Tierra Buena BESS project. Inside the proposed project lease area, the proposed BESS facility's distribution voltage cable would be run below grade through underground conduit and would terminate at

the base of an existing PG&E electric distribution pole immediately adjacent to the proposed project lease area approximately 35 feet south of the northern parcel boundary. This interconnect line would not add to the existing visible PG&E electric distribution lines and transmission lines in the area.

PG&E anticipates no upgrades to the PG&E system, and that the proposed VESI 10 Tierra Buena BESS project would be accommodated with the existing utility infrastructure. PG&E anticipates that no new power poles or overhead conductors would be required between the VESI 10 Tierra Buena BESS project site and the Pease Road power substation in order to accommodate the proposed BESS facility. PG&E would install minor equipment upgrades to the existing Pease Road power substation control system, inside the substation's existing perimeter fence.

3.9.6 Project Construction

Construction of the proposed VESI 10 Tierra Buena BESS project would include implementation of driveway improvements, installation of access road on an access easement within the parcel, installation of reinforced pervious concrete slab (36'x150'), stormwater drainage detention basin, and installation of the proposed battery storage system components described above. Construction vehicles and equipment would use the existing ingress/egress to the parcel and staging of equipment would be limited to the northern end of the parcel or on the adjoining vacant parcel.

Construction of the proposed VESI 10 Tierra Buena BESS project would take place in one phase and would begin in the first quarter of 2020 and would be anticipated to be completed by the second quarter of 2020. The proposed BESS facility is anticipated to commence commercial operations and begin delivering energy to the grid by the end of the second quarter of 2020. The overall construction period, including commissioning and testing, would be expected to be up to 5 months. Construction would generally occur between 8:00 a.m. and 6:00 p.m., on a 5-day-per-week, 8-hour-per-day basis. Additional work hours and days may be necessary to make up for unanticipated schedule delays or to perform certain testing and checkout activities. All construction work performed outside of the normal work schedule would be coordinated with the appropriate agencies and conform to the Sutter County Code of Ordinances.

Wastewater generated during construction may include storm water runoff and equipment wash water. Construction would adhere to a stormwater pollution prevention plan (SWPPP), which would incorporate best management practices (BMPs) for runoff and erosion control. Site-specific BMPs would be designed and installed by the contractor in compliance with all applicable regulations and permit conditions of the SWPPP and Sutter County requirements.

3.9.6.1 Construction Sequence

Construction activities for the proposed VESI 10 Tierra Buena BESS project would occur in the following general sequence:

1) Pre-construction survey to confirm avoidance of any sensitive resources
2) Installation of stormwater Best Management Practices (BMPs), such as silt fence and gravel bags to ensure soil and runoff is contained onsite
3) Preparation of driveway and equipment foundation sites by removing existing gravel, topsoil, and vegetation as required
4) Improve the driveway and access road using compaction and the addition of gravel as needed
5) Install pour-in-place reinforced pervious concrete slab and equipment foundations as required
6) Install below-ground conduit banks
7) Deliver and secure the battery enclosure-to-slab foundations/footings
8) Install PCS, PDS, and pad-mounted transformers
9) Install below-ground conduit to adjacent existing PG&E utility pole
10) Install safety features and security lighting
11) Install drip irrigation for vegetative screening hedge

12) Install landscaping for vegetative screening hedge
13) Install perimeter security and screening fencing and gates
14) Cleanup and demobilize project site
15) Conduct operator orientation and training.

3.9.6.2 Construction Personnel and Equipment

Construction personnel would consist of approximately 15 to 20 craft workers and supervisors at any given time, depending on the construction activities. The following equipment would be used during construction and commissioning of the proposed project:

- Excavator (1)
- Backhoe (1)
- Dump truck (1)
- Concrete mixer (1)
- Flatbed-mounted utility crane (1)
- Portable generator and welding equipment (1)
- Forklift (1)
- Pickup trucks (4)
- Utility line trucks (2)

3.9.6.3 Construction Traffic and Parking

Construction vehicles coming from the north (Gridley, Live Oak, Chico) would access the site via the Eager Road/State Route 99 Interchange and travel west on Eager Road approximately 1.32 miles to Tierra Buena Road and then south approximately 1 mile to the project site. Construction vehicles coming from the south (Yuba City) would access the site via the Queens Avenue/State Route 99 Interchange and then follow E. Onstott Frontage Road approximately 1.32 miles to Pease Road, and then west on Pease Road approximately 1.5 miles and right (north) on Tierra Buena Road. Vehicles would enter the existing ingress/egress entrance on the east side of Tierra Buena Road approximately 730 feet north of Pease Road and Tierra Buena intersection. It is estimated that trip generation would include the following:

- One-time mobilization and demobilization of heavy equipment (excavator and backhoe) at the start and end of earthwork or other construction stage, as needed
- One-time delivery of the major battery storage system equipment components

There would be no parking of project construction vehicles on Tierra Buena Road or other surface streets, unless necessary to complete a specific construction task (e.g., electrical interconnection to the PG&E power lines).

3.9.7 Operations and Maintenance

Only authorized personnel would be permitted onsite and generally would be limited to the employees monitoring and maintaining the facility. An estimated one or two offsite workers would be required for operation, maintenance, and security of the site. Operation and security would be conducted from an offsite location, and maintenance crews would be dispatched to the site (as needed) during operations.

Facility maintenance would include the periodic maintenance of structures and BESS components. Traffic would be limited to scheduled and emergency maintenance visits and infrequent delivery vehicles. Regular maintenance performed would consist of equipment inspection and replacement and would occur primarily during daylight hours. Emergency maintenance could occur at any time, as needed for the situation; however, maintenance and emergency service during daylight hours would be encouraged to maximize worker safety. Operation and maintenance vehicles would include trucks (pickups, flatbeds, and dump trucks), forklifts, and loaders for routine and unscheduled maintenance. Large heavy-haul transport equipment may be brought to the site infrequently for equipment repair or replacement.

3.9.8 Site Access, Security, and Lighting

Security would consist of a proposed 7-foot-high screening fence that would be installed around the perimeter of the BESS facility. Controlled-access gates would be located at the two entrances (Main Entrance and Emergency Access Only Entrance). The Main Entrance gate will be located off the parcel access road (easement) which will be from the Valdez Trucking ingress/egress of the parcel off Tierra Buena Road approximately 200 feet south of the northern parcel boundary. The Emergency Access Only Entrance will be directly off Tierra Buena Road with the emergency gate setback twenty-five (25) feet from the Tierra Buena Road right-of-way and would only allow access for emergency vehicle responders. Access gates would either be swinging or sliding gates, with a minimum width of 20 feet, as required to access and maintain the facility. This access would be keyed, and a KNOX box installed to prevent unauthorized access to the BESS facilities. Additional site security measures may include a monitored camera system designed to cover the entire facility. This system would be remotely monitored, and security breaches would be reported to emergency responders as well as site operations. An intrusion detection system may be installed along perimeter fences to alert monitors of fence breaches. A camera working in conjunction with the fence intrusion system would decrease the number of false positives reported. Furthermore, the proposed project would comply with North American Energy Reliability Corporation and Western Electricity Coordinating Council requirements for regulatory control and security systems.

Low-level lighting would be installed at the gate and at strategic locations around the facility. All project lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. Lighting would conform to National Electric Safety Code (NESC) requirements and all applicable County outdoor lighting standards. Photocell-controlled overhead lighting will be provided throughout the proposed BESS facilities.

3.9.9 Landscaping and Screening Fencing/Hedges

Landscaping would comply with the Sutter County Design Guidelines and environmental reviews. The footprint of the BESS facility is setback from the parcel boundaries to allow for buffers, screening fencing/vegetative hedges, and landscaping setbacks as called for by policy LU-1.8 in the Sutter County 2030 General Plan. A five (5) foot vegetative screen planter has been planned for along Tierra Buena Road and the northern boundary of the BESS. It is proposed to use Photinia as the planting for the vegetative hedge shown on the Site Plan (See Figure 1.0-2: Use Permit Site Plan or Figure 3.2-1: VESI 10 Tierra Buena BESS Layout Plan). The BESS project will utilize accepted planting procedures, consistent with fire safety requirements. A detailed landscaping plan with screening fencing/vegetative hedges consistent with or exceeding Sutter County's requirements will be incorporated into the project's final design prior to building permit submittal. Pursuant with Sutter County regulations, no building permit will be issued until landscaping and irrigation plans have been reviewed and approved by the Sutter County Planning Director or designee.

3.10 SUMMARY OF MITIGATION MEASURES

Mitigation measures identified during planning for the proposed VESI 10 Tierra Buena BESS facility, and identified during the Initial Study Review to reduce potential significant impacts to a less than significant level are summarized below.

3.10.1 Aesthetics

None recommended

3.10.2 Agriculture and Forestry Resources

None recommended

3.10.3 Air Quality

AQ-1: Suspend excavation and grading activity when sustained winds exceed 20 miles per hour or when gusts exceed 25 miles per hour.
AQ-2: Install wheel washers for all exiting trucks and equipment leaving the site.
AQ-3: Use alternative fuel or catalyst-equipped diesel construction equipment.
AQ-4: Minimize idling time (e.g., 10-minute maximum).
AQ-5: Replace fossil-fueled equipment with electrically driven equivalents when possible.
AQ-6: Limit or curtail construction activity during periods of high ambient pollution.

3.10.4 Biological Resources

BIO-1: Prior to starting construction a biologist will perform a pre-construction survey of the site prior to any project-related ground disturbance to verify vegetation types affected by the project. The results of the pre-construction survey will determine which Incidental Take Minimization Measures (if any) will be required for project approval. Incidental Take Minimization Measures for each species will be implemented to ensure that all impacts to covered species are minimized and mitigated appropriately under FESA, CESA, and CEQA.

3.10.5 Cultural Resources

CR-1: In the event that unanticipated archaeological resources should be accidentally discovered during project construction, a qualified archaeologist or paleontologist will be retained for evaluation of the find. If the find is determined to be a historical or unique archaeological resource, appropriate mitigation or avoidance measures will be taken in accordance with CEQA Guidelines 15064.5(f). During mitigation of unanticipated archaeological resources, it would not be necessary for work to halt in construction areas not affected by such finds. Any historically significant cultural materials discovered during project construction will be the subject of professional scientific analysis and a report to be prepared by a qualified archaeologist. In the event that such a discovery should contain human remains, the following steps shall be taken as outlined in CEQA Guidelines 15064.5 (e)(1):

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
(B) If the coroner determines the remains to be Native American:
1. The coroner shall contact the Native American Heritage Commission within 24 hours.
2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98 or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
(B) The Descendant identified fails to make a recommendation; or
(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

3.10.6 Energy

None recommended

3.10.7 Geology and Soils

None recommended

3.10.8 Greenhouse Gas Emissions

None recommended

3.10.9 Hazards and Hazardous Materials

HM-1: **Contingency Plans.** VESI 10 Tierra Buena BESS facility contingency plans shall be prepared to address potential contingency situations associated with the battery storage systems. These existing contingency plans include: Fire Protection Plan, Emergency Response Plan, and Hazardous Materials Business Plan. In addition, the plans will include where fire suppression material is stored on the site, how the fire department will access the material, what the material is, and where copies of the plan are stored. All updates will occur in coordination with applicable agencies, including but not limited to the Yuba City Fire Department/CSA-G, and the Sutter County Environmental Health Services-CUPA. Contingency plans shall be stored onsite.

Plan Requirements and Timing: Contingency plans shall be completed prior to the initiation of construction activities for the proposed battery storage system, in order to ensure that appropriate contingency plans are in place through all project phases. The Sutter County Development Services Department/Planning, or their designee, shall ensure completion of contingency plans and approval by Yuba City Fire Department/CSA-G and Sutter County Environmental Health Services-CUPA.

Monitoring: The Yuba City Fire Department/CSA-G, or their designee, shall inspect the contingency plans on an annual basis, and following any emergency or unanticipated situation during which contingency plan procedures are required to be implemented, in order to ensure that contingency plans remain relevant and applicable to the VESI 10 Tierra Buena BESS facilities and surroundings.

3.10.10 Hydrology and Water Quality

WQ-1: VESI 10, LLC and/or contractor will develop and implement a SWPPP and adopt BMPs prior to beginning construction activities.

WQ-2: Spill prevention kits shall always be in close proximity when using hazardous materials (e.g. crew trucks and other appropriate locations).

WQ-3: For equipment that must be fueled on-site, containment shall be provided in such a manner that any accidental spill of fuel shall not be able to enter the water or contaminate sediments that may come in contact with water.

WQ-4: VESI 10, LLC, or construction contractor will prepare a pollutant control plan that specifies logistics and schedule for construction activities that will minimize the potential for erosion and standard practices that include monitoring and maintenance of control measures.

3.10.11 Land Use and Planning

None recommended

3.10.12 Mineral Resources

None recommended

3.10.13 Noise

N-1: Air conditioners will be housed in an acoustical enclosure.

N-2: Noise perimeter fencing and vegetative hedge around the BESS facility will be placed which will further minimize noise off site.

N-3: VESI 10, LLC, will establish a telephone number for use by public to report any undesirable noise conditions associated with construction and operations. Telephone number will be posted at the project site in a manner visible to passersby.

N-4: All power equipment and vehicles associated with the project will have proper muffler devices.

N-5: VESI 10, LLC, will document, investigate, evaluate, and attempt to resolve all project related noise complaints. VESI 10, LLC, will conduct the following: Use a Noise Complaint Resolution Form to respond to each complaint; Attempt to contact the person making the noise complaint in 24 hrs.; Conduct investigation to determine source of noise; Reduce noise with all feasible measures upon a complaint.

N-6: Wherever feasible, erect barriers or shields near construction equipment (e.g., compressors, pneumatic tools, drills, generators) considered major sources of noise.

3.10.14 Population and Housing

None recommended

3.10.15 Public Services

None recommended

3.10.16 Recreation

None recommended

3.10.17 Transportation

T-1: A traffic control plan will be developed in coordination with the Engineering Division of the Sutter County Development Services Department for any work requiring a County Encroachment Permit.

T-2: Start times and end times of the construction day will be offset from identified peak traffic hours to mitigate traffic congestion on local streets and highways. Construction personnel will typically arrive at the project site around 6:00 AM, before the morning peak hour (7:00 AM to 8:00 AM). Construction employees will typically leave between 3:00 PM and 4:00 PM, before the evening peak hour (4:00 PM and 5:00 PM).

3.10.18 Tribal Cultural Resources

CR-1: In the event that unanticipated archaeological resources should be accidentally discovered during project construction, a qualified archaeologist or paleontologist will be retained for evaluation of the find. If the find is determined to be a historical or unique archaeological resource, appropriate mitigation or avoidance measures will be taken in accordance with CEQA Guidelines 15064.5(f). During mitigation of unanticipated archaeological resources, it would not be necessary for work to halt in construction areas not affected by such finds. Any historically significant cultural materials discovered during project construction will be the subject of professional scientific analysis and a report to be prepared by a qualified archaeologist. In the event that such a discovery should contain human remains, the following steps shall be taken as outlined in CEQA Guidelines 15064.5 (e)(1):

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
(B) If the coroner determines the remains to be Native American:
1. The coroner shall contact the Native American Heritage Commission within 24 hours.
2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98 or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
(B) The Descendant identified fails to make a recommendation; or
(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

3.10.19 Utilities and Service Systems

UTL-1: Employ an approved Solid Waste Diversion and Recycling Plan. VESI 10, LLC, will develop a solid waste diversion and recycling plan in accordance with AB 341 (Solid Waste Diversion), which requires industrial and commercial construction efforts to recycle fifty percent of their industrial wastes. Such a plan would be implemented in conjunction with CalRecycle (formerly CIWMB) and RWMA. In addition to the requirement of diverting commercial and construction debris, VESI 10, LLC, will submit a Diversion Report within 30 days of completing the project to the RWMA.

3.10.20 Wildfire

None recommended

3.10.21 Mandatory Findings of Significance

Recommended Mitigations Above will reduce all impacts regarding Mandatory Findings to less than significant.

4.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

Based on the analysis presented in this IS, it has been determined that for all resource areas, the proposed VESI 10 Tierra Buena BESS project would not result in any significant impacts that cannot be mitigated to a less than significant level. In addition, the project may result in potentially significant impacts, but proposed VESI 10 LLC, project-specific mitigation measures would reduce the effect of such impacts to a level that no significant impacts would occur. On the basis of the IS and implementation of all proposed VESI 10 LLC, project-specific mitigation measures, there is no substantial evidence that the project as mitigated would have a significant impact on the environment which would trigger the necessity to prepare an EIR. The proposed MND is presented in Appendix A of this document.

5.0 DETERMINATION

On the basis of the IS evaluation that follows, I find that:

☐ The proposed project is exempt from CEQA pursuant to the general exemption (CEQA Guidelines, 15061(b)(3)), a statutory exemption, and/or a categorical exemption, and that if a categorical exemption, none of the exceptions to the exemption apply. A NOTICE OF EXEMPTION will be prepared.

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

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

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

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental document is required. FINDINGS consistent with this determination will be prepared."

Signature Casey Murray, Associate Planner, Sutter County Development Services Department/Planning — July 7, 2020 Date

APPLICANT MITIGATION AGREEMENT

CEQA allows a project proponent to make revisions to a project, and/or to agree and comply with, mitigation measures that reduce the project impacts such that the project will not have a significant effect on the environment. CEQA Guidelines Section 15064.

As the applicant/representative for this proposed project, I hereby agree to implement the proposed mitigation measures and mitigation monitoring program identified within this document.

Connie Stechman — July 7, 2020 Date

Ms. Connie Stechman, Vice President – Finance
Viridity Energy Solutions, Inc., 10, LLC
Applicant/Representative

6.0 DISCUSSION OF ENVIRONMENTAL SETTING, POTENTIAL IMPACTS, AND MITIGATION MEASURES

The Environmental Checklist is used to assist in evaluating the potential environmental impacts of the proposed VESI 10 Tierra Buena BESS project. The Environmental Checklist identifies potential project effects as follows:

(1) **Potentially Significant Impact**: An effect that is substantial based on significance criteria. If there are one or more "potentially significant impact" entries in the Environmental Checklist, an EIR is required.

(2) **Less than Significant with Mitigation Incorporated**: An effect that, with the incorporation of mitigation measures, is reduced from a "potentially significant impact" to a "less than significant impact." The Initial Study includes mitigation measures and briefly explains how these measures reduce the associated effect to a less than significant level.

(3) **Less than Significant Impact**: No significant impacts will result.

(4) **No Impact**: The project will not create an impact in the category.

Included in each discussion is a summary of relevant setting information and identified potential impacts and mitigation measures that apply to the proposed VESI 10 Tierra Buena BESS project. Substantiation and clarification for each Environmental Checklist response is also provided in the following resource discussions.

CEQA provides the following guidance for evaluation of impacts:

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

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

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

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

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

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

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

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

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

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

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

9. The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

6.1 AESTHETICS

The aesthetics section addresses the potential effects of the proposed VESI 10 Tierra Buena BESS project on aesthetics. This section describes existing regional visual character, visual resources, views of the project area from important vantage points, and the changes in these views that would occur with the implementation of the proposed VESI 10 Tierra Buena BESS project.

Visual resources are the natural and cultural features of the landscape that can be seen and that contribute to the public's appreciative enjoyment of the environment. Visual resources, or aesthetic impacts, are generally defined in terms of a project's physical characteristics and potential visibility, and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located.

This section describes the visual resources setting of the project and the appearance of the proposed VESI10 Tierra Buena BESS project after construction and analyzes the potential effects of the project on visual resources in terms of changes to the viewshed from Key Observation Points (KOPs) near the project. KOPs are strategic viewing points where there are significant numbers of public (sensitive) viewers and from which there would be a clear view of the project after construction. This analysis considers the existing visual setting and its visual character and scenic quality, the potential sensitivity of likely project viewers to changes in the viewshed, and the visibility or dominance of the project after construction.

6.1.1 Background

6.1.1.1 Regional Setting

The proposed project is located adjacent to a public county roadway known as Tierra Buena Road, in a rural section of Sutter County, and is situated on a 0.32 +/- acre project lease area of unimproved vacant land. The proposed project lease area is in the Sacramento Valley and is situated a few miles west of the Feather River and, as such, the proposed project lease area is located on flat lands which do not possess significant natural topographic variation. The immediate surrounding area of the proposed project lease area is characterized by orchards in all directions which limits site distance in the area. In the surrounding area of the proposed project lease area, several agricultural operations with associated steel fabricated buildings exist. Just south of the proposed project site is the PG&E Pease Road power substation which has utility infrastructure with heights that reach over the orchards and can be seen from a distance, such as transmission line towers. The proposed project lease area has been used in the past as an agricultural truck storage yard and has possessed stored vehicles and trailers. The proposed project lease area is located approximately .68 of a mile from the urban residential subdivisions in the City of Yuba City, approximately 2.8 miles from State Route 99/Queens Avenue and Eager Road Interchanges. To the west of the project lease area the Sutter Buttes can be seen in the background and are located approximately 8 miles northwest of the proposed project lease area. The top of the Coastal Range is approximately 50 miles from the proposed project lease area and can also be viewed from the parcel on a clear day. Local regional land uses which affect the visual character include: City of Yuba City residential urban development (southeast of the proposed project lease area) and agricultural lands developed in orchards (west/south/north/east of the proposed project lease area) and rural residential housing (south/north of the proposed project lease area) and public utilities/agricultural industrial facilities (south/north of proposed project lease area).

6.1.1.2 Local Setting

The proposed VESI 10 Tierra Buena BESS project lease area is located 730 feet north of the intersection of Pease Road and Tierra Buena Road in rural Sutter County. The lease area is roughly rectangular in shape, with a width of approximately 80 feet and length of 175 feet and is approximately 0.32 +/- acres in size within the parcel identified as Sutter County Assessor's Parcel Number (APN) 10-250-060 which is 1.75 +/- acres in size. The proposed project lease area is immediately north of the Valdez Trucking yard,

and the Valdez single-family residence on the parcel which faces Pease Road. Immediately to the east of the project lease area is an orchard dirt access road which is approximately 20 feet wide, a 25 feet PG&E distribution electric line easement, and beyond the dirt road are orchards, which occupies the entire length of the eastern boundary of the parcel. The western boundary of the lease area is bordered by Tierra Buena Road which is approximately 45 feet wide with orchards running the distance of the western boundary along Tierra Buena Road. North of the proposed project lease area is vacant land for approximately 400 feet, upon which an agricultural out-building is located. Northwest of the project site across Tierra Buena Road is a large ag-butler style building approximately 80 feet by 50 feet at a height of 20 feet, located approximately 200 feet northwest of the northern boundary of the project lease area. Beyond the ag-butler building to the northwest are two single family residences. The entire proposed project lease area is relatively unimproved other than a three-strand barbwire perimeter fence and PG&E wooden distribution line poles on the eastern boundary of the proposed project lease area. The proposed project lease area being repurposed from ag-trailer storage area to a lithium battery storage area. The terrain is primarily flat throughout the entire parcel with a very slight slope to the west/southwest toward Tierra Buena Road dropping in elevation from 61 feet above sea level to 58 feet above sea level the entire length of the parcel, going from the northeast to southwest. See *Figure 3.8-1: Project Setting*, which shows the surrounding land uses to the proposed project lease area.

6.1.1.3 Regulatory Context

Federal Regulations

No federal regulations apply to the proposed VESI 10 Tierra Buena BESS project's visual resource issues.

State Regulations

California Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code Section 260, et seq. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in Section 263 of the Streets and Highways Code. A list of California's scenic highways and a map showing their locations may be obtained from the California Department of Transportation's Scenic Highway Coordinators. There are no designated State scenic highways in the immediate vicinity of the proposed VESI 10 Tierra Buena BESS project.

Local Regulations

Sutter Buttes Overlay Zone Ordinance

The Sutter Buttes Overlay Zone (Chapter 15, Zoning, Sections 1500-6010 through 1500-6040) reinforces and is coterminous with the Sutter Buttes Overlay. The intent of the zone is to preserve the cultural, historic, geologic, and visual values of the Sutter Buttes. Structures within the Overlay Zone that are visible from public roads or adjacent residences are subject to development and siting standards that address landscaping, screening, grading, tree removal, roof areas and materials, building colors, roads and driveways, lighting, and other factors, and require approval of a zoning clearance. The Sutter Buttes Overlay Zone is located approximately three (3) miles to the west of the proposed project lease area, and therefore the proposed project lease area will not be subject to this local regulation.

Sutter County 2030 General Plan

The Sutter County 2030 General Plan sets out policies for countywide land use, rural communities, growth areas, rural planned communities, industrial/commercial and employment corridor, and implementation programs. Goals and policies from the Sutter County 2030 General Plan that pertain to

the VESI 10 Tierra Buena BESS project area listed below. Discussions under the general plan which may be applicable to the proposed project concerning aesthetics/visual resources are as follows:

LU 1.6 Buffers. Require new development adjacent to agricultural and open space lands to provide buffers and incorporate mitigation to minimize impacts as appropriate. Agricultural buffers shall be in accordance with the Sutter County Design Guidelines and project environmental review. *(LU 1-B)*

LU 1.8 Commercial and Industrial Buffers. Require new commercial and industrial development to incorporate, as appropriate, buffers, landscape setbacks, masonry screening walls, berms, building setbacks and placement, performance standards, and other measures that mitigate visual and operational impacts to adjacent uses in compliance with the Sutter County Design Guidelines and project environmental review. *(LU 1-B)*

LU 1.13 Landscape Design. Implement reduction measures in the Climate Action Plan, where appropriate, to help reduce greenhouse gas emissions through landscape design. These reduction measures can include expanding tree planting within the County; and strategically planting trees and other landscaping to create shade and to reduce the heat island effect. *(LU 1-B)*

LU 1.16 Views from Rural Roadways and Highways. Prohibit new projects and activities that would obscure, detract from, or negatively impact the quality of views from the County's rural roadways and highways. Limit off-site advertising along County roadways and highways. *(LU 1-B)*

LU 2.6 Rural Character. Ensure the density, intensity, and design of new development within agricultural areas is consistent with and maintains the County's rural/agricultural character. *(LU 1-B)*

LU 3.8 Landmarks and Resources. Preserve and protect local landmarks and significant natural resources within rural communities. *(LU 1-B/ LU 3-A)*

LU 4.8 Quality New Development. Require high-quality, efficient, and well-designed new development.

a. Use significant natural, historic, and visual site features to guide site planning and design and incorporate such features as focal points when feasible.
b. Enhance scenic views to the Sutter Buttes, rivers, agricultural lands, and other visual resources through project siting and design.
c. Provide for a mix of interconnected uses and a compact development form that makes efficient use of the land.
d. Facilitate non-automobile transportation modes.
e. Screen visually obtrusive activities and facilities from roadways and other public spaces through the use of landscaping, walls, building orientations, and other methods.
f. Design and locate lighting to avoid spillage and glare on adjacent properties and protect the rural night sky. *(LU 1-B/LU 2-A)*

LU 4.22 Aesthetic Appearance. Require that the Sutter County Design Guidelines be applied to all industrial and commercial areas to improve the aesthetic appearance of those developments. *(LU 1-B)*

LU 4.23 Commercial and Industrial Development. Promote well designed and articulated new commercial and industrial development.

a. Consider the relationship and orientation of commercial and industrial buildings to arterials and other major roadways to enhance street frontages.
b. Ensure commercial and industrial development provides pedestrian access to surrounding neighborhoods where feasible and within the development itself.
c. Ensure the scale, massing, and architectural detail of commercial and industrial buildings compliments adjacent residential uses.

d. Create visually interesting and consistent commercial and industrial projects by utilizing consistent design elements and materials throughout individual centers/complexes. Consider variations of wall planes, rooflines, and building forms, and articulating all building elevations visible from streets and other public spaces.
e. Reduce the perceived scale of large-scale commercial and industrial uses through modulating building mass, façade articulation, well-defined entries, use of different colors and materials, landscaping, and other similar techniques.
f. Screen utilities, HVAC units, waste collection, and other similar areas from public view.
g. Provide for consistent sign types, materials, and graphics within commercial and industrial centers/complexes that compliment project design and are appropriately scaled to the buildings.
h. Incorporate transit facilities such as turnouts, drop-offs, and shelters within and/or adjacent to commercial and industrial development when supported by transit services.
i. Minimize the visual impact of parking areas from roadways and other public spaces.
j. Encourage shared access and reciprocal parking between adjacent commercial and industrial parcels to reduce curb cuts along streets.
k. Provide flexibility in commercial and industrial development standards to allow opportunities for mixed-use development and unique uses. *(LU 1-B/LU 2-A)*

LU 7.2 Quality Design. Ensure that projects within Industrial/Commercial and Employment Corridor areas provide high quality site design, architecture, screening, buffering, landscaping, signage, lighting, and other design elements, in particular along the Highway 99 corridor, in accordance with the Sutter County Design Guidelines and applicable General Plan policies. *(LU 1-B/LU 7-A)*

LU 7.4 Industrial Buffers. Require new development in Industrial/Commercial and Employment Corridor to incorporate, as appropriate, buffers, landscape setbacks, masonry screening walls, berms, building setbacks and placement, performance standards, and other measures that mitigate visual and operational impacts to adjacent uses in compliance with the Sutter County Design Guidelines and project environmental review. *(LU 1-B)*

ER 7.1 Scenic Resources. Protect views of Sutter County's unique scenic resources including the Sutter Buttes, wildlife and habitat areas, the Sacramento, Feather, and Bear Rivers, and other significant resources. *(ER 7-A)*

ER 7.4 New Development. Apply design, development, and landscaping standards to new industrial and commercial developments to ensure a quality visual appearance. Screening of parking, ancillary features, storage yards, and other similar elements shall be required.

ER 7.5 Lighting. Support practices that reduce light pollution and preserve views of the night sky including the design and sighting of light fixtures to minimize glare and light on adjacent properties. *(ER 7-A)*

6.1.1.5 Required Permits and Approvals

No visual resource permits are required for the proposed VESI 10 Tierra Buena BESS project.

6.1.2 Methodology

A qualitative assessment of the existing and future visual environment within the project area was conducted to determine whether there would be significant impacts resulting from the construction of the VESI10 Tierra Buena BESS project. Visual elements of the proposed VESI10 Tierra Buena BESS project were evaluated in relation to the existing visual character in the vicinity of the project. Potential KOPs were reviewed within the project area and viewer sensitivities were identified.

6.1.2.1 Viewer Sensitivity

Visual perception is the basic act of seeing or recognizing an object. Physical conditions that affect perception and ability to discern details are: (1) observer distance and (2) speed. As observer distance increases, the ability to see the details of an object decreases. As observer speed increases, the sharpness of lateral vision decreases, and the observer tends to focus along the line of travel. Vehicle passengers are able to focus on the passing landscape for longer periods than the driver. Viewer groups are differentiated by the physical factors that modify perception.

6.1.2.2 Viewer Response

Changes to the visual environment are subjectively evaluated by the affected viewers. To understand and predict viewer response to the changes resulting from project construction, it is necessary to make assumptions about the viewers who may see the project and the aspects of the visual environment to which they are likely to respond. Table 6.1-1: Viewshed Ratings, below explains viewshed ratings and descriptions.

Table 6.1-1: Viewshed Ratings

Rating	Description
Outstanding Visual Quality	A rating reserved for landscapes with exceptionally high visual quality. These landscapes will be significant regionally and/or nationally. They usually contain exceptional natural or cultural features that contribute to this rating. They will be what we think of as “picture postcard” landscapes. People will be attracted to these landscapes to be able to view them.
High Visual Quality	Landscapes that have high quality scenic value. This may be due to cultural or natural features contained in the landscape or to the arrangement of spaces contained in the landscape that causes the landscape to be visually interesting or a particularly pleasing place for people. These are often landscapes which have high potential for recreational activities or in which the visual experience is important.
Moderately High Visual Quality	Landscapes which have above average scenic value but are not high scenic value. The scenic value of these landscapes may be due to manmade or natural features contained within the landscape, to the arrangement of spaces in the landscape, or the two dimensional attributes of the landscape.
Moderate Visual Quality	Landscapes which have average scenic value. They usually lack significant manmade or natural features. Their scenic value is primarily a result of the arrangement of spaces contained in the landscape and the two dimensional visual attributes of the landscape.
Moderately Low Visual Quality	Landscapes that have below average scenic value but not low scenic value. They may contain visually discordant manmade alterations but the landscape is not dominated by these features. They often lack spaces that people would perceive as inviting and provide little interest in terms of two dimensional visual attributes of the landscape.
Low Visual Quality	Landscapes with low scenic value. These landscapes are often dominated by visually discordant manmade alterations or they are landscapes that do not include spaces that people will find inviting and lack interest in terms of two dimensional visual attributes.

6.1.3 Environmental Setting

6.1.3.1 Regional Overview

The proposed project lease area is in a historic floodplain adjacent to the Feather River. The major natural visual characteristics of the area include a flat topography and scattered irrigation canals, and orchard agricultural lands located along the various county roadways. Distant views of the coastal mountain ranges, Sierra Nevada’s, and the Sutter Buttes are visible throughout the region.

The proposed VESI 10 Tierra Buena BESS project is located within the northern Sacramento Valley region of California, which is very flat with numerous orchards and levees that limit sight distance in the area. Due to the agricultural orchard and agricultural industrial developed nature of the area, minimal topographic relief, and lack of natural vegetative features, the existing land uses are the strongest determining factor for visual character. The dominant visual features of the area are agricultural facilities and public utilities structures. The Pease Road overpass at State Route 99 approximately 1.5 miles east

of the project lease area, provides the highest point within the region to view the surrounding area and the proposed project lease area for the BESS facility.

Ag-industrial, residential, and public utilities facilities, including the Valdez Trucking yard, PG&E Pease Road power substation, ag-industrial buildings across Tierra Buena Road from the proposed project lease area, three single family residences to the north of the proposed project lease area and one single family residence to the south of the proposed project lease area, making up the man-made visual aspects of the area. Residential areas north and south of the proposed project lease area are primarily behind vegetation, or ag-industrial buildings, ag-trucking and storage yards, blocking the views of the proposed project lease area. Additional residential areas approximately quarter (¼) mile east of the proposed project site off Elmer Avenue are also not visible from the proposed project lease area due to the flat terrain and orchards. Other agricultural, and residential areas are located south and north approximately a third (1/3) of a mile from the proposed project lease area which also have no view of the BESS facilities.

Because this portion of the County is so highly developed with agricultural and public utilities infrastructure, few, if any, natural features exist within the area. No open space near the proposed project lease area exists, due to the conversion of all land to orchards and row crops. The relative visibility of the proposed project lease area from residences, industrial, institutional, and commercial properties is low. The vantage points with the clearest views of the proposed project lease area are distant elevated locations such as from the overpass on State Route 99 and Pease Road. Furthermore, the general viewshed is highly disrupted by existing man made public utilities, ag-industrial or transportation infrastructure, ranging from the State Route 99 overpass structure, to infrastructure on nearby farms (above ground storage tanks, ag-buildings, tractor and truck storage yards, PG&E high power electric transmission lines, PG&E electric distribution lines, PG&E Pease Road power substation, irrigation canals and levees, train tracks, undeveloped parcels of land, etc.). The minimal topographic relief does not provide the viewers with a vivid viewshed or long sight distances. As a result of the existing development, the viewer sensitivity remains low to moderately low for agricultural, and industrial viewers, and moderate to more distant residential viewers. As such, these viewers, who are already in an impacted viewshed, and will receive minimal, if any, impact from the proposed VESI 10 Tierra Buena BESS project.

6.1.3.2 Potential Project Visibility

Identification of the proposed project's viewshed was based on review of VESI 10, LLC's project engineering drawings, visual simulations of the project's appearance from a bird's-eye view, study of topographic maps and air photos, and extensive field observations (*See Figure* 6.1-1: *Site Elevation Plan*). The viewshed map indicates two categories of view areas: (1) those in which the proposed project lease area would likely be generally visible; and (2) those in which views toward the proposed project lease area and its ancillary facilities would likely be blocked for the most part, although it may be visible from specific locations. The boundaries of the viewshed were set to the west of the proposed lease area along the Tierra Buena Road, where views were not otherwise blocked by orchards, ag tractors, trailers, and truck storage yards, buildings, trees, hedges, or other obstructions. This distance was selected because elements of a view that are beyond the Tierra Buena Road distance are considered part of the background—the landscape zone in which little color or texture is apparent, colors blur into values of blue or gray, and individual visual impacts become least apparent (USDA Forest Service 1973, pp. 56-57).

The proposed VESI 10 Tierra Buena BESS project facilities would be most visible in views immediately adjacent to the project lease area and from a short portion of the overpass at State Route 99 and Pease Road. In most cases, views of the BESS facilities beyond the immediate vicinity would be completely blocked by intervening structures, agricultural orchards and natural features (flat terrain and orchards) of the area.

6.1.3.3 Sensitive Viewing Areas

Views of the proposed project lease area are limited due to flat terrain, orchards, vegetative growth, and surrounding ag-industrial development. Unobstructed views of the proposed project lease area are limited to locations immediately adjacent to the proposed project lease area. The area surrounding the proposed

project lease area is dominated by various ag-industrial and public utilities facilities including PG&E Pease Road power substation, Valdez Trucking yard, existing agricultural buildings, and orchards. The nearest sensitive viewers with potential to experience a visual impact from the proposed BESS facilities are three residents in proximity from the proposed project lease area, and drivers/passengers on Tierra Buena Road. For the purpose of determining potential visual impacts to sensitive receptors in the project vicinity, the following three Key Observation Points (KOPs) were identified:

KOP 1 – Tierra Buena Road: All views from KOP 1 are dominated by the Valdez Trucking yard, PG&E transmission and distribution lines, PG&E Pease Road power substation, ag-industrial facilities, and orchards in the immediate vicinity of the project area extending through the middle ground into the background. Sensitive viewers are likely to have the most substantial (defined as duration of view and predominance of the proposed BESS infrastructure) at the intersection of Pease Road and Tierra Buena Road. Motorists and pedestrians (no foot traffic in this area) at this intersection would have unobstructed views of the BESS facilities for limited (likely less than 15 seconds) lengths of time while stopped at the intersection.

Sensitive viewers traveling northbound on Tierra Buena Road at the posted speed limit of 55 miles per hour would have the most direct view of the BESS facilities (likely duration of 4-6 seconds). From this perspective the facilities of the adjacent Valdez Trucking yard, and agricultural buildings with reflective solar panels are also plainly visible in the foreground; in the middle ground, are orchards and PG&E electric transmission and distribution lines visible as well as large PG&E Pease Road power substation structures rising above the orchards; the towers of the PG&E high tension electric transmission line protrude from the background. Additionally, any viewer arriving at this intersection would have extended, unobstructed views of the PG&E Pease Road power substation facilities located immediately south of the project lease area featuring numerous steel structures, insulators, box structures, chain link fencing, and poles of different shapes and sizes, and various substation equipment including transformers, switching gears, overhead power lines, etc. Due to the nature of the existing fore and middle ground of this viewshed, the proposed VESI 10 Tierra Buena BESS project is consistent with the visual nature of existing facilities (bulk, shape, color, texture, etc.) in the area and would not represent a significant impact to any potential viewer and no mitigation measures will be required for KOP 1 viewers. (*See Figure 6.1-2: VESI 10 Tierra Buena BESS Project KOPs Views*)

KOP 2 – Residential Dwellings: Two residential dwellings are located just northwest and across Tierra Buena Road from the proposed VESI 10 Tierra Buena BESS project. The residents view of the proposed project lease area is limited by an existing ag-butler building, and vegetative hedge, however, from the driveways of each resident the BESS facility will be viewable. The foreground viewshed for these residences is the Valdez Trucking yard, which is associated with agricultural grain trailers, tractors, and used truck and trailer parts. In the background the residences have a view of the PG&E electric distribution and transmission lines as well as the PG&E Pease Road power substation. The proposed VESI 10 Tierra Buena BESS project will have perimeter screening fence and landscaping which will shield the view of the residences (sensitive viewers) of the BESS enclosures, transformers, and controller structures associated with the proposed BESS facility. The landscaping and perimeter fencing proposed would not represent a significant impact as all proposed structures would be consistent with existing development in size, shape, color, and bulk, visible within the fore and middle ground. The proposed BESS facility structures are consistent with the existing viewshed and would not further degrade the aesthetic value of the KOP 2 viewshed. (*See Figure 6.1-2: VESI 10 Tierra Buena BESS Project KOPs Views*)

KOP 3 – Valdez Residence: The Valdez residence is located south of the existing Valdez Trucking yard and the proposed project lease area on the same assessor's parcel. The Valdez Trucking yard separates the residence from the BESS facility. The view from this residence of the proposed project lease area will be obstructed by the agricultural grain trailers, flat bed trailers, trucks, and other equipment associated with the Valdez Trucking business. The foreground from this sensitive viewer will consist of the Valdez Trucking yard; middle ground consists of orchards, PG&E electric distribution line and PG&E electric

transmission tower and lines. The background viewshed is disrupted by surrounding ag-buildings, and orchards. The proposed BESS facility will also be screened from this sensitive viewer by fencing and landscaping in addition to the truck yard completely obscuring the view of the BESS facility. It is extremely unlikely that any aspect of the proposed BESS facility will be visible from any point of the Valdez residence, including any proposed vertical structures. As such, visual quality of the viewshed from KOP 3 would not be impaired, and therefore, would not represent a significant impact to sensitive receptors from the Valdez residence. (*See Figure 6.1-2: VESI 10 Tierra Buena BESS Project KOPs Views*)



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: Site Elevation Plan

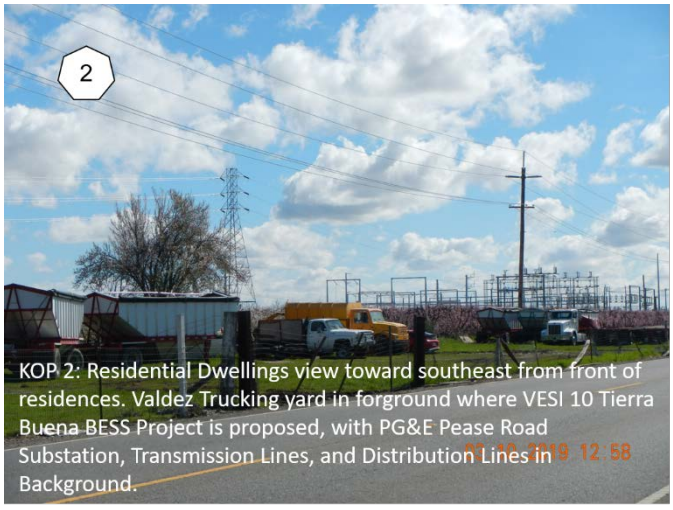
DATE:	11-25-2019	SCALE:	NTS
BY:	SCV	FIGURE:	6.1-1

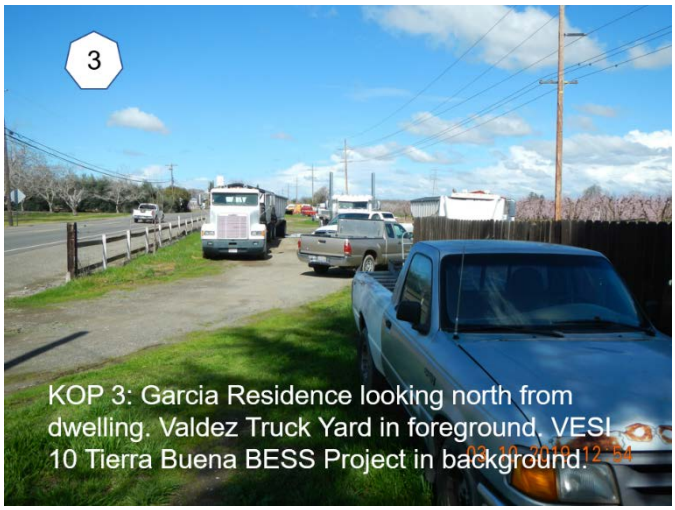
viridity energy
An ORMAT Company

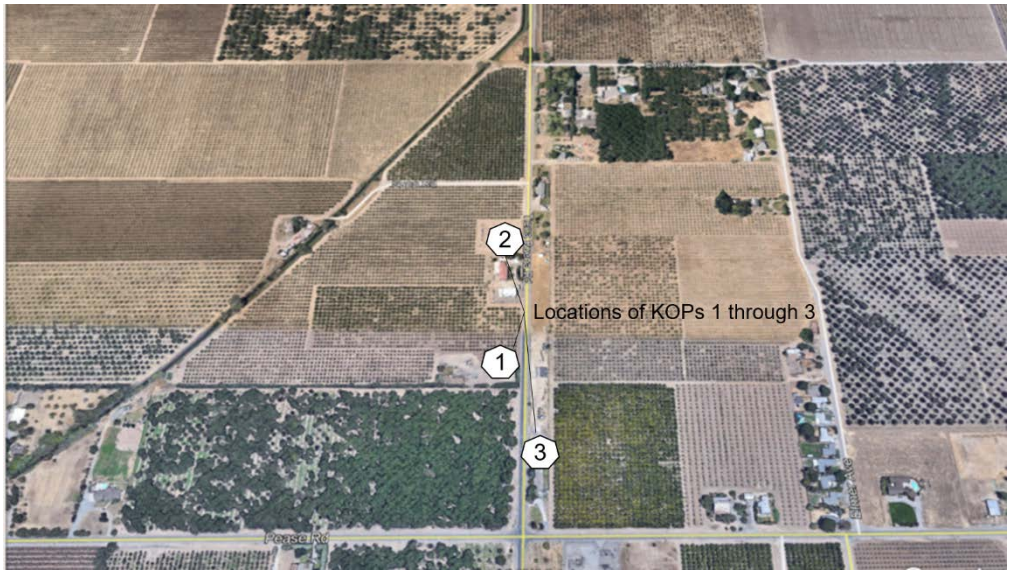
SIERRA GEOTECH

Figure 6.1-2: VESI 10 Tierra Buena BESS Project KOPs Views









6.1.4 Standards of Significance

An impact to aesthetics would be considered significant if the project would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; and/or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

6.1.5 Impacts and Mitigation Measures

No significant impacts to aesthetics or visual resources were identified as a result of the proposed VESI 10 Tierra Buena BESS project. As a result, project-specific mitigation measures to reduce visual impacts are not recommended.

6.1.6 Aesthetics Initial Study Responses

Table 6.1-2: Aesthetics Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
AESTHETICS: Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☑
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	☐	☐	☑	☐

6.1.7 Responses to Initial Study Questions

6.1.7.1 Scenic Vistas: No Impact

The proposed VESI 10 Tierra Buena BESS project would not interfere with any scenic vistas or damage any scenic resources. The existing visual character in the vicinity of the proposed project lease area is not considered scenic, and, therefore, there would be No Impact to scenic vistas.

6.1.7.2 Damages to Scenic Resources: No Impact

The proposed VESI 10 Tierra Buena BESS project would not damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway. The proposed project lease area has no trees, rock outcroppings, historic structures, or other scenic resources. Since the existing visual character of the vicinity of the proposed lease area is not considered scenic, there will be No Impact to scenic vistas or scenic resources.

6.1.7.3 Visual Character: No Impact

The proposed project lease area is currently occupied by agricultural grain trailers, tractor/trailers, truck parts and the existing visual character will not be changed by the proposed VESI 10 Tierra Buena BESS project. The proposed VESI 10 Tierra Buena BESS project calls for improvements with similar scale, density, and building materials as existing ag-buildings and nearby public utilities facilities surrounding the proposed project lease area. There is no State scenic highway near to or affected by the proposed VESI 10 Tierra Buena BESS project. The existing visual character of the proposed project lease area is not considered scenic; therefore, there would be No Impact.

6.1.7.4 Light and Glare: Less than Significant Impact

The proposed VESI 10 Tierra Buena BESS project would include parking, access roadway, perimeter fencing, vegetative hedge, and security lighting. No additional glare will occur from the proposed BESS facility. The nearest sensitive receptor is located approximately 265 +/- feet from the proposed project lease area, across Tierra Buena Road. The ag-buildings, utility facilities, uses adjacent to the proposed project lease area are existing sources of light and glare. In addition, car and truck lights associated with vehicles on Tierra Buena Road produce additional sources of light and glare within the proximity of the proposed project lease area. A significant increase in light or glare in the area would not be occasioned by this BESS facility. All lighting for the proposed VESI 10 Tierra Buena BESS project would be designed so that it does not adversely impact adjacent areas. Exterior lighting will be designed with shields and light directed only onto the BESS facility. Only lighting that is absolutely necessary for safety and operation purposes will remain on at night. Therefore, the impact is considered less than significant.

6.2 AGRICULTURE AND FORESTRY RESOURCES

This section describes the proposed VESI Tierra Buena BESS project as it could affect agricultural and forestry conditions and describes applicable federal, state, and local farmland conservation policies.

6.2.1 Background

6.2.1.1 Regulatory Context

California Department of Conservation's Farmland Mapping and Monitoring Program Lands

The Farmland Mapping and Monitoring Program (FMMP) was designed by the Soil Conservation Service in 1982 as a non-regulatory system that categorizes important farmland through the State of California. The goal of the program is to provide maps and data to various stakeholders to assist them in making land planning decisions about the best utilization of California's farmlands. The important farmland categories are Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance.

Williamson Act Farmlands

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value.

6.2.2 Methodology

Information related to agricultural resources and zoning was obtained from California Department of Conservation maps, and Sutter County 2030 General Plan and Zoning District maps. Site inspection of the proposed project lease area confirmed the existing conditions of the area and the surrounding land uses.

6.2.3 Environmental Setting

6.2.3.1 Regional Overview

The proposed project lease area is located approximately 730 feet north of the Sphere of Influence boundary on Pease Road for the City of Yuba City. All parcels within a two-mile radius of the proposed project lease area are not enrolled within a Williamson Act Contract. Parcels along Tierra Buena Road, including the proposed project lease area, are mapped as "*Other Land*" and parcels east and west of the proposed project lease area, are mapped as "*Farmland of Statewide Importance*", per the 2016 Farmland Mapping and Monitoring Program (FMMP). "*Urban and Built-Up Land*" designation was noted approximately .68 of a mile from the proposed project lease area on the southside of Pease Road in the City of Yuba City. The proposed project lease area consists of approximately 0.32 +/- acres of existing ag-industrial used land. The proposed project lease area does not directly abut agricultural productive property or designated Williamson Act contracted land.

6.2.3.2 Study Area Setting

The Sutter County 2030 General Plan designates the proposed project lease area for agricultural use (AG-20), and the Sutter County Zoning Code classification is Agriculture (AG). The proposed project lease area has never supported agricultural production. The proposed project lease area has never supported forestry resources. The parcel on which the lease area is partitioned from is 1.75 acres in size, which is not conducive to viable agricultural production. The parcel was created by the abandonment of the old railroad corridor which historically ran through the region. The proposed project lease area is compacted bare soil and gravel formerly used by Valdez Trucking as an agricultural truck yard. All property immediately surrounding the proposed project lease area is utilized for non-agricultural production purposes: East is access roadway and PG&E electrical distribution line; West is Tierra Buena Road a county roadway; South is the Valdez Trucking yard; and North is a vacant field too small and narrow for viable agricultural

commercial production. The proposed project lease area is buffered from existing orchard agricultural operations by setbacks of the BESS facilities within the project lease area as well as roadways which surround the project lease area. The proposed project lease area was historically used for non-agricultural uses and was created as a parcel size of 1.75 acres from the abandonment of the railroad, which precludes the project lease area from qualifying for Williamson Act Contract.

6.2.4 Standards of Significance

An impact to agriculture and forestry resources would be considered significant if the project would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g));
- Result in the loss of forest land or conversion of forest land to non-forest use; and/or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

6.2.5 Impacts and Mitigation Measures

The construction and operation of the proposed VESI 10 Tierra Buena BESS project would not require the conversion of prime agricultural land to non-agricultural uses, nor would it affect timberlands. The proposed project lease area is situated in a parcel that has been designated as an area deemed acceptable for non-agricultural production land uses such as the proposed VESI 10 Tierra Buena BESS project. The proposed project lease area is not within a Williamson Act contract for agricultural land preservation. Furthermore, there are no existing forest lands within the vicinity that would be affected by the construction of the proposed VESI 10 Tierra Buena BESS project. Developing the proposed VESI 10 Tierra Buena BESS project at this location would make optimal use of the existing infrastructure and public services of the County while conserving prime agricultural lands and timberlands. Locating the VESI 10 Tierra Buena BESS project at this location best serves the electric grid and peaking power demands of this section of Sutter County and the Pease sub-area.

6.2.6 Agriculture and Forestry Resources Initial Study Responses

Table 6.2-1: Agriculture and Forestry Resources Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
AGRICULTURE /FORESTRY RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

6.2.7 Responses to Initial Study Questions

6.2.7.1 Convert Designated/Prime Farmland: No Impact

There would not be any changes in the existing environment that could result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. The proposed VESI 10 Tierra Buena BESS project would not convert farmland as none exists in the proposed project lease area. Therefore, there would be No Impact.

6.2.7.2 Zoning Conflict and Williamson Act Contract: No Impact

The proposed VESI 10 Tierra Buena BESS project is zoned as Agriculture (AG), however, the proposed project area was historically used for non-agricultural uses (Railroad Corridor and Truck Yard). The parcel was created after the abandonment of the railroad leaving a 1.75 +/- acre parcel, which precludes the lease area from qualifying for Williamson Act Contract. Therefore, there would be No Impact.

6.2.7.3 Conflict with Existing Forest Land, Timberland, or Timberland Production Zones: No Impact

The proposed VESI 10 Tierra Buena BESS project would not involve other changes in the existing environment that, due to their location or nature, could result in conversion of forest land, timberland, or timberland zoned Timberland Production. The spatial relationship of the proposed project lease area relative to any such land, is such that the two land uses would not conflict. The nearest forest area is over 50 miles from the proposed project lease area, and the nearest timberland would be no closer as there are no timberland zoned properties within Sutter County. The proposed VESI 10 Tierra Buena BESS project would therefore not involve other changes in the existing environment that could result in conversion of timberland or forest land. Therefore, there would be No Impact.

6.2.7.4 Result in the Loss of Forest Land: No Impact

The proposed VESI 10 Tierra Buena BESS project is zoned as AG by Sutter County Zoning Code and possesses no forestlands. Furthermore, the nearest forest resources are in the Plumas National Forest which is well over 50 miles from the proposed project lease area. Therefore, there would be No Impact.

6.2.7.5 Involve Changes that Could Result in Conversion of Farmland or Forestland: No Impact

As discussed above, throughout this section, there is no existing forest or farmland under Williamson Act Contract in the nearby vicinity of the proposed project lease area that could be converted. In addition, the parcel from which the project lease area is partitioned from is not eligible for a Williamson Act Contract and is buffered from existing orchard agricultural operations to ensure no conflicts or influence to convert orchard lands. Therefore, there would be No Impact.

6.3 AIR QUALITY

This section describes the impacts of the proposed VESI Tierra Buena BESS project on local and regional air quality. Sources of odor and air contaminants associated with a typical project consist of construction-related emissions (i.e., particulate matter from surface disturbance activities, such as grading and site preparation, and other short-term emissions from fuel combustion in equipment, including semi-trucks, trenchers, pavers, backhoes, and other construction equipment) and operational emissions (emissions produced in the course of operation after implementation of the completed project). Dust and fumes from increased traffic associated with construction can also reduce air quality. Presence of contaminants does not constitute an environmental or health risk unless minimum established thresholds are exceeded. Air contaminants released from construction and operational activities may include gases, particulate matter (dust), gases in diesel exhaust such as nitrous oxide, nitrogen dioxide, formaldehyde, benzene, sulfur dioxide, hydrogen sulfide, carbon dioxide, and carbon monoxide can also create health problems.

6.3.1 Background

6.3.1.1 Regulatory Context

Federal Regulations

The United States Environmental Protection Agency (EPA) is responsible for enforcing the many federal environmental and hazardous waste laws. California is under the jurisdiction of EPA Region IX, with offices in San Francisco. The federal Clean Air Act (CAA), established in 1970 and last amended in 1990, authorized the establishment of national health-based air quality standards, set deadlines for their attainment, and established actions required of areas in the nation that exceeded these standards. Under the CAA, state and local agencies in areas that exceed the National Ambient Air Quality Standards (NAAQS) are required to develop state implementation plans (SIP) to show how they will achieve the NAAQS. The EPA's responsibility to control air pollution in individual states is primarily to review submittals of SIPs that are prepared by each state. The following federal regulations and standards would apply to the proposed VESI Tierra Buena BESS project:

National Ambient Air Quality Standards

The EPA has set NAAQS for several air pollutants based on human health and welfare criteria. Two types of NAAQS have been established: primary standards, which protect public health; and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction. Primary NAAQS were established for the following several "criteria" air pollutants listed in Table 6.3-1.

State Regulations

In California, the California Air Resources Board (CARB) is responsible for preparing and enforcing the federally required state implementation plan (SIP) in an effort to achieve and maintain NAAQS and California Ambient Air Quality Standards (CAAQS), which were developed as part of the California Clean Air Act (CCAA) adopted in 1988. CAAQS for criteria pollutants are equal to or more stringent than NAAQS and include other pollutants for which there are no NAAQS. In addition, CARB is responsible for assigning air basin attainment and nonattainment designations in California. Air basins are designated as being in attainment if the levels of a criteria air pollutant meet the CAAQS for the pollutant and are designated as being in nonattainment if the level of a criteria air pollutant is higher than the CAAQS.

Table 6.3-1: National Ambient Air Quality Standards

Air Pollutant	Primary/ Secondary	Averaging Time	Units	NAAQS	Attainment Status
Ozone	both	8-hour	ppm	0.075	Unclassified/Attainment
Carbon monoxide (CO)	primary primary	8-hour 1-hour	ppm ppm	9 35	Unclassified/Attainment
Nitrogen dioxide (NO_2)	primary both	Annual 1-hour	ppm ppm	0.053 0.1	Unclassified/Attainment
Sulfur dioxide (SO_2)	primary secondary	1-hour 3-hour	ppm ppm	0.075 .5	Unclassified/Attainment
Fine particulate matter ($PM_{2.5}$)	primary secondary both	Annual Annual 24-hour	$\mu g/m^3$ $\mu g/m^3$ $\mu g/m^3$	12 15 35	Unclassified/Attainment
Respirable particulate matter (PM_{10})	both	24-hour	$\mu g/m^3$	150	Unclassified/Attainment
Lead (Pb)		3-month	$\mu g/m^3$	0.15	Unclassified/Attainment

[1]ppm = parts per million; $\mu g/m^3$ = microgram per cubic meter

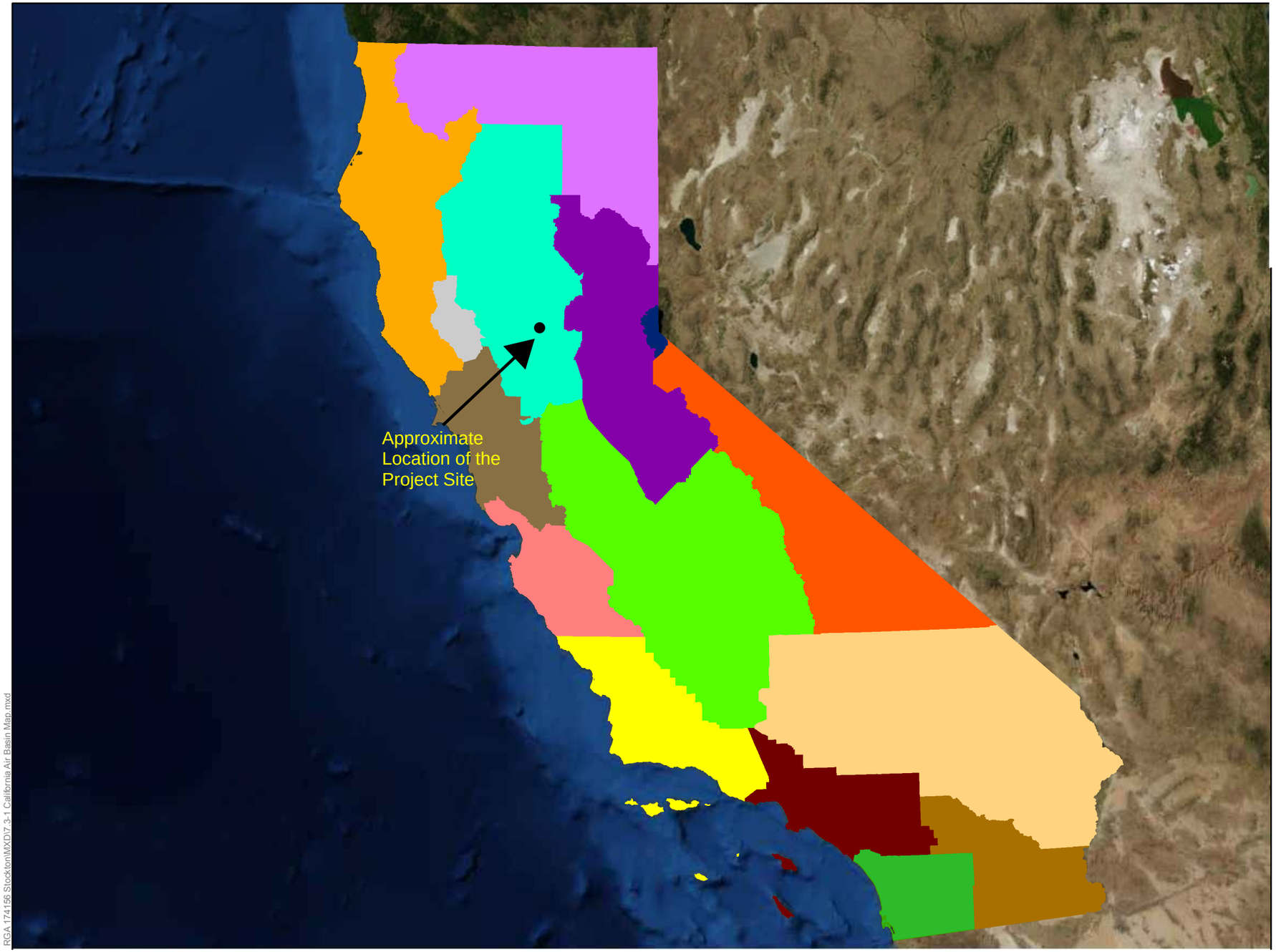
CARB is the agency responsible for regulating statewide air quality, but implementation and administration of CAAQS is delegated to 35 regional air pollution control districts (APCD) and air quality management districts (AQMD). These districts have been created for specific air basins, and have principal responsibility for:

- Developing plans to meet CAAQS and NAAQS;
- Developing control measures for non-vehicular sources of air pollution necessary to achieve and maintain CAAQS and NAAQS;
- Implementing permit programs established for the construction, modification, and operation of air pollution sources;
- Enforcing air pollution statutes and regulations governing non-vehicular sources; and,
- Developing employer-based trip-reduction programs.

To regulate air pollutant emissions within California, the state has been divided into 15 air basins based upon similar meteorological and geographic conditions and consideration for political boundary lines whenever practicable. The proposed VESI Tierra Buena BESS project is in the Sacramento Valley Air Basin (Air Basin) which is defined by on the east by the southern portion of the Cascade Mountain Range and the northern portion of the northern Sierra Nevada mountain range and on the west by the Coast Ranges (*See Figure* 6.3-1). This Air Basin includes Butte, Colusa, Glenn, Placer, Sacramento, Shasta, Solano, Sutter, Tehama, and Yolo Counties. FRAQMD manages the portion of the air basin located within Yuba and Sutter Counties.

The proposed project would be subject to CARB's air quality legislation.

California Ambient Air Quality Standards
States may establish their own standards, provided the state standards are at least as stringent as the NAAQS. California has established CAAQS pursuant to California Health and Safety Code (CHSC) [§39606(b)] and its predecessor statutes. The CAAQS are provided in Table 6.3-2. The CHSC [§39608] requires CARB to identify and classify each air basin in the state on a pollutant-by-pollutant basis. Subsequently, CARB designated areas in California as nonattainment based on violations of the CAAQSs.



Legend

BASIN_NAME

- GREAT BASIN VALLEYS
- LAKE COUNTY
- LAKE TAHOE
- MOJAVE DESERT
- MOUNTAIN COUNTIES
- NORTH CENTRAL COAST
- NORTH COAST
- NORTHEAST PLATEAU
- SACRAMENTO VALLEY
- SALTON SEA
- SAN DIEGO COUNTY
- SAN FRANCISCO BAY AREA
- SAN JOAQUIN VALLEY
- SOUTH CENTRAL COAST
- SOUTH COAST

RGA 174156 StocktonMXD\7.3-1 California Air Basin Map.mxd

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: California Air Basin Map

DATE: 11-20-2019	SCALE: NTS
BY: SCV	FIGURE: 6.3-1

viridity energy
An ORMAT Company

SIERRA GEOTECH

Table 6.3-2: California Ambient Air Quality Standards

Air Pollutant	Averaging Time	Units	CAAQS	Attainment Status
Ozone (O_3)	8-hour 1-hour	ppm ppm	0.07 0.09	Nonattainment Nonattainment/Severe
Carbon monoxide (CO)	8-hour 1-hour	ppm ppm	9 20	Attainment/Unclassified
Nitrogen dioxide (NO_2)	Annual average 1-hour	ppm ppm	0.03 0.18	Attainment
Sulfur dioxide (SO_2)	Annual average 24-hour 1-hour	ppm ppm ppm	------- 0.04 0.25	Attainment
Respirable particulate matter (PM_{10})	Annual average 24-hour	$\mu g/m^3$ $\mu g/m^3$	20 50	Nonattainment
Fine particulate matter ($PM_{2.5}$)	Annual average 24-hour	$\mu g/m^3$ $\mu g/m^3$	12 ------	Nonattainment
Sulfates	24-hour	$\mu g/m^3$	25	Attainment
Lead (Pb)	30-day average	$\mu g/m^3$	1.5	Attainment
Hydrogen Sulfide	1-hour	ppm	0.03	Unclassified
Vinyl Chloride	24-hour	ppm	0.01	Unclassified
Visibility-reducing particulates (VSP)	8-hour	-------	see note[a]	Unclassified

Note: In enough to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent

Local Regulations

The Feather River Air Quality Management District (FRAQMD) was formed in 1991 and is the lead air quality regulatory agency for Sutter and Yuba Counties, located in the Sacramento Valley Air Basin. The FRAQMD has jurisdiction over all point and area sources except mobile sources (such as motor vehicles), consumer products, and pesticides in the bi-county area. In addition to planning responsibilities, the FRAQMD possesses permitting authority over stationary sources. The FRAQMD and CARB have joint responsibility for attaining and maintaining the NAAQS and CAAQS in the Air Basin.

The FRAQMD is a CEQA Responsible Agency for the proposed VESI Tierra Buena BESS project. The FRAQMD sets forth rules and regulations aimed at improving basin-wide air quality. Specific rules applicable to the proposed project may include, but are not be limited to:

Rule 3.0 Visible Emissions
As provided by Section 41701 of the California Health and Safety Code, a person shall not discharge into the atmosphere from any single source of emissions whatsoever, any air contaminants for a period or periods aggregating more than three minutes in any one hour which

- As dark or darker in shade as that designated as No. 2 on the Ringlemen Chart, as published by the United States Bureau of Mines; or
- Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described above.

Rule 3.16 Fugitive Dust Emissions
The purpose of this rule is to reasonably regulate operations which may periodically cause fugitive dust emissions into the atmosphere. A person shall take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line, from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation. Reasonable precautions include, but are not limited to:

- Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, construction of roadways, or the clearing of land;
- Application of asphalt, oil, water, or suitable chemical on dirt roads, material stockpiles, and other surfaces which can give rise to airborne dusts; and
- Other means approved by the air pollution control officer (APCO).

Table 6.3-3: Ambient Air Monitoring Sites near the Proposed BESS facility

Site Name	ARB Number	Agency	Address	Pollutants Monitored[1]	Approximate Distance from Site
Sutter Buttes Station	51899	FRAQMD	Top of South Butte, Sutter Buttes CA	Ozone, CO, CH_4, CO_2, N_2O	8 miles
Yuba City (Almond Street) Station	51898	FRAQMD	773 Almond St, Yuba City CA 95991	Ozone, NO_2 PM_{10} $PM_{2.5}$	4.0 miles

[1]O_3 = ozone; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particles; CO = carbon monoxide; NO_2 = nitrogen dioxide; TAC = toxic air contaminants

FRAQMD Thresholds of Significance
The FRAQMD recommended thresholds for determining whether projects have significant adverse air quality impacts. These thresholds are provided in Table 6.3-4.

Table 6.3-4: FRAQMD Thresholds of Significance

Pollutant	Threshold of Significance
Reactive organic gases	25 pounds/day
Nitrogen oxides	25 pounds/day
PM10, Respirable particulate matter	80 pounds/day
PM2.5 Fine particulate matter	FRAQMD has yet to establish a significance threshold for PM2.5

Required Permits and Approvals

The FRAQMD would not require any operations permits because the proposed VESI 10 Tierra Buena BESS facility will have no operational emissions other than an occasional vehicle trip and construction emissions which will be below the threshold of 25 pounds per day for ROG and NO_X. In addition, the proposed BESS facility construction phase will not require any FRAQMD authority to construct permit, since the BESS facility has no operational emissions and vehicles which operate during construction (see Section 6.3.5.1 for Construction Impacts) are covered by state regulations through the California Air Resources Board regarding vehicle emissions standards.

6.3.2 Methodology

Emissions from the proposed VESI 10 Tierra Buena BESS project construction and operations were estimated using appropriate methodology provided by the FRAQMD, CARB, and EPA. To determine whether the calculated emissions and the impacts to air quality are significant environmental effects, CEQA guidelines have been addressed.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was used to estimate construction and operations emissions. CalEEMod was developed by California Air Pollution Officers Association (CAPCOA) in collaboration with the California Air Districts and is used by jurisdictions throughout the state to quantify criteria pollutant emissions. Maximum daily pollutant emissions include emissions from worker trips, hauling trips, construction vehicle emissions and fugitive dust. The construction schedule, equipment, and numbers used to model emissions with CalEEMod reflect project plans as outlined in the project description section of this document with auto-populated default values for a project of the scale of and nature of the VESI 10 Tierra Buena BESS project being used where consistent with planned project phases and limited modifications made where necessary to reflect specific BESS facility attributes.

6.3.3 Environmental Setting

Air quality is an important factor in the health and the quality of life of a community. Air pollutants have the potential to adversely affect human health, wildlife, climate, visibility, and agriculture. In recent years, awareness of the global effect of air quality has increased, and as a result, many regulations have been developed in an effort to limit air pollutant emissions, particularly in California.

AB 32 requires California to reach 2000 levels of greenhouse gas (GHG) emissions by 2010, reach 1990 levels by 2020, and have 80 percent less emissions than 1990 levels by 2050. CARB, together with the California Energy Commission and other agencies, has been developing and revising the regulation, and as of January 1, 2012, the new policies became legally enforceable.

The pollutants regulated by either the CAA or CCAA are known as criteria pollutants. Non-criteria air pollutants are not regulated by these Acts but are of concern as they may be precursors to criteria air pollutants or could also have other adverse impacts. Criteria pollutants include particulate matter, ozone (O_3), NO_x, CO, SO_2, and lead (Pb).

6.3.3.1 Regional Overview

The climate within the FRAQMD is typical of inland valleys in California, with hot dry summers and mild rainy winters that characterize a Mediterranean climate. Daytime temperatures in the summer often exceed 100 degrees, with lows in the 60s. Air flows into the air basin from the San Francisco Bay area through the Carquinez Strait and moves across the Sacramento–San Joaquin Delta (Delta). Most precipitation in the air basin comes masses of air originating over the Pacific Ocean and moving inland, usually from the west or northwest during winter. More than half the total annual precipitation falls from November through February. Predominant wind direction in the air basin is from the south-southwest at with an average velocity of approximately 10 mph.

Because of the Valley's unique physical characteristics, including surrounding elevated terrain and temperature inversions, pollution potential is very high as lateral and vertical dilution of pollutants are severely restricted. Ozone, the major component of the Valley's summertime smog, is formed via chemical reactions between hydrocarbons and nitrogen oxides (NOx) in the presence of ultra-violet radiation or sunlight. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidants, and the Valley becomes a frequent scene of photochemical pollution (ozone).

Tiny particles of solids or liquids (excluding pure water) that are suspended in the atmosphere are known as Particulate matter (PM). and are classified according to their diameter in microns as either PM2.5 or PM10. Particulate matter can be emitted directly (primary PM, such as dust or soot), and can form in the atmosphere through photochemical reactions or gaseous precursors (secondary PM). Much of the Valley's ambient PM10 and PM2.5 is secondary PM, formed in atmospheric reactions of NOx.

6.3.3.2 Air Quality Pollutants

Ozone

Ozone is the most prevalent of a class of photochemical oxidants formed in the urban atmosphere. O_3 is formed via chemical reactions between volatile organic compounds (VOCs are referred to as ROGs throughout) and nitrogen oxides in the presence of ultra-violet radiation or sunlight. Unlike other criteria pollutants, O_3 is not emitted directly into the atmosphere by any sources; it is only formed when the precursor compounds are present. These precursor compounds (reactive hydrocarbons and NO_x) are generated by combustion sources such as factories and automobiles as well as evaporation of solvents and fuels. The health effects of O_3 are eye irritation and deterioration of lung tissues. O_3 can damage materials such as rubber, and also harm plants, crops, and marine life.

Carbon Monoxide

Carbon monoxide is a colorless, odorless gas emitted from combustion processes. Nationally and, particularly in urban areas, the majority of CO emissions to ambient air come from mobile sources. CO can cause harmful health effects by reducing oxygen delivery to the body's organs and tissues. At extremely high levels, CO can cause death.

Particulate Matter

Particulate matter consists of solid and liquid particles of dust, soot, aerosols, and other matter that are small enough to remain suspended in the air for a long period of time. Particulate matter is regulated in two categories, based upon diameter. Course particles (PM_{10}) are between 2.5 and 10 microns in diameter and arise primarily from natural processes such as wind-blown dust. $PM_{2.5}$ are fine particles less than 2.5 microns in diameter and are produced mostly from combustion or burning. Fine particles typically have more adverse health effects, because they are small enough to absorb into the lung tissue. Particulate matter in the air is from both natural sources (wind-blown dust and pollen) and manmade sources (combustion, automobiles, field burning, factories, and road dust). A portion of the particulate matter in the atmosphere is also a result of photochemical processes. The effects of high concentrations on humans include aggravation of chronic diseases, including heart/lung disease.

Greenhouse Gases

Greenhouse gases are heat-trapping compounds that absorb and emit radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect, which results in global climate change. The primary GHGs in the Earth's atmosphere include water vapor, carbon dioxide (CO_2), methane, nitrous oxide, O_3, and fluorinated gases (hydrofluorocarbons and perfluorocarbons). The primary sources of these GHG are as follows:

Carbon Dioxide

Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of

cement). CO_2 is also removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

Methane
Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide
Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases
Hydrofluorocarbons (HCFCs), perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High Global Warming Potential gases.

Ozone
See above definition of Ozone.

Reactive Organic Gases
ROGs are photochemically reactive gases that play a role in ozone formation. This definition excludes methane, CO, CO_2, carbonic acid, metallic carbides or carbonates, ammonium carbonates, methylene chloride, methyl chloroform and various chlorofluorocarbons, but includes VOCs. VOCs are a group of carbon-containing compounds that evaporate readily at room temperature. Examples of VOCs include trichloroethane; trichloroethylene; and *benzene, toluene, ethylbenzene, and xylene*. These contaminants typically are generated from metal degreasing, printed circuit board cleaning, gasoline, and wood-preserving processes.

VOCs can cause, eye, nose, and throat irritation; headaches, loss of coordination, nausea; and damage to the liver, kidney, and central nervous system. Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans. Key signs or symptoms associated with exposure to VOCs include conjunctival irritation, nose and throat discomfort, headache, allergic skin reaction, dyspnea, declines in serum cholinesterase levels, nausea, emesis, epistaxis, fatigue, and dizziness.

The ability of organic chemicals to cause health effects varies greatly from those that are highly toxic to those with no known health effect. As with other pollutants, the extent and nature of the health effect depends on many factors, including level of exposure and length of time exposed. Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment are among the immediate symptoms that some people have experienced soon after exposure to some organics.

Sulfur Oxides
Sulfur oxides refer to a group of highly reactive gasses that includes, SO, SO_2, SO_3 S_nO, S_7O_2, and S_6O_2. Among these gasses, SO_2 is the most common and typically used as an indicator for SO_x. The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore, and the burning of high-sulfur-containing fuels by locomotives, large ships, and non-road equipment. SO_2 is linked with a number of adverse effects on the respiratory system.

Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory affects, including bronchoconstriction and increased asthma symptoms.

These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing).

Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics.

Nitrogen Oxides

The sum of nitric oxide and nitrogen dioxide is commonly called nitrogen oxides. Other oxides of nitrogen, including nitrous acid and nitric acid are part of the nitrogen oxide family. While the EPA's NAAQS covers this entire family, NO_2 is the component of greatest interest and the indicator for the larger group of nitrogen oxides. NO_2 forms quickly from emissions from cars, trucks, and buses; power plants; and off-road equipment. In addition to contributing to the formation of ground-level ozone and fine particle pollution, NO_2 is linked with a number of adverse effects on the respiratory system.

NO_x reacts with ammonia, moisture, and other compounds to form small particles. These small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.

6.3.3.3 Hazardous Air Pollutants

Hazardous Air Pollutants (HAPs) are air contaminants that are known or suspected to cause acute, chronic, or carcinogenic effects to human health. They are known in some sources as TACs. According to the EPA Technology Transfer Network Air Toxics Web Site, almost 200 HAPs have been identified. The sources of HAPs are mostly of human origin, including refineries, automobiles, gasoline stations, and painting operations.

6.3.4 Standards of Significance

An impact to air quality would be considered significant if the proposed project would:

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

To determine whether a project has the potential to obstruct implementation of the applicable air quality plans, contribute to potential air quality violations, or result in a cumulatively considerable net increase of a criteria pollutant for which the Air Basin is nonattainment, the FRAQMD has established thresholds of significance for construction impacts, project operations, and cumulative impacts. For construction impacts, the pollutant of greatest concern to the FRAQMD is PM_{10}. The FRAQMD recommends that significance be based on a consideration of the control measures to be implemented during project construction. According to the FRAQMD, compliance with district regulations and implementation of appropriate mitigation measures to control PM_{10} emissions are sufficient to render a project's construction-related impacts less than significant.

The FRAQMD's policies and regulations for assessing and mitigating air quality impacts also includes significance criteria for evaluating operational-phase emissions from direct and indirect sources associated with a project. Indirect sources include those covered under permit with the FRAQMD. For this

analysis, the proposed VESI 10 Tierra Buena BESS project would be considered to have a significant effect on the environment if it would:

- Cause a net increase in pollutant emissions of ROG or NO_x exceeding 10 tons per year,
- Cause a violation of state CO concentration standards (*The level of significance of CO emissions from mobile sources is determined by modeling the ambient concentration under project conditions and comparing the resultant 1- and 8-hour concentrations to the respective State CO standards of 20.0 and 9.0 parts per million.*),
- Frequently expose members of the public to objectionable odors, and/or
- Expose the public to project-related toxic air contaminants in excess of the following thresholds:
  - probability of contracting cancer for the Maximally Exposed Individual exceeds 10 in one million,
  - ground-level concentrations of non-carcinogenic TACs would result in a Hazard Index greater than 1.

Lastly, any project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. Impacts of local pollutants are cumulatively significant when modeling shows that the combined emissions from the project and other existing and planned projects in the area would exceed air quality standards.

6.3.5 Impacts and Mitigation Measures

This section details potential Air Quality impacts that might arise from the construction and operation of the proposed VESI 10 Tierra Buena BESS project and the mitigation measures to be implemented in association with said impacts.

6.3.5.1 Construction Impacts

Construction of the proposed VESI Tierra Buena BESS project is anticipated to begin in the first quarter of 2020 and would be anticipated to be completed by the second quarter of 2020 with the overall construction period, including commissioning and testing expected to last up to 5 months. The construction phase consists of pre-construction Best Management Practices (BMPs) site preparation, including stormwater runoff containment systems; clearing driveway and foundation areas of existing vegetation, gravel, etc.; compaction and the addition of gravel to driveway surface as needed; pour-in-place concrete footing and pad foundation installation; installation of subterranean conduit banks; delivery and placement of the battery enclosure to prepared foundation; installation of PCS, PDS, and pad-mounted transformers; running conduit to adjacent existing PG&E utility poles; installation of safety features and security lighting; cleanup and demobilization. The battery storage system equipment is pre-fabricated. No onsite coating applications are needed for this equipment.

The emissions for the construction of the proposed VESI Tierra Buena BESS project were estimated using California Emissions Estimator Model (CalEEMod) Version 2016.3.2. Information concerning project construction has been taken from facility designs as outlined in the project description section of this document.

Construction activities for the project would generate temporary air pollutant emissions and fugitive dust emissions (PM10 and PM2.5) from construction equipment used in activities such as minimal site preparation, portable engines, on-site heavy-duty construction vehicles, laying of foundations, and motor vehicles transporting construction workers. Exhaust emissions from construction activities would vary daily as construction activity levels change. Construction was assumed to take place over a five months period, in accordance with the client supplied construction schedule.

Fugitive particulate matter emissions (PM_{10}) are the greatest pollutant of concern for a project's construction emissions. The PM_{10} emissions in tons/year have been quantified using CalEEMod. However, there is no quantified threshold provided by the FRAQMD. The FRAQMD, rather, states that PM_{10} emissions are hard to predict and can vary greatly depending on several changing variables such as weather conditions, soil conditions, and the specific activity taking place. To address the temporary issue of fugitive dust emissions from the proposed VESI 10 Tierra Buena BESS project's construction activity, the FRAQMD mandates BMPs for dust control. The mitigation measures outlined on the FRAQMD website shall be adhered to during the construction of the proposed BESS facility. Implementing these BMPs would reduce all PM_{10} impacts to less than significant levels.

Table 6.3-5: Unmitigated Construction Emissions Estimates

Pollutant	CalEEMod Estimate (tons/year)	Thresholds of Significance
Reactive organic gases	0. 0248	10 tons/year
Nitrogen oxides	0. 2537	10 tons/year
Respirable particulate matter (PM_{10})	0.0167	N/A See FRAQMD website for BMPs
Particulate matter ($PM_{2.5}$)	0.0148	N/A See FRAQMD website for BMPs
Carbon monoxide	0.2080	9 ppm

Incorporating recommended FRAQMD BMPs into the mitigation measures ensures that NO_x, ROG and PM emissions would be fully in compliance with applicable thresholds, resulting in a less than significant impact. CO emissions are less than significant because the applicable source, vehicular emissions, is not substantial according to the FRAQMD guidelines.

6.3.5.2 Operations Impacts

Long-term VESI 10 Tierra Buena BASS project emissions are those associated with stationary sources and mobile sources involved in the regular operation of the BESS facility after implementation. No long-term stationary emissions would result from the battery components of the battery storage system.

Mobile emissions during long-term operations would be limited to vehicle trips made to maintain the facility. After commissioning and during the operational life of the project, most routine inspections of the battery storage system would occur concurrently with inspections and maintenance of existing facilities (i.e., requiring no additional vehicle trips). Therefore, the BESS facility would have a less than significant impact on regional air quality from operational emissions. Furthermore, long-term emissions from the proposed BESS facility are not anticipated to pose any risk to any sensitive receptors. The proposed BESS facility would not result in long-term operational emissions levels that would exceed thresholds of significance. Additionally, operation of the battery storage system would not result in the generation of other hazardous air contaminants.

6.3.5.3 Odor Impacts

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress to the public. Due to the innocuous nature of odor impacts, no requirements for their control are included in state or federal air quality regulations. Furthermore, no activities with potential to produce odors are anticipated from the operation of the VESI 10 Tierra Buena BESS project. Some odors associated with emissions from diesel powered construction equipment may occur, however, such odors will be mitigated with the mitigation measures offered below. It is therefore not anticipated that the project poses a potential risk of odor impacts.

6.3.5.4 Mitigation Measures

The following mitigation measures would be implemented to control PM emissions associated with construction activities:

AQ-1: Suspend excavation and grading activity when sustained winds exceed 20 miles per hour or when gusts exceed 25 miles per hour.
AQ-2: Install wheel washers for all exiting trucks and equipment leaving the site.

Although the NOx, CO, and CO2 emissions for the construction period are within the thresholds of significance, the following mitigation measures would further reduce emissions:

AQ-3: Use alternative fuel or catalyst-equipped diesel construction equipment.
AQ-4: Minimize idling time (e.g., 10-minute maximum).
AQ-5: Replace fossil-fueled equipment with electrically driven equivalents when possible.
AQ-6: Limit or curtail construction activity during periods of high ambient pollution.

6.3.6 Air Quality Initial Study Responses

Table 6.3-6: Air Quality Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☑	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☑
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☑	☐

6.3.7 Responses to Initial Study Questions

6.3.7.1 Air Quality Plan: Less than Significant Impact

The FRAQMD has adopted and periodically revises an Attainment Plan that addresses PM10, ozone and ozone precursors, (NOx and ROGs). The effect of which ensures that when incorporated into subsequent projects, they will avoid or reduce impacts and result in reasonable further progress toward attainment with air quality standards over time. The FRAQMD has air quality plans set in place to reduce emissions and meet and maintain attainment status of the NAAQS and CAAQS. Compliance with the FRAQMD regulations will ensure that the proposed VESI 10 Tierra Buena BESS project will not conflict with or obstruct implementation of the air quality improvement plans.

The proposed VESI 10 Tierra Buena BESS project would have no impact to the FRAQMD's air quality goals because it would not create or cause adverse impacts or alter the current ambient air quality status. The proposed VESI 10 Tierra Buena BESS project would adhere to district policy by providing relevant and economically feasible mitigation measures as conditional requirements. Monitoring would be conducted as prescribed to ensure compliance.

6.3.7.2 Air Quality Violation from Considerable Net Increase of any Criteria Pollutant or Cumulative Air Quality Impacts: Less than Significant with Mitigation Incorporated

Air quality violations could occur due to construction or operational emissions. During construction, the emissions for ozone precursors NOx and ROG are below the yearly threshold and, therefore, pose no significant impact. PM10 would have no impact due to the proposed VESI 10 Tierra Buena BESS project´s conformity with FRAQMD rules and policies. Operations at the proposed VESI 10 Tierra Buena BESS project would have no NOx, ROG, CO, and PM10 emissions and therefore, would not exceed the FRAQMD threshold of significance. Furthermore, mitigation measures would be implemented as called pursuant to district rules and policies, further reducing any impacts. Therefore, air quality violations are less than significant with mitigation.

The VESI 10 Tierra Buena BESS project's contribution to cumulative air quality impacts is considered significant if the project's total emissions of either NO_X or ROG exceed the long-term threshold of 25 lbs./day. The BESS facility's construction-related contributions to cumulative NO_X and ROG emissions were below this threshold. The BESS facility's contribution to cumulative air quality impacts were not cumulatively considerable, as these emissions have been incorporated into the adopted Clean Air Plan in terms of the overall emissions inventory for construction activities. Cumulative air quality impacts occur when two or more related individual impacts compound to create a net significant impact. Since all projects within the FRAQMD must comply with district rules and regulations and the less than significant level of project specific impacts, this is considered a less than significant impact.

6.3.7.3 Sensitive Receptors: No Impact

A sensitive receptor is defined as a location where there is a reasonable expectation of continuous human exposure to pollutants. Sensitive receptors are usually evaluated for more acute, localized pollutants (PM10, SO2, hydrogen sulfide) rather than regional pollutants such as ozone precursors (NOx and ROG). Because the proposed VESI 10 Tierra Buena BESS project is not expected to emit said pollutants in the course of the regular operation, there will be no impact on receptors in the project vicinity.

6.3.7.4 Objectionable Odors: Less than Significant Impact

Heavy equipment operating on the proposed project lease area would emit odors during construction. However, such odors would be temporary and would cease to occur after construction. The benign nature of the VESI 10 Tierra Buena BESS project ensures that no unpleasant odors will result from regular operation. As such there will be less than significant impact from objectionable odors.

6.4 BIOLOGICAL RESOURCES

This section identifies existing biological resources, including any special-status species and sensitive natural communities, present or potentially present at the proposed project lease area. For biological resources, the study area includes a review of the limited surrounding nearby agricultural areas and orchards. In addition, several of the existing operations within the nearby area were reviewed for potential biological resources, but no such resources were found at these sites. There are no undisturbed, natural habitats in the proposed project area as defined in Sections 1702 (q) and (v) of Title 20 of the California Code of Regulations. The federal, state, and local regulations pertaining to biological resources within the region are described. This section describes impacts of the proposed VESI 10 Tierra Buena BESS project on biological resources and measures to mitigate those impacts determined to be potentially significant.

6.4.1 Background

6.4.1.1 Regulatory Context

Federal Regulations

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973. FESA protects plants and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Section 9 of FESA prohibits the taking of endangered wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR §17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land, and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of State law (16 USC §1538). Under Section 7 of FESA, federal agencies are required to consult with the USFWS and/or NMFS if their actions, including permit approvals or funding, could adversely affect an endangered plant or wildlife species or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS and/or NMFS may issue an incidental take statement allowing take of a species that is incidental to another authorized activity, provided the action would not jeopardize the continued existence of any federally listed species or result in the destruction or adverse modification of habitat of such species. Section 10 of FESA provides for issuance of incidental take permits to private parties without a federal nexus provided a habitat conservation plan is developed.

Migratory Bird Treaty Act

The federal MBTA, first enacted in 1916, prohibits any person, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatsoever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird." (16 USC 703). As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal.

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

State Regulations

California Environmental Quality Act

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant.

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into the regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant under CEQA such a case occurs when impacts result in an adverse alteration of existing conditions, but do not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA directs agencies to consult with the California Department of Fish and Wildlife (CDFW) on projects or actions that could affect listed species, directs the CDFW to determine whether jeopardy would occur, and allows the CDFW to identify “reasonable and prudent alternatives” to the project consistent with conserving the species. CESA generally parallels the main provisions of FESA, but unlike its federal counterpart, CESA applies the “take” prohibitions to species proposed for listing (called candidates by the State). “Take” is defined in Section 86 of the California Fish and Game (CFG) Code as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Section 2080 of the CFG Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. CESA allows the CDFW to authorize exceptions to the state’s prohibition against take of a listed species (except for designated fully protected species) if the take of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (CFG Code § 2081).

Fully Protected Species

The State of California first began to designate species as fully protected prior to the creation of CESA and FESA. Lists of fully protected species were initially developed to provide protection to those species that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CFG Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Senate Bill 618, amended in 2011, allows CDFW to issue permits authorizing the incidental take of fully protected species under CESA, as long as any take authorization is issued in conjunction with the approval of a Natural Community Conservation Plan that covers the fully protected species.

California Species of Concern

In addition to formal listing under FESA and CESA, some species receive additional consideration by the CDFW and lead agencies during the CEQA process. Species that may be considered for review are included on a list of species of special concern, developed by the CDFW. The list tracks species in California whose numbers, reproductive success, or habitat may be in decline.

California Fish and Game Code

Section 3503.5 of the CFG Code states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any

such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Disturbance activities that result in abandonment of an active bird-of-prey nest in areas adjacent to the disturbance may also be considered a violation of the CFG Code.

California Native Plant Protection Act and California Native Plant Society

The California Native Plant Protection Act of 1977 (CFG Code Sections 1900-1913) affords the California Fish and Game Commission the authority to designate native plants as endangered or rare and protects such endangered or rare plants from take. In addition, plants that are not State-listed, but meet the standards for listing are also protected under CEQA (CEQA Guidelines, Section 15380). The California Native Plant Society (CNPS) maintains a list of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The definitions for each of the CNPS listings are below:

Plant Ranks
List 1A: Plants presumed extinct in California
List 1B: Plants rare, threatened, or endangered in California and elsewhere
List 2A: Plants presumed extinct in California, but more numerous elsewhere
List 2B: Plants rare, threatened, or endangered in California, but more numerous elsewhere
List 3: Plants about which we need more information — A review list

Threat Ranks
0.1: Plants are seriously endangered in California
0.2: Plants are fairly endangered in California
0.3: Plants are not very endangered in California

California Lake and Streambed Alteration Agreement

Sections 1600 through 1616 of the CFG Code require that a Lake and Streambed Alteration Program Notification Package be submitted to the CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal on which the CDFW and the applicant agree is the Lake and Streambed Alteration Agreement. Often, projects that require a Lake and Streambed Alteration Agreement also require a permit from the Corps under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Lake and Streambed Alteration Agreement may overlap.

State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State

In accordance with the Porter-Cologne Water Quality Control Act 6 (Water Code, § 13000 et seq.), the Water Boards are authorized to regulate discharges of waste, which includes discharges of dredged or fill material, that may affect the quality of waters of the state. Waters of the state include some, but not all, features that are defined as wetlands, as well as other features, including the ocean, lakes, and rivers. These Procedures for the Discharges of Dredged or Fill Material to Waters of the State (Procedures) conform to Executive Order W-59-93, commonly referred to as California's "no net loss" policy for wetlands. In accordance with Executive Order W-59-93, the Procedures ensure that the California Water Boards' regulation of dredge or fill activities will be conducted in a manner "to ensure no overall net loss and long-term net gain in the quantity, quality, and permanence of wetlands acreage and values…"

Local Regulations

Sutter County 2030 General Plan Policies Pertaining to Biological Resources

ER 1.2 Yuba-Sutter NCCP/HCP. Participate in the preparation and implementation of the Yuba-Sutter Natural Community Conservation Plan/Habitat Conservation Plan to promote biological conservation within the Plan boundary area in Sutter County.

ER 1.5 Resource Assessment. Require discretionary development proposals that could potentially impact biological resources to conduct a biological resources assessment to determine if any resources will be adversely affected by the proposal and, if so, to identify appropriate measures to avoid or mitigate such impacts.

ER 1.6 Avoidance. Ensure that new development projects avoid, to the extent feasible, significant biological resources (e.g. areas of rare, threatened or endangered species of plants, riparian areas, vernal pools), except where such projects are identified as "Authorized Development" within an adopted Habitat Conservation Plan.

ER 3.7 Oak Trees. Preserve native oak trees when possible through the review of discretionary development projects and activities. Reduce the loss of oak trees through consideration of tree mitigation/replanting programs. *(ER 3-B/ER 3C)*

6.4.1.2 Required Permits and Approvals

No biological resource permits are required for the proposed VESI 10 Tierra Buena BESS project.

6.4.2 Methodology

6.4.2.1 Literature Review

Prior to performing the biological field survey, documentation relevant to the proposed project lease area, interconnection methodology with the PG&E Pease Road power substation and surrounding area was reviewed and a special-status species list was prepared for the project. The special-status species list includes species identified from record searches for the U.S. Geological Survey 7.5-minute Sutter, Pennington, Gridley, Honcut, Sutter Buttes, Yuba City, Tisdale Weir, Gilsizer Slough, and Olivehurst topographic quadrangles. Special-status species include all federally and State-listed endangered and threatened species, candidates for listing, species proposed for listing, fully protected species, State species of concern, species protected under other regulations (e.g., MBTA), species listed as rare or endangered by the CNPS, and species that receive special consideration during environmental review under CEQA.

Sources of information that were used to compile the species list included the USFWS and NMFS endangered species lists, the CDFW California Natural Diversity Data Base (CNDDB), and the CNPS species lists (online version) for the quadrangles listed above. (See *Figure 6.4-1* California Natural Diversity Data Map)

6.4.2.2 Field Survey

Sierra Geotech staff biologist conducted a field survey of the project area and interconnection route along the PG&E electrical distribution lines between the project lease area and the Pease Road power substation on March 10, 2019. The project locations were systematically surveyed on foot to identify all sensitive habitats and determine the potential for the project locations to support each special-status species identified from the record searches. Each species' potential for occurrence was based on the presence or absence of general habitat requirements (nesting or foraging habitat, specific soil type, permanent water source, etc.). During the field survey, all biological communities were characterized, and the observed plant and wildlife species were recorded.

6.4.3 Environmental Setting

The approximately 0.32+/- acre proposed project lease area is comprised of mostly barren ground with interspersed patches of vegetation. Bermuda grass (*Cynodon dactylon*) was the dominant plant species within the proposed project lease area during the field survey. The proposed project lease area is

currently used as an agricultural trucking and staging yard by Valdez Trucking, and as such the ground is constantly disturbed daily by truck and trailer movements eradicating most vegetation except for some Bermuda grass (*Cynodon dactylon*) which grows along the fence line of the proposed project lease area. Along the fence line remnants of other identified species included milk thistle (*Silybum marianum*), cudweed *(Gnaphalium* sp.), Russian thistle (*Salsola tragus*), gumweed (*Grindelia* sp.), and Jimson weed (*Datura stramonium*). All these species are common ruderal (weedy) species typically found growing in disturbed places. Some of the vegetation was dead or stressed with twisted and curled leaves and stems, indicating that herbicides may be used for vegetation management purposes. The interior of the proposed project lease area lacks trees and shrubs. Tire tracks are prevalent in the entire area of the proposed project lease area and portions of the proposed project lease area have vehicles and trailers stored which prevents growth of vegetation. Gravel, and dust binder occur throughout the proposed project lease area. There are no natural habitats present the proposed project lease area.

Wildlife activity was very limited during the field survey, most likely because of the disturbed nature of the parcel and surrounding orchards, roadways and lack of habitat diversity. Wildlife species observed on and adjacent to the site include birds flying over, or immediately adjacent to the site included: mourning dove (*Zenaida macroura*), house sparrow (*Passer domesticus*), rock dove (*Columba livia*), American crow (*Corvus brachyrhynchos*), killdeer (*Charadrius vociferus*), western meadowlark (*Sternella neglecta*), and yellow-billed magpie (*Pica nuttalli*).

6.4.3.1 Special-status Species

Special status species are plant and animal groups with regulatory protection under either the federal Endangered Species Act, or the endangered species program of the California Department of Fish and Wildlife (CDFW). The CDFW's California Natural Diversity Data Base (CNDDB) was searched for occurrences of rare, threatened, endangered, and/or sensitive animals, plants, and natural communities. The search was conducted for the proposed project lease area and surrounding area within the USGS's 7.5-minute Sutter quadrangle.

No special status species were identified at the proposed project lease area. Only three records of special status species occur within a 5-mile radius of the proposed project lease area: (1) the Bank Swallow (*Riparia riparia*), a California-listed threatened bird species; (2) the Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*), a California-listed endangered bird species; and (3) the Hartweg's Golden Sunburst (*Pseudobahia bahifolia*), a California- and federal-listed plant species. Other species identified over 4 miles from the proposed project lease area include the vernal pool tadpole shrimp (*Lepidurus packardi*), a federally listed, endangered crustacean; the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*), a federally listed, threatened insect; and the California Linderiella (*Linderiella occidentalis*). In addition, the following terrestrial natural communities were identified along the Feather River about 2 miles east of the site: Great Valley Cottonwood Riparian Forest and the Great Valley Mixed Riparian Forest.

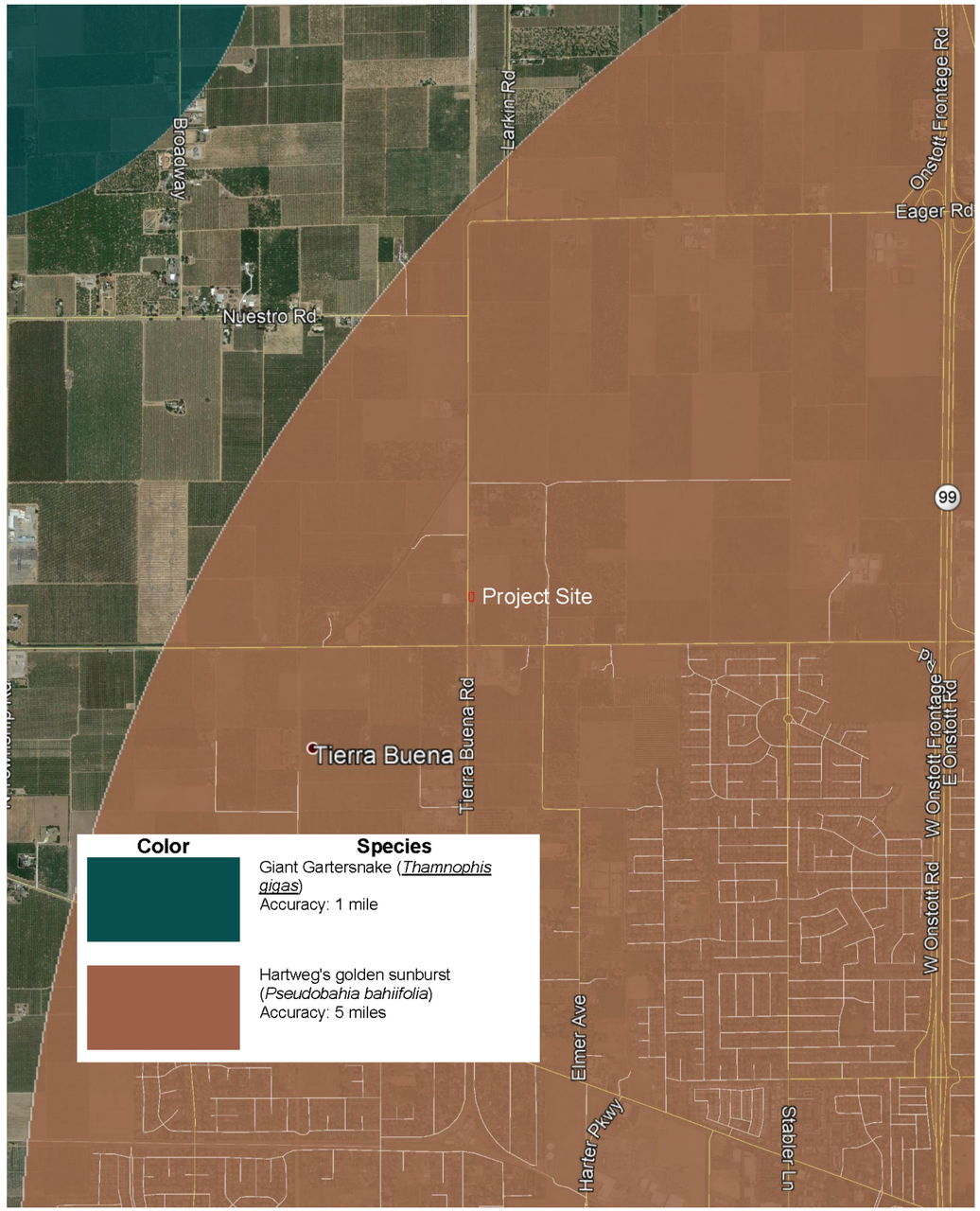
As discussed above, the special-status plant and wildlife species analyzed for the proposed VESI 10 Tierra Buena BESS project were identified through the review of existing documentation relevant to the proposed project lease area and surrounding area. *Figure 6.4-1*: *California Natural Diversity Data Base Map* depicts the locations of special-status species recorded in the CNDDB within 5 miles of the proposed project lease area. The USFWS list for the Sutter quadrangle, in which the proposed project lease area occurs, contains the same species listed on the lists generated for the surrounding eight quadrangles. Therefore, only the list for the Sutter quadrangle is included.

6.4.3.2 Special-status Plants

Due to presumed vegetation management practices and/or the lack of suitable habitats on the assessed land, none of the special-status plant species known to occur in the vicinity of the proposed project lease area have the potential to occur. For these reasons, the proposed VESI 10 Tierra Buena BESS project would have no impact on special-status plant species.

6.4.3.3 Special-status Wildlife

Based on the review of literature relevant to the proposed project lease area and surrounding areas along with the field survey, several special-status wildlife species have the potential to occur. However, due to the disturbed nature of the proposed project lease area and the lack of habitat diversity, special-status species with the potential to occur on the proposed project lease area are limited. For these reasons, the proposed VESI 10 Tierra Buena BESS project would have no impact on special-status plant species.



Reference: California Natural Diversity Database

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

N W E S

FIGURE: CNDDB Map

DATE: 03-21-2019	SCALE: NTS
BY: SCV	FIGURE: 6.4-1

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6.4.3.4 Wetlands and Jurisdictional Waters

Wetlands are lands that may be covered periodically, or permanently, with shallow water, and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools. The United States Fish and Wildlife Service's National Wetlands Inventory Map was examined to identify wetlands within one (1) mile of the proposed project lease area. Based on these maps and site observations, no wetlands exist within the boundaries of the parcel; however, several wetland areas do exist within 2.5 miles of the parcel. The identified wetlands within 2.5 mile of the parcel are located east and west of the proposed project lease area, within the Feather River flood plain and between the levees east of the parcel as well as along the Live Oak Canal west of the parcel. The nearest wetlands are approximately 1/3 of a mile west of the proposed project lease area, along the Live Oak Canal. Based on the field survey, there are no wetlands, drainage ditches, or other water features on the proposed project lease area. There was no evidence of wetland hydrology or hydrophytic vegetation observed.

6.4.3.5 Natural Areas

Natural areas include officially designated wilderness areas, wildlife preserves, sanctuaries, and refuges, wild and scenic rivers, national parks, forests, monuments, wildlife sanctuaries, preserves, refuges, and federal wilderness areas. Based on an electronic search of federal data from the Bureau of Land Management, National Park Service, National Forest Service, and Fish and Wildlife Service, no officially designated natural areas exist on or within one (1) mile of the proposed project lease area.

6.4.4 Standards of Significance

Under CEQA, an impact to biological resources is considered significant if the project would:

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

In the evaluation process, it is noted that *Section 15380* of the *CEQA Guidelines* defines endangered, rare, or threatened species as follows:

> *1)"Endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, over-exploitation, predation, competition, disease, or other factors; or*

2)"Rare" (all animals designated as rare by the Fish and Game Commission prior to January 1, 1985 were automatically reclassified as threatened by Fish and Game Code Sec. 2067) when either:

(a)Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or

(b)The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.

(c)A species of animal or plant shall be presumed to be endangered, rare, or threatened, if it is listed in:

(1) Sections 670.2 or 670.5, Title 14, California Administrative Code of Regulations; or

(2) Title 50, Code of Federal Regulations Sections 17.11 or 17.2 pursuant to the Federal Endangered Species Act as rare, threatened, or endangered.

(d)A species not included in any listing identified in subsection (c) shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria in subsection (b).

(e)This definition shall not include any species of the Class Insecta, which is a pest whose protection under the provisions of CEQA would present an overwhelming and overriding task to man as determined by:

(1) The Director of Food and Agriculture with regard to economic pests; or
(2) The Director of Health Services with regard to health risks.

6.4.5 Impacts and Mitigation Measures

Based on site observations conducted on March 10, 2019, the proposed project lease area for the VESI 10 Tierra Buena BESS project consists of bare soil and some new rye grasses propagating from the recent rain. There are no natural habitats present on the parcel and it is unlikely that any special status species or sensitive habitats are present on the proposed project lease area or along the corridor for the connection to the PG&E Pease Road power substation. The proposed project lease area does not contain any wetland areas and the linear facilities do not cross wetlands or riparian areas. The proposed VESI 10 Tierra Buena BESS project will not have any significant impacts to biological resources or special status species. There are some pine trees in front of the Valdez resident that could be suitable habitat for nesting birds, which is approximately 500 feet south from the proposed lease area. These trees are limited to marginal nesting and foraging habitat for nesting birds protected by the MBTA. Although no bird species were observed actively nesting or foraging on the parcel during the field inspection, suitable nesting and foraging habitat could potentially be impacted by during construction of the proposed BESS facility. The mitigation measure below addresses the conservation guidelines called out by the Sutter County 2030 General Plan that shall be implemented to mitigate for project-related potential impacts.

BIO-1 Prior to starting construction a biologist will perform a pre-construction survey of the site prior to any project-related ground disturbance to verify vegetation types affected by the project. The results of the pre-construction survey will determine which Incidental Take Minimization Measures (if any) will be required for project approval. Incidental Take Minimization Measures for each species will be implemented to ensure that all impacts to covered species are minimized and mitigated appropriately under FESA, CESA, and CEQA.

6.4.6 Biological Resources Initial Study Responses

Table 6.4-1: Biological Resources Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

6.4.7 Responses to Initial Study Questions

6.4.7.1 Species Impacts: Less than Significant with Mitigation Incorporated

The entire project lease area has been cleared of vegetation, and the ground surface consists of compacted soils and gravel. Vegetation cover is limited to ruderal grass and forb species along the western and eastern boundary of the proposed project lease area. Habitat described above for special status species does not occur on the proposed project lease area. Thus, there is no potential for special status plant or wildlife species to occur on the project lease area. The proposed project would not directly impact any special status species or habitat of such species. The construction of the proposed BESS facilities could possibly, however, disturb potential bird nesting in the nearby surrounding area that contain large mature trees. The mitigation measure above BIO-1 addresses the conservation guidelines called out by the County General Plan that shall be implemented to mitigate for project-related potential impacts. Implementation of Mitigation Measure BIO-1 would reduce potential impacts to sensitive birds to a less than significant level.

6.4.7.2 Riparian and Other Sensitive Habitats: No Impact

There are no riparian habitats or sensitive natural communities within the proposed project lease area. The proposed project lease area is highly disturbed and composed of barren land and scattered ruderal vegetation. The proposed VESI 10 Tierra Buena BESS project would have no impact on riparian and other sensitive habitats. No impact.

6.4.7.3 Federally and State Protected Wetlands: No Impact

There are no wetland features as defined by the CWA or California Water Code Section 1300 et. seq.; California Executive Order W-59-3, “no net loss” policy for wetlands, and the California Water Quality Control Board, Procedures for Discharges of Dredge or Fill Material to Waters of the State, on the parcel nor proposed project lease area. Therefore, the proposed VESI 10 Tierra Buena BESS project would have No Impact on federally/state protected wetlands.

6.4.7.4 Interfere with Movement of Native Wildlife: No Impact

Although the proposed project lease area is along the Pacific Flyway, an established air route of waterfowl and other birds migrating between wintering grounds in Central and South America and nesting grounds in Pacific Coast states and provinces of North America, the small size (.32 of an acre) of the proposed project lease area and lack of aquatic features and higher-quality vegetation communities preclude migratory bird species from using the proposed project lease area as a stopover during their migration. The lack of aquatic features would also eliminate potential project-related impacts to resident and migratory fish. Therefore, the proposed project lease area does not provide wildlife movement corridors and the project will have no impact on the movement of terrestrial or aquatic wildlife.

6.4.7.5 Conflict with Local Policies: No Impact

The proposed BESS project would adhere to the proposed policies and implementation measures of all local policies or ordinances protecting biological resources. The proposed project will not conflict with any

local policies or ordinances protecting biological resources, such as a tree preservation policy, because Sutter County has not adopted such an ordinance. Therefore, no impact is anticipated. This project is consistent with Sutter County 2030 General Plan for Open Space, Conservation, and Biological protection.

6.4.7.6 Conflict with Conservation Plans: No Impact

The proposed BESS facility will comply with all conservation plans and would not conflict with any approved local, regional, or state habitat conservation plans.

6.5 CULTURAL RESOURCES

This section summarizes the Cultural Resources Inventory for the proposed VESI 10 Tierra Buena BESS project dated March 2019 and reviews the potential of the proposed VESI 10 Tierra Buena BESS project to impact cultural resources. Cultural resources include prehistoric and historic archaeological sites, historic-era buildings and structures, and resources of traditional cultural significance to Native Americans and other groups. Figure 6.5-1: *Area of Potential Effect*, depicts the cultural-archaeological area of potential effect.

6.5.1 Background

6.5.1.1 Regulatory Context

Cultural resources in the State of California are recognized as non-renewable resources that require management to assure their benefit to present—and future—Californians. Therefore, cultural resources management work conducted as part of any proposed project must comply with applicable federal, state, and/or local regulations designed to protect the cultural heritage within the proposed project area.

Federal Regulations

National Historic Preservation Act

Enacted in 1966, the National Historic Preservation Act (NHPA) has become the foundation and framework for historic preservation in the United States. The NHPA authorizes the Secretary of the Interior to expand and maintain a National Register of Historic Places, establishes an Advisory Council on Historic Preservation as an independent federal entity, requires federal agencies to take into account the effects of their undertakings on historic properties, affords the Advisory Council on Historic Preservation a reasonable opportunity to comment on any undertaking that may affect historic properties listed, or eligible for listing, in the National Register of Historic Places, and makes the heads of all federal agencies responsible for the preservation of historic properties owned or controlled by their agencies.

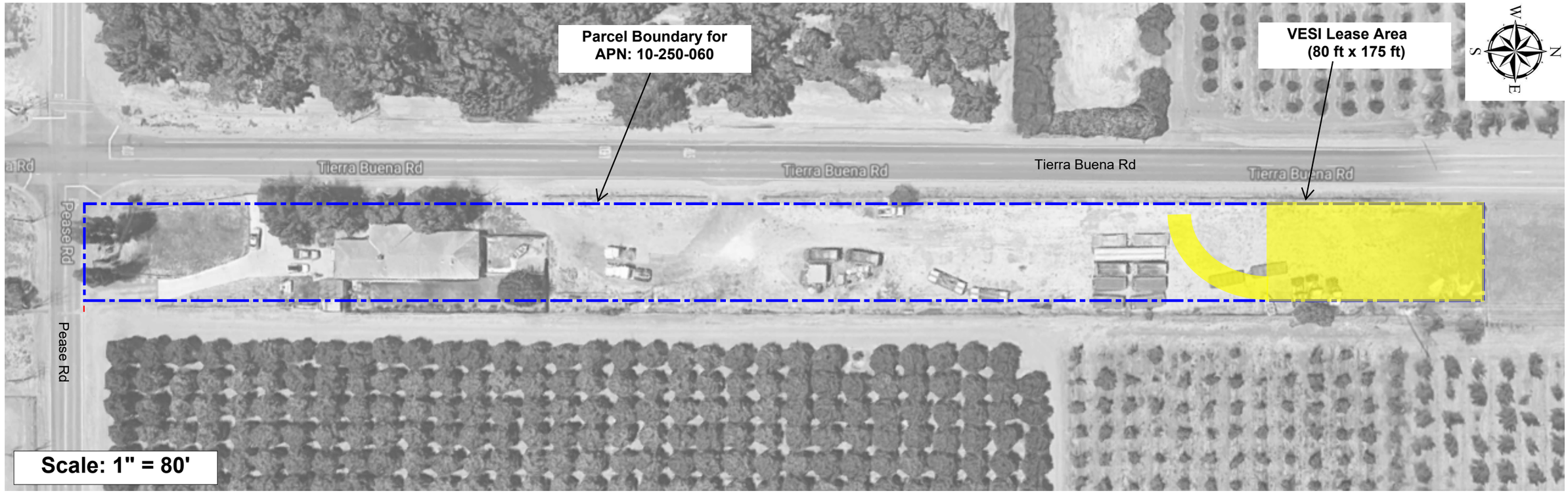
Section 106 of the NHPA governs federal regulations for cultural resources. The goal of the Section 106 process is to offer a measure of protection to cultural resources that are determined eligible for listing on the National Register of Historic Places. The criteria for determining National Register eligibility are found in 36 Code of Federal Regulations (CFR) Part 60.4.

State Regulations

Discretionary actions undertaken by state or local governments in California, unless otherwise exempted, must comply with the CEQA Guidelines, Sections 21083.2 and 15064.5. Enacted in 1970, CEQA directs lead agencies to first determine whether a cultural resource is a “historically significant” cultural resource. In the protection and management of the cultural environment, CEQA Guidelines provide definitions and standards for cultural resources management. The term “historical resource” is defined as follows:

> (1) A resource listed in or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources.
>
> (2) A resource included in a local register of historical resources or identified as significant in a historical resource survey shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
>
> (3) Any object, building, structure, site area, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record. Generally, a cultural resource shall be considered by the lead agency to be

Indicates approximate area of potential effect



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: Area of Potential Effect

DATE:	11-17-2019	SCALE:	1" = 80' (11"x17")
BY:	SCV	FIGURE:	6.5-1

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"historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources, including the following:

a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

b. Is associated with the lives of persons important in our past;

c. 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

d. Has yielded, or may be likely to yield, information important in prehistory or history.

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, or is not included in a local register of historical resources, or identified in a historical resources survey, does not preclude a lead agency from determining that the resource may be a historical resource [Title 14 CCR Section 15064.5(1) (California, 2011)]. As defined in Section 15064.5(1) of the CEQA Guidelines, a "unique archaeological resource" is: 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:

(2) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historical event or person [Public Resources Code Section 21083.2(g)].

A project with an effect that may cause a substantial adverse change in the significance of a historical resource or unique archaeological resource is a project that may have a significant effect on the environment per the CEQA Guidelines, Section 15064.5(b). Effects on cultural properties that qualify as historical resources or unique archaeological resources can be considered adverse if they involve physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired.

Assembly Bill 52 (AB 52) was passed on September 25, 2014 and applies to all projects that have a notice of preparation or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015. The bill requires that a lead agency notify a California Native American tribe if that tribe has requested, in writing, to be kept informed of proposed projects by the lead agency, prior to the determination whether a negative declaration, mitigated negative declaration, or environmental impact report will be prepared, and then begin consultation if requested in the tribe's written response. The bill also specifies mitigation measures that may be considered to avoid or minimize impacts on tribal cultural resources. The CEQA Appendix G checklist was amended to add consideration of "Tribal Cultural Resources".

Per AB 52, tribal cultural resources were established as a new category of resource under CEQA. As defined under Section 21074 of the Public Resources Code, tribal cultural resources are "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either: (1) included or determined to be eligible for inclusion in the California Register of Historical Resources; included in a local register of historical resources as defined in Section 5020.1(k) of the Public Resources Code; or (2) determined by the lead agency to be significant pursuant to the criteria for inclusion in the California Register of Historical Resources set forth in Section 5024.1(c) of the Public Resources Code, if supported by substantial evidence and taking into account the significance of the

resource to a California Native American tribe. A “historical resource” as defined in Section 21084.1 of the Public Resources Code, a “unique archaeological resource” as defined in Section 21083.2(g) of the Public Resources Code, or a “nonunique archaeological resource” as defined in Section 21083.2(h) of the Public Resources Code may also be a tribal cultural resource.

The statutes and guidelines cited above specify how cultural resources are to be managed in the context of projects subject to CEQA. Archival and field surveys must be conducted and identified cultural resources must be inventoried and evaluated in prescribed ways per the CEQA Guidelines, and Section 21083.2 of the statute.

Prehistoric and historical resources deemed “historically significant” must be considered in project planning and development. As well, any proposed undertaking that may affect “historically significant” cultural resources must be submitted to the State Historic Preservation Officer for review and comment prior to project approval by the responsible agency and prior to construction. The CEQA Guidelines detail methods by which significant effects may be mitigated and discuss procedures for treatment of human remains discovered in the course of project development.

The California Office of Historic Preservation administers the California Register program, the California Register of Historical Landmarks, and California Points of Local Historical Interest programs. The State Historic Preservation Officer enforces the designation and protection process and is the head of the California Office of Historic Preservation. The California Office of Historic Preservation ensures that the state has a qualified historic preservation review commission, maintains a system for surveys and inventories, and provides for adequate public participation in its activities. The Office of Historic Preservation also administers the Certified Local Government program for the State of California.

Local Regulations

Sutter County General Plan

The following goal, policies, and implementation programs of the Environmental Resources Element of the Sutter County 2030 General Plan are applicable to the proposed VESI 10 Tierra Buena BESS project:

Goal ER-8 is to identify, protect, and enhance the County’s important cultural and paleontological resources to increase awareness of the County’s heritage.

The following policies from the Sutter County 2030 General Plan applies to the proposed VESI 10 Tierra Buena BESS project:

ER-8.1 **Identification.** Identify cultural resources, which include prehistoric, historic, paleontological, and archaeological resources, throughout the County to provide adequate protection of these resources.

ER-8.2 **Preservation.** Ensure the preservation of significant cultural and paleontological resources, including those recognized at the national, state, and local levels.

ER-8.4 **Consultation.** Consult with the appropriate organizations and individuals early in the development process (e.g., Information Centers of the California Historical Resources Information System, Native American Heritage Commission, and Native American groups and individuals) to minimize potential impacts to cultural resources.

The following Implementation Programs apply specifically to policies in the Environmental Resources Element, as applicable to the proposed project:

Implementation Program ER 8-C: For projects subject to discretionary approval, which involve grading, excavation, or construction, require the applicant to hire a professional that meets the Secretary of Interior’s professional qualifications standards for archaeology to conduct an

archaeological resource investigation. As determined necessary by the archaeologist and the County, the investigation may include, but not be limited to, an updated records search, pre-construction field surveys, research, and testing, and/or other methods that identify whether a substantial adverse impact on significant archaeological resource would occur. If cultural resources are discovered, the resource shall be examined by a qualified archaeologist to determine its significance and develop appropriate protection and preservation measures.

Implementation Program ER 8-D: Require that when any subsurface cultural resources, paleontological resources, or human remains are encountered, all work within 100 feet of the discovery be stopped and the area protected from further disturbance until the discovery is evaluated. The appropriate County personnel shall be notified immediately. The resources shall be examined by qualified personnel to determine their significance and develop appropriate protection and preservation measures.

If human remains are discovered, they shall be treated in compliance with applicable state and federal laws, including notifying the County Coroner and consulting with the California Native American Heritage Commission, as appropriate.

6.5.2 Methodology

6.5.2.1 Archival Research Methods

The California Historic Resources Information System maintains regional offices that manage site records for known cultural resource locations and related technical studies. The regional office for Sutter County is the Northeast Information Center at California State University, Chico. Information regarding prior cultural resource studies and previously recorded cultural resources was compiled by the Information Center on February 26, 2019, using a 0.25-mile radius around the parcel. Sources reviewed include all known and recorded archaeological and built-environment resources and cultural resource reports. Additional databases that were consulted for relevant information included the California Register, National Register, California Inventory of Historic Resources, and California Points of Historical Interest, California Historical Landmarks, plus historic maps, land patents, and aerial photographs.

6.5.2.2 Native American Sacred Lands File Search

By letter dated February 13, 2019, the Native American Heritage Commission stated that a search of their Sacred Lands File for traditional cultural resources within or near the proposed project lease area did not identify sacred sites in the proposed project lease area vicinity.

6.5.2.3 Field Survey Methods

An intensive-level pedestrian survey of the parcel was conducted by Natural Investigations Company archaeologist and cross-trained paleontologist, Cindy Arrington, on March 18, 2019. Survey transects were spaced apart at intervals no greater than 15 meters. All visible ground surface within the parcel as well as the propose project lease area was carefully examined for cultural material and geologic outcrops that may contain paleontological resources.

6.5.3 Environmental Setting

The proposed VESI 10Tierra Buena BESS project is located between the Feather River to the east and the Sutter Buttes to the west and lies within the lower Sacramento Valley, which comprises the northern half of the Central Valley.

6.5.3.1 Prehistory

Early occupation in this region occurred at least 9,500 years ago during a time of Early Holocene deglaciation and warming. There are few recorded archaeological sites, however, that predate 5,000 years ago during the Paleo-Indian and Lower Archaic periods due mainly to burial of early landscapes by alluvial fan and floodplain deposits (Rosenthal et al. 2007). During the Middle Archaic, which dates from 7,500 to 2,500 years ago, archaeological sites indicate populations had an established trade network and

followed a seasonal foraging strategy, consuming a variety of animals, plants, and fish and likely occupying higher elevations in the summer and shifting to lower elevations during the winters.

After 2,500 years ago, more specialized technology during the Upper Archaic resulted in innovations with new types of shell beads, bone tools, ceremonial blades, and charmstones. A proportional change in types of milling tools suggests there was a shift to a greater reliance on acorns as a dietary staple, with pine nuts a seasonally important food in the uplands. The remains of a variety of aquatic resources in the valley and mountains, as well as large Central Valley shell middens, suggest fish and shellfish were also important food resources. Large mounded villages developed in the Sacramento Valley that included accumulations of habitation debris and features, such as hearths, rock-lined ovens, house floors, and burials.

The diversity and number of artifacts and the number of archaeological sites increased in this region after 1,000 years ago during the Emergent Period. An increase in sedentism and population led to the development of social stratification, with an elaborate ceremonial and social organization. The Emergent Period was also shaped by a number of cultural innovations, such as the bow and arrow and more elaborate and diverse fishing technology. The development of extensive exchange networks during this period was accompanied by the use of clamshell disk beads as a form of currency. As viewed from the archaeological record, the cultural patterns typical of the Emergent Period also begin to reflect the cultural traditions known from historic period Native American groups, including the Nisenan.

6.5.3.2 Ethnography

The proposed project lease area lies within the lands historically occupied by the Nisenan (also known as the southern Maidu) (Kroeber 1925; Wilson and Towne 1978). Their territory included the southern extent of the Sacramento Valley, east of the Sacramento River between the North Fork Yuba River and Cosumnes River on the north and south, respectively, and extended east to the crest of the Sierra Nevada Range. As this region provided these seasonally mobile hunter-gatherers with an abundance of natural resources, the Nisenan established central villages and smaller satellite villages along main watercourses in their territory, such as Yupu at the Yuba-Feather river confluence east of the proposed project lease area.

Similar to other California Native American groups, the Nisenan employed a variety of tools, implements, and enclosures for hunting and collecting natural resources. Acorns, of particular importance to the diet, were collected in the fall and then stored in village granaries before processing with bedrock or portable mortars and pestles. They also participated in an extensive east-west trade network between the coast and the Great Basin.

The traditional culture and lifeways of the Nisenan were disrupted beginning in the early 1800s. Foreign disease epidemics in 1830-1833 that swept through the densely populated Central Valley decimated native populations, wiping out entire villages. The discovery of gold in 1848 in the heart of Nisenan territory had a devastating impact on the remaining Nisenan. By 1850, with their lands, resources and way of life being overrun by the steady influx of non-native people during the Gold Rush, surviving Nisenan retreated to the foothills and mountains or labored for the growing ranching, farming, and mining industries.

6.5.3.3 Historic Period

One of California's original 27 counties, Sutter County was created at the time of statehood in 1850. Named honor of the famous Sacramento Valley settler and pioneer, John Augustus Sutter, the history of the County is deeply tied to the Gold Rush era and to the agricultural industry. On the western bank of the Feather River, Yuba City was founded in 1849 as a distribution center for supplies to the miners. During this same period, another town (Marysville) was developing on the eastern bank of the Feather River in neighboring Yuba County. As mining efforts moved farther from the river when the easily accessible gold along the sand bars was exhausted, many miners began settling to develop the rich agricultural land in Sutter County.

The late 1800s and early 1900s witnessed the arrival of several rail lines to Yuba City and Marysville, including the Central Pacific Railroad in 1864, the Southern Pacific in 1887, the Northern Electric Railway in 1905, and the Western Pacific in 1909. The railroads provided industrial opportunities with freight service for the burgeoning agricultural produce and canning industries and provided passenger service.

The Northern Electric Railway was established to connect the agricultural towns of the upper Sacramento Valley to the San Francisco Bay Area. From late 1905 to 1918, the 93-mile line connected Sacramento to Yuba City–Marysville and Chico and had a small depot on Second Street in Yuba City. After two acquisitions and renaming as the Sacramento Northern Railway (SN Railway), the 183-mile line achieved the goal of connection with the Bay Area in 1928 when it was part of the Western Pacific Railroad.

Heading west from Yuba City, the Northern Electric/SN Railway turned north at Colusa Junction near the Tierra Buena settlement around present-day Tierra Buena Road and Redding Avenue. From the junction, a branch line headed west to Colusa. The next stop on the route north from Tierra Buena was Pease, which was located on the Pease Ranch and south of the proposed project lease area. Mark Pease was a pioneer raisin farmer in the County, well-known for propagating the Thompson Seedless grape. A spur track built by the railroad at Pease Station made it one of the principal grape shipping points in the region. Continuing north, historic maps show the Northern Electric/SN Railway passing through the proposed project lease area vicinity between Pease and the next stop at Nuestro.

With the growth of automobile use and then the 1930s Great Depression, passenger service by the SN Railway was discontinued in 1940. The power lines were eliminated when the railway converted its freight service to diesel in the early 1960s. The freight depot in Yuba City was closed shortly after the Western Pacific was acquired by the Union Pacific Railroad in 1983. As sections of the line were abandoned, the tracks were removed, although segments of the SN Railway are still used by commuter lines, museums, and freight lines.

Sutter County continues to rely on agriculture as its primary economic industry. Orchard crops (prunes, apricots, peaches, etc.) are particularly productive in areas near the river. Sunsweet Growers operates the world's largest dried tree fruit processing plant in Yuba City. Urban expansion has been greatest in the agricultural areas to the west and south of the City, particularly along the highway corridors where new homeowners can more readily commute to jobs in the greater Sacramento metropolitan area. Some new urban residential expansion has occurred in the north just south of Pease Road.

6.5.3.4 Summary of Known Cultural Resources and Significant Findings

An archival record search of the proposed project lease area and nearby vicinity was conducted by the Northeast Information Center at California State University, Chico, on February 26, 2019. The records search was conducted to determine the extent, if any, to which the current project lease area had been previously surveyed, and the number and type of cultural resources in the area and within the project limits. The archival search consisted of an archaeological and historical records and literature review for an area within a quarter-mile radius of the parcel that contains the proposed project lease area. This record search, plus review of historic maps, land patents, and aerial photographs, provided background on the types of cultural resources expected in the region, and covered the parcel within which the proposed project lease area is contained.

The records maintained by the Northeast Information Center indicate no cultural resources have been previously recorded within the vicinity of the proposed project lease area. The review of historic maps and archival sources found the Northern Electric/SN Railway had passed through the parcel between 1905 and when this section of the line was abandoned, and the tracks removed after acquisition of the Western Pacific by the Union Pacific Railroad in 1983. The tracks are not discernable on the earliest available aerial photograph from 1987 and the 1998 aerial shows a single-family residence within the former railroad grade northeast of the intersection of Tierra Buena Road and Pease Road approximately 730 feet south of the proposed project lease area. By production of the 2012 Sutter USGS 7.5-minute quadrangle, the railroad line is no longer depicted.

No prehistoric or historic-era archaeological sites, ethnographic sites, or historic-era built environment resources were identified during field survey of the parcel nor proposed project lease area by Natural Investigations Company on March 18, 2019. There was no evidence during the survey of the former tracks or grade of the Northern Electric/SN Railway. There was also no evidence within the proposed project lease area of any debris frequently found in association with abandoned rail lines.

The proposed project lease area has been heavily disturbed by construction, removal of the Northern Electric/SN Railway tracks, leveling of the former railroad grade, historic agricultural activities, and use as an agricultural truck yard and storage area. The sensitivity for discovery of subsurface archaeological deposits, materials, or features by implementation of the proposed VESI 10 Tierra Buena BESS project in this heavily disturbed area, which is underlaid by sediments older than evidence for human occupation in this region, is low.

6.5.4 Standards of Significance

CEQA guidelines Section 15064.5 defines historical resources as:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources;

- A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant; or

- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources.

Determination of the significance of impacts to archaeological resources was made in accordance with Section 15064.5 of CEQA which indicates that the project's impact to cultural resources would be considered significant if it would:

- Cause a substantial adverse change in the significance of a historical resource;

- Cause a substantial adverse change in the significance of an archaeological resource; and/or

- Disturb any human remains, including those interred outside of dedicated cemeteries.

6.5.5 Impacts and Mitigation Measures

Review of cultural resources records, Sacred Lands File search, and field survey uncovered no evidence of any significant cultural resources within the proposed project lease area. The proposed VESI 10 Tierra Buena BESS project would not affect any known archaeological or built environment resources of significance, or tribal cultural resources. There is a possibility that undocumented subsurface archaeological deposits or human remains may be encountered during BESS facility construction. If resources are encountered during construction, adverse impacts could be substantial, depending on the significance of the cultural resource. With the implementation of the following mitigation measure, no significant impacts are anticipated for the proposed VESI 10 Tierra Buena BESS project.

CR-1 In the event that unanticipated archaeological resources should be accidentally discovered during project construction, a qualified archaeologist or paleontologist will be retained for evaluation of the find. If the find is determined to be a historical or unique archaeological resource, appropriate mitigation or avoidance measures will be taken in accordance with CEQA Guidelines 15064.5(f). During mitigation of unanticipated archaeological resources, it would not be necessary for work to halt in construction areas not affected by such finds. Any historically significant cultural materials discovered during project construction will be the subject of professional scientific analysis and a report to be prepared by a qualified archaeologist. In the event that such a discovery should contain human remains, the following steps shall be taken as outlined in CEQA Guidelines 15064.5 (e)(1):

(2) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
(B) If the coroner determines the remains to be Native American:
1. The coroner shall contact the Native American Heritage Commission within 24 hours.
2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98 or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
(B) The Descendant identified fails to make a recommendation; or
(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

6.5.6 Cultural Resources Initial Study Responses

Table 6.5-1: Cultural Resources Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☑	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☑	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☑	☐

6.5.7 Responses to Initial Study Questions

6.5.7.1 Historical Resource: Less Than Significant with Mitigation Incorporated

No cultural resources, including archaeological sites and historic era-built environment resources, that presently qualify as historical resources, have been identified within the proposed project lease area and the potential for discovery of buried archaeological materials within the heavily disturbed proposed project lease area is low. Although unlikely, there is a potential that previously unknown archaeological deposits that may qualify as historical resources could be discovered during excavation work associated with construction of the BESS facility. With implementation of the mitigation measure CR-1, discussed above, any potential impacts would be considered less than significant. Therefore, project-related impacts to unanticipated discoveries would be less than significant with mitigation.

6.5.7.2 Archaeological Resource: Less than Significant Impact

No prehistoric or historic-era archaeological sites or ethnographic sites were identified by the record search or survey of the proposed project lease area, and the potential for discovery of buried archaeological materials within the heavily disturbed project lease area is low. Although unlikely, there is a potential that previously unknown archaeological deposits could be discovered during excavation work associated with construction of the BESS facility. With implementation of the mitigation measure CR-1, discussed above, any potential impacts would be considered less than significant. Therefore, project-related impacts to unanticipated discoveries would be less than significant.

6.5.7.3 Human Remains: Less than Significant Impact

Based on the documentary research and proposed project lease area survey described above, no evidence suggests that any prehistoric or historic era marked, or unmarked human interments are present within or in the immediate vicinity of the heavily disturbed project lease area. Although unlikely, there is a potential for unmarked, previously unknown Native American or other graves to be present and be uncovered during construction activities. With implementation of the mitigation measure CR-1, discussed

above, any potential impacts would be considered less than significant. Therefore, project-related impacts to human remains would be less than significant.

6.6 ENERGY

This section contains a description of the potential of the Project on a short-term during construction phase, and on a long-term operational phase to waste energy, be inefficient, and unnecessarily consume energy. Public Resources Code Section 21100(b)(3) and Appendix F of the CEQA Guidelines requires a description (where relevant) of the wasteful, inefficient, and unnecessary consumption of energy caused by a project. This section will evaluate the energy impacts of the proposed BESS Tierra Buena Project.

6.6.1 Background

6.6.1.1 Regulatory Context

VESI 10, LLC, is responding to PG&E's approved plans by the California Public Utility Commission (CPUC) to develop four cost-effective energy storage projects totaling approximately 567 MW. CPUC Resolution E-4909 adopted January 11, 2018 authorized PG&E to procure energy storage to address local deficiencies in the Pease sub-area of the public grid system in Sutter County and ensure local reliability. The Pease local sub-area surrounding the PG&E Pease Road Substation north of Yuba City was one of three specified local sub-areas by the CPUC.

In November of 2016 Calpine Corporation which operates two peaking power plants (Feather River and Yuba City) in the Pease local sub-area, sent a letter to the California Independent System Operator (CAISO) stating Calpine's desire to terminate the Participating Generator Agreements (PGAs) The claim for termination of the two plants is that they are no longer economical to operate at current energy and Resource Adequacy (RA) capacity prices. Additionally, Calpine claimed that the CAISO's capacity procurement mechanism (CPM) does not provide enough planning period for Calpine to make major maintenance, budget, and company planning decisions. Calpine requested that the CAISO conduct reliability studies for the two plants to determine whether they are needed to ensure local reliability. CAISO performed the studies, per Section 41.3 of the CAISO Tariff.

In March 2017, the CAISO determined the Calpine Yuba City Energy Center peaking unit was needed to meet a local capacity need in the Pease sub-area located within the Sierra local capacity area (LCA) and includes Sutter County. The CAISO then designated the peaker plant as reliability must-run resources (RMR) under tariff section 41. The Yuba City Energy Center is a 47.6 MW facility that has been designated to fulfill a CAISO-determined capacity shortfall of 18 megawatts (MWs) in the Pease sub-area.

Use of RMR to ensure reliability has been declining for more than a decade, since 2006. In 2006, the CAISO announced that it was reducing the use of RMR agreements by sixty percent for 2007. CPUC staff expressed concern that the historical procurement process was not followed leading up to these RMR agreements with Calpine. The CPUC became concerned about impacts to Sutter County ratepayers if the RMR contracts with Calpine were executed and extended. These Calpine peaker plant contracts were developed outside of the normal resource adequacy process and the CAISO's Capacity Procurement Mechanism (CPM) was not initiated.

CPUC determined that a lack of competition for these RMR contracts could lead to market distortions and unjust rates for power. Ultimately, this concern lead to the CPUC's passage of Resolution E-4909 under its procurement authority to authorize PG&E to conduct a limited solicitation for resources to fill the local deficiencies and address issues identified by the CAISO. The VESI 10 Tierra Buena BESS project is responding to CPUC Resolution E-4909, by providing new battery storage resources, thereby eliminating the need for the Calpine RMR contracts for the Yuba City peak power plant, or renewal in subsequent years. In addition, the proposed VESI 10 Tierra Buena BESS project will be subject to must offer obligations (MOO) in the wholesale energy markets for Sutter County. In contrast, RMR contracts cover the full cost of keeping the facility available, but the facility is only called upon to serve load if the specific contingency occurs and is not subject to a MOO. In all other time periods, RMR designation can cause ongoing market distortions because it may serve as a disincentive to a peaker plant from regular participation in the energy market.

Several areas of California law give the CPUC authority to act to ensure a safe and reliable energy supply for the state as well as just and reasonable retail rates for such services. The CPUC's authority over utility regulation and supervision arises from the California Constitution, state law and court decisions as well as federal law including, but not limited to, the Federal Power Act, 16 U.S.C. § 791 et seq., and section 714 of the Energy Policy Act of 1992, 16 U.S.C. §824(g). (General Order 167, Section 1; see generally Southern California Edison Company v. Public Utilities Commission (2014) 227 Cal.App.4th 172, 186-196.) Several state statutes direct the CPUC to assure the long-term reliability of California's electric energy supply. Section 380 of the California Public Utilities Code 9 requires the CPUC to establish and enforce resource adequacy requirements to assure "development of new generating capacity and retention of existing generating capacity that is economic and needed." (Section 380, subds. (b)(1); see also subds. (c)-(f).).

The CPUC also exercises authority over electric utilities and in state generation facilities. Section 761.3, subdivision (a) provides that the CPUC "shall implement and enforce standards for the maintenance and operation of facilities for the generation of electricity . . . located in the state to ensure their reliable operation." The CPUC shall enforce the protocols for the scheduling of powerplant outages of the Independent System Operator." The Commission designed General Order (G.O.) 167, *Enforcement of Maintenance and Operation Standards*.

Battery energy storage systems are recognized by the CPUC as fast-responding and reliable and may be constructed in a short timeframe. BESSs are procured at increasing levels to meet local reliability requirements including capacity shortfalls, in lieu of conventional generation. The proposed VESI 10 Tierra Buena BESS project is a direct response to the CPUC Resolution E-4909, and the plan to mitigate increasing electrical rates for Sutter County ratepayers.

6.6.2 Methodology

The energy impact evaluation reflects relevant data from conceptual BESS plans based on existing, equivalent BESS facilities. These BESS production models were used to determine potential impacts in accordance with CEQA guidelines. VESI 10, LLC employs a cutting-edge battery storage technologies and processes to produce peaking power in a manner that exceeds traditional production efficiencies. The final facility design would ultimately be provided by VESI 10, LLC and exact input/output consumption values may vary from assumed values provided herein for purposes of CEQA evaluation.

6.6.3 Environmental Setting

6.6.3.1 Removing Fossil Fuel Power Production

PG&E must coordinate with the CAISO to ensure that its proposed portfolio will contribute to reducing or eliminating the local sub-area deficiencies in the Pease subarea. Without the proposed VESI 10 Tierra Buena BESS project, PG&E and CAISO will be forced to pay high costs to continue the Calpine Yuba City Peaker Power Center operations, which higher costs will be passed on to Sutter County ratepayers. The proposed BESS facility has been evaluated by CAISO and determined to reduce, or eliminate, the local sub-area deficiencies at a reasonable cost. The proposed project development schedule allows for on-line and operational status on or before a date sufficient to ensure that the RMR contracts for the two peaker power plants – Feather River Energy Center and the Yuba City Energy Center – will not be renewed in any year from 2019 through 2022.

6.6.3.2 Reduction of Greenhouse Gas Emissions

Battery storage is used to reduce greenhouse gas emissions associated with gas-fired power generation facilities by storing energy during off-peak hours (lower energy usage/demand times) and dispatching this energy on an as-needed basis during peak demand hours. This technology reduces the amount of fossil fuels consumed during peak hours and maximizes usage of energy from renewable sources such as wind and solar facilities that may not be able to produce energy during times of peak demand. The proposed project would increase local storage of electricity as peaker power, thereby supporting the stability of the local electrical grid and removing offline the old gas fired peaker power plants in Sutter County (Calpine Feather River Energy Center and Calpine Yuba City Energy Center). The proposed project's location

across the street from the PG&E Pease power substation allows the proposed BESS facilities to service the deficiencies created by the shutdown of the gas-fired peaker plants and enabling connection to the existing grid. Benefits of the proposed BESS facility include integration of solar, reduction of the need to ramp up polluting gas plants in the late afternoon, increased local reliability in an area that is currently highly reliant on gas-fired generation, ultimately pushing gas off the system and moving a step closer to a decarbonized grid in Sutter County and California. The CAISO would control the dispatching of electricity from the project. Electricity dispatched from the battery storage system would supplement the existing peaking capacity available to the CAISO system.

6.6.3.3 CPUC Adopted Energy Renewable Plan Goal of 100% Retail Electricity

CPUC approved the proposal by PG&E, one of California's three main investor-owned utilities (IOUs) to deploy large-scale energy storage to replace peaking natural gas plants statewide. CPUC issued its approval of three capacity contracts and one power purchase agreement (PPA) for 567.5MW of energy storage capacity to be built across four large-scale battery storage systems in California. Significantly, each system will store energy for four hours, making them viable capacity resources to replace gas plants. California has been among the fastest adopters of energy storage in the world, partly due to its prolific adoption of solar energy in past decades. The state now has a policy in place (SB100) to source 100% percent of retail electricity by 2045 from renewable sources. The proposed project supports PG&E's compliance with new regulatory and policy measures, such as the Self-Generation Incentive Program (SGIP), which offers support for solar-plus-storage purchases, and AB2514, which mandates that utilities procure over 1.3GW of behind-the-meter storage by the early 2020s and adds energy storage into utilities' long-term Integrated Resource Planning (IRP).

New state energy policies are ensuring that net metering policies are on their way out and increasing application of time-of-use rates, resulting in the increase peak demands. Generating, then storing power for use at peak demand times (when power becomes expensive) is more financially viable than injecting the power into the grid for diminishing returns. BESS facilities achieve these goals by creating aggregated virtual power plants (VPP) through inter-connection of several BESSs, which pools the capabilities of several such systems and offers more economic, reliable services.

6.6.4 Standards of Significance

There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed BESS project.

Under CEQA, an impact to energy is considered significant if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; and/or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

6.6.5 Impacts and Mitigation Measures

The proposed project would provide operational support and a more secure electrical power system for the PG&E distribution and transmission system as a whole, in addition to providing local capacity reserves and energy security benefits for the immediate surrounding Sutter County and Yuba City area. With a ready supply of dispatchable reserve energy, PG&E could reduce its reliance on gas-generation peaking power plants to serve peak power demands or possible loss of transmission capacity due to earthquake, landslides, or wildfires within the Pease electrical service sub-area. The proposed BESS facility will utilize state-of-the-art power conversion and energy storage technologies, which provides high-efficiency power conditioning capabilities for demand management, power dispatch, renewable energy smoothing, etc. The BESS facility will integrate bi-directional power conditioning and battery devices, site controllers, and a cloud management system to provide comprehensive energy storage for the utility application of providing peaker power in the Pease subarea. No impacts anticipated.

6.6.6 Energy Initial Study Responses

Table 6.6-1: Energy Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☑
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☑

6.6.7 Responses to Initial Study Questions

6.6.7.1 Wasteful, Inefficient, or Unnecessary Consumption of Energy during Project Construction or Operation: No Impact

The proposed BESS Project's objectives are to construct and operate an integrated energy storage that would help California achieve its ambitious Renewables Portfolio Standard goals and enhance grid reliability through the provision of key operational flexibility and dispatchability attributes. Additional basic project objectives include helping to enhance grid reliability through construction of a BESS. The operation of the BESS facility would create renewable energy over its planned lifetime and decrease the need for energy from fossil fuel–based power plants in Sutter County, which is considered a beneficial impact to statewide and regional air quality. The energy being stored by the BESS facility would displace the pollutant emissions which would otherwise be produced by existing business-as-usual power generation resources (Sutter County Calpine Gas Fired Peaker Power Plants). The BESS facility would generate a maximum of 20 MW of electricity at any one time. For this reason, operation of the proposed BESS Tierra Buena project would not be considered a wasteful, inefficient, or unnecessary consumption of energy resources.

Construction of the BESS facility would require the consumption of gasoline to power construction equipment and delivery trucks. The BESS facility will take only five to six weeks to construct and operate and will consume minor amounts of fuel compared to the total consumption within Sutter County. As such, proposed BESS project construction would have a nominal effect on local and regional energy supplies, especially over the long-term. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and require recycling of construction debris, would further reduce the amount of transportation fuel demand during BESS project construction. For these reasons, it is expected that construction fuel consumption associated with the BESS project construction would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature within Sutter County.

6.6.7.2 Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency: No Impact

As described above, the BESS facility would generate a maximum of 20 MW of electricity at any one time. The primary objective of the BESS facility is to construct and operate integrated energy storage that will help California achieve its ambitious Renewables Portfolio Standard goals and enhance grid reliability through the provision of key operational flexibility and dispatchability attributes. Thus, the proposed BESS Tierra Buena project would represent a beneficial impact to the state's goal of increasing renewable energy and closing fossil fuel fired peaker power plants. Therefore, No Impacts are anticipated regarding energy.

6.7 GEOLOGY AND SOILS

This section contains a description of the setting regarding geology, soils, and paleontological resources in the proposed project lease area, along with a description of the existing regional physiography, geologic hazards, and soil characteristics in the area. Paleontological resources include any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth. The following discussion is based primarily on the following information sources, and other publicly available geologic literature:

- United States Geological Survey (USGS) topographic and geologic maps;

6.7.1 Background

6.7.1.1 Regulatory Context

Title 24 Uniform Building Code sets building construction standards for safety and protection in the event of ground shaking.

6.7.2 Methodology

Our geologic evaluation consisted of reviewing aerial photographs, researching readily available geologic reports and maps. No site-specific information was available for review at the time of this writing.

6.7.3 Environmental Setting

6.7.3.1 Geologic Setting

The proposed project lease area is situated in the east-central portion of Sutter County, California within the southeastern portion of the Sacramento Valley. The Sacramento Valley represents the northern portion of the Great Valley geomorphic province of California. The foothills of the Sierra Nevada geomorphic province occur east of the Great Valley and the Coast Ranges geomorphic province occurs to the west. The Great Valley is an asymmetrical trough approximately 400 miles long and 40 miles wide forming the broad valley along the axis of California. Erosion of the Coast Ranges to the west, Sierra Nevada mountains to the east and Klamath and Cascade mountains to the north has generated alluvial, overbank, and localized lacustrine sediments up to 50,000 feet thick. Subsequent deformation has folded these sediments into an asymmetrical syncline with its axis off center toward the western Coast Ranges. These sediments thin toward the boundary of the valley basin where they contact against metamorphic terrain and crystalline basement rock of the Sierra Nevada foothills.

According to geologic mapping performed by Helley and Harwood (1985), the proposed project lease area is underlain by Holocene alluvial deposits, including flood plain deposits, derived from the Feather River as it meandered in the area. The proposed project lease area flood plain deposits consist of fine sand and silt. Underlying the flood plain deposits is sandy gravel.

There are no identified fault lines or evidence of ground rupture within the north Yuba City Urban Area nor Sutter County immediately north of the City. There have been some minor faults identified in the Sutter Buttes, located 6 miles north and west of the proposed project lease area.

6.7.3.2 Topography Setting

Site topography is relatively flat with minimal elevation difference between various points. Site survey data was not available for this project at the time of preparing this report. An aerial photograph of the site layout is presented on various figures included in this report. The proposed project lease area is nearly level in elevation with the surrounding area based on topographic map data and observation.

6.7.3.3 Soils

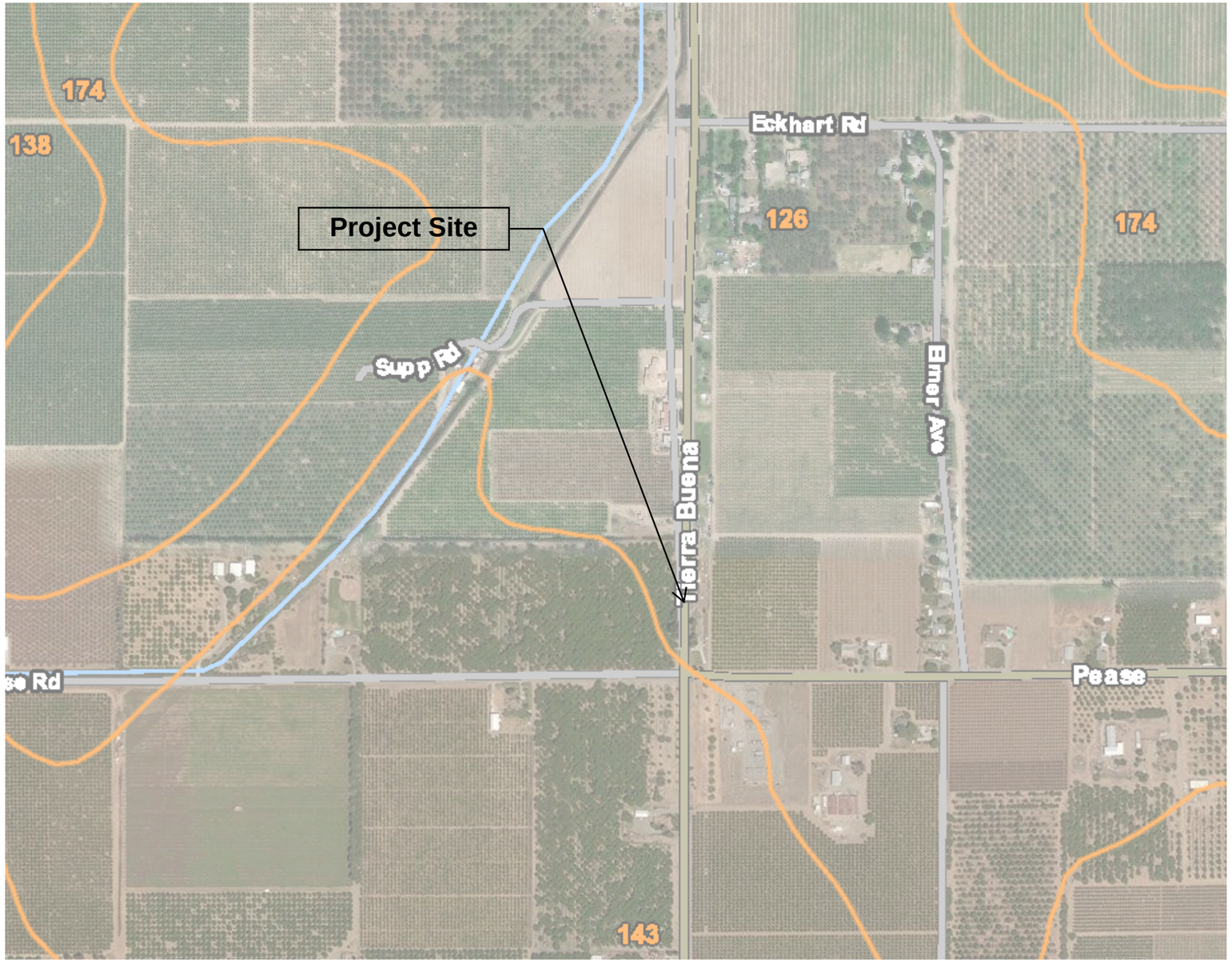
According to the NRCS Soil Survey of Sutter County, Conejo-Tisdale complex soil is mapped throughout the entire proposed project lease area (See Figure 6.7-1: *Soils Map*). The Conejo series consists of very deep, well drained soils that formed in alluvium from basic igneous or sedimentary rocks. Conejo soils are on alluvial fans and stream terraces. lopes range from 0 to 9 percent. The mean annual precipitation is

about 20 inches, and the mean annual air temperature is about 62 degrees F, (17 degrees C). The Tisdale series consists of moderately deep, well drained soils that formed in alluvium from mixed sources. Tisdale soils are on low terraces and have slopes of O to 2 percent. Tisdale soils are on low terraces and have slopes of 0 to 2 percent. The annual precipitation is about 18 inches and the annual temperature is about 62 degrees F.

6.7.3.4 Geologic Hazards

Earthquakes

The proposed project lease area is not located within a currently designated Alquist-Priolo Earthquake Fault Zone (formerly known as a Special Studies Zone). No known surface expression of active faults is believed to cross the proposed project lease area. Fault rupture through the proposed project lease area is therefore not anticipated (See Figure 6.7-2: *Fault Map*).



Map Unit Symbol	Map Unit Name
126	Conejo-Tisdale complex, 0 percent slopes, MLRA 17
138	Liveoak sandy clay loam, 0 to 2 percent slopes
143	Marcum-Gridley clay loams, 0 to 1 percent slopes
174	Tisdale clay loam, 0 to 2 percent slopes

Reference: USDA NRCS Soil Survey

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

N W E S

FIGURE: Soils Map

DATE: 11-20-2019 | SCALE: NTS
BY: SCV | FIGURE: 6.7-1

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SIERRA GEOTECH



Reference: USGS Quaternary Fault and Fold Database of the United States

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

N W E S

FIGURE: Faults Map

DATE:	11-20-2019	SCALE:	NTS
BY:	SCV	FIGURE:	6.7-2

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SIERRA GEOTECH

Seismic Ground Shaking

While active faults are not known to exist at or near the subject proposed project lease area, they are mapped within 100 miles of the proposed project lease area and are capable of generating an earthquake resulting ground shaking at the proposed project lease area. A design-level earthquake on a nearby fault could be capable of producing a mean, peak ground acceleration at this site of about 0.21g during an event of moment magnitude 6.9. However, this will be confirmed through geotechnical investigation during the final design phase of the BESS facility.

Liquefaction

Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained granular soils behave like a fluid when subjected to high-intensity ground shaking. An increase in pore pressure occurs as the soil attempts to compact in response to the shaking, resulting in less grain-to-grain solid contact, and therefore loss of strength. Liquefaction occurs when three general conditions exist: shallow groundwater (i.e., 40 feet below ground surface or less); low density, fine-grained sandy soils; and high-intensity ground motion. Effects of liquefaction on level ground can include sand boils, settlement, and bearing capacity failures below structure foundations.

Review of publicly available information indicates liquefaction of underlying soils is possible during future seismic events. However, liquefaction conditions at the proposed project lease area will be confirmed through a site-specific geotechnical investigation during the final design phase of the BESS facility.

Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or “free” face such as an open body of water, channel, or excavation. In soils, this movement is generally due to failure along a weak plane and may often be associated with liquefaction. For the proposed project lease area, the risk of lateral spreading is considered very low.

6.7.4 Standards of Significance

An impact to geology and soils would be considered significant if the project would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
  - strong seismic ground shaking;
  - seismic-related ground failure, including liquefaction; and/or
  - landslides
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; and/or

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

6.7.5 Impacts and Mitigation Measures

The project would be constructed to meet the safety standards listed in the Uniform Building Code. Best Management Practices (BMPs) for control of erosion would be executed on site as outlined in the Stormwater Pollution Prevention Plan (SWPPP). Grading and erosion control plans would be prepared in accordance with the County's engineer requirements for improvement plans. A detailed geotechnical survey will be completed, and grading, soil compaction, and structural design would be implemented in accordance with the recommendations of the geotechnical report during the final design phase of the BESS facility. (See Appendix H – Geotechnical Report) No significant impacts are anticipated.

6.7.6 Geology and Soils Initial Study Responses

Table 6.7-1: Geology and Soils Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☑	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? *Refer to Division of Mines and Geology Special Publication 42*.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☑

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☑	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☑

6.7.7 Responses to Initial Study Questions

6.7.7.1 Exposed People to Potential Substantial Adverse Effects: Less than Significant Impact

It is highly improbable that the proposed VESI 10 Tierra Buena BESS project would be the cause of loss of life or other injury from risks associated with geologic and soil factors of the proposed BESS facility. The proposed BESS facility will be constructed in accordance with local, state, and federal regulations (as will be discussed in ensuing sections of the document). Included in these regulations are the California Building Code requirements which provide specific seismic regulations as discussed below to reduce risks to acceptable levels. Based on the absence of known faults in the proposed project lease area and the fact that the BESS facility is unmanned and will have no structures for human occupancy it is unlikely

persons will be exposed to potential adverse effects as a result of the development of the BESS facility at this location.

The proposed battery storage enclosures would be engineered to meet all local, state, and federal requirements pertaining to seismicity. The proposed battery storage enclosures would be placed on existing soils at 95 percent compaction with a pervious reinforced concrete slab. The storage enclosures would be level. Each battery storage enclosure would be fastened to earth screws at all four corners of the enclosure. Within the enclosures, battery racks would be attached to the floor of the storage enclosure using methods and materials approved by a structural engineer to withstand damage from seismic ground shaking. No permanent occupancy is proposed at the BESS facility, and people would generally not be present except during construction or during scheduled or required maintenance or repairs of the BESS facility operations. With conformance to all applicable building codes and regulations, impacts would be less than significant. The proposed BESS facility will be constructed to these standards, and as such, will result in less than significant effects related to exposure to loss of life and/or injury.

6.7.7.2 Alquist-Priolo Earthquake Faults: No Impact

The proposed project lease area is not located within a currently designated Alquist-Priolo Earthquake Fault Zone and no known surface expression of active faults is believed to cross the proposed project lease area; therefore, fault rupture through the site is not anticipated. There would be no impact. No Impact.

6.7.7.3 Ground Shaking: Less than Significant Impact

While active faults are not known to exist at or near the proposed project lease area, they are mapped within 100 miles of the proposed project lease area and are capable of generating an earthquake resulting ground shaking at the proposed project lease area. A design-level earthquake on a nearby fault could be capable of producing a mean, peak ground acceleration at this site of about 0.21g during an event of moment magnitude 6.9. The proposed BESS facility would be designed and constructed in compliance with the CBC Seismic Zone 3 design guidelines to address potential seismic-related hazards. Therefore, impacts related to seismic ground shaking would be less than significant.

6.7.7.4 Liquefaction: Less than Significant Impact

All structures associated with the BESS facility would be designed to withstand strong ground motion and ground failure (liquefaction) resulting from a design earthquake in accordance to the adopted standards. Therefore, foundations will be designed to withstand strong ground motion and liquefaction. Such measures would ensure adequate protection of the BESS facility infrastructure. Following the site-specific geotechnical investigation during the final design phase of the VESI 10 Tierra Buena BESS project, additional-project specific geotechnical design specifications will be adopted and impacts resulting from liquefaction are anticipated to be less than significant.

6.7.7.5 Landslides: No Impact

The proposed project lease area is relatively level and all BESS infrastructure will be placed upon compacted soils. Review of publicly available geotechnical data did not identify any potential project impacts from landslides. The lack of significant slopes on or near the proposed project lease area indicates that the hazard from slope instability, both landslides and debris flows, is negligible. Therefore, no impacts resulting from landslides are anticipated. No Impact.

6.7.7.6 Soil Erosion: Less than Significant Impact

Since the proposed project lease area is relatively flat, the potential for substantial soil erosion is considered minimal. BMPs for control of erosion would be implemented as part of the Sutter County's grading and building permits to reduce erosion of soils on the proposed project lease area. BMPs would be implemented as part of the encroachment permits within public rights-of-way, which would mitigate potential impacts on soil erosion as a result of construction. Such BMPs could include but is not limited to the utilization of a sediment trap for all drains, straw bale barriers, the placement of mulch (straw or hydraulic) throughout the parcel and areas of disturbance, and the placement of geotextile mats for any of

the sloped areas. VESI 10, LLC's implementation of BMPs will ensure that this impact would be less than significant.

6.7.7.7 Unstable Soils: Less than Significant Impact

The proposed project lease area is not within an area of known ground subsidence, and the subsurface conditions beneath the proposed project lease area do not appear susceptible to subsidence. In general, subsidence is induced by construction activities such as dewatering or fill placement. Considering the proposed improvements, the potential risk for subsidence at the proposed project lease area appears to be very low because dewatering is not expected. Some of the sand and silt layers at the proposed project lease area may theoretically liquefy and result in post-seismic total and differential settlement. A geotechnical investigation will be carried out at the site prior to any development to establish foundation design parameters, in order to resist or accommodate post-seismic total and differential settlement; therefore, this impact would be less than significant, and no project specific mitigation measures are required.

6.7.7.8 Expansive Soils: Less than Significant Impact

The proposed project lease area is not expected to contain expansive soils which exhibit expansion related hazards. However, a Geotechnical Investigation will be conducted to confirm the presence of expansive soils. If expansive soils are found, the slab-on-grade and exterior concrete flatwork would be supported on a layer of non-expansive fill; therefore, no additional-project specific mitigation measures are proposed, and the resulting impacts would be less than significant.

6.7.7.9 Septic Tanks and Wastewater Disposal System: No Impact

The proposed VESI 10 Tierra Buena BESS project does not require septic tanks and wastewater disposal system as there will be no occupants. Therefore, no impacts are anticipated. No Impact.

6.7.7.10 Directly or Indirectly destroy Unique Paleontological or Geologic Feature Site or Resource: No Impact

On February 21, 2019, an online locality record search was conducted for the project on the University of California, Museum of Paleontology website (UCMP 2019). No localities were found within the proposed project lease area for invertebrates, microfossils, or vertebrates. The geologic map of the area was checked for the geologic rock units for the proposed project lease area (Saucedo and Wagner 1992). The map shows that the proposed project lease area and surrounding vicinity is underlined by the Modesto Formation dating from the late Pleistocene (40,000–11,500 years ago). This formation was deposited by rivers still existing today and forms alluvial terraces and fans of major rivers along the axis of the Central Valley. While no vertebrate fossils have been recovered from the formation in Sutter County, as a diversity of vertebrate fossils have been recovered from sediments referable to this formation at several localities in the Central Valley, including Fresno, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Yolo counties, the Modesto Formation has a high sensitivity for paleontological resources. No fossils, no unique geologic features, and no alluvial deposits attributable to the Modesto Formation were observed during survey within the proposed project lease area nor nearby.

Based on the results of the field survey and assessment of potential direct or indirect project impacts, no additional work for paleontological resources is recommended at this time. Implementation of the proposed BESS Project is considered to have a low potential to uncover or damage fossils or to cause a significant impact on any resource that currently qualifies as a significant paleontological resource. Although the Modesto Formation is considered to have a high sensitivity for paleontological resources, no evidence of this rock units and no fossils or unique geologic outcrops were observed during the survey. Construction monitoring of ground-disturbing activity for the presence of paleontological resources within the heavily disturbed BESS Project area is thus not recommended. Therefore, no impacts are anticipated. No Impact.

6.8 GREENHOUSE GAS EMISSIONS

This section describes the potential effect on greenhouse gas (GHG) emissions as a result of implementing the proposed VESI 10 Tierra Buena BESS project. In addition, this section provides a discussion of federal and state regulations regarding GHG emissions. Potential impacts to air quality, as a general matter, associated with implementation of the proposed VESI 10 Tierra Buena project, were previously discussed in this document. (See: Section 6.3: Air Quality). Updates to the CEQA Guidelines, codified in March 2010, require lead agencies to consider the potential for a project to result in significant emissions of GHGs. Sutter County's Climate Action Plan (CAP) includes a greenhouse gas (GHG) inventory, an emission reduction target, and reduction measures to reach the target. The CAP also includes screening tables used to assign points for GHG mitigation measures. These are the primary considerations to be discussed in the following section of this document.

6.8.1 Background

GHGs have been regulated internationally, federally, and at the state level for nearly a quarter of a century. While several regulations of the matter have failed, and the successes of others have yet to be determined, this section will discuss the application of several of these regulations as related to the proposed VESI 10 Tierra Buena BESS project.

6.8.1.1 International Regulations

In 1988, nearly a decade after the first World Climate Conference (hosted by the World Meteorological Organization) was held to discuss the anthropogenic (human) effects of climate change, the United Nations established the Intergovernmental Panel on Climate Change (IPCC). As a result of subsequent years of IPCC discussions, the IPCC developed a worldwide treaty that outlined several general objectives and principles aimed at limiting worldwide GHG emissions. Known as the United Nation's Framework Convention on Climate Change (UNFCCC) agreement (developed in 1990, signed in 1992, and effective as of 1994). In November 1998, the IPCC hosted another series of meetings aimed at the worldwide reduction of GHGs. Throughout the course of these meetings, the IPCC developed the Kyoto Protocol which required specific reductions of GHGs (the Kyoto Protocol required each signatory country to commit to a particular goal in GHG emissions reductions). While the Kyoto Protocol was successful, in that it heightened global awareness of increasing GHGs, the Kyoto Protocol was seen by many as a failure, as the US, and several other nations which emit mass GHG emissions failed to sign or ratify the Kyoto Protocol. As such, these nations were never bound by the goals and implementation mechanisms of the Kyoto Protocol.

Again, in December 2009, representatives from 170 countries convened to prepare an updated international treaty for GHG emission reductions, known as the Copenhagen Protocol. The Copenhagen Protocol seeks to establish a two-degree limit (Celsius) on global warming by 2050. While the Copenhagen Protocol demonstrated the international attempt to regulate GHG emissions, many have considered the negotiations a failure, as the document produced failed to provide a legally binding document on the participant nations.

At the Conference of the Parties 21, (COP 21) in Paris, in December 2015, Parties to the UNFCCC reached a landmark agreement to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future. The Paris Agreement builds upon the Convention and – for the first time – brings all nations into a common cause to undertake take ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

On June 1, 2017, United States President, Donald Trump announced that the United States would cease all participation in the 2015 Paris Agreement on climate change mitigation. President Trump stated that "The Paris accord will undermine (the U.S.) economy," and "puts (the U.S.) at a permanent disadvantage." During the presidential campaign, then candidate Trump had pledged to withdraw from the pact, saying a withdrawal would help American businesses and workers. Candidate Trump stated that the withdrawal would be in accordance with his American First Policy. In accordance with Article 28 of the

Paris Agreement, the earliest possible effective withdrawal date by the United States cannot be before November 4, 2020, four years after the Agreement came into effect in the United States and one day after the 2020 U.S. Presidential Elections. The Trump White House later clarified that the United States will abide by the four-year exit process. Until the withdrawal takes effect, the United States may be obligated to maintain its commitments under the Agreement, such as the requirement to continue reporting its emissions to the United Nations.

6.8.1.2 Federal Regulations

In October 2009, EPA issued a Final Rule for mandatory reporting of GHG emissions. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufactures of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. The Final Rule went into effect on December 29, 2009, with data collection between January 1, 2010, and March 2011. This rule does not regulate the emission of GHGs, it only requires the monitoring and reporting of GHG emissions for sources above specific thresholds. Additional legislative measures have been taken to attempt to regulate GHGs, in other manners, however; each has failed in the process.

President Donald Trump in 2017 signed several Executive Orders which have impacted the EPA in carrying out GHG emission monitoring and management. President Trump's Executive Order, Promoting Energy Independence and Economic Growth has rolled back GHG regulations on the many energy sector companies. Section 2 of the Executive Order states "*Immediate Review of All Agency Actions that Potentially Burden the Safe, Efficient Development of Domestic Energy Resources. (a) The heads of agencies shall review all existing regulations, orders, guidance documents, policies, and any other similar agency actions (collectively, agency actions) that potentially burden the development or use of domestically produced energy resources, with particular attention to oil, natural gas, coal, and nuclear energy resources. Such review shall not include agency actions that are mandated by law, necessary for the public interest, and consistent with the policy set forth in section 1 of this order. (b) For purposes of this order, "burden" means to unnecessarily obstruct, delay, curtail, or otherwise impose significant costs on the siting, permitting, production, utilization, transmission, or delivery of energy resources."*

6.8.1.3 State Regulations

As previously discussed, CARB is responsible for implementing state policy to address air quality issues and global climate change. CARB, in coordinating and administering state air pollution control programs adopted Resolution 07-55 on December 6, 2007. Resolution 07-55 approved a 427 million metric ton of CO_2e as the statewide GHG emissions limit as of 2020. This statewide target is equivalent to 1990 level (of CO_2e measured in the atmosphere), a common goal for several of California's emissions reductions programs.

California Executive Order S-03-05 (June 1, 2005) mandated a reduction of GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Although the 2020 target is the core of AB 32, and has effectively been incorporated into AB 32, the 2050 target remains the goal of the Executive Order.

In an effort to further the vision of California's Global Warming Solutions Act (Assembly Bill 32), Governor Brown identified key climate change strategy pillars in his January 2015 inaugural address. The pillars recognize that several major areas of the California economy will need to reduce emissions to meet the 2030 greenhouse gas emissions target. The pillars include (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate

pollutants; (5) managing farm and rangelands, forests and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy: Safeguarding California.

Governor Gavin Newsom started his term in January 2019, presenting a set of policy proposals that should improve the state's chances of hitting its ambitious climate targets. California has been experimenting with techniques to get farmland to soak up carbon from the air under its Healthy Soils Initiative. Governor Newsom is seeking to restore funding to the Healthy Soils Initiative.

6.8.1.4 Local Regulations

The Sutter County adopted the Climate Action Plan (CAP) in March 2011 as part of the General Plan to assist lead agencies in assessing and reducing the impacts of project specific GHG emissions on global climate change. Sutter County's CAP includes a greenhouse gas (GHG) inventory, an emission reduction target, and reduction measures to reach the target. The CAP also includes screening tables used to assign points for GHG mitigation measures. Sutter County has developed a two-tiered pre-screening procedure featuring a threshold of 3,000 metric tons of CO_2e per year, which was designed to allow for the most efficient allocation of County resources toward making strides to meet GHG emission reduction goals.

6.8.2 Methodology

This GHG assessment is based on Sutter County's Greenhouse Gas Pre-Screening Measures for Sutter County adopted by the Sutter County Board of Supervisors on June 28, 2016 which is part of the Sutter County CAP. The CAP includes screening tables used to assign points for GHG mitigation measures. Sutter County has developed a two-tier pre-screening procedure. This approach enables Sutter County to minimize time spent on small projects, allowing staff to focus their efforts on larger projects where meaningful reductions in GHG emissions can be achieved.

The two-tiered pre-screening procedure uses a threshold of 3,000 metric tons of CO_2e per year. This threshold is based on a study conducted for San Bernardino County that used a statewide list of projects compiled by the Governor's Office of Planning and Research (OPR). In that study, emissions were estimated for each project within OPR's database. The analysis found that 90% of CO_2e emissions are from CEQA projects that exceed 3,000 metric tons CO_2e per year. Both cumulatively and individually, projects that generate less than 3,000 metric tons CO_2e per year have a negligible contribution to overall emissions. To determine whether a project has the potential to exceed 3,000 metric tons CO_2e per year, Sutter County has developed the following two-tiered pre-screening approach. Under Tier 1, projects are pre-screened out based on project type. Certain types of projects produce limited emissions and will inherently not exceed 3,000 metric tons CO_2e per year. If a project cannot be pre-screened out based on project type, then a Tier 2 evaluation is needed.

6.8.3 Environmental Setting

Climate gases that trap heat in the atmosphere are often called greenhouse gases (GHGs), analogous to the way in which a greenhouse retains heat. Common GHG include water vapor, carbon dioxide (CO_2), methane (CH4), nitrous oxides (N2Ox), fluorinated gases, and ozone. GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH4 results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), and sulfur hexafluoride (SF6) (CalEPA 2006).
The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34° C cooler (CalEPA 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

The environmental setting was previously discussed in detail in the air quality section (See: Section 6.3). To avoid duplicative discussions, please refer to Section 6.3.

6.8.4 Standards of Significance

GHG emissions would be considered significant should the proposed VESI 10 Tierra Buena BESS project:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulations adopted for the purpose of reducing the emissions of greenhouse gases.

6.8.5 Impacts and Mitigation Measures

6.8.5.1 VESI 10 Tierra Buena BESS Project GHG-specific Impacts

This GHG assessment is based on Sutter County's Greenhouse Gas Pre-Screening Measures for Sutter County adopted by the Sutter County Board of Supervisors on June 28, 2016 which is part of the Sutter County CAP and developed on a two-tiered pre-screening procedure which uses a threshold of 3,000 metric tons (MT) of CO_2e per year. This threshold is based on a study conducted for San Bernardino County that used a statewide list of projects compiled by the Governor's Office of Planning and Research (OPR). In that study, emissions were estimated for each project within OPR's database. The analysis found that 90% of CO_2e emissions are from CEQA projects that exceed 3,000 MT CO_2e per year. Both cumulatively and individually, projects that generate less than 3,000 MT CO_2e per year have a negligible contribution to overall emissions. To determine whether a project has the potential to exceed 3,000 MT CO_2e per year, Sutter County has developed the following two-tiered pre-screening approach. Under Tier 1, projects are pre-screened out based on project type. Certain types of projects produce limited emissions and will inherently not exceed 3,000 MT CO_2e per year.

Tier 1 project types include projects consisting primarily of construction activities with little to no operational emissions. Tier projects typically have moderate levels of construction-related GHG emissions, but almost no operational emissions aside from occasional maintenance activities. Except in unusual circumstances, emissions do not exceed 3,000 MT of CO_2e/year for these project types. According to the Sutter County CAP, Tier 1 projects do not need to be evaluated using Sutter County's Tier 2 GHG screening tables. Tier 1 projects identified in the Sutter County GHG Screening Measures Document is meant to be as comprehensive as possible but is not all-inclusive. The Development Services Director may determine that a project type not specifically listed on Table 1 can be screened out as a Tier 1 project. Such determination will be based on findings that the proposed project type is similar in nature and operation to those listed in the Sutter County GHG Screening Measures Document in Table 1: Tier 1 Pre-Screening Project Types and will inherently generate limited emissions below 3,000 MT of CO_2e/year.

The proposed VESI 10 Tierra Buena BESS project falls within the Tier 1 category of projects as defined in the Sutter County GHG Screening Measures Document. The proposed VESI 10 Tierra Buena BESS project will have moderate levels of construction related GHG emissions since the construction period to establish the BESS facility is approximately 16 to 20 weeks and requires no major grading or earthwork. In addition, the BESS facility does not produce any emissions during operations. The finding that the proposed VESI 10 Tierra Buena BESS project qualifies as a Tier 1 project is backed by the following analysis.

The GHG analysis is based on the methodologies recommended by the California Air Pollution Control Officers Association (CAPCOA) CEQA and Climate Change white paper (2008). The analysis focuses on CO_2, N_2O, and CH_4 as these are the GHG emissions that onsite development would generate in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF6, were also considered for the analysis. However, because the project would involve battery storage, the quantity of fluorinated gases would not be substantial since fluorinated gases are primarily associated with industrial processes.

Calculations were based on the methodologies discussed in the CAPCOA white paper (2008) and included the use of the California Climate Action Registry General Reporting Protocol (2009). Emissions associated with the proposed VESI 10 Tierra Buena BESS project were estimated using CalEEMod. Complete CalEEMod results and assumptions can be viewed in Appendix G.

Construction activities would contribute GHG emissions primarily from the combustion of fossil-fuel based fuels by construction equipment. The construction of the proposed VESI 10 Tierra Buena BESS project would generate an estimated 27 MT CO_2e of GHG emissions in 2019 and 29 MT CO_2e of GHG emissions in 2020 for a total of 56 MT CO_2e of GHG emissions. When amortized over a 30-year period (the assumed life of the project), construction emissions would be approximately 1.86 MT CO_2e per year. As discussed in Section 6.3, Air Quality, project maintenance would be scheduled following manufacturer specified recommendations. This analysis conservatively assumes one maintenance trip every quarter for a total of four trips per year. Four trips per year would not have substantial GHG operational impacts. Furthermore, these estimations of GHG emissions do not factor in the reduction of total GHG emissions that would result from the increased efficiency the project would provide for the local power grid. Therefore, the project would not generate emissions exceeding the 3,000 MT per year threshold and impacts would be less than significant.

No specific mitigation measures will be required for the GHG emissions of the proposed VESI 10 Tierra Buena BESS project. Mitigation measures previously discussed in the air quality section will be applicable to the limitation of GHGs. In particular these measures include:

AQ-3: Use alternative fuel or catalyst-equipped diesel construction equipment;
AQ-4: Minimize idling time (e.g., 10-minute maximum)
AQ-5: Replace fossil-fueled equipment with electrically driven equivalents when possible

6.8.6 Greenhouse Gas Emissions Initial Study Responses

Table 6.8-1: Greenhouse Gas Emissions Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
b) Conflict with an applicable plan, policy or regulations adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	☐	☐	☑

6.8.7 Responses to Initial Study Questions

6.8.7.1 Generate Greenhouse Gas Emissions: Less Than Significant Impact

The proposed VESI 10 Tierra Buena BESS project does not have emissions and as a replacement power source for existing gas fired peaker power plants in Sutter County, will further reduce the GHG emissions in Sutter County. As documented above, the only GHG emissions associated with the VESI 10 Tierra Buena BESS project are associated with the construction phase which will last 16 to 20 weeks. The GHG

emissions associated with the construction of the proposed VESI 10 Tierra Buena BESS project would be below Sutter County's threshold levels of significance established at 3,000 MT of CO_2e/year. The proposed VESI 10 Tierra Buena BESS project is therefore deemed to represent a less than significant impact as established by the Sutter County's CAP. Additionally, while GHGs will likely be emitted throughout the construction phase through the utilization of heavy-duty construction equipment, the construction methods will be temporary and will not cause a significant increase in GHG emissions (See: Section 6.3 for detailed analysis). Additional mitigation measures will be employed throughout the construction phase to ensure that air pollution emitted from the construction equipment is limited. As such, the impact on GHG emissions from both the construction and operation of the proposed VESI 10 Tierra Buena BESS project is less than significant.

6.8.7.2 Conflict with an Applicable Plan Adopted to Reduce Greenhouse Gas Emissions: No Impact.

As discussed in the air quality section (See: Section 6.3), the proposed VESI 10 Tierra Buena BESS project will not conflict with the CAP and, therefore, will have no impact on any such plan. The primary concern of the CAP is to demonstrate the reduction of 29 percent in GHGs from a business-as-usual scenario. According to the CAP, projects which are classified as Tier 1 projects under Sutter County GHG Screening Measures Document in Table 1: Tier 1 Pre-Screening Project Types will inherently generate limited emissions below 3,000 MT of CO_2e/year, thus being considered to have a less than significant impact. The proposed VESI 10 Tierra Buena BESS project meets the definition of a Tier 1 project as defined in the Sutter County GHG Screening Measures Document. Considering the implementation of adopted mitigation measures for the construction phase of the VESI 10 Tierra Buena BESS project, there will be No Impact to the local plan that has been adopted to reduce GHGs.

6.9 HAZARDS AND HAZARDOUS MATERIALS

This section contains a description of hazards and hazardous materials in the proposed project lease area as well as hazardous materials which may be found within the vicinity and within the region, generally. The discussion is based primarily on environmental records, and available environmental hazard literature. These data sources were supplemented by observations made during site reconnaissance visits conducted on March 10, 2019 and documented in a Phase 1 Environmental Site Assessment. (See Appendix I: *Phase 1 Environmental Site Assessment*)

Hazards related to the proposed VESI 10 Tierra Buena BESS project primarily fall under two categories based on the origin of the hazard: (1) hazards created by project operations that impact facilities and/or people on the proposed project lease area or nearby and (2) hazards created by nearby uses that impact the BESS facilities and/or people on or near the proposed project lease area. Exposure to hazardous chemicals could fall under both categories (hazardous chemicals could originate onsite or offsite), whereas risk to people and property on the proposed project lease area by proximity to airports would fall under the second category.

6.9.1 Background

6.9.1.1 Hazardous Substances Defined

Hazardous materials can be defined as such based on various criteria, including toxicity, ignitability, corrosivity, or reactivity. The term “hazardous material” is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment. (California Code of Regulations (CCR) Title 22, Division 4.5 Chapter 10, Article 2, §66260.10).

Once a hazardous material becomes ready for discard, it becomes a hazardous waste. A hazardous waste, for the purpose of this report, is any hazardous material that is abandoned, discarded, or (planned to be) recycled. In addition, hazardous wastes may occasionally be generated by actions that change the composition of previously non-hazardous materials. The same criteria: toxicity, ignitability, corrosivity, or reactivity that renders a material hazardous makes waste hazardous. (CCR Tit. 22, Div. 4.5 Ch. 10, Art. 3).

6.9.1.2 Regulatory Context

Numerous federal, state, and local agencies regulate the storage, use, transport, generation, or handling of these materials. The transfer, handling, storage, and transport of hazardous liquid bulk cargoes within the proposed project lease area are governed by the Sutter County Environmental Health Services (SCEHS).

Federal Regulations

Regulations Pertaining to Hazardous Substances

Federal regulatory agencies include the United States Environmental Protection Agency (U.S. EPA), Occupational Safety Health Administration (Fed/OSHA), the United States Department of Transportation (DOT) and the National Institute of Health (NIH). The following represent some of the federal laws and guidelines governing hazardous substances:

- Clean Air Act (CAA) (42 US Code Section 7401, et seq./40 CFR)
- Occupational Safety and Health Act (29 US Code Sections 651, et seq./29 CFR)
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (42 US Code Section 9601, et seq./29, 40 CFR)
- Superfund Amendments and Reauthorization Act Title III (42 USC Section 11001, et seq./29, 40 CFR)
- Resource Conservation and Recovery Act (RCRA) (42 US Code Section 6901, et seq./40 CFR)
- Safe Drinking Water Act (42 US Code Section 300f, et seq./40 CFR)
- Toxic Substances Control Act (15 US Code Section 2601, et seq./40 CFR)

- Hazardous Materials Transportation Act (49 U.S.C. 1801, et seq.) and regulations issued under that Act by the Department of Transportation
- Pollution Prevention Act (42 US Code Section 13101, et seq./40 CFR)
- Renewable Fuel Standard Program and RIN Generation registration (40 CFR 80.1126(e)(2).
- Emergency Planning and Community Right-to-Know Act 40 CFR 355
- Reporting Hazardous Chemical Storage – Tier II Reporting

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is the U.S. EPA, under the authority of RCRA. U.S. EPA regulates hazardous substance sites under CERCLA. Applicable federal regulations are contained primarily in Titles 29, 40, and 49 of the CFR.

Hazardous Substances Worker Safety Requirements

The Fed/OSHA is the agency responsible for ensuring worker safety. Fed/OSHA sets federal standards for implementation of training in the work place, exposure limits, and safety procedures in the handling of hazardous substances (as well as other hazards). Fed/OSHA also establishes criteria by which each state can implement its own health and safety program.

Hazardous Materials Transportation

The DOT regulates the interstate transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. This Act specifies driver training requirements, load labeling procedures, and enclosure design and safety specifications. Transporters of hazardous wastes must also meet the requirements of additional statutes such as RCRA.

Hazardous Substances Handling Requirements

RCRA established a federal hazardous substance “cradle-to-grave” regulatory program that is administered by U.S. EPA. Under RCRA, U.S. EPA regulates the generation, transportation, treatment, storage and disposal of hazardous substances. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the “cradle-to-grave” and specifically prohibits the use of certain techniques for the disposal of certain hazardous substances.

U.S. Environmental Protection Agency (EPA)

The EPA is responsible for the National Contingency Plan and acts as the lead agency in response to an onshore spill. EPA also serves as co-chairman of the Regional Response Team, which is a team of agencies established to aid and guidance to the on-scene coordinator (OSC) during the response to a spill. The EPA also regulates disposal of recovered oil and is responsible for developing regulations for Spill Prevention, Control, and Countermeasures (SPCC) Plans. SPCC Plans are required for non-transportation-related onshore and offshore facilities that have the potential to spill oil into waters of the U.S. or onto adjoining shorelines. The proposed VESI 10 Tierra Buena BESS project would be required to prepare and maintain a SPCC Plan.

State Regulations

Regulations Pertaining to Hazardous Substances

The agency which has primary State jurisdiction to regulate and enforce hazardous materials regulations within the proposed project lease area is SCEHS. However, the Regional Water Quality Control Board (RWQCB) and the California Department of Toxic Substances Control (DTSC) have secondary jurisdiction, and in instances in which hazardous waste may cause air pollution, the FRAQMD would also have jurisdiction. Lastly, both the federal and state Occupational Safety and Health Administration (Fed/OSHA and Cal/OSHA) in the preparation of hazardous materials remediation site safety plans intended to protect the health of construction and contamination remediation workers.

The California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES) establish rules governing the use of hazardous substances. The California State Water Resources Control Board (SWRCB) has primary responsibility to protect water quality and supply.

Cal/EPA was created in 1991 to better coordinate state environmental programs, reduce administrative duplication, and address the greatest environmental and health risks. Cal/EPA unifies the state's environmental authority under a single accountable cabinet-level agency. The Secretary for Cal/EPA oversees the following agencies: Air Resources Board, Integrated Waste Management Board, Department of Pesticide Regulation, SWRCB, DTSC, and OES.

Applicable State laws include the following:

- California Accidental Release Prevention Law (California Health and Safety Code Section 25531, et seq./19 CCR)
- California Fire Code (California Health and Safety Code Section 13000, et seq./19 CCR)
- Uniform Fire Code (California Code of Regulation Section 1924(b), 3221, 6150, 6184)
- Carpenter-Presley-Tanner Hazardous Substance Account Act "State Superfund" (California Health and Safety Code Section 25300, et seq./California Revenue and Tax Code Section 43001, et seq.)
- California Building Code (California Health and Safety Code Section 18901, et seq./24 CCR)
- Hazardous Waste Control Law (HWCL) (California Health and Safety Code Section 25100, et seq./22 CCR)
- California Occupational Safety and Health Act (Cal/OSHA) (California Labor Code Section 6300-6718/ 8 CCR)
- Hazardous Materials Handling and Emergency Response "Waters Bill" (California Health and Safety Code Section 25500, et seq./19 CCR)
- Hazardous Substances Act (California Health and Safety Code Section 108100, et seq.)
- Safe Drinking Water and Toxic Enforcement Act "Proposition 65" (California Health and Safety Code Sections 25180.7, 25189.5, 25192, 25249.5-25249.13/8, 22 CCR)
- California Air Quality Laws (California Health and Safety Code Section 39000, et seq./17 CCR)
- California Clean Air Act (California Health and Safety Code Section 44300, et seq./17 CCR)
- Hazardous Substances Information and Training Act (Cal/OSHA) (Worker Right-to-Know Law) (California Labor Code Section 6360, et seq.)
- Hazardous Substances Release Response Plans and Inventory Act
- Air Toxics "Hot Spots" Information and Assessment Act of 1987 (A.B. 2588) (California Health and Safety Code Section 44300, et seq.) (17 California Code of Regulations Section 90700, et seq.)

Hazardous Substances Handling Requirements

Within the Cal/EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to disposal of hazardous substances under the authority of the Hazardous Waste Control Law (HWCL). Regulations implement the HWCL list of hazardous chemicals and more common substances that may be considered hazardous; establish criteria for identifying, packaging and labeling hazardous substances; prescribe management of hazardous substances; establish permit requirements for hazardous substances treatment, storage, disposal and transportation; and identify hazardous substances that cannot be deposited in landfills.

Under both RCRA and the HWCL, the generator of a hazardous substance must complete a manifest that accompanies the waste from the point of generation to the ultimate treatment, storage, or disposal location. The manifest describes the waste, its intended destination, and other regulatory information about the waste. Copies must be filed with the DTSC. Generators must also match copies of waste manifests with receipts from the treatment, storage, or disposal facility to which it sends waste.

Hazardous Substances Worker Safety Requirements

Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations within the State. Cal/OSHA standards are more stringent than federal regulations. Cal/OSHA regulations concerning the use of hazardous substances include requirements for safety training, availability of safety equipment, hazardous substances exposure warnings, and emergency action and fire prevention.

Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous substances, describing the hazards of chemicals, and documenting employee-training programs.

Both federal and state laws include special provisions for hazard communication to employees who work with and/or encounter hazardous materials and wastes. The training must include safe methods for handling hazardous substances, an explanation of MSDS, use of emergency response equipment, implementation of an emergency response plan, and use of personal protective equipment.

Groundwater Regulatory Background

Acting through the RWQCB, the SWRCB regulates surface and groundwater quality pursuant to the Porter-Cologne Water Quality Act, the federal Clean Water Act, and Underground Tank Regulations. Under these laws, RWQCB is authorized to supervise the cleanup of hazardous wastes sites when two conditions are met: (1) the potential for water pollution exists and (2) RWQCB assistance is requested by local agencies.

Depending on the nature of contamination, the lead agency responsible for the regulation of hazardous materials at the site can be the DTSC, RWQCB, or both. DTSC evaluates contaminated sites to ascertain risks to human health and the environment. Sites can be ranked by DTSC or referred for evaluation by the RWQCB. Cal/EPA (DTSC) and Cal/OSHA are responsible for ensuring that appropriate measures are taken to protect workers from exposure to potential groundwater contaminants.

Hazardous Materials Transport

California law requires that Hazardous Waste (as defined above) be transported by a California registered hazardous waste transporter that meets specific registration requirements. The requirements include possession of a valid Hazardous Waste Transporter Registration, proof of public liability insurance, which includes coverage for environmental restoration, and compliance with California Vehicle Code registration regulations required for vehicle and driver licensing.

State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation (Caltrans). Together, these agencies determine enclosure types used and license hazardous waste haulers for hazardous waste transportation on public roads.

Local Regulations

The Unified Hazardous Waste and Hazardous Management Regulatory Program (SB 1082, 1993) is a state and local effort to consolidate, coordinate, and make consistent existing programs regulating hazardous waste and hazardous materials management. Cal/EPA adopted implementing regulations for the Unified Program (CCR, Title 27, Division 1, Subdivision 4, Chapter 1) in January 1996. The Unified Program is implemented at the local level by Certified Unified Program Agencies (CUPAs).

The SCEHS is the Certified Unified Program Agency (CUPA) for cities and unincorporated areas within Sutter County (County). SCEHS regulates the use, storage and disposal of hazardous materials by issuing permits, inspecting facilities, and investigating complaints. SCEHS issues permits for installation and removal of aboveground and underground storage tanks. SCEHS inspects businesses for compliance with the Hazardous Waste Control Act which places limitations on hazardous waste: storage duration, disposal, and labeling. SCEHS also requires businesses that handle hazardous materials and hazardous wastes to submit an annual inventory of hazardous materials and hazardous wastes as well as an emergency response to incidents involving those hazardous materials and wastes.

Sutter County 2030 General Plan

The Sutter County 2030 General Plan contains goals and policies for hazardous materials, including the following specific goals and policies that are applicable to the proposed VESI10 Tierra Buena BESS project:

PHS 3.1 Use and Disposal. Ensure that the use and disposal of hazardous materials and waste complies with appropriate federal, state, and local requirements.

PHS 3.2 Hazardous Materials Area Plan. Maintain and implement a Sutter County Hazardous Materials Area Plan consistent with the requirements of state law.

PHS 3.3 Project Review. Coordinate with appropriate state and federal agencies to review all proposed development projects that manufacture, use, or transport hazardous materials and waste.

PHS 3.4 Hazardous Materials Business Plan (HMBP). Require the owner or operator of a facility to complete a HMBP if the facility handles hazardous materials or a mixture containing hazardous materials that has a quantity equal to or greater than 55 gallons for liquid, 500 pounds for solids, or 200 cubic feet for compressed gas. Provide a copy of the HMBP to the Sutter County Environmental Health Services (as a Certified Unified Program Agency).

PHS 3.5 Remediation of Known Sites. Require that businesses and property owners of known hazardous materials contamination and waste sites coordinate with the County, state, and/or appropriate federal agencies to develop and implement a plan to investigate, facilitate, and manage the remediation of the known sites.

PHS 3.6 New Development. Ensure buildings and sites are investigated for the presence of hazardous materials and /or waste contamination before development for which County discretionary approval is required.

PHS 3.7 Sitting of New Development. Ensure that the siting of facilities that transfer, treat, store, or dispose of hazardous materials is compatible with surrounding land uses.

Sutter County Code of Ordinances (Title 700 Health and Sanitation, Chapter 770 Regulations Pertaining to the Certified Unified Program Agency, 770.005 through 770.130)
These portions of the Sutter County Code of Ordinance regulate and manages hazardous materials and wastes within the county through implementation of the Unified Program.

Sutter County Code of Ordinances (Title 600 Fire Prevention, Chapter 600 Fire Prevention and Regulation, 600.010 through 600.040)
These portions of the Sutter County Code of Ordinances regulate the construction of buildings and other structures used to store flammable hazardous materials, and the storage of these same materials. These sections ensure that the business is equipped properly and operates in a safe manner and in accordance with all applicable laws and regulations. The Code also requires maintaining emergency response plans including evacuation plans, approved by the Yuba City Fire Department-County Service Area G.

6.9.1.3 Required Permits and Approvals

The Yuba City Fire Department/CSA-G and CUPA will require VESI 10, LLC to prepare and submit contingency plans: Fire Protection Plan, Emergency Response Plan, and Hazardous Materials Business Plan.

6.9.2 Methodology

Surrounding potential hazards, hazardous materials, and public health impacts associated with the proposed VESI 10 Tierra Buena BESS project were evaluated through the review of historical records and government agency-maintained databases and records of known hazards at within the area, hazardous materials contamination, generation, and/or storage as part of the Environmental Database Report (EDR). A Phase 1 Environmental Site Assessment (ASTM 1527-E) was performed on the property in 2019, neither of which revealed existing hazardous conditions on the property. See Appendix I: *Phase 1 Environmental Site Assessment*.

Four steps have been undertaken to assess the safety impacts and the hazards associated with the proposed VESI 10 Tierra Buena BESS project: (1) develop a range of potential upset scenarios associated with the proposed VESI 10 Tierra Buena BESS project; (2) estimate the likelihood of the upset scenarios occurring; (3) estimate the consequences of the scenarios, should they occur; and (4) determine the significance of risk based on the probability of occurrence and the severity of consequences.

The risk-of-upset analysis evaluates outcomes of potential upset scenarios, which are the culmination of several events that result in a hazard to the public and/or environment. Some upset scenarios could lead to a significant impact to public safety (e.g., battery storage system malfunction, runaway reaction or overcharging event, results in fire, toxic air release that reaches a residence and results in an injury). Other upset scenarios do not create a significant impact to safety but create a significant impact to the environment (e.g., battery storage system malfunction resulting in emitting pollutants into the atmosphere). Parts of a given scenario have different likelihoods or probabilities. Probabilities and consequences of various project-related upset events and scenarios are assessed in this section.

6.9.3 Environmental Setting

6.9.3.1 Phase 1 Environmental Site Assessment (ESA)

A Phase 1 Environmental Site Assessment (ESA) was conducted by Sierra Geotech, Inc. for the parcel and proposed project lease area. (See Appendix I: *Phase 1 Environmental Site Assessment*) The review included a preliminary review of past and present land use practices; a records review (historical site plans, environmental regulatory/agency lists and records); reconnaissance of the parcel and proposed project lease area and surrounding area; and interviews with Mr. Luis Garcia Valdez, the property owner and owner of Valdez Trucking which operates an agricultural truck yard on the parcel regarding the current and past operations on the proposed project lease area. Subsurface investigations were not performed. However, based on the ESA, no potential subsurface impacts were identified. EDR records were reviewed in conjunction with the ESA completed by Sierra Geotech, Inc. staff in November 2019. The November 2019 ESA encompassed the entire parcel from which the proposed project lease area will be carved out of approximately (+/- 0.32 acre). No Recognized Environmental Condition (REC) or other contamination was found on the parcel in November of 2019.

6.9.3.2 Setting.

The proposed lease area for the VESI 10 Tierra Buena BESS project is the northern portion of a 1.75 +/- acre parcel. The VESI 10 Tierra Buena BESS project will occupy approximately 0.32 +/- acre which is currently vacant and used as storage for assorted agricultural trailers and trucks. The southern portion of the parcel approximately 1.5 +/- acre is used as the Valdez Truck Yard and the Valdez residence. The VESI 10 Tierra Buena BESS project will occupy land that is directly north of the Valdez Trucking Yard. The PG&E Pease Road power substation is due south approximately 730 feet and immediately adjacent to PG&E electrical distribution lines on the eastern boundary of the main parcel.

To the north of the VESI 10 Tierra Buena BESS project is a parcel of approximately 950 feet long with a residence and outbuildings on the northern end of the parcel. Across Tierra Buena Road are orchards and agricultural buildings which store ag-equipment and supplies. A residential area of single-family homes is approximately 1,100 feet east of the proposed project lease area. There are two single family residential dwellings across Tierra Buena Road, approximately 365 feet northwest of the proposed project lease area and the Valdez residence located south approximately 460 feet of the proposed project lease area. The project lease area has been used in the past to store semi-trucks and ag-trailers. Two sensitive receptors, the Islamic Center of Yuba City is located half mile north, and the Sikh Temple, Gurdwara Sahib Yuba City is located a half mile south of the proposed project lease area. The nearest school, Butte Vista Elementary School is located approximately one (1) mile southeast, and Encinal Elementary School, is located just over three and half (3 ½) miles north of the proposed project lease area. The VESI 10 Tierra Buena BESS project lease area is not located near any airport or aviation facility. The nearest airport is the Sutter County Airport, which is located approximately 4.5 miles southeast of the proposed project lease area.

6.9.3.3 BESS Safety Systems and Controls.

Safety and reliability systems would be implemented in accordance with a Design Failure Mode and Effects Analysis (DFMEA) performed as part of the BESS facility's early design phase. Safety and reliability systems would include voltage and current protection via software controls; physical protection via component isolation; and fire alarm and suppression systems. The battery storage control system has built-in, redundant protection functions at multiple equipment and software levels for:

- Battery cell over/under temperature protection
- String over voltage protection
- String over-current protection
- Environment over/under temperature protection
- Islanding (i.e., "anti-islanding" protection that would cause an automatic shutdown in the event of a power outage or other grid problem)

The battery system would be comprised of lithium ion pouch cells that are arranged into a module, where multiple modules are placed into a rack, and racks are placed into an enclosure and enclosures are clustered. There are physical, electrical, and control designs at each level that mitigate safety risks. These multiple layers of protection are summarized below, as well as protections external to the enclosure provided at the VESI 10 Tierra Buena BESS project site and from local agency fire and emergency response services.

Lithium Ion Battery Technology Overview. In general, a Lithium Ion (Li-ion) battery is a rechargeable type of battery consisting of three major functional components: a positive electrode made from metal oxide; a negative electrode made from carbon; and, electrolyte solution made from lithium salt. Lithium ions move from negative to positive electrode during discharging and in the opposite direction when charging.

There are five major Li-ion battery sub-chemistries that are commercially available. They are:

1. Lithium Nickel Cobalt aluminum (NCA)
2. Lithium Nickel Manganese cobalt (NMC)
3. Lithium Manganese oxide (LMO)
4. Lithium titanite oxide (LTO)
5. Lithium-iron phosphate (LFP)

It is anticipated by VESI 10, LLC that the battery storage system would utilize an LFP technology developed by many manufacturers (*Final Determination will be made at 90% Plans and Specifications Stage*). The proposed battery storage system would be designed, constructed, operated and maintained in accordance with applicable industry best practices and regulatory requirements, listed below in Table 6.9.1: *Industry Design Standards*.

Table 6.9-1: Industry Design Standards

Regulations & Standards	Compliance
Inverter, Converter, Controllers & Interconnection System Equipment	UL 1741 (Inverter only)
Interconnecting Distributed Resources with Electric Power Systems	IEEE 1547
Seismic Rating	IBC / CBC Zone 4
Communication	FCC Part 15B Class A
National Electric Code	The system would conform to NEC 2011, ANSI/NFPA 70 with regards to wire sizing, fuses, and circuit breakers.
Sizing of the Halon fire suppression system	NFPA 2003
Transportation	UN Manual Section 38.3, DOT, PHMSA Class 9
Harmonic Control in Electrical Power Systems	IEEE 519
Signage of Hazardous Materials for Emergency Response	NFPA 704
Product Safety Signs and Labels	ANSI Z535
Transformer Standards	ANSI C57
Surge Withstand Capabilities	ANSI C37
Battery Cell safety	UL1642, IEC62133, EN62133, UN38.3
Battery Module safety	UL1973, UN38.3

Industry standards are outlined in a 2014 study prepared by Pacific Northwest National Laboratory for US Department of Energy (Conover 2014). A partial list of these design materials includes:

- Computer software analysis for battery storage system heat generation and HVAC capacity based on final selection of the battery chemistry
- Battery rack design drawings
- A jurisdictional agency (e.g. Yuba City Fire Department/CSA-G) evaluation of fire suppression system adequacy
- Vendor report on effectiveness of Stat-X (aerosol) Fire Suppression System
- CAISO accepted power system load flow (PSLF) modeling for evaluation of the battery storage system's effect on the electrical grid
- Transformer short circuit duty requirements (short circuit duty is a description of the severity of overcurrent that a device can reasonably be expected to withstand)

This study also provides recommended safety measures based on other California battery storage projects. Lithium batteries are used as a cathode material for electric vehicles and stationary energy storage facilities due to their low cost, thermal stability, abundance and lack of toxicity. Numerous tests are performed to examine the risk of fire and explosion to these products. According to many manufacturers of Lithium-ion batteries no fire or explosion has occurred under the scenarios tested to date.

Governing Regulations and at BESS Existing Facilities. The components of BESS battery systems are qualified to the following international standards:

- Battery Cell: UL 1642, UN DOT Transportation Testing and Certifications (UN DOT 38.3) for Lithium Batteries
- Battery Module: UL 1973, CE, EMC, UN DOT Transportation Testing and Certifications (UN DOT 38.3) for Lithium Batteries. UL 1973 requires that a battery storage system cannot be an

explosion hazard when attacked by an external fire source, and that a single cell failure in an energy storage system pack would not result in a cascading thermal runaway.

- Production facilities and quality procedures: ISO9001; ISO14001; OHSAS18001[1]; and Technical Specification (TS) 16949.

Lithium Ion Cell Level Features. Each battery is built up from several small, pouch-type cells. Each cell measures approximately 9.8 inches in length, 6.5 inches in width, and is 0.2 inches thick. The battery cell must pass abuse tests according to UL Standard 1642 for Lithium Batteries. This standard includes protocols for several tests designed to reduce the risk of fire or explosion, including electrical tests, mechanical tests, environmental tests, and fire exposure tests.[2] In the case of any cell-level thermal event, the module is designed to provide additional containment to prevent thermal runaway.

Module Level Features. The system is designed to prevent events such as: over currents, over voltage, under voltage and over temperature. The module must also comply with UL Standard 1973 - Batteries for Use in Light Electric Rail and Stationary Applications.[3] Additional physical containment and electrical protection is provided in both the hardware and the software such as module metal encasing, rack structure and fastening, battery management system (BMS) software for diagnosing abnormal characteristics, fuses in each module and at the rack level.

Many BESS facilities have tested the fire suppression system in a test where they artificially created a short circuit in a module. The fire was put out after a minute from the start of gas injection (gas injection for 90 seconds). Tests have also verified that a fire in one battery module would not result in the fire spreading to adjacent modules. The potential risk of explosion is also addressed in the cell and module design. The cell's metal electrodes are contained in a thin, non-rigid aluminum 'pouch'. During normal charge and discharge cycling of the battery, there would be some limited degradation of the electrolyte and cathode, and the chemical processes would result in the production of a small quantity of CO_2 gas. This results in a slight swelling of the pouch with the volume increasing by about 5 percent. Such swelling is accounted for in the design of the battery sub-modules (i.e., stacks of battery cells) by (1) inclusion of compressible pads between cells, and (2) design of the sub-modules' end-plates, such that there is no risk to the integrity of the cells, sub-modules, or complete battery systems.

Rack Level Features. Typical BESS facility battery modules are assembled into self-contained racks. Battery protection at the rack level includes BMS communication, pre-charge relay and resisters for inrush current prevention, circuit breakers to protect overcurrent, sensors for measuring voltage and current, and emergency stops.

Enclosure and Control System Features. Inside the enclosure that houses the battery cells, modules, and racks, there is a broader system that enables the racks' energy to be aggregated, inverted from DC to AC power, and transformed to the interconnection voltage level. The enclosure that would house the battery racks (roughly 24 racks per enclosure) would have several safety systems including an HVAC system that is sized to maintain the advised temperature range and account for the heat dissipation from the batteries when being charged or discharged. The heating and cooling system is designed with redundancy.

System-level protections designed to maintain battery health and safety include an automatic stop to battery operations at certain temperatures and dangerously high and low states of charge (i.e., near 0 percent and 100 percent).

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[1] See: http://www.ohsas-18001-occupational-health-and-safety.com/

[2] See: http://ulstandards.ul.com/standard/?id=1642_5

[3] See: http://ulstandards.ul.com/standard/?id=1973_1

The battery storage system control system would detect and categorize all device or internal communication faults as Warning, Normal Error or Critical Error faults. All fault occurrences would generate alerts that are sent to monitoring systems and over Web Service to the battery storage system supplier's portal, and email notifications to the BESS operator. If any critical error occurs, the system stops charge/discharge operations within milliseconds and the DC contactor is opened to cut off any current flow.

The battery storage system would be controlled remotely from VESI 10, LLC offices. However, the battery storage system's onsite emergency shutdown system (ESS) controller has a Human Machine Interface (HMI) accessible from the front of the inverter in the PCS that would enable onsite personnel to view status information, including state of charge, charge/discharge modes, and the ability to input commands to operate the system in local mode.

This HMI also enables Sutter County emergency responder personnel to shut off the equipment in the event of an emergency. In addition, security lighting and surveillance cameras would be installed and continuously monitored from VESI 10, LLC's operations facility.

The battery storage system design adheres to requirements related to posted safety and warning placards. The battery storage system supplier would develop site specific operating and maintenance and safety manuals. As part of the BESS facility commissioning process, the battery storage system supplier would provide classroom and field training (operations, maintenance and safety) to the VESI 10, LLC, operators including instructions and procedures on PCS and battery/module safety during maintenance and replacement. Manual disconnects would be installed on the auxiliary power, PCS, and battery strings, enabling manual shutdown of all electrical equipment during maintenance and service.

Fire Safety and Suppression Systems. The battery storage system would be designed and operated in accordance with applicable industry best practices and regulatory requirements, including fire safety standards (Table 6.9.1: *Industry Design Standards*). In addition, the battery installation would follow NFPA 850 standards (NFPA 2015).

The battery storage unit enclosure includes a fire suppression system designed to detect and suppress fires. If smoke or heat is detected or if the system is manually triggered, an alarm would sound, horn-strobes would flash, and the system would release Stat-X aerosol fire suppression from pressurized storage cylinders in the battery enclosure. Stat-X aerosol fire suppression generators provide highly effective, environmentally friendly fire suppression for fires in enclosed facilities and local spaces. Unlike FM-200, Halon or C02, the Stat-X systems don't require the pressure vessels, pipe work, and installation manpower. The aerosol generators are virtually maintenance free. The Stat-X generators effectiveness is a function of its patented design, aerosol composition, and the ultra-fine aerosol particles produced. Both are non-toxic, and non-corrosive. The agent is potassium based and is 5 times as effective as Halon. Primary extinguishing mechanism is chemical interference with free radicals of flame, which interrupts the propagation of fire. Stat-X is an ideal fire solution for energy storage containers, or sea cans with power generators.

Stat-X system is listed as "acceptable for occupied areas" under the Significant New Alternatives Program (SNAP), the U.S. EPA program to evaluate and regulate substitutes for ozone-depleting chemicals. When discharged, the Stat-X aerosol flows through a network of nozzles in the battery enclosure and vaporizes, extinguishing a fire within seconds. Stat-X aerosol is specifically designed to extinguish Li-ion battery fires, and does not contain water, which is reactive with Lithium. The aerosol agent is used as a propellant in pharmaceutical inhalers that dispense asthma medications. Activation of the Stat-X system would not endanger VESI 10 LLC, BESS facility operating personnel or emergency responders.

VESI10 Tierra Buena BESS Facility Safety Systems. Emergency response plans will be prepared for the VESI 10 Tierra Buena BESS Facility prior to operations. VESI 10, LLC will initiate consultation with the Yuba City Fire Department/CSA-G to address potential contingency situations associated with the battery storage systems. In coordination with the Yuba City Fire Department/CSA-G, and Sutter County

Environmental Health Services, the facility's contingency plans, including the Hazardous Materials Business Plan and Emergency Response Plan would be prepared with appropriate plans and procedures to address battery storage system safety components.

Local Agency Response. Additional fire protection and emergency response capability is available from local fire and emergency response services. The proposed VESI 10 Tierra Buena BESS project is located within the County Service Area G (CSA-G) for fire protection. The nearest fire station to the project site is Station 7 located approximately 1.6 miles to the southwest at 2855 Butte House Road, Yuba City, near the intersection of Coy Drive and Butte House Road in Yuba City. Response time to the project site is approximately three to five minutes.

Lithium Ion Transportation. Transportation of lithium ion batteries is subject to 49 CFR 173.185 – DOT Pipeline and Hazardous Material Administration. These regulations include requirements for prevention of a dangerous evolution of heat; prevention of short circuits; prevention of damage to the terminals; and the requirement that no battery come in contact with other batteries or conductive materials.

6.9.3.4 Hazardous Materials which may occur within the vicinity.

The agricultural community within Sutter County has many agricultural uses related to shipping and receiving of goods and commodities which include hazardous materials. Numerous facilities that handle, store, or transport hazardous material are located nearby the proposed project lease area. Regulated, hazardous materials in the Sutter County agricultural community may include ag-use compounds such as chlorinated solvents, ammonia, petroleum products, compressed gases, paints, cleaners, fertilizers, herbicides and pesticides. Numerous federal, state, and local agencies regulate the storage, use, transport, generation, or handling of these materials. The transfer, handling, storage, and transport of hazardous materials within Sutter County is planned for by regional and community plans and is also under the review of a number of agencies and regulations, including the Yuba City Fire Department/CSA-G, SCEHS-CUPA, and state and federal departments of transportation (49 CFR 2 Part 176).

6.9.4 Standards of Significance

An impact regarding hazards or hazardous materials would be considered significant if the project would:

- Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and/or
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

6.9.5 Impacts and Mitigation Measures

There would be no impacts related to airports, fire dangers related to wildlands or residential housing, or emergency plans. With construction of the proposed VESI 10 Tierra Buena BESS project, these impacts (or lack thereof) would remain the same as no airport would be located within 4.5 miles, and no wildlands or residences would be constructed within 250 feet of the proposed BESS facilities.

The following analysis reviews the risk of upset and hazards associated with the proposed VESI10 Tierra Buena BESS project.

6.9.5.1 Risk Battery Transport in case of Replacement

Battery storage systems, such as the proposed VESI10 Tierra Buena BESS project, are designed so that batteries would not degrade to the point of needing to be replaced during the life of the project. However, if transport of batteries is necessary, this material would be classified mostly as universal waste under the Department of Toxic Substances Control (DTSC) regulations and guidance (DTSC 2015). Transportation of lithium ion batteries is subject to 49 CFR 173.185 – DOT Pipeline and Hazardous Material Administration. These regulations include requirements for prevention of a dangerous evolution of heat; prevention of short circuits; prevention of damage to the terminals; and the requirement that no battery meet other batteries or conductive materials. Adherence to the requirements, VESI 10, LLC personnel training, safe interim storage, and segregation from other potential waste streams would minimize any public hazard related to transport, use, or disposal of BESS facility batteries. In order to ensure that these requirements would be in place, mitigation measure HM-1 requires that the emergency plans be prepared for the VESI10 Tierra Buena BESS project and include the planning and training elements. Other uses of hazardous materials on the proposed project lease area would be those normally associated with modern electric utility infrastructure, including copper wiring and insulators. No liquid or gaseous compounds are expected to be used for the proposed BESS facility operations. Adherence to these requirements and mitigation measure HM-1 would ensure that project impacts would be less than significant.

6.9.5.2 Fire Hazards

The proposed VESI10 Tierra Buena BESS project would be a passive use that would not use hazardous materials on a regular basis that could be upset and cause a hazardous condition for the public. However, there is a risk of fire on the site resulting from overheating or other electrical fault conditions in the battery storage system, or fire that spreads to the proposed project from an adjacent property. If the multiple fire suppression systems that are proposed to be included in the battery storage system were to fail and emissions from the battery equipment were to be released to atmosphere, the fumes and smoke could be irritating and toxic. Depending on specific lithium chemistry, fumes could contain hydrogen fluoride or phosphorous compounds containing fluorides (Andersson et al. 2013).

The proposed battery storage system would include physical, electrical, and control features in order to control potential adverse conditions at the sources, and thus prevent offsite impacts. Protective measures are included in the project at the lithium ion cell level, the module level, the rack level, and the enclosure level to mitigate fire hazards.

The proposed VESI 10 Tierra Buena BESS project proposes to use one of the standard type lithium-ion batteries (To be determined at 90% plans and specification). All battery manufacturers have performed multiple tests to examine the risk of fire and explosion when using lithium-ion type batteries. Under the scenarios tested to date, no fire or explosion has occurred. The battery system would be protected by alerts, alarms, fire suppressions systems inside the enclosure, and external to the enclosure in the VESI10 Tierra Buena BESS facility. The battery storage system is designed in accordance with various electrical and safety codes and regulations and includes numerous safety features as described in the existing conditions section above. Key features include DFMEA in early design; voltage and current protection via software controls; physical protection via component isolation; and, fire alarm and suppression systems. The battery storage system enclosure would include a fire suppression system designed to detect and suppress fires. If smoke is detected or if the system is manually triggered, alarm bells would sound, horn-strobes would buzz and flash, and the Stat-X system would release a dry aerosol agent from canisters mounted in the battery storage system enclosure. The Stat-X aerosol agent is stored

in pressurized cylinders. When discharged, the aerosol composition (potassium based), and the ultra-fine aerosol particles produced in the enclosure, creates chemical interference with free radicals of flame, which interrupts the propagation of fire. The system is designed to extinguish a fire within 10 seconds.

The aerosol agent is specifically designed to extinguish Li-ion battery fires, and would not contain water, which is reactive with Lithium. The aerosol agent is used as a propellant in pharmaceutical inhalers that dispense asthma medications, and exposure represents no risk to first responders if Stat-X activation occurs. There are some battery manufacturers that are producing batteries for BESS facilities that can use water for fire suppression. Other potential upset conditions include intentional or unintentional damage, theft, or vandalism resulting in damage to the battery storage system or exposure of the battery system components to the environment. Under such conditions, the equipment would be shut down and rendered inoperable, with no potential for offsite impacts. To prevent these types of upset conditions, the battery storage system would be located inside a secure gated and fenced area. Security lighting and surveillance cameras would be installed and continuously monitored from VESI 10, LLC's operations facility. Emergency response plans will be prepared and coordinated with Yuba City Fire Department/CSA-G. In order to ensure that the Yuba City Fire Department/CSA-G approves of all safety plans for the proposed VESI 10 Tierra Buena BESS project, mitigation measure HM-1 requires that the VESI 10 Tierra Buena BESS facilities contingency plans, including the Fire Protection Plan, Emergency Response Plan, and Hazardous Materials Business Plan incorporate appropriate plans and procedures to address potential contingency situations associated with the battery storage system in coordination with the Yuba City Fire Department/CSA-G, and the Sutter County Environmental Health Services-Certified Unified Program Agency (CUPA).

6.9.5.3 Public Safety

Sensitive public receptors are those locations such as residences, schools, daycare centers, etc. which might have persons present for extended periods of time, and thus would be potentially affected by a nearby catastrophic event. In the event of an accident in the vicinity of a sensitive receptor, consequences of the accident could be much greater than at other locations. There are no sensitive receptors located near the proposed VESI10 Tierra Buena BESS facility. The nearest sensitive receptor is the Islamic Center of Yuba City which is located a half mile north of the proposed project lease area off Tierra Buena Road.

During normal operation there would be no emissions from the project. However, in the event of a battery storage system malfunction, such as a runaway reaction or overcharge event, the project could emit pollutants to the atmosphere. The expected pollutants emitted from the modeled scenarios are listed in Table 6.9-2: *Compounds Emitted During a Battery Storage System Malfunction.*

Table 6.9-2: Compounds Emitted During a Battery Storage System Malfunction

Constituents Emitted		
Hydrogen	Carbon Monoxide	Carbon Dioxide
Methane	Acetylene	Ethylene
Ethane	Propene	Propane
Hydrogen Fluoride	Sulfur Dioxide	Nitrogen Oxides
Phosphine	1,1,1,2,3,3,3-heptafluoropropane (Fire Suppressant)	

To determine the reasonable worst-case public health impacts for this analysis, it was assumed that the battery storage system fire suppression system would activate but not control the system malfunction. For this event, it was further assumed that the system malfunction would continue for up to one hour at which time the fire department would arrive onsite and open the enclosure. (Fire Department response time is three to five minutes from the time of notification).

Three different system malfunctions are considered: (1) an elevated temperature situation due to a runaway reaction with no combustion (venting with no combustion); (2) an elevated temperature situation due to a runaway reaction with combustion; and (3) and an overcharge event with combustion. For all three malfunction scenarios, it was assumed that the release of pollutants to the atmosphere would occur within a relatively short period of time (i.e., one hour or less). The primary pollutants released due to the malfunction scenarios would be five hazardous substances: 1) hydrogen chloride (HCl); 2) hydrogen fluoride (HF); 3) hydrogen cyanide (HCN); 4) carbon monoxide (CO); and 5) carbon dioxide (CO_2) along with lesser amounts of other compounds, including the chemicals released by the fire suppression system.

Sensitive receptors were defined as the locations occupied by groups of individuals who may be more susceptible to health risks from a chemical exposure. The nearest residential receptor is the Valdez residence located approximately 505 feet south of the battery storage system location, and two residences across Tierra Buena Road located northwest approximately 265 feet. A residential area of single-family homes is located approximately 1,100 feet east of the proposed project lease area. Two sensitive receptors, the Islamic Center of Yuba City is located half mile north, and the Sikh Temple, Gurdwara Sahib Yuba City is located a half mile south of the proposed project lease area. The nearest school, Butte Vista Elementary School just over one (1) mile southeast, and Encinal Elementary School, located just over 3 ½ miles north of the proposed project lease area. These sensitive receptors are shown in Figure 6.9-1 *Sensitive Receptors Near Proposed Project.*



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: Sensitive Receptors Near Proposed Project

DATE: 03-21-2019	SCALE: NTS
BY: SCV	FIGURE: 6.9-1

viridity energy
An ORMAT Company

SIERRA GEOTECH

Project emissions to the air would consist of combustion and vent products from the burning and/or venting of the battery cells due to a system malfunction. Inhalation is the main pathway by which air pollutants could potentially cause public health impacts. Significance criteria used in this review of public safety were based on the prioritization method developed by the California Air Pollution Control Officers Association (CAPCOA) in consultation with the California Air Resources Board (ARB) and Office of Environmental Health Hazard Assessment (OEHHA) as part of the implementation of the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Air Toxics "Hot Spot" Act, Health and Safety Code §44344.4(c)). The significance criteria used by the prioritization method is based on a Total Score (TS) for chronic and acute impacts. These score thresholds are presented in Table 6.9-3: *Prioritization Thresholds*. The thresholds are based on the application of several conservative air dispersion modeling scenarios coupled with air pollutant toxicities as reported by OEHHA and the EPA.

Table 6.9-3: Prioritization Thresholds

Facility Score	Facility Designation
Total Score ≥ 10	High Priority
1 ≤ Total Score < 10	Intermediate Priority/Consider Other Factors
Total Score < 1	Low Priority

The expected pollutants emitted from the modeled scenarios included several conservative factors, including allowing both the non-combustion and combustion malfunction events to continue without control for over an hour and using an external ignition source to force combustion when the malfunction itself did not result in enough heat to cause a fire. The tests performed by leading battery manufacturers concluded that, for a high temperature event of a single cell with no combustion, there will be no propagation from this cell to surrounding cells. The tests also concluded that for a combustion event of a module (a module is comprised of 28 cells) there will be no propagation from one module to surrounding modules. However, because there were no tests performed to determine if combustion of a single cell would propagate to surrounding cells, for both combustion scenarios the emissions and health impacts were determined based on emissions from an entire module (28 cells). The impacts for the non-combustion event were based on the emissions from a single cell.

The release of emissions to the atmosphere would occur over a relatively short period of time (approximately one hour or less). Therefore, only the public health impacts associated with acute exposure to short term releases were analyzed for the three system malfunctions. The acute impact prioritization scores for the three system malfunction scenarios are shown in Table 6.9-4: *BESS Prioritization Scores for Three System Malfunction Scenarios*. Each score is below 1, indicating that all of these release scenarios receive a Low Priority classification. Therefore, the public health impacts associated with the three system malfunctions are not considered significant at the nearest receptors (i.e., residences along Tierra Buena Road north of proposed project lease area and Valdez residence south of proposed project lease area). By extension, potential impacts at other nearby but more distant receptors, such as Islamic Center of Yuba City, Sikh Temple-Gurdwara Sahib Yuba City, Rural Residential Neighborhood, Butte Vista Elementary School and Encinal Elementary School, are not considered significant.

Table 6.9-4: BESS Prioritization Scores for Three System Malfunction Scenarios

Malfunction Scenario	Acute Prioritization Score	Exceeds Prioritization Threshold of 1?
Runaway with No Combustion	1.1E-4 (0.0011)	No
Runaway with Combustion	1.0E-01 (0.1)	No
Overcharge with Combustion	2.9E-01 (0.29)	No

6.9.5.4 Electric and Magnetic Fields (EMF)

Electric and magnetic fields (EMF) are invisible lines of force that are part of the natural and man-made environment. A natural source is the earth's magnetic field. Manmade sources include household or building wiring, electrical appliances and electric power transmission and distribution facilities. EMF strength decreases rapidly with distance from the source. Electric fields are created around appliances and wires wherever a voltage exists, like the water pressure in a hose. Electric field strength is measured in units of volts per meter (V/m). Health-related research around EMF focuses primarily on magnetic field exposures. Magnetic fields are created whenever electrical current flows, like the way water flows when the nozzle of a hose is opened. Magnetic field strength is measured in units of gauss (G) or more commonly in milligauss (mG).

Potential EMF sources from the battery storage system are the battery system electronic components and the offsite electrical grid. EMF is not normally associated with the batteries themselves, as these are a pure DC source. The proposed battery storage system will not add incremental EMF to the existing offsite electrical grid. The battery storage system provides a new point of interconnection with the grid, and the grid will experience the same load as it would without the battery storage system.

The battery storage system would tie into PG&E's existing 16 kV distribution system that runs along the east side of VESI10 Tierra Buena BESS facility. It is anticipated by PG&E that no new electric distribution and transmission lines are required for the interconnection of the project to the electrical grid at the Pease Road power substation. Given the low levels of EMF from the battery storage system's electronic components and the absence of new incremental EMF to the existing offsite electrical grid, no impacts from EMF would occur.

Potential impacts to the public are determined by delineating "hazard footprints" for the type of accidents that can potentially occur. It is then determined if the hazard footprints would reach the sensitive receptors or vulnerable resources identified in the area, as well as the number of injuries and/or fatalities that could occur. Types of hazards evaluated include radiant heat from a fire, flammable gas cloud from a release, and EMF emissions. Due to the large distance from any component of the proposed VESI10 Tierra Buena BESS facility and the closet sensitive receptor, no significant impact is anticipated from the risk of upset or EMF emissions.

The following mitigation measures have been incorporated to diminish any potentially significant impacts related to hazards and hazardous materials to a less than significant level:

HM-1 **Contingency Plans.** VESI10 Tierra Buena BESS facility contingency plans shall be prepared to address potential contingency situations associated with the battery storage systems. These existing contingency plans include: Fire Protection Plan, Emergency Response Plan, and Hazardous Materials Business Plan. In addition, the plans will include where fire suppression material is stored on the site, how the fire department will access the material, what the material is, and where copies of the plan are stored. All updates will occur in coordination with applicable agencies, including but not limited to the Yuba City Fire Department/CSA-G, and the Sutter County Environmental Health Services-CUPA. Contingency plans shall be stored onsite.

Plan Requirements and Timing: Contingency plans shall be completed prior to the initiation of construction activities for the proposed battery storage system, in order to ensure that appropriate contingency plans are in place through all project phases. The Sutter County Development Services Department/Planning, or their designee, shall ensure completion of contingency plans and approval by Yuba City Fire Department/CSA-G and Sutter County Environmental Health Services-CUPA.

Monitoring: The Yuba City Fire Department/CSA-G, or their designee, shall inspect the contingency plans on an annual basis, and following any emergency or unanticipated situation during which contingency plan procedures are required to be implemented, in order to ensure that contingency plans remain relevant and applicable to the VESI10 Tierra Buena BESS facilities and surroundings.

6.9.6 Hazards and Hazardous Materials Initial Study Responses

Table 6.9-5: Hazards and Hazardous Materials Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☑	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☑	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☑
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☑

6.9.7 Responses to Initial Study Questions

6.9.7.1 Significant Hazard to the Public or Environment through Transport or Use of Hazardous Materials: Less than Significant with Mitigation Incorporated

The project design minimizes the risk of hazardous materials release through appropriate technological development and design; some of these design factors are required by law, as previously discussed, and others will be implemented as mitigation measures or required contingency plans and will receive additional treatment in subsequent portions of this document.

Construction Activities. Construction of the proposed VESI10 Tierra Buena BESS facility would require the limited use of heavy machinery and construction equipment, such as graders, backhoes, and front-end loaders. The operation of this equipment and machinery could result in a spill or accidental release of hazardous materials, including fuel, engine oil, engine coolant, and lubricants. Because the proposed project would require less than one acre of construction, the project would not be required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ) to comply with Clean Water Act National Pollutant Discharge Elimination System (NPDES) requirements. However, VESI 10, LLC, will incorporate and comply with these requirements which would include preparation of a construction SWPPP, which would specify BMPs to quickly contain and clean up any accidental spills or leaks. Due to the relatively short-term construction period (approximately 5 months) and implementation of a construction SWPPP, the potential for an accidental release of hazardous materials to harm the public or the environment would be low. This potential would be further reduced through compliance with applicable regulations and good construction practices.

Other hazardous wastes that would be used during construction would be typical of most construction projects, including detergents, degreasers, paints, ethylene glycol, and welding materials. During project construction, material safety data sheets for all applicable materials present at the site would be made readily available to onsite personnel. Small quantities of hazardous wastes would most likely be generated from construction, including spent construction solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Workers would be trained to identify and handle hazardous materials properly. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment and/or disposal facility. All hazardous waste shipped off site for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler. Implementation of the construction SWPPP and proper handling and disposal of hazardous materials and wastes during construction would result in less than significant construction impacts.

Operational Activities. The batteries and other materials for the BESS facilities would be manufactured off site and transported to the proposed project lease area by truck. If removal of defective batteries from the proposed project lease area is required during operations, this material would be classified mostly as universal waste under the California Department of Toxic Substances Control (DTSC) regulations and guidance (DTSC 2015). Transportation of lithium ion batteries is subject to 49 Code of Federal Regulations (CFR) 173.185 – Department of Transportation Pipeline and Hazardous Material Administration. These regulations include requirements for prevention of a dangerous evolution of heat; prevention of short circuits; prevention of damage to the terminals; and require that no battery meet other batteries or conductive materials. Adherence to the requirements and regulations, personnel training, safe interim storage, and segregation from other potential waste streams would minimize any public hazard related to transport, use, or disposal of batteries.

The proposed VESI10 Tierra Buena BESS project would be subject to Title 700 Health and Sanitation and Title 600 Fire Prevention, of the Sutter County Code of Ordinances governing the storage of hazardous materials, liquids, and chemicals, including a provision that any storage of hazardous materials would be subject to conditions established by the Yuba City Fire Department/CSA-G or the Sutter County Environmental Health Services-CUPA. After it becomes operational, the BESS facility would be subject to annual inspection by the Yuba City Fire Department/CSA-G. It would also be required to comply with Chapter 27 of the 2016 California Fire Code, which sets limits on hazardous materials storage.

Therefore, this impact would be reduced to less than significant with the implementation of the discussed mitigation measure **HM-1** and design factors.

6.9.7.2 Significant Hazard to the Public or Environment through Reasonably Foreseeable Accident: Less than Significant with Mitigation Incorporated

As previously discussed, the typical foreseeable accident would include fire that resulted from overcharging, overheating, or other electrical fault conditions within the BESS facility, or a fire that spreads to the BESS facility from an adjacent property. In most cases, mechanical damage would probably rank as the highest risk factor for initiating a thermal runaway event as discussed above. Improper handling could also result in crush or puncture damage possibly leading to the release of electrolyte material or short-circuiting.

Lithium-ion battery fire risks can be managed through proper planning, risk assessment, storage methods, and response protocols. The project would use a fire protection system with the suppression through cooling, isolation, and containment strategy. Each BESS enclosure would include a gaseous fire suppressant agent (e.g., Stat-X aerosol) and an automatic fire extinguishing system with sound and light alarms. The system would be designed in accordance with National Fire Protection Association (NFPA) safety standards including an automatic shut-down system for fans that keep the enclosure sealed when the fire extinguishing system is activated. The fire suppressant agent is released by a releasing panel that uses an aspirating smoke detection system and has a manual release. The aspirating smoke detection system provides for four levels of signaling before release of the fire suppressant agent. A disable switch is provided for maintenance personnel to allow for work on the enclosure without accidental discharge. Stat-X aerosol fire suppression generators are not regulated as a hazardous material and is identified as safe to use in occupied spaces by the EPA as a non-toxic halon substitute.

Norms such as NFPA 2010: Standard for Fixed Aerosol Fire Extinguishing Systems and UL 2775: Fixed Aerosol Extinguishing Systems Units now govern its use in a wide variety of applications such as with BESS enclosures. Stat-X technology is also listed by the EPA as a Halon alternative under its Significant New Alternatives Policy (SNAP) program. It has no Ozone Depletion Potential (ODP) and zero effective Global Warming Potential (GWP) meaning Stat-X agent is not prone to future bans like many halocarbon agents.

At the system level, a three-tiered battery management system (BMS) would monitor parameters critical to safety, including all cell voltages, all currents, and representative temperatures. A robust system of logic-based isolation interlocks would prevent exposing cells to unsafe voltages, currents, and temperatures by providing both active and passive isolation. If the three-tiered BMS were to fail, each of the battery cells include several features designed to reduce the potential for short-circuits, excessive pressure, overheating, and other factors that could potentially lead to a thermal runaway and a resulting fire.

VESI 10, LLC, personnel training would be required to help address the unique issues associated with lithium ion battery technology, such as battery fire behavior, emergency response procedures, and fire extinguisher use (lithium-ion battery focus). To ensure compliance with the Occupational Safety and Health Administration's (OSHA) Emergency Action Plan Standard, 29 CFR 1910.38, and to prepare personnel for dealing with emergency situations, an emergency action plan would be developed. All personnel working onsite would receive instruction and training on the emergency action plan.

While the proposed BESS facility would include the Stat-X fire suppression system described above, if this system were to fail and emissions from the battery equipment were to be released to the atmosphere, there are five hazardous substances that may be potentially released: 1) hydrogen chloride (HCl); 2) hydrogen fluoride (HF); 3) hydrogen cyanide (HCN); 4) carbon monoxide (CO); and 5) carbon dioxide (CO_2) along with lesser amounts of other compounds, including the chemicals released by the fire suppression system. Based on battery manufacturers data for the batteries it is predicted hazards impacts may extend to approximately 100 feet from the fire event. The toxic endpoint distance of 100 feet may extend beyond the proposed project lease area depending on the location of the fire event. The toxic endpoint distance is the distance a toxic vapor cloud will travel before dissipating to the point that serious injuries from short-term exposures will no longer occur. Thus, if a battery storage enclosure close to the project lease area boundary were to ignite, the 100-foot toxic endpoint distance may overlap by

approximately 50 feet into the orchard to the east, or just across Tierra Buena Road to the west, or into the vacant field to the north, or into the Valdez Trucking Yard to the south. None of these areas have full time occupancy. With proper protocols established and readily implementable in the event of such a release, impacts would be mitigated to a less than significant level.

During a fire, toxic concentrations of hydrogen chloride and hydrogen fluoride may be present within the interior of the burning storage enclosures. There would be potential for firefighters responding to the fire to be exposed to hazardous materials at potentially dangerous levels unless personal protection equipment and self-contained breathing apparatus are used. Other potential upset conditions include intentional or unintentional damage, theft, or vandalism, resulting in damage to the BESS facility or exposure of the battery system components to the environment. Site security would consist of a 7-foot-high perimeter fence around the BESS facility and site security measures may include a monitored camera system designed to cover the entire facility and an intrusion detection system. With the aforementioned fire suppression systems and site security measures and with implementation of the mitigation measure **HM-1** above there is a very low likelihood of the project creating a significant hazard to onsite or offsite receptors. Therefore, this impact would be reduced to less than significant level with the implementation of the discussed mitigation measure **HM-1** and design factors.

6.9.7.3 Emit Hazards within 0.25 Mile of a Proposed or Existing School: No Impact

The nearest existing school is the Butte Vista Elementary School located just over one (1) mile to the southeast and Encinal Elementary School, located just over 3 ½ miles north of the proposed project lease area. No school has been proposed within the 0.25-mile radius of the proposed BESS facilities. As described above, in the event of a potential upset and accident conditions, including fire that results from overheating or other electrical fault conditions, potential hazard emissions could affect areas up to 100 feet beyond the proposed VESI10 Tierra Buena BESS facility. The elementary schools are beyond this distance. Adherence to all requirements and regulations, personnel training, safe interim storage, and segregation from other potential waste streams would minimize any hazard related to transport, use, or disposal of batteries within proximity to schools. No Impact.

6.9.7.4 Located on a Hazardous Materials Site: No Impact

As determined by the EDR records search and Phase 1 Environmental Site Assessment, the proposed VESI 10 Tierra Buena BESS lease area is not located on a hazardous materials site (See Appendix I: *Phase 1 Environmental Site Assessment and EDR Records*). The following databases were queried in November of 2019, for known hazardous materials contamination at the proposed project lease area:

- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database (United States Environmental Protection Agency);
- United States Environmental Protection Agency EnviroMapper database;
- California State Water Quality Control Board GeoTracker database; and
- California Department of Toxic Substances Control EnviroStor database.

The proposed project lease area does not appear on any of the above lists. The proposed project lease area is not identified on the Hazardous Waste and Substance Site List database compiled pursuant to Government Code Section 65962.5 (the “Cortese” list). No impact.

6.9.7.5 Create a Safety Hazard or Excessive Noise for People Working or Residing Within 2 Miles of a Public Use Airport: No Impact

The Sutter County Airport is the nearest airport to the proposed project lease area and is approximately 4.5 miles to the southeast. As such, public use airports do not pose a threat to the safety of those residing or working in the proposed project lease area. According to the Sutter County Airport Land Use Commission, the project site is not located within any airport safety zones or height restriction zones of the Sutter County Airport. As such, there will be no impact from an airport. No Impact.

6.9.7.6 Physically Impair or Interfere with the Implementation of an Emergency Response Plan: No Impact

The Sutter County Office of Emergency Management is responsible for planning, response and recovery activities associated with natural and man-made emergencies and disasters throughout Sutter County and coordination of those activities with Local Agencies, California Emergency Management Agency (CalEMA) and the Federal Emergency Management Agency (FEMA). Sutter County Office of Emergency Management provides an Emergency Management Guide for Business and Industry within Sutter County. The proposed VESI 10 Tierra Buena BESS project would not impair implementation of or physically interfere with implementation of an adopted emergency response plan or emergency evacuation plan. No impact.

6.9.7.7 Create Risk Involving Wildland Fires: No Impact

No wildland is within the vicinity of the proposed VESI10 Tierra Buena BESS project, and as such, wildland fires do not pose a threat to the proposed BESS facility. The site is surrounded by agricultural orchard lands, ag-industrial land uses, and rural residential land uses and no wildlands. Therefore, there would be No Impact from wildland fires. No Impact.

6.10 HYDROLOGY AND WATER QUALITY

This section analyzes the potential impacts on water quality and hydrology that may result from the proposed VESI 10 Tierra Buena BESS project located in the Feather River Hydrologic Region. Additionally, this section addresses the following potential issues related to the implementation of the proposed VESI 10 Tierra Buena BESS project: general water quality issues, flood hazards, storm drainage issues, and project-specific impacts. These data sources were supplemented by observations made during site visits conducted during the months of February and March 2019.

6.10.1 Background

6.10.1.1 Regulatory Context

The water surface quality is federally regulated by the Environmental Protection Agency (EPA). In California, the SWRCB and its RWQCBs regulate groundwater quality. The RWQCB is the primary agency tasked with protecting California surface and groundwater quality, including the regulation of discharges from wastewater treatment facilities and of urban stormwater runoff.

The RWQCB for the Central Valley Region has established a Water Quality Control Plan (WQCP) for the Sacramento and Feather River Basins that designates surface and ground waters in the region and assigns beneficial uses to such waters. Additionally, the WQCP and establishes water quality objectives to protect those waters. The water quality objectives and beneficial uses are collectively referred to as Water Quality Standards.

Federal Regulations

The Clean Water Act (CWA) (33 USC 1251-1376), is the federal legislation that governs water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

Applicable sections of the act are as follows:

- Section 301 prohibits the discharge of any pollutant by any person, except as in compliance with sections 302, 306, 307, 318, 402, and 404 of the CWA.

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.

Section 303(d) of the CWA requires states to develop a list of impaired water bodies. In California the SWRCB has developed the list of impaired waters, applying the following criteria: chlorpyrifos, DDT, diazinon, Group A pesticides, mercury, unknown toxicity, and organic enrichment/low Dissolved Oxygen (DO).

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.), which is the principal law governing water quality regulation in California, establishes a comprehensive program to protect water quality and the beneficial uses of State waters. The Act established the SWRCB and nine RWQCBs, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The Porter-Cologne Water Quality Control Act also implements many provisions of the federal CWA, such as the NPDES permitting program. CWA § 401 gives the SWRCB the authority to review any proposed federally permitted or federally licensed activity which may impact water quality and to certify, condition, or deny the activity if it does not comply with State water quality standards. If the SWRCB imposes a condition on its certification, those conditions must be included in the federal permit or license.

RWQCB Construction Permit

The RWQCB administers the NPDES stormwater permitting (federal stormwater permitting program which is implemented by each state) program in the Central Valley Region for construction and industrial activities. Because the proposed project lease area is not an industrial site, but rather an agricultural site and the proposed use is a community utility facility, VESI 10, LLC, would not be required to obtain both a construction and industrial NPDES permit from the RWQCB prior to construction and/or operation.

To require a construction permit, a construction site must disturb one (1+) acre or more of land (this is more commonly referred to as a General Construction Permit). The proposed project lease area will be less than 0.32 +/- acre and thus will not require a General Construction Permit. Qualifying projects require the applicant to submit a Notice of Intent (NOI) to the SWRCB prior to the beginning of construction. The General Construction Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which must be completed before construction begins. The SWPPP must describe the BMPs and monitoring programs that would be implemented during the construction phase to ensure that runoff from the construction site does not cause or contribute to exceedances of water quality standards relevant to receiving waters downstream of the site. Implementation of the plan starts with the commencement of construction and continues through the completion of the project. Upon completion of the project, the applicant must submit a Notice of Termination to the RWQCB to indicate that construction is completed. It is anticipated VESI 10, LLC, will require the project's contractor to prepare a SWPPP and BMPs to ensure no water quality impacts will occur during construction, even though the project is not required under the current rule of one (1+) plus acres of disturb ground.

California Toxics Rule (CTR) of 2000 (40 CFR Part 131)

This rule establishes numeric criteria for priority toxic pollutants in inland waters as well as enclosed bays and estuaries to protect ambient aquatic life (23 priority toxics) and human health (57 priority toxics). The CTR also includes provisions for compliance schedules to be issued for new or revised NPDES permit limits when certain conditions are met. The numeric criteria are the same as those recommended by the EPA in its CWA Section 304(a) guidance.

Spill Prevention, Control, and Countermeasure

SPCC regulations require VESI 10, LLC's construction contractors to have in-place measures that help ensure spills do not occur. However, if they do, there are protocols and response equipment in place to contain the spill and neutralize the potential harmful impacts. A SPCC Plan would be prepared that would be reviewed and approved by the Regional Water Quality Control Board. The SPCC Plan would detail and implement spill prevention and control measures.

Local Regulations

Sutter County Code of Ordinances, Article 1700, Chapter 1790 Stormwater Management and Discharge Control

Due to amendments to the Clean Water Act, the USEPA developed a Phase I and a Phase II program requiring municipalities to develop and implement stormwater pollution management programs. Smaller municipalities and contiguous areas with small, but still urban, communities come under the Phase II regulations of the State Board's General Permit for Discharges of Storm Water from Small Municipal Separate Storm Sewer Systems (hereafter called the "Small MS4 General Permit" where MS4 stands for Municipal Separate Storm Sewer System). Sutter County is subject to the Phase II regulations, which requires the submittal of a Notice of Intent (NOI) to seek coverage under the "Small MS4 General Permit."

Sutter County and Yuba City are jointly permitted under the Waste Discharge Requirements for Small Municipal Separate Storm Sewer Systems (Order No. 2003-0005-DWQ), which also serves as a National Pollutant Discharge Elimination System Permit (No. CAS000004) under the Federal Clean Water Act. Under the provisions of this permit, the County is required to possess the necessary legal authority and implement appropriate procedures, to regulate the entry of pollutants and non-stormwater discharges into the County stormwater conveyance system.

The Sutter County Stormwater Management Ordinance is applied to urban areas of the County or areas of the County that are comprised of lands within the sphere of influence for the City of Yuba City. The ordinance also applies to construction anywhere in Sutter County that is subject to the current State of California—General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board; the pollutant control provisions of a County-issued Building Permit; or any other instrument of the County that establishes pollutant control provisions for construction sites. Because the proposed project lease area is outside of the City of Yuba City sphere of influence and is smaller than the required one plus (1+) acre which triggers the State General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, the proposed VESI 10 Tierra Buena BESS project will not be subject to the Sutter County Ordinance identified above.

6.10.2 Methodology

This analysis considers the potential for the proposed VESI 10 Tierra Buena BESS project impacts to local surface and groundwater hydrology and water quality. The impact analysis focuses on foreseeable changes to existing hydrological and water conditions. The impact analysis provides a separate discussion for major proposed BESS project components. Potential water and sediment quality impacts of the proposed VESI 10 Tierra Buena BESS project are assessed through a comparison of literature data (including all applicable water quality criteria) and results from past projects in Sutter County, to estimated discharges from the proposed VESI 10 Tierra Buena BESS project using scientific expertise of the preparers. Mitigation measures are identified where appropriate.

6.10.3 Environmental Setting

6.10.3.1 Project Setting

Water Supply

The proposed VESI 10 Tierra Buena BESS project will require minor amounts of water for the BESS facility associated with vegetation. The proposed VESI 10 Tierra Buena BESS project will have no employees working long term at the BESS facility requiring water, nor does the BESS require water for fire suppression purposes. Watering required during construction will be supplied by the contractor's water truck. During project construction, water would be required for dust suppression, to support project soil compaction, and sanitary use. Water necessary for project construction would be delivered to the project site via truck.

Stormwater Runoff and Drainage

The topography of the BESS facility will be within a proposed perimeter screening fence and is relatively flat, sloping less than 1 percent to the southwest, and with an unpaved graveled surface. The BESS Layout Plan (See Figure 6.11-3: *VESI 10 Tierra Buena BESS Layout Plan)* calls for a pervious concrete pavement area of 36 feet by 150 feet to locate the battery/inverter enclosures, SCADA enclosure, MV switchgear, IT and PG&E equipment. The pervious concrete will have compressive strengths of 4000 psi and flexural strengths of 600 psi, which are on par with conventional concrete to support the BESS equipment, however, the pervious concrete will reduce stormwater runoff, reduce contaminants in waterways, and renew groundwater recharge on site. Other major benefits provided by pervious concrete include reduction in heat island effects (water percolating through the pavement can exert a cooling effect through evaporation), and convective airflow can also contribute to cooling, and reductions in standing water on pavements.

Surface runoff in the BESS facility area typically infiltrates into the site soils inside the proposed perimeter fencing. The remainder of the parcel outside of the perimeter fencing (i.e., the Valdez Truck Yard, Valdez Residence and surrounding landscaped and unimproved or paved area) is gently sloping to the southwest to Tierra Buena Road shoulder along western edge of the parcel. Runoff of surface water outside of the perimeter fenced area of the BESS facility and the remaining parcel will be negligible due to on-site infiltration of stormwater.

During a heavy precipitation events, sheet flows from the BESS facility area may reach the natural ground or gravel areas south of the perimeter fenced area and perk into the ground on the remaining one acre of the parcel. The small amount of new impervious surfaces required for the proposed BESS project (i.e., small pedestal footings for the battery storage system and small foundations for ancillary equipment) would not inhibit continued infiltration of rainwater into the parcel soils. An area of 17 feet by 150 feet will be slightly depressed to provide for stormwater detention in case of a 500-year storm event. Any runoff that may sheet flow beyond the perimeter wall of the BESS area would enter the southern portion of the parcel and would then infiltrate in the undeveloped area of the parcel, consistent with current practices. Impervious surface areas of the parcel currently are limited to the residential dwelling, driveway, patio, out-buildings which totals to approximately 6,250 square feet.

6.10.3.2 Regional Setting

The proposed VESI 10 Tierra Buena BESS project is in a rural portion of Sutter County without stormwater drains. The proposed VESI 10 Tierra Buena BESS is located within the Feather River Basin. Average annual precipitation in Sutter County is 22 inches. The parcel is flat and nearly featureless with the topography sloping southwest towards Tierra Buena Road. The proposed project lease area is not located in an area subject to inundation by seiche, tsunami, or mudflow, and it is not adjacent to topographic elevations which would induce or permit mudflow.

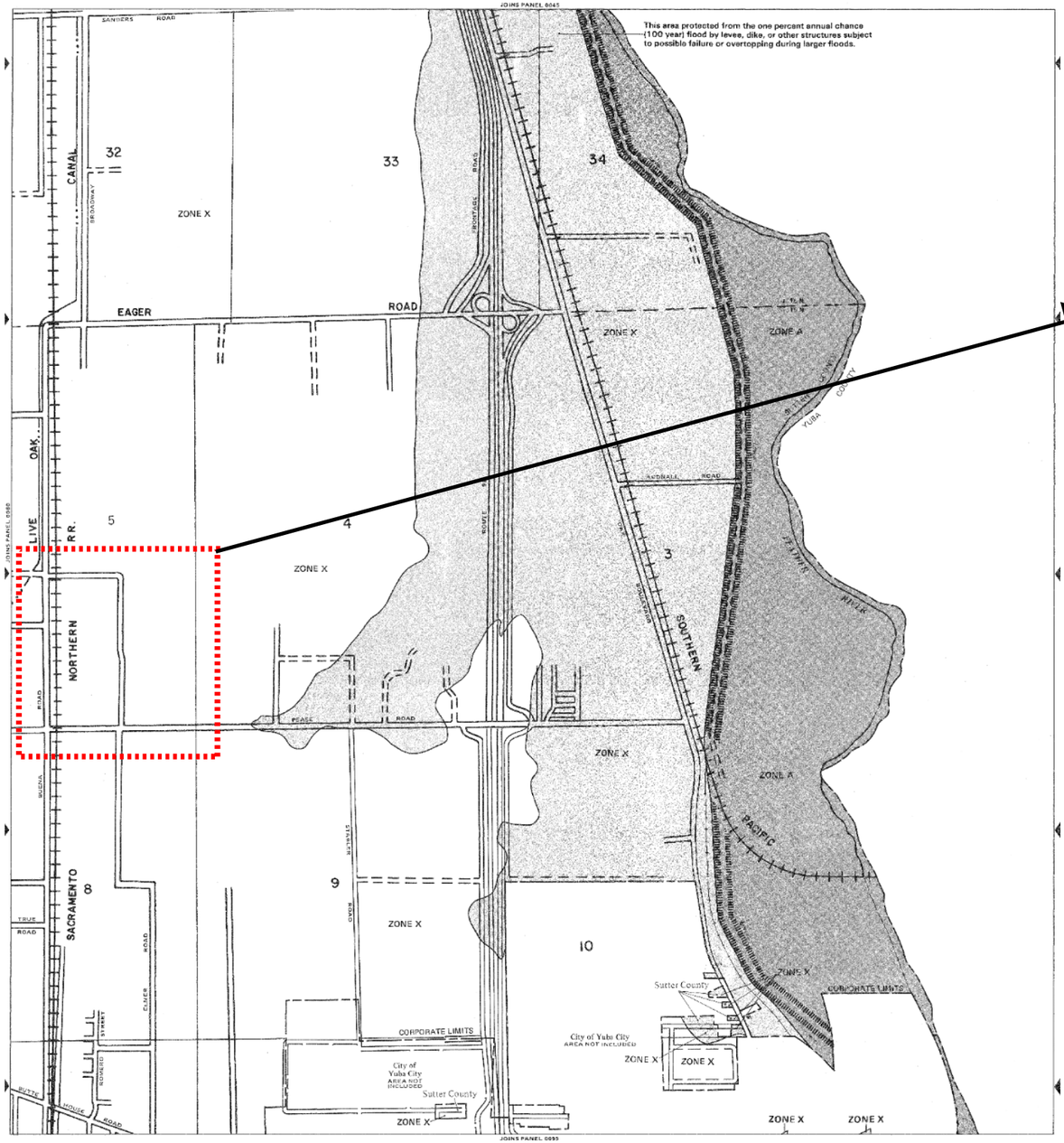
The proposed project lease area is protected by a levee system. Levee failure has a relatively small probability of occurrence (levees may be subject to site specific structural failure, erosion, damage from vegetation and rodents, and earthquakes). The County and Special Districts are responsible for the levee systems and has established an annual levee monitoring and inspection program. The purpose of the program is to determine whether reinforcement of the structural integrity of the levee is required.

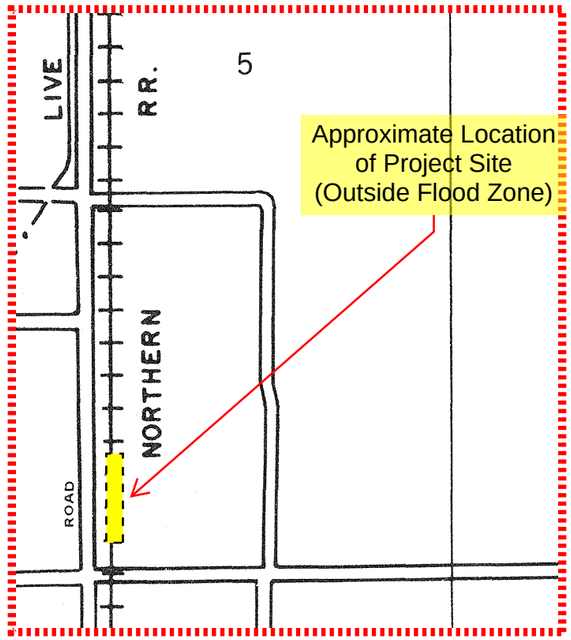
6.10.3.3 Flooding

The Engineering Division of the Sutter County Development Services Department maintains Flood Insurance Rate Maps (FIRMs) as required by the Federal Emergency Management Agency (FEMA). These FIRMs indicate potential of flooding for various locations. The proposed project lease area and main parcel is in an "X" (Unshaded) zone, as shown on the Flood Insurance Rate Map which indicates the proposed project lease area is outside of an area determined for a 500-year flood event. Furthermore, the proposed project lease area is not located in an area subject to inundation by seiche, tsunami, or mudflow, and it is not adjacent to topographic elevations which would induce or permit mudflow. The proposed project lease area and surrounding parcels are located outside of designated flood zone areas as shown on Flood Insurance Rate Map #0603940085B (FEMA April 5, 1988). See *Figure 6.10-1: FEMA Flood Insurance Rate Map*. The nearest flood zone channels are located at just west of Stabler Lane and Pease Road intersection some three quarters (¾) of a mile east of the proposed lease area. (FEMA April 5, 1988).

6.10.3.4 Surface Water Quality and Supply

The Lower Feather River flows to the east of the proposed project lease area approximately two and half (2 ½) miles away. The proposed project lease area is in the Feather River subregion of the Sacramento River Watershed. All waterways surrounding the proposed project lease area, have been designated as impaired for a variety of contaminants, primarily from agricultural sources in the surrounding region. Pollutant impairments in the waterways include various pesticides and unknown toxicity among others. The most recently produced TMDL "impaired waters" list included the Feather River as being impaired by several pollutants, including: Diazinon, Chlorpyrifos, DDT, Group A Pesticides, polychlorinated biphenyls (PCBs) and Mercury (Lower Sacramento and Feather Rivers – Water Quality Progress Report 6/15/2015).





FIRM
FLOOD INSURANCE RATE MAP

SUTTER COUNTY, CALIFORNIA
(UNINCORPORATED AREAS)

PANEL 85 OF 325
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
060394 0085 B

EFFECTIVE DATE:
APRIL 5, 1988

Federal Emergency Management Agency

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** — No base flood elevations determined.
- **ZONE AE** — Base flood elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- **ZONE V** — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside 500-year flood plain.
- **ZONE D** — Areas in which flood hazards are undetermined.

- Flood Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet*
- D — D — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*
- $RM7_X$ — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

N W E S

FIGURE: FEMA Flood Map

DATE:	11-20-2019	SCALE:	NTS
BY:	SCV	FIGURE:	6.10-1

viridity energy
An ORMAT Company

SIERRA GEOTECH

6.10.4 Standards of Significance

An impact to hydrology and water quality would be considered significant if the project would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - result in substantial erosion or siltation on- or offsite;
    - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
    - create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    - impede or redirect flood flows
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; and/or
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

6.10.5 Impacts and Mitigation Measures

6.10.5.1 BMPs to be Employed Throughout Construction to Limit Run-Off

Standard storm water BMPs will be incorporated by VESI 10, LLC, construction contractors, such as erosion controls, soil barriers, sedimentation basins, site contouring, and others would be used during construction activities to minimize runoff of soils and associated contaminants. Erosion controls are used during construction to reduce the amount of soils disturbed and to prevent disturbed soils from entering runoff. Erosion controls can include both logistical practices, such as scheduling construction during seasons with the least potential for erosion (e.g., non-storm seasons), and sediment control practices. The combined effectiveness of the erosion and sediment control systems is not easily predicted or quantified (EPA 1993). The proposed VESI 10 Tierra Buena BESS project would not be required to obtain coverage under a Construction General Permit to comply with Clean Water Act NPDES requirements, because the project footprint is less than one (1+) acre. VESI 10, LLC, however, will require construction contractors to voluntarily implement a SWPPP and associated BMPs.

Given the relatively flat topography of the BESS construction site, distance from surface waters, the minimal grading and excavation required for construction, soil disturbance footprint less than one (1+) acre, and voluntary implementation of a SWPPP, construction of the proposed BESS facility would not violate any water quality standards or waste discharge requirements. During operations of the BESS facility, wastewater discharge would be expected to be minimal amounts of stormwater runoff generated during precipitation events. Given the nearly flat topography of the proposed project lease area, and the minor amounts of impervious surfaces that the proposed BESS facility would create, precipitation would be expected to infiltrate or evaporate onsite more so than sheet flow over land and discharge offsite at substantial rates or volumes. Any runoff leaving the BESS facilities during operations would flow onto the remaining parcel like previous storm events. Lithium-ion batteries would be fully contained within the storage enclosures, and battery fluids or substances would not be susceptible to spills or release as runoff. If the BESS facility did have a spill it would be contained in the 17 feet by 150 feet stormwater detention area located on the western side of the BESS facility. Operation of the proposed BESS facility

would not be expected to violate any water quality standards or waste discharge requirements. The proposed VESI 10 Tierra Buena BESS project would have less than significant impacts on water quality standards and discharge requirements.

Spills associated with construction equipment, such as oil/fluid drips or gasoline/diesel spills during fueling, typically involve small volumes that can be effectively contained in the work area and cleaned up immediately. Other spills of fuels and lubricants from construction equipment would have a very low potential to occur and enter surface water, including during the rainy season, due to implementation of BMPs in the project-specific SWPPP and assuming the following are included in the SWPPP:

- Equipment shall be inspected regularly (daily) during construction, and any leaks found shall be repaired immediately;
- Refueling of vehicles and equipment shall be in a designated, contained area;
- Drip pans shall be used under stationary equipment (e.g., diesel fuel generators), during refueling, and when equipment is maintained;
- Drip pans that are in use shall be covered during rainfall to prevent washout of pollutants; and
- Monitoring to verify that the BMPs are implemented and kept in good working order.

Construction activities associated with the proposed VESI 10 Tierra Buena BESS project would not result in discharges that create pollution, contamination, or nuisance, or cause regulatory standards to be violated. Therefore, construction activities would have less than significant impacts on water quality.

6.10.5.2 Impacts on Potential Flooding

Construction of the proposed battery storage facilities, foundation pads for transformers or switching gears and interconnections would add minor amounts impervious surfaces at the BESS facility. It is anticipated no new off-site storm flows will occur as a result of the proposed BESS facility. Construction activities would not increase the potential for flooding, impede runoff flows, or endanger people, property, or biological resources because the staging and storage areas would be protected with stormwater controls in accordance with the project's construction SWPPP. Construction activities for the proposed BESS facilities would not cause or increase the potential for flooding that could harm people or sensitive biological resources or damage property. Therefore, impacts from construction operations on flood flows would be less than significant. No mitigation is required.

6.10.5.3 Impacts on Natural Processes of Erosion and Sedimentation

Construction of the proposed BESS facility would require very minor grading and trenching that would disturb the ground surface. Ground surface disturbance also would result from installation of foundation systems, pervious concrete slab, for the BESS facilities and equipment components, the proposed underground electric lines and interconnection, and for excavation of battery storage structures/ equipment foundations. Since construction activities may include work in one rainy season, soils exposed by grading and trenching would be subject to erosion by stormwater runoff and/or possibly wind.

Construction sites would be managed by complying with the project's BMPs for stormwater management, and implementation of a project-specific SWPPP. Standard construction BMPs would include both procedural and structural controls. Procedural controls include minimizing the amount and duration of soils exposed during grading and trenching, washing dirt off construction equipment, and refueling only in designated areas. Structural BMPs can include silt fences/straw bale barriers or sedimentation basins that would be installed and maintained during construction to minimize sediment runoff. Maintenance of these control measures would include daily checks during the rainy season of systems. The construction contractor would be responsible for ensuring compliance with SWPPP and adopted BMPs for the job.

With implementation of procedural and structural BMPs, erosion of site soils is expected to be minimal. Small amounts of sediment added to the parcel via runoff would not cause localized erosion or sedimentation because sediment particles would be sufficiently dispersed prior to settling to the bottom. No water quality standards or objectives would be exceeded because of the implementation and maintenance of adopted BMPs.

Construction activities associated with the proposed VESI 10 Tierra Buena BESS project would not accelerate erosion or sedimentation that could not be contained on-site due to implementation and maintenance of adopted BMPs, as described above. Therefore, impacts to water quality from erosion and sedimentation would be less than significant. No mitigation is required as the voluntary SWPPP and adoption of BMPs will provide adequate environmental protection for erosion and sediment.

6.10.5.4 Operational Impacts to Water Quality

During long-term operations of the BESS facilities, no wastewater discharges would occur, and the proposed battery storage system components would be enclosed. Site maintenance would include visual inspections for any inadvertent spills of materials that could enter the onsite soils (e.g., due to heavy precipitation event that sheet flows out of the perimeter fenced battery storage area). Based on these site conditions and maintenance practices, the potential for water quality impacts over the life of the project are less than significant.

The BESS facility lease area is nearly level and will be confined inside an existing perimeter fenced area. The existing drainage pattern would be generally unchanged. Detailed site engineering would consider the present and future drainage patterns. No new or expanded storm drain system is anticipated because the remainder of the unpaved gravel-surfaced area inside the project lease area (after installation of the small equipment, pervious concrete slab, foundations and footings) should continue to provide adequate onsite infiltration. As discussed above, appropriate BMPs would be maintained onsite to ensure that sediment or other pollutants are contained onsite and do not travel or export off the parcel. During and after construction any excess soil, construction waste or other debris would be removed from the BESS facility lease area. BMPs and soil management procedures would be listed on the project construction plans. In addition, the proposed project lease area and surrounding parcels are located outside of designated flood zone areas, and the nearest flood channels are distant from the proposed project lease area (Feather River is located approximately two and half (2 ½) miles east of the BESS facility lease area). Therefore, potential erosion and flood-related impacts would be less than significant.

The following additional Mitigation Measures have been volunteered for the project, to further reduce and ensure project specific potential impacts to hydrology or water quality remain less than significant.

WQ-1 VESI 10, LLC and/or contractor will develop and implement a SWPPP and adopt BMPs prior to beginning construction activities.

WQ-2 Spill prevention kits shall always be in close proximity when using hazardous materials (e.g. crew trucks and other appropriate locations).

WQ-3 For equipment that must be fueled on-site, containment shall be provided in such a manner that any accidental spill of fuel shall not be able to enter the water or contaminate sediments that may come in contact with water.

WQ-4 VESI 10, LLC, or construction contractor will prepare a pollutant control plan that specifies logistics and schedule for construction activities that will minimize the potential for erosion and standard practices that include monitoring and maintenance of control measures.

6.10.6 Hydrology and Water Quality Initial Study Responses

Table 6.10-1: Hydrology and Water Quality Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☑	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☑
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☐	☑
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☐	☑
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☑
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☑	☐
iv. impede or redirect flood flows?	☐	☐	☑	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☑
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☑

6.10.7 Responses to Initial Study Questions

6.10.7.1 Violate Any Water Quality Standards: Less than Significant with Mitigation Incorporated

Construction of the proposed BESS facility will have minor grading take place, and soil disruption will be restricted to 36 feet by 150 feet pervious concrete slab for equipment, minor trenching for conduit to allow interconnection to the PG&E electrical grid, and a 17 feet by 150 feet stormwater detention basin to ensure no sheet flows of stormwater impacts the remainder of the parcel. The footprint of the BESS facility is less than one acre thereby not triggering the requirement for a RWQCB General Construction Permit. Based on the final plans and specifications, VESI 10, LLC's foot print of the BESS facility will be approximately 0.32 +/- acre. In addition, VESI 10, LLC's construction contractor will implement all relevant source control BMPs as part of the project and incorporate project design features to reduce potential for water pollution.

During long-term operations, no wastewater discharges would occur, and the proposed battery storage system components would be enclosed. Site maintenance would include visual inspections for any inadvertent spills of materials that could enter the onsite soils (e.g., due to heavy precipitation event that sheet flows out of the walled battery storage area). Based on these site conditions and maintenance practices, the potential for water quality impacts over the life of the project are less than significant. Furthermore, through the inclusion of the BMPs and aforementioned mitigation measures, it is anticipated that the proposed VESI 10 Tierra Buena BESS project would: not violate any applicable water quality requirements; that water quality standards in receiving waters would be maintained; and that the proposed VESI 10 Tierra Buena BESS project would have less than significant water quality impacts.

6.10.7.2 Substantially Deplete Groundwater: No Impact

Design of the proposed project lease area has provided for minimal impervious area which allows stormwater runoff to infiltrate within the proposed project lease area. The existing site drainage pattern, which allows rainwater infiltration will remain unchanged. The small amount of new impervious surfaces required for the project (i.e., small pedestal footings for the battery storage system and small foundations for ancillary equipment) would not inhibit continued infiltration of rainwater into parcel soils. Potable water and sanitary sewer are not required for the BESS facility, since the facility is un-manned. A new water connection to the existing well on the parcel will be required for irrigation water to support the vegetative screening hedge. It is estimated during the dry season the plants will require approximately 112.21 gallons per day. According to Mr. Luis Garcia Valdez the irrigation water of 112.21 gallons per day during the dry season from the well on the parcel will be no impact to the well located on the parcel. The proposed VESI 10 Tierra Buena BESS project would not result in groundwater depletion and there would be no impact.

6.10.7.3 Substantially Alter Drainage That Would Result in Erosion: No Impact

The proposed VESI 10 Tierra Buena BESS project would not alter existing drainage patterns. A SWPPP will be prepared prior to project construction to ensure that erosion is limited to the greatest extent feasible. The parcel and proposed project lease area is nearly level. Detailed site engineering would consider the present and future drainage patterns. In general, no new or expanded storm drain system is anticipated because the remainder of the unpaved gravel-surfaced area of the parcel (after installation of the pervious concrete slab, small equipment foundations and footings) should continue to provide adequate onsite infiltration. VESI 10, LLC will ensure appropriate BMPs would be maintained onsite to ensure that sediment or other pollutants are contained onsite and do not exit the parcel. During and after construction any excess soil, construction waste or other debris would be removed from the BESS facility lease area. BMPs and soil management procedures would be listed on the project construction plans. No Impact has been identified.

6.10.7.4 Substantially Alter Drainage That Would Result in Flooding: No Impact

The proposed VESI 10 Tierra Buena BESS project would not alter existing drainage patterns. A SWPPP would be incorporated into the final plans and specifications to limit the potential of flooding due to the construction of the proposed VESI 10 Tierra Buena BESS project. There are no streams, canals or rivers

located on or adjacent to the proposed project lease area. The proposed BESS facility would not alter the course of a stream or river. In addition, the proposed project lease area and surrounding parcels are located outside of designated flood zone areas, and the nearest flood channels are distant (2 ½ + miles) from the proposed project lease area. No Impact has been identified.

6.10.7.5 Substantially Alter Drainage That Would Contribute to Runoff that Would Cause Polluted Runoff: Less than Significant Impact

The proposed project lease area has very little topographic relief and is nearly flat. Any runoff from the minor addition of impervious surfaces by the proposed VESI 10 Tierra Buena BESS project would be anticipated to flow over impervious surfaces until reaching soils, gravels, or other pervious surfaces within the parcel, and then would either infiltrate or evaporate as drainage did in the past. The proposed VESI 10 Tierra Buena BESS project will not alter the surface infiltration characteristics of the parcel, thereby not changing the volume and discharge rate of stormwater runoff, that could raise the risk of polluted runoff. Throughout the construction phase of the proposed VESI 10 Tierra Buena BESS project, it is possible that some of the runoff water will be polluted, either from leaky equipment or from workers leaving refuse/waste in the open (enclosures will be provided). With the implementation of proper design, SWPPP, and BMPs the potential pollution would be greatly limited, and, therefore, the potential affects from water pollution runoff would be less than significant.

6.10.7.6 Substantially Alter Drainage That Would Impede or Redirect Flood Flows: Less than Significant Impact

As discussed above in section 6.10.7.1, VESI 10, LLC would employ BMPs throughout the construction and operations phases of the project to ensure that discharges are limited to the greatest extent possible. Runoff from the BESS facilities would either infiltrate or evaporate. Any runoff that does not infiltrate or evaporate onsite would be contained by a berm that would be constructed along western and southern parcel boundaries to allow for further infiltration on the parcel. Site-specific BMPs would be designed by the contractor in compliance with all applicable regulations. Given that much of the BESS facilities would be pervious and nearly flat, operation of the BESS facility would not impede or redirect flood flows. Impacts would be less than significant.

6.10.7.7 Risk Release of Pollutants in Flood Hazard, Tsunami, or Seiche Zones: No Impact

Seiches are seismically induced waves that occur in large bodies of water, such as lakes and reservoirs. The proposed project lease area is not in proximity to a large body of water, and seiches are not a risk to the proposed VESI 10 Tierra Buena BESS project.

A tsunami is a tidal wave produced by off-shore seismic activity. The proposed project lease area is not located within a tsunami inundation area as shown on the California Emergency Management Agency's Tsunami Inundation Map (2009) and would not be subject to inundation by tsunami. The proposed project lease area is not located within a flood hazard, tsunami, or seiche zone; therefore, there is no risk of release of pollutants due to project inundation within these zones. No impact.

6.10.7.8 Obstruct Implementation of Water Quality Control Plan or Sustainable Groundwater Management Plan. No Impact

As discussed above in section 6.10.7.1, VESI 10, LLC would employ BMPs throughout the construction and operations phases of the project to ensure that discharges are limited to the greatest extent possible. Runoff from the BESS facilities would either infiltrate or evaporate. Any runoff that does not infiltrate or evaporate onsite would be contained by a berm that would be constructed along western and southern parcel boundaries to allow for further infiltration on the parcel. Site-specific BMPs would be designed by the contractor in compliance with all applicable regulations. Lithium-ion batteries would be fully contained in battery storage enclosures, and in the event of a rupture or otherwise defective battery, no battery fluids would discharge from within the enclosures. Given that much of the BESS facilities would be pervious and nearly flat, operation of the BESS facility would not substantially degrade water quality or obstruct implementation of water quality control plans. The BESS facility requires only small amounts of water for a vegetative hedge which will be supplied from an existing well on site and will not require any

additional water use than that which was used on the property historically. Thus, the BESS facilities water demands will have no impact on sustainable groundwater management plans. No Impacts.

6.11 LAND USE AND PLANNING

This section analyzes the potential impacts on land use and planning that may result from the proposed VESI 10 Tierra Buena BESS project. The discussion is based primarily on observations made during site visits conducted during March through August of 2019, as well as other available land use planning documentation from the current Sutter County 2030 General Plan. The goals and policies of the Sutter County 2030 General Plan are implemented by zoning regulations. Each area within the County is assigned a land use plan designation and zoning classification, which describes the standards for use or development. The zoning regulations set forth development standards for such items as building height, property-line setbacks, and landscaping.

6.11.1 Background

6.11.1.1 Regulatory Context

Federal Regulations

No applicable federal plans or policies are anticipated to influence land.

State Regulations

California Environmental Quality Act

The primary applicable state regulation is CEQA, Public Resources Code Sections 21000-211781 and the CEQA Guidelines Code of Regulations Sections 15000-15387. No other applicable State land use plans or policies have been identified.

Government Code – Land Use Laws

California Government Code Sections 65000 et seq. is the foundation for local planning in California. California Government Code Sections 65000 et seq. contains many of the laws pertaining to the regulation of land uses by local governments including: the general plan requirement, specific plans, subdivisions, and zoning.

Local Regulations

City and County Zoning and General Plan Designations

The California State Legislature, pursuant to Government Code Section 65300, requires each city and county jurisdiction in the state to prepare a local general plan. The general plan is the primary planning document that establishes policies to regulate the development, function, and use of land within the boundaries and planning area of each city or county. General plans are required to contain the following seven elements or chapters: land use, circulation, housing, conservation, open space, noise, and safety. Although all elements carry equal weight, the land use element designates the pattern and scope of development. Land use designations are one of the primary tools cities and counties use to establish a comprehensive plan for guiding development. Typical land use designations are Residential, Commercial, Agricultural, Industrial, and Open Space, with subcategories based on densities or uses. Land use designations are supported by general plan policies that generally define how land can and cannot be used.

General plan policies are supported by local ordinances such as zoning, which describe the specific requirements for developing a parcel within an identified land use designation. Zoning ordinances define the specific allowable uses for each type of land use designation. Land uses may be classified in the zoning ordinance as principally permitted, conditionally permitted, or permitted under other special circumstances. Under most zoning ordinances, principally permitted land uses require a simplified land use permitting process, whereas Conditional Use Permits and other special-circumstance use permits have additional criteria for being considered allowable. Conditional Use Permits are discretionary actions of the local government and as such require the appropriate CEQA document to allow the approval of the Conditional Use Permit request.

Sutter County 2030 General Plan

Sutter County's General Plan outlines a vision of a long-range physical and economic development as well as conservation. Pertinent policies for electric utility use in Sutter County are outlined in the Sutter County 2030 General Plan and listed in Table 6.11-1.

Sutter County Code of Ordinances – Section 1500, Zoning Code, Part 1 Enactment, Rules, and Use Classifications; Part 2 District Specific Regulations; Part 3 Use Specific Regulations; Part 4 General Regulations; Part 5 Process and Enforcement; and Part 6 Terms and Definitions

The zoning classification for the proposed project lease area is Agriculture (AG). The AG zoning district is applied to areas of the County that are used for agricultural purposes. The Sutter County Zoning Code 1500-03-040 "Agricultural Use Types" defines agricultural use types in twelve broad terms: A) Agricultural Education and Entertainment; B) Agricultural Homestays; C) Agricultural Manufacturing; D) Agricultural Processing; E) Agricultural Products Sales; F) Agricultural Supplies and Services; G) Agricultural Truck Yards; H) Agriculture; I) Animal Processing; J) Intensive Animal Operations; K) Commercial Stables; and L) Wineries, Breweries, Distilleries, and Mills. AG zoning is consistent with the Agricultural-20 land use designation of the General Plan.

Table 6.11-1: Applicable Land Use Policies

Policy Document/ Section	Policy Number	Policy Statement
Sutter County 2030 General Plan		
Land Use	LU-1.5	**Minimize Land Use Conflicts.** Avoid/minimize conflicts between land uses and ensure that new development maintains the viability of adjacent agricultural, open space, and rural uses and minimizes impacts upon existing residents, businesses, and resources. *(LU 1-B)*
Land Use	LU-1.6	**Buffers.** Require new development adjacent to agricultural and open space lands to provide buffers and incorporate mitigation to minimize impacts as appropriate. Agricultural buffers shall be in accordance with the Sutter County Design Guidelines and project environmental review. *(LU 1-B)*
Land Use	LU-1.8	**Commercial and Industrial Buffers.** Require new commercial and industrial development to incorporate, as appropriate, buffers, landscape setbacks, masonry screening walls, berms, building setbacks and placement, performance standards, and other measures that mitigate visual and operational impacts to adjacent uses in compliance with the Sutter County Design Guidelines and project environmental review. *(LU 1-B)*
Land Use	LU-1.16	**Views from Rural Roadways and Highways.** Prohibit new projects and activities that would obscure, detract from, or negatively impact the quality of views from the County's rural roadways and highways. Limit off-site advertising along County roadways and highways. *(LU 1-B)*
Land Use	LU-9.3	**Non-County Public Facilities.** Encourage school, utility, and other non-County public agencies to plan and design their structures and improvements at a high level of visual, architectural, and landscape quality that compliments adjacent neighborhoods and uses.

Sources: Sutter County 2030 General Plan

6.11.2 Methodology

Guidelines and key sources of data used in the preparation of this section include the following:

- A site reconnaissance survey
- Review of current U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps
- Aerial photography
- Review of Sutter County Zoning Code Ordinances and the Sutter County 2030 General Plan
- Review of State Code pertaining to land uses and development standards

- Review of California Public Utilities Commission Resolution E-4909 ordering PG&E to develop a Battery Energy Storage System for Pease electric service sub-area to meet local capacity shortfall of 18 megawatts.

6.11.3 Environmental Setting

6.11.3.1 Regional Land Use

The City of Yuba City is a city in the southern Sacramento Valley, is the county seat of Sutter County, and the sphere of influence for the City of Yuba City reaches to Pease Road just 730 feet south of the proposed project lease area. Yuba City is the 133rd largest city in California with a population of 66,229 of the Sutter County population of 94,737 estimated in 2018 by California Department of Finance. Major highways that pass near the proposed project lease area include: State Route 99, State Route 70 and State Route 20. The Sutter County portion of the Sacramento Valley is primarily farmland associated with fruit and nut orchards. Yuba City and Sutter County are connected southward with the Sacramento Metropolitan area by State Route 99/70 and Interstate 5. The Southern Sacramento Valley is primarily farmlands with mix of various land uses throughout the region.

6.11.3.2 Surrounding Land Use

The proposed project lease area is surrounded by agricultural use types as defined by the Sutter County zoning code such as: Agricultural Homestays, Agricultural Truck Yards, and Agriculture-Orchards and Row crops. In addition, several facilities of essential public electric facilities are adjacent to the proposed project lease area which include: High-power Transmission Lines and Towers, Eclectic Distribution Lines, and Electric Power Substation. Residential structures are located on the same parcel as the proposed project lease area approximately 505 feet south. In addition, residential structures are located northwest, north, south, and east of the proposed project lease area, approximately 365 feet northwest, 850 feet north, and 1,100 feet east. Due to the AG zoning classification and the long historic use of the land in orchard production around the proposed project lease area, no residential development is foreseen. The lease area is bordered immediately to the north by a lot which contains a residence and outbuildings and is approximately 1.75 +/- acre in size. The property to the west contains an ag-butler type building, ag-storage buildings, two residences, and fruit orchards. The property to the east contains the PG&E electric distribution line, PG&E high-power transmission line and tower, and fruit orchards. The property to the south of the proposed project lease area on the same parcel contains the Valdez Trucking agriculture truck yard, and Valdez residence. Further south from the main project parcel is the PG&E electric power substation, ag-butler type buildings, residence, and orchards. (*See Figure 3.8-1 Project Setting*)

6.11.3.3 Planning

Sutter County 2030 General Plan

The proposed project lease area is designated as Agriculture-20 (AG-20) land use designation by the Sutter County 2030 General Plan (*See Figure 6.11-1 General Plan Map*). The agricultural land use designation (AG-20) provides for the long-term production, processing, distribution, and sale of food and fiber on prime agricultural soils and other productive and potentially productive lands. Typical permitted uses include crop production, orchards, grazing, pasture and rangeland, and associated residences and agricultural support uses. The proposed BESS facility is considered an agricultural support use since it was ordered by the CPUC as an essential service use to meet the Pease electric service sub-area local capacity shortfall of 18 megawatts. The development standards for the AG-20 land use designation is 0.05 du/acre and no maximum floor area ratio (FAR) is established per Table 3-2 Land Use Development Standards, page 3-9 of the General Plan. The general plan includes considerations limiting population/housing and uses allowable in agriculture land use designations. It is unlikely that an appreciable population will develop around the proposed project lease area.

Sutter County Zoning Code

As discussed above, the zoning classification for the proposed project lease area is Agriculture (AG) zoning district, which is consistent with the Agriculture-20, (AG-20) land use designation of the Sutter County 2030 General Plan. The development and operations of the proposed BESS facility is designated

as a conditionally permitted use within the zoning classification requiring Sutter County discretionary approval under the zoning code.

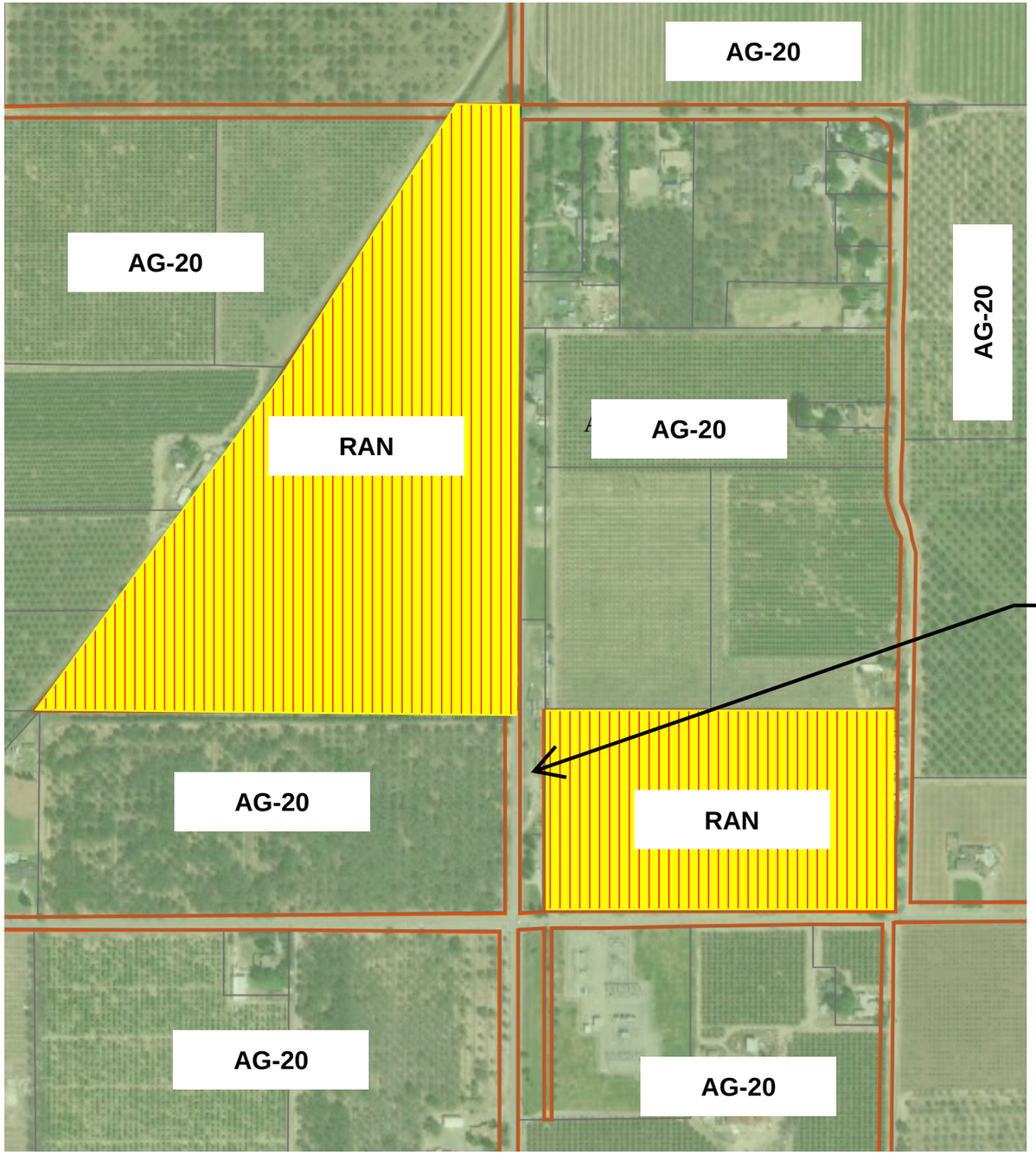
The purpose (Zoning Code 1500-05-010 Purpose) of the Agriculture (AG) zoning classification is intended to protect and promote the long-term viability and productivity of Sutter County's agricultural resources, uses and economy. This district provides for parcel sizes to sustain a wide variety of agricultural and farming activities, low intensity rural uses and open space. Agricultural support services and industries that are compatible with adjacent uses and operations are encouraged. The AG District implements the General Plan Agricultural (AG-20, AG-40, and AG-80) and Open Space (OS) land use designations.

The Sutter County Zoning Code specifies allowed use types (Zoning Code 1500-05-020 Allowed Use Types) as either of the following: (P) Permitted, (ZC) Zoning Clearance, (AP) Administrative Permit, (UP) Use Permit, and Not Permitted. Under the AG zone the proposed VESI 10 Tierra Buena BESS project falls under the general use category "Transportation, Communication, and Utilities Use Types", with a specific use type of "Community Facilities and Services-Major" which is allowed in the AG zone classification by (UP) Use Permit. (See: *Zoning Code Table 1500-05-1: Allowed Use Types*)

Utility Planning

Section 701 of the Public Utilities Code gives the CPUC authority to take any action to conduct its duties: The commission may supervise and regulate every public utility in the State and may do all things, whether specifically designated in this part or in addition thereto, which are necessary and convenient in the exercise of such power and jurisdiction. Several areas of California law give the CPUC authority to act to ensure a safe and reliable energy supply for the state as well as just and reasonable retail rates for such services. The CPUC's authority over utility regulation and supervision arises from the California Constitution, state law and court decisions as well as federal law including, but not limited to, the Federal Power Act, 16 U.S.C. § 791 et seq., and section 714 of the Energy Policy Act of 1992, 16 U.S.C. §824(g). (*General Order 167, Section 1; see generally Southern California Edison Company v. Public Utilities Commission (2014) 227 Cal.App.4th 172, 186-196*.) Several state statutes direct the CPUC to assure the long-term reliability of California's electric energy supply. Section 380 of the California Public Utilities Code requires the Commission to establish and enforce resource adequacy requirements to assure "development of new generating capacity and retention of existing generating capacity that is economic and needed." (Section 380, subds. (b)(1); see also subds. (c)-(f).) As such the CPUC in its planning for the delivery of electric service to portions of Sutter County and Yuba City authorized PG&E to solicit and procure a battery energy storage system for the Pease sub-area by passage of CPUC Resolution E-4909 on January 11, 2018. PG&E, California Energy Storage Association (CESA), Sierra Club, Earth Justice, and California Environmental Justice Alliance and Environmental Defense Fund all expressed support for the CPUC Resolution E-4909. VESI 10, LLC, responded to the PG&E solicitation and was awarded the contract, subject to VESI 10, LLC obtaining Sutter County clearance and approval for the proposed VESI 10 Tierra Buena BESS project.

The CPUC recognizes battery energy storage systems can be fast-responding, reliable, and may be able to be procured at sufficient quantity and reasonable cost to alleviate a projected capacity shortfall and a high voltage issue in the Pease sub-area within Sutter County. Battery energy storage systems can be constructed in a short timeframe and may be able to be brought on-line in sufficient time as to obviate the need for RMR contracts, or their extension, for the Feather River Energy Center, and Yuba City Energy Center, subject to Sutter County approval of the Conditional Use Permit for the project. California Public Utilities Code Section 451 requires that every public utility maintain adequate, efficient, just, and reasonable service, instrumentalities, equipment and facilities to ensure the safety, health, and comfort of the public. The CPUC approved battery energy storage system for the Pease sub-area was found to meet the Public Utilities Code Section 451 requirements.



Project Site

Tax Parcels: 10-250-060

APN	10-250-060
ADDRESS	3025 TIERRA BUENA RD
ASSESSED_ACREAGE	1.75
ZONING	AG
GENERAL PLAN	AG-20/RAN
FLOOD	NOT IN FLOODPLAIN
DEVELOP_RIGHTS	

Legend

General Plan

- P - Public
- AG-20 - Agriculture (20 acre minimum)
- AG-40 - Agriculture (40 acre minimum)
- AG-80 - Agriculture (80 acre minimum); AG-SB - Agricultural (Sutter Buttes)
- AG-RC - Agricultural Rural Community
- RAN - Ranchette Parcels

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

N W E S

FIGURE: General Plan Map

DATE:	11-20-2019	SCALE:	NTS
BY:	SCV	FIGURE:	6.11-1

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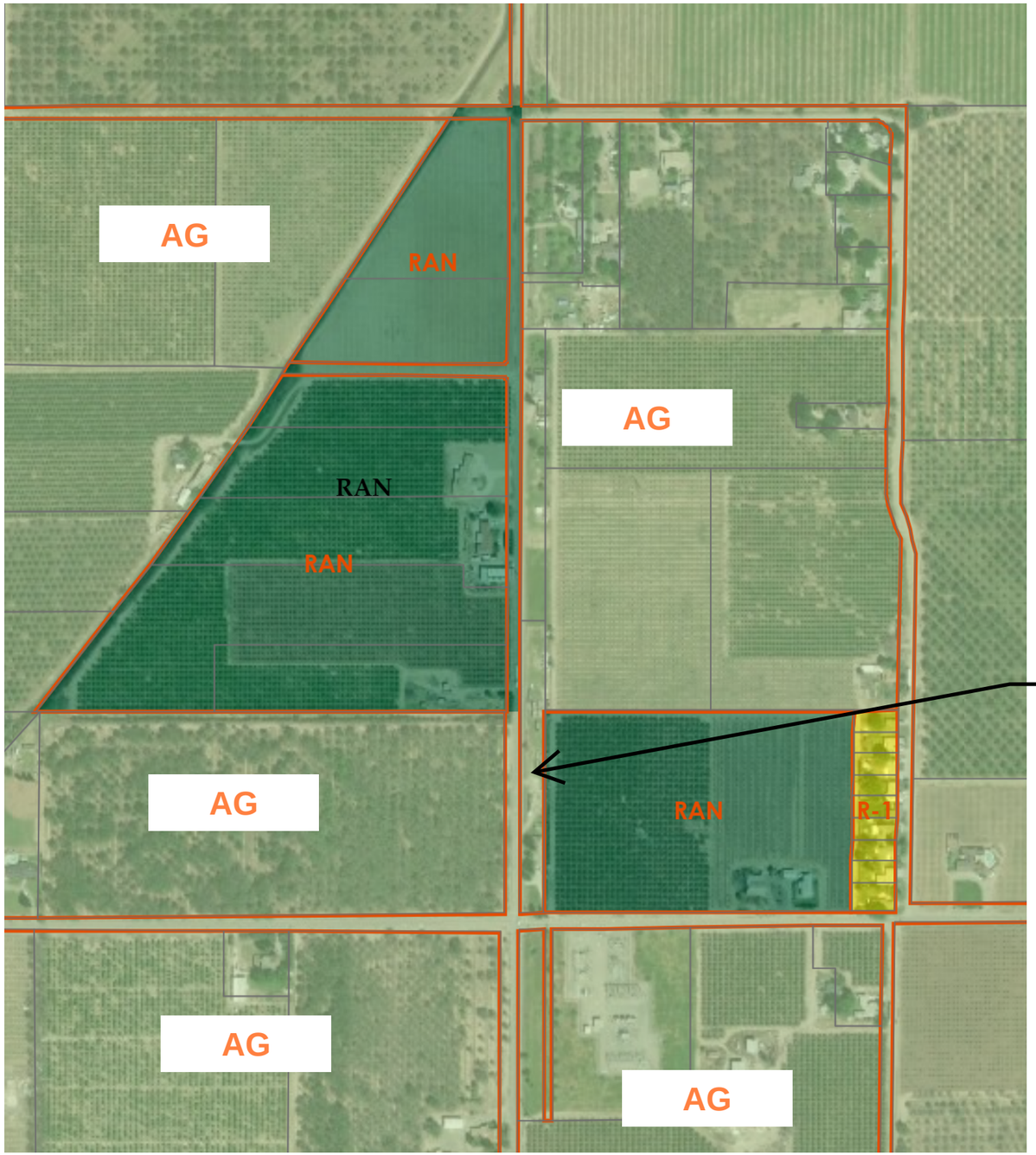

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ZONING	AG
GENERAL PLAN	AG-20/RAN
FLOOD	NOT IN FLOODPLAIN
DEVELOP_RIGHTS	

AG-Agricultural

RAN-Ranchette Parcels

R-1-Single Family Residential

Table obtained from Sutter County Zoning Code, Article 4

Table 1500-05-1: ALLOWED USE TYPES				
Use Types	AG	REC	P	Supplemental Regulations
P Permitted **ZC** Zoning Clearance	**AP** Administrative Permit		**UP** Use Permit	- Not Permitted
Medical Offices and Clinics	-	-	-	
Nightclubs	-	-	-	
Nursery				
Wholesale	P	-	-	
Retail	UP	-	-	
Personal Services	-	-	-	
Personal Storage	-	-	-	
Professional Offices	-	-	-	
Recreational Vehicle Storage	-	-	-	
Recycling Collection Facilities				
Small	P	P	P	See Article 14 – Recycling Collection Facilities (Use Specific Regulations)
Large	-	-	-	
Retail Sales				
General	-	-	-	
Outdoor	-	-	-	
Superstore				
Vehicle and Equipment Sales and Services				
Fuel Stations	-	-	-	
Vehicle Rentals, Sales and Leasing, Light	-	-	-	
Vehicle Rentals, Sales and Leasing, Heavy	-	-	-	
Vehicle Repairs, Light	-	-	-	
Vehicle Repairs, Heavy	-	-	-	
Vehicle Washing	-	-	-	
Industrial Use Types				
Equipment and Materials Storage Yards	-	-	-	
General Truck Yards	UP	-	-	See Section 1500-05-030(E) – Agricultural and General Truck Yards
Impound and Towing Yards	-	-	-	
Manufacturing				
Light	-	-	-	
General	-	-	-	
Heavy	-	-	-	
Research and Development	-	-	-	
Warehousing, Wholesaling, and Distribution,	UP	-	-	See Section 1500-05-030(J) – Agricultural Related Facilities
Transportation, Communication, and Utilities Use Types				

Table 1500-05-1: ALLOWED USE TYPES				
Use Types	AG	REC	P	Supplemental Regulations
P Permitted **ZC** Zoning Clearance	**AP** Administrative Permit		**UP** Use Permit	- Not Permitted
Airports and Landing Strips	UP	-	P	See Section 1500-05-030(R) – Public Facilities
Heliports	UP	-	P	See Section 1500-05-030(R) – Public Facilities
Community Facilities and Services				
Major	UP	UP	P	See Section 1500-05-030(V) – Regional transmission line Projects
Intensive	UP	-	UP	

PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

N W E S

FIGURE: Zoning Map

DATE:	11-20-2019	SCALE:	NTS
BY:	SCV	FIGURE:	6.11-2

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6.11.4 Standards of Significance

An impact to land use and planning would be considered significant if the proposed project would:

- Physically divide an established community; and/or
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

6.11.5 Impacts and Mitigation Measures

6.11.5.1 Project Design and Layout – Consistency with Zoning Development Standards

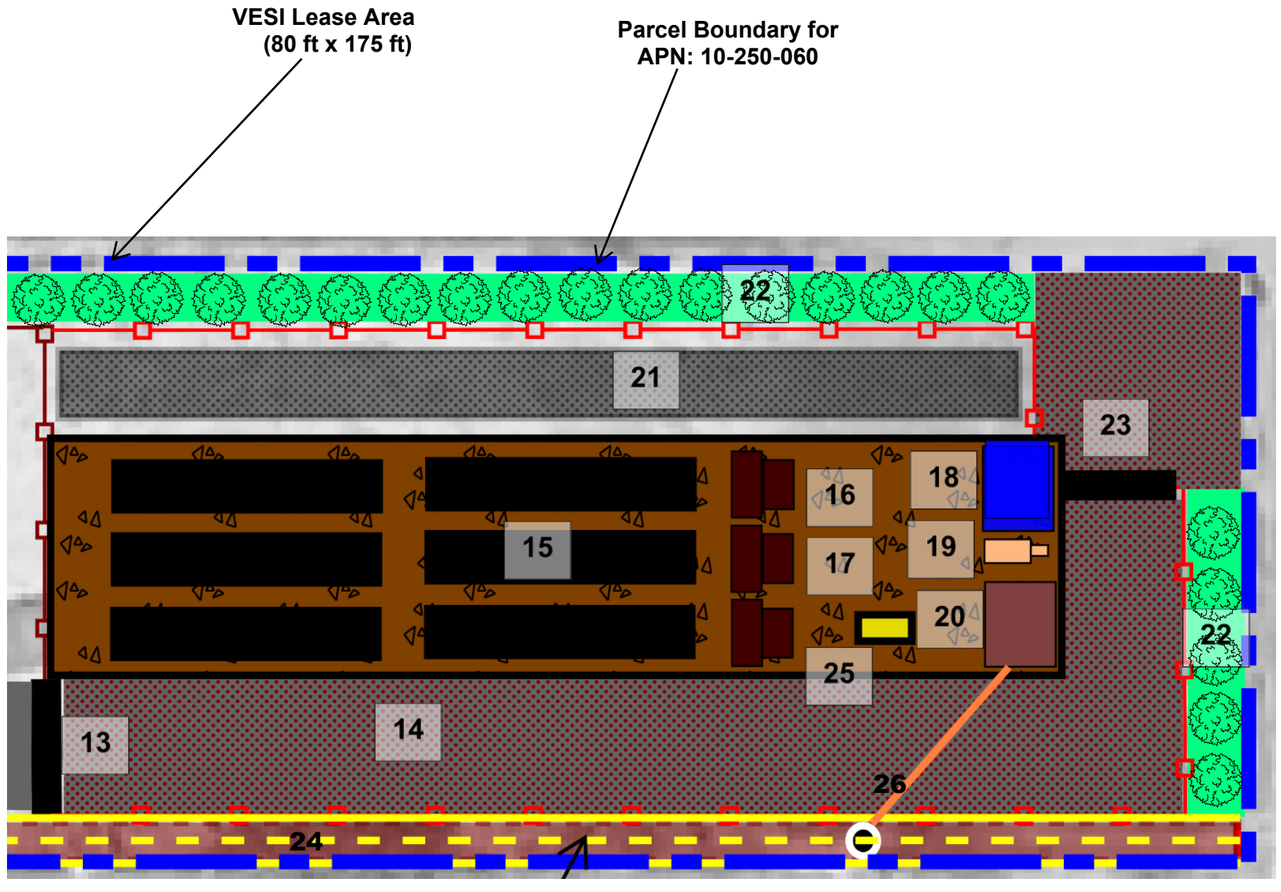
The proposed VESI 10 Tierra Buena BESS project has been designed and a site plan/layout has been developed to be compliant with the Sutter County Zoning Code Development Standards and Exceptions (Zoning Code Table 1500-05-2) for the AG zoning district classification. Minor modifications are proposed to the existing PG&E Pease Road power substation and the PG&E electric distribution lines for the interconnection between the BESS facility and the pole as part of the proposed BESS facility. All PG&E facilities have existed within the proposed project lease area prior to the adoption of the Sutter County General Plan and Zoning Code. The proposed VESI 10 Tierra Buena BESS project is an ordered source of peaker power energy for the Pease Road power substation by the CPUC. No new above-ground electrical transmission or distribution lines would be required for the BESS facility. The battery storage system will interconnect with an existing 16 kV distribution line, which connects to PG&E Pease Road substation to the south approximately 730 +/- feet away. This distribution line will provide energy to recharge the battery system.

The proposed VESI 10 Tierra Buena BESS project would include several modular battery storage systems (6) situated in a cluster of enclosures which measure overall 40 feet long, 8 feet wide, and 6.6 feet high per enclosure cluster. The BESS facility will have six 40-foot-long battery enclosures which would house arrays of lithium ion (Li-ion) batteries and associated wiring and controls. Perimeter fencing and landscaping is proposed as part of the project for screening purposes along Tierra Buena Road which will be irrigated from a private well on the existing parcel. Existing vegetation along the project lease area perimeter would not be modified (one tree on Tierra Buena Road and four trees on the eastern parcel boundary). The battery storage unit will be placed in the vacant portion of the parcel in the designated project lease area. The modular battery unit enclosures will be placed on a pervious concrete slab measuring 36 feet by 150 feet and will be setback from the eastern parcel boundary by twenty-two (22) feet, western parcel boundary by twenty-two (22) feet, northern parcel boundary by twenty-five (25) feet and the southern parcel boundary by approximately seven hundred and thirty (730) feet. The area under the battery unit enclosures and associated ancillary improvements would be pervious concrete slab which will allow water to simply filter through the slab and recharge the groundwater on site.

Due to the level topography of the proposed project lease area, no formal grading will be required. Earthwork will be limited to excavation of approximately 90 cubic yards of soil for the stormwater detention area, pervious concrete slab, conduit banks, and this soil material will be kept on-site. No new above-ground electrical transmission or distribution lines would be required for the battery storage system. Within the proposed project lease area, a distribution voltage cable would be run below grade through underground conduit and would terminate to the base of the existing PG&E distribution pole immediately adjacent to the proposed project lease area. *Figure 6.11-3: VESI 10 Tierra Buena BESS Layout Plan*, below depicts the site plan.

LEGEND

13	Main Gate for BESS Facility
14	Gravel Paved Access Road
15	Battery Storage Enclosures
16	Reinforced Pervious Concrete Slab
17	Electrical Transformer
18	IT Cabinet
19	Power Conversion System (PCS)
20	Switchgear
21	Stormwater Detention Area
22	Vegetative Hedge (Area Highlighted in Green) 5 ft wife planters of photinia (*Photina Fraseri*) planted at 5 feet on center
23	EMS Access Roadbed and Gate
24	PG&E Easement & Pease 1103 Feeder
25	Power Inverter
26	Generation Interconnect



PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: VESI 10 Tierra Buena BESS Layout Plan

DATE: 11-17-2019	SCALE: 1"=20' (11"x17")
BY: SCV	FIGURE: 6.11-3

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The battery storage equipment would be screened from public view by proposed perimeter screening fence and vegetative hedge screening along Tierra Buena Road. The battery enclosures would have a low profile and view of the enclosures will be obscured by the perimeter screening fence.

Dimensions of the proposed project components, as well as the battery storage unit enclosures, are summarized in *Table 6.11-2: BESS Facility Component Dimensions*, below.

Table 6.11-2: BESS Facility Component Dimensions

Battery Storage System Component	Number Of Units	Height (ft)	Width (ft)	Length (ft)	Foundation Design	Surface Area (sq. ft)	Excavation Volume (cy)
Battery Storage System Enclosures	6	6.6	8	40	Pervious Concrete Slab,4 to 6 inches above grade, 18 inches below grade	1920	16
Power Conversion System (PCS)	1	9	11	5	Pervious Concrete Slab, 11 ft by 5 ft, 4 to 6 inches above grade, 18 inches below grade	55	7
Power Distribution Center (PDC)	1	8	12	10	Pervious Concrete Slab, 4 to 6 inches above grade, 18 inches below grade	120	12
2032 kVa Pad-Mounted Transformer	1	6	6	7	Pervious Concrete Slab, 4 to 6 inches above grade, 18 inches below grade	43	5
Power Inverter Pad-Mounted	1	7.5	9	5	Pervious Concrete Slab, 4 to 6 inches above grade, 18 inches below grade	45	6
Pad-Mounted Switchgear	1	4	5	2.5	Pervious Concrete Slab, 4 to 6 inches above grade, 18 inches below grade	12	2
Cable Trench	NA	2	2	100		NA	15
Stormwater Detention	NA	NA	17	150		2250	27
Totals	**13**					**4445**	**90**

6.11.5.2 General Plan Consistency

The proposed VESI 10 Tierra Buena BESS project is required to be consistent with the Sutter County 2030 General Plan. The General Plan land use designation for the proposed project lease area is Agriculture-20 (AG-20). Typical permitted uses in the AG-20 general plan land use designation include crop production, orchards, grazing, pasture and rangeland, and associated residences and agricultural support uses. The proposed BESS facility is considered an agricultural support use since it was ordered by the CPUC as an essential service use to meet the Pease electric service sub-area local capacity shortfall of 18 megawatts. The BESS facility was ordered by the CPUC to replace existing gas powered peaker generated power in Sutter County and to service the PG&E Pease Road power substation. The

PG&E Pease Road power substation was installed in Sutter County prior to the adoption of a zoning code and general plan. The proposed BESS facility would be a separate accessory use to the existing PG&E power substation, providing greater electricity reliability in an environmentally-friendly way.
The proposed VESI 10 Tierra Buena BESS project is a planned public utility energy storage project necessary for electric power capacity required to allow the build-out of the Sutter County 2030 General Plan. CPUC has endorsed new technologies for the grid, including battery energy storage, which will alter the traditional real-time requirements for grid operations and the nature of production, transmission, and distribution of power—opening up new avenues for flexible and cost-effective operation of the grid in supporting existing and future development within Sutter County. The proposed VESI 10 Tierra Buena BESS project is consistent with the AG 4.3 New Technologies policy of the Sutter County 2030 General Plan which states "*Support the development and use of new technologies that facilitate resource efficient operation of agriculturally related industries, including food processing. These technologies may include energy development technologies, such as wind, solar and waste sources; energy and water conservation technologies; cultivation practices; global positioning system (GPS) applications; and others that improve the profitability of agriculture in Sutter County*". AG 4.3 policy of the Sutter County 2030 General Plan mandates that projects such as the proposed VESI 10 Tierra Buena BESS project be granted support and approval from the Sutter County Planning Commission and Board of Supervisors in upholding and endorsing the AG 4.3 policy in making discretionary land use decision.

The existing PG&E Pease Road power substation is a significant part of the infrastructure providing electricity throughout Sutter County, northern Yuba City in the electrical service area known as the Pease sub-area, and the proposed VESI 10 Tierra Buena BESS project would improve the reliability of electricity distribution throughout the grid and to the general public by storing excess electrical energy from the electric grid as electro-chemical energy and delivering it back to the grid as electrical energy. This is a use that would serve the residents, agricultural community and businesses in the Sutter County Pease electrical sub-area and therefore the proposed project is consistent with the stated objective of the AG-20 land use designation as defined in the General Plan Land Use Element. Therefore, the battery storage project would not result in any conflict with the General Plan Land Use standards as the PG&E power substation, PG&E electric distribution lines, and the proposed BESS facility as a separate CPUC ordered accessory use of the existing public utility infrastructure in the Pease sub-area. The PG&E power substation and electric distribution lines are legally permitted, the intensity and character of the current land use would not change, and the overall BESS project would remain in compliance with the General Plan's stated Guiding Principles and Goals.

The proposed VESI 10 Tierra Buena BESS project is consistent with and furthers in many respects the goals and policies of the Sutter County 2030 General Plan. Specifically, the BESS facility is an "associated agricultural support use" as defined in the Sutter County 2030 General Plan and is properly located within the AG-20 land use designation, consistent with the General Plan. The VESI 10 Tierra Buena BESS project would further key goals and policies stated in the General Plan's Land Use, Economic Development, and Growth Management Elements, and is consistent with the goals and policies of the other elements, as noted below:

- The Goal LU-1 of the Land Use Element states, "*Promote the efficient and sensitive use of lands to protect and enhance Sutter County's quality of life and meet the needs of existing and future residents and businesses.*" This BESS facility is placed on land adjacent to the existing PG&E substation which historically has never been used for agricultural production, but rather is the results of an abandoned railroad corridor. Thus, placement of the proposed project on this parcel and re-utilization for a vital public purpose as providing peaker power to avoid black out electrical services is meeting the needs of existing and future residents and businesses, while protecting sensitive use of lands within Sutter County.

- The Goal LU-3 of the Land Use Element states, "*Protect the character of the County's unincorporated rural communities while allowing appropriate opportunities for new growth*." The proposed BESS facility will be built consistent with the existing character of the Pease Road and Tierra Buena Road area, which is characterized by agricultural truck yards, public utility facilities,

agricultural storage buildings and similar development to the proposed BESS facility. Meeting the design standards of the zoning code such as perimeter screening wall, and screening vegetation ensures the BESS facility is in character to the surrounding land uses and development improvements.

- The Goal LU-9 of the Land Use Element states, "*Designate adequate and compatible sites for governmental/public uses and take a lead role when feasible on regional issues of importance to Sutter County, its residents, and businesses.*" The proposed BESS facility is a quasi-public use, since its purpose is to provide the peaker power needs of the Pease sub-area as ordered by CPUC and remove the Pease sub-area off dependence on gas-fired power generation, reducing the greenhouse gas footprint in Sutter County, and avoiding rolling black outs of electrical services in the region. The placement of the proposed BESS facility is vital to the Sutter County region in planning out reliable and sustainable electrical service. The BESS facility is also required to implement the full build-out of the Sutter County 2030 General Plan by providing the required electric utility infrastructure capacity to meet the demands of existing and future growth under the General Plan. The approval of the BESS facility furthers attainment of SB100, "*The 100 Percent Clean Energy Act of 2018*", calling for 100% sustainable electrical energy in California.

6.11.5.3 Zoning Code Consistency

The proposed VESI 10 Tierra Buena BESS project is required to be consistent with the Sutter County Zoning Ordinance. The proposed project lease area is zoned Agriculture (AG) (Zoning Code Article 5). Major community facilities are allowed in the zone by Use Permit to be approved by the Sutter County Planning Commission. BESS facilities that are accessory to the existing electrical transmission substations and uses, buildings, and structures accessory and customarily incidental to the electric transmission substation use are conditionally permitted uses within the AG Zone. Due to the special character and possible effect on surrounding uses, the proposed battery storage system requires the issuance of a Conditional Use Permit pursuant to Zoning Code Table 1500-05-1 to allow the battery storage system as a use incidental to the previously permitted and existing PG&E Pease Road Substation.

The proposed BESS facility would be consistent with the Sutter County Zoning Development Standards (Zoning Code Table 1500-05-2). The proposed VESI 10 Tierra Buena BESS project would not cause an increase in noise, odors, smoke, or vibration and all battery storage areas are screened from outside views by a proposed perimeter screening fence. The BESS facility would be setback approximately twenty-two (22) feet from the eastern parcel boundary, twenty-two (22) feet from the western parcel boundary, twenty-five (25) feet from the northern parcel boundary and approximately seven hundred and thirty (730) feet from the southern parcel boundary. The ingress/egress to the proposed lease area will utilize the driveway for the Valdez Truck Yard, with an easement through the Valdez Truck Yard to the BESS facility main gate, no new access driveways are proposed by the project. Ingress/egress to the parcel and the proposed project lease area is of adequate size to serve the existing uses on the parcel (Valdez Trucking agricultural truck yard) and those of the BESS facility. An additional ingress/egress is proposed at the northern end of the proposed project lease area as an emergency vehicle access only in case the main entrance is blocked. The emergency vehicle access gate will be setback twenty-five (25) feet from the Tierra Buena Road right-of-way to allow emergency vehicles the ability to pull off Tierra Buena Road prior to opening the gate. All access driveways, access easement roadway, and internal access roadways will be adequate in size (20 feet wide) to meet Fire Department requirements. No changes are proposed to the existing landscaping. Therefore, the proposed VESI 10 Tiera Buena BESS project is consistent with the Sutter County Zoning Ordinance.

6.11.5.4 Conditional Use Permit

The proposed project lease area is adequate in terms of location and physical characteristics to accommodate the BESS facility. The proposed project lease area is currently being utilized as agricultural truck yard (Valdez Trucking), Single Family Residence (Valdez Home) and a PG&E easement which accommodates the electric distribution lines along the eastern boundary of the parcel and proposed project lease area. The Valdez Trucking Yard is a Sutter County approved small agricultural truck yard

which is limited to parking five or fewer agricultural trucks and trailers on the parcel as part of the Valdez Family owned agricultural trucking business. (See Appendix C: *Sutter County Zoning Clearance # M-19-036 for Valdez Trucking*).

In addition, the proposed BESS facility meets the performance standards established for uses within the AG zoning district. Improvements associated with BESS facilities would be located within the proposed screening fenced perimeter and would be largely screened from view. Therefore, the project does not change the adequacy or character of the site. As such, the parcel will remain adequate in size, shape, location, and physical characteristics to accommodate the intensity of the BESS facility development proposed and the existing improvements such as the Valdez Trucking, agricultural truck yard and Valdez residence on the southern end of the parcel.

The existing streets and highways (Tierra Buena Road, Eager Road, E/W Onstott Frontage Road, Pease Road, State Route 99, State Route 20) in the vicinity of the parcel area are adequately designed to support the safe and efficient movement of construction crews and VESI 10, LLC, employees in the project area because they are of adequate size to accommodate the surrounding uses. The transportation system is also adequate to service the transport of BESS equipment to the proposed project lease area.

The parcel will continue to be served by the Yuba City Fire Department/CSA-G and Sherriff's Department. No water service or wastewater service from any County Service District is required. To the extent service is required, the Yuba City Fire Department/CSA-G and the Sheriff's Department have adequate capacity to continue to serve the parcel based upon communications with the above-mentioned agencies.

The VESI 10 Tierra Buena BESS project will not be detrimental to the health, safety, comfort, convenience, and general welfare of the neighborhood and will not be incompatible with the surrounding areas, as the improvements are minor in nature and would not expand the existing use and activity footprint of the existing parcel. The VESI 10 Tierra Buena BESS project will maintain the existing PG&E Pease Road power substation use and will improve reliability of energy delivery to the grid by constructing a battery storage system and meeting the 18-megawatt shortfall forecasted by the CAISO for the Pease sub-area.

The BESS facility will be designed in accordance with various electrical and safety codes and regulations and includes numerous safety features. Key features include voltage and current protection via software controls; physical protection via component isolation; and fire alarm and suppression systems. The battery storage system enclosure would include a fire suppression system designed to detect and suppress fires. If smoke is detected or if the system is manually triggered, alarm bells would sound, horn-strobes would buzz and flash, and the suppression system would release a dry aerosol agent from canisters mounted in the battery storage system enclosures. The system is designed to extinguish a fire within 10 seconds.

A Public Health Screening-Level Assessment in Section 6.9 *Hazards and Hazardous Materials* of this IS was conducted to characterize the public health effects in the event of a battery malfunction. The expected pollutants emitted from the modeled scenarios included several conservative factors, including allowing both the non-combustion and combustion malfunction events to continue without control for over an hour. The results of this analysis concluded that public health impacts associated with the system malfunctions are not considered detrimental to the nearest receptors (i.e., residences along Tierra Buena Road). The potential impacts at other nearby but more distant receptors, such as Islamic Center of Yuba City, Sikh Temple, Gurdwara Sahib Yuba City, Butte Vista Elementary School and the Encinal Elementary School, are similarly not considered detrimental.

6.11.5.5 Summary of Land Use Impacts

In accordance with the checklist criteria, the proposed VESI 10 Tierra Buena BESS project would not have a significant impact to land use or planning. The proposed VESI 10 Tierra Buena BESS project is consistent with the Sutter County 2030 General Plan and the Sutter County Zoning Code (1500 et seq.)

The proposed VESI 10 Tierra Buena BESS project would not impair the integrity or the character of the surrounding area. In addition, this BESS facility land use would not be: (1) unreasonably incompatible with or injurious to surrounding properties; (2) detrimental to the health and general welfare of persons residing or working in the neighborhood; or (3) detrimental to the general health, welfare, and safety of residents of Sutter County. No mitigation measures are needed. No Impacts.

6.11.6 Land Use and Planning Initial Study Responses

Table 6.11-3: Land Use and Planning Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

6.11.7 Responses to Initial Study Questions

6.11.7.1 Divide a Community: No Impact

The proposed VESI 10 Tierra Buena BESS project would not result in the physical division of any established community or neighborhood nor would it include changes to the existing circulation network. The proposed VESI 10 Tierra Buena BESS project represents a type of community services utility land use on a parcel that has been used for agricultural truck yard land uses and adjoining parcels for electric substation and electric distribution and transmission lines for decades. Therefore, there would be no impact related to dividing an established community.

6.11.7.2 Conflict with Plans or Policies: No Impact

The Sutter County 2030 General Plan land use designation for the subject parcel is Agriculture-20 (AG-20). The General Plan does not describe the BESS facility designation as a discrete land use, and, instead, as a "*Associated Agricultural Support Use*" land use within the General Plan land use designation of AG-20. The current zoning classification for the subject property is Agricultural (AG). The proposed VESI 10 Tierra Buena BESS project is a conditionally permitted use in this land use zoning classification under the Sutter County Zoning Code (Table 1500-05-1).

The *CEQA Guidelines* require consideration of whether a proposed project may conflict with any applicable land use plan, policy, or regulation that was adopted for the purpose of avoiding or mitigating an environmental impact. This environmental determination differs from the larger policy determination of whether a proposed project is consistent with a jurisdiction's general plan. The former determination that is intended for consideration in a CEQA document is based on, and limited to, a review and analysis of environmental effects. Policy conflicts are considered environmental impacts only when they would result in direct environmental effects.

The potential environmental impacts of the proposed project are disclosed and analyzed in this Initial Study/Mitigated Negative Declaration. As described in this document, the project would not have any potentially significant and unavoidable environmental impacts. With the incorporation of the mitigation measures identified in this document, all impacts would be less than significant. There would be no conflicts with any applicable land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect. The proposed VESI 10 Tierra Buena BESS project is consistent with the existing zoning classification and general plan designations. In addition, the proposed land use is compatible and consistent with surrounding land uses. Therefore, there is No Impact.

6.12 MINERAL RESOURCES

This section describes mineral resources in Sutter County and analyzes the potential impacts on mineral resources that may result from the proposed VESI 10 Tierra Buena BESS project. The discussion is based primarily on United States Geological Survey topographic and geologic maps, information contained in the Sutter County 2030 General Plan and Environmental Impact Report for the General Plan, and other available mineral resource literature.

6.12.1 Background

6.12.1.1 Regulatory Context

Federal Regulations

There are no federal regulations regarding mineral resources that are applicable to the project.

State Regulations

California Surface Mining and Reclamation Act

The California Surface Mining and Reclamation Act of 1975 requires classification of lands into Mineral Resource Zones (MRZ) based on the known or inferred mineral resource potential of that land. The classification process is to be completed by a State Geologist and is based solely on geology, without regard to land use or land ownership. The primary goal of mineral land classification is to help ensure that the mineral resource potential of lands are recognized and considered in the land use planning process. MRZ dedications are listed directly below:

MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.

MRZ-2: Areas where adequate information indicates significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.

MRZ-3: Areas containing mineral deposits the significance of which cannot be evaluated from available data.

MRZ-4: Areas where available information is inadequate for assignment to any other MRZ.

Local Regulations

Sutter County 2030 General Plan

The Sutter County 2030 General Plan states that there are no areas within Sutter County designated by the state Mining and Geology Board (MRZ-2 or MRZ-3) to have regional or statewide significance. The mineral resources present within Sutter County are not enough to trigger the development of specific Mineral Resource Management Policies by the County per Public Resources Code Section 2762.

6.12.2 Methodology

Information for this section was obtained from the Sutter County 2030 General Plan, General Plan Background Report and the Sutter County 2030 General Plan Draft EIR.

6.12.3 Environmental Setting

6.12.3.1 Regional Overview

No important extractive resources are identified in Sutter County. Some minor resources of sand, gravel, and placer gold, exists. Extraction of these minerals has occurred historically along the Feather River.

6.12.3.2 Study Area Setting

The proposed project lease area is classified as an MRZ-1; adequate information indicates that no significant mineral deposits are present, or it is judged that little likelihood exists for their presence. The proposed VESI 10 Tierra Buena BESS project does not contain any known mineral resources including any rock, sand, or gravel resources.

6.12.4 Standards of Significance

An impact to mineral resources would be considered significant if the proposed project would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; and/or
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

6.12.5 Impacts and Mitigation Measures

The proposed VESI 10 Tierra Buena BESS project does not contain any known mineral resources including any rock, sand, or gravel resources and it is not expected that the relatively all orchards and agricultural area would contain mineral resources, because the soil is expected to have similar characteristics. Furthermore, if any mineral resources were to be discovered on the proposed project lease area, it is not feasible to mine them given the developed status of the proposed parcel and the Sutter County Zoning Ordinance of AG, which does require a Use Permit for quarrying or mining within this zoning classification. Thus, the proposed VESI 10 Tierra Buena BESS project would not result in significant mineral resource impacts.

6.12.6 Mineral Resources Initial Study Responses

Table 6.12-1: Mineral Resources Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☑

6.12.7 Responses to Initial Study Questions

6.12.7.1 Loss of Mineral Resource: No Impact

No significant mineral deposits are present in the proposed project lease area or it is judged that little likelihood exists for their presence. The proposed VESI 10 Tierra Buena BESS project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, as no significant mineral deposits are present in the proposed project parcel nor in the surrounding area, or it is judged that little likelihood exists for their presence. Therefore, there would be No Impact.

6.12.7.2 Loss of Mineral Resource Recovery Site: No Impact

The Sutter County 2030 General Plan states that there are no areas within Sutter County designated by the state Mining and Geology Board (MRZ-2 or MRZ-3) to have regional or statewide significance. The mineral resources present within Sutter County are not enough to trigger the development of specific Mineral Resource Management Policies by the County per Public Resources Code Section 2762. Adequate information indicates that no significant mineral deposits are present, or it is judged that little likelihood exists for their presence. The proposed project lease area does not include a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, there would be No Impact.

6.13 NOISE

The following section addresses noise as it relates to the construction and operation of the proposed VESI 10 Tierra Buena BESS project. A review of the setting surrounding the proposed project lease area was carried out in order to identify any noise impacts that might occur. Noise sensitive receptors closest to the proposed project lease area are identified as well as the laws, ordinances, regulations, and standards that regulate noise levels at those receptors. The following discussion addresses noise terminology, existing noise levels in the project vicinity, anticipated noise levels from proposed BESS facility operations, and how impacts to noise-sensitive receptors would be avoided. Noise generated by the proposed BESS facility during operations and construction is assessed using California Environmental Quality Act (CEQA) and noise guidelines adopted by Sutter County and the Goals and Policies of the Sutter County 2030 General Plan. The Sutter County Noise Control ordinance (Zoning Code Article 21.5) is enforceable by the Development Services Director, County Sheriff, and/or other assigned County officials. The ordinance includes definitions, general noise regulations, and incorporates existing General Plan Noise Element standards.

6.13.1 Background

6.13.1.1 Fundamentals of Environmental Acoustics

The decibel scale used to describe sound levels is a logarithmic rating system to account for large range in audible sound intensities. A general rule for the decibel scale is that a 10-decibel (dB) increase in sound is perceived as a doubling of loudness by the human ear. For example, a 55-dB sound level would sound twice as loud as a 45-dB sound level. Generally, people cannot detect differences of 1-dB whereas a 5-dB change is clearly noticeable.

Several sound measurement descriptors are used to assess the effects of sound on the human environment. These include the equivalent sound level, L_{eq}, which is the level of a constant sound that has the same sound energy as the actual fluctuating sound. It is like the average sound level. The day-night sound level, L_{dn}, is like the 24-hour L_{eq} except that a 10-dB penalty is added to sound levels between 10 p.m. and 7 a.m. to account for the greater sensitivity of people to sound at night. The Community Noise Equivalent Level, or CNEL, also places a weighted factor on sound events occurring in the evening hours. L_{90} is the sound level that is exceeded 90 percent of the time and is often used to describe the background or residual sound level. Each of these sound level descriptors is found within the Sutter County 2030 General Plan.

Acoustics is defined as the science of sound, including the generation, transmission, and effects of sound waves, both audible and inaudible. Noise, on the other hand, is generally defined as loud, unpleasant, unexpected or undesired sound that disrupts or interferes with normal human activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The objectionable nature of sound is caused by its *pitch* or loudness. *Pitch* is the height or depth of a tone or sound wave, depending on the relative rapidity (frequency) of the sound vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. *Intensity* is a measure of the amplitude or height of the sound wave. *Frequency* describes the sound's pitch and is measured in Hertz (Hz), while intensity describes the sound's loudness and is measured in dB.

Applicable Sound Measurements

The A–weighted decibel (dBA) is a method of sound measurement which assigns weighted values to selected frequency bands to reflect how the human ear responds to sound. The range of human hearing is from 0 dBA (the threshold of hearing) to about 140 dBA which is the threshold of pain. Examples of noise and their A–weighted decibel levels are shown in Table 6.13–2. In general, a three to five dBA change in community noise levels starts to become noticeable, while one to two decibel changes are generally not perceived. Quiet suburban areas typically have noise levels in the range of 40–50 dBA, while those along arterial streets are in the 50–65+ dBA range. Normal conversational levels are in the 60–65 dBA ranges.

In addition to the actual instantaneous measurements of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. To analyze the overall noise levels in an area, noise events are combined for an instantaneous value or averaged over a specific time period. The time–weighted measure is referred to as equivalent sound level and represented by energy equivalent sound level (L_{eq}). The percentage of time that a given sound level is exceeded also can be designated as L_{10}, L_{50}, and L_{90}. The subscript denotes the percentage of time that the noise level was exceeded during the measurement period. Namely, an L_{10} indicates the sound level is exceeded 10 percent of the time and is generally taken to be indicative of the highest noise levels experienced at the site. The L_{90} is that level exceeded 90 percent of the time and this level is often called the base level of noise at a location. The L_{50} sound (that level exceeded 50 percent of the time) is frequently used in noise standards and ordinances.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within ±1 dBA. The data is then imported into computer sound models. These computer models are used to predict environmental noise levels from sources such as roadways and airports over a given area using equal sound level contours. The accuracy of the predicted models depends upon the distance the receptor is from the noise source and natural attenuation caused by structures and other sound barriers. The closer to the noise source, the greater is the model's accuracy (±1–2 dBA).

Since the sensitivity to noise increases during the evening and at night – because excessive noise interferes with the ability to sleep – 24–hour descriptors have been developed that incorporate artificial noise penalties that are added to quiet–time noise events. The *Community Noise Equivalent Level (CNEL)* is a measure of the cumulative noise exposure in a community during a 24–hour period. The *Day/Night Average Sound Level, L_{dn},* is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three–hour period are grouped into the daytime period. The measurement of any sound level requires language used specifically for the measurement of acoustical conditions. Table 6.13-1 defines technical terms that are used in this section.

Appropriate Noise Levels

The "acceptable" guideline level is a day-night equivalent noise level (L_{dn}) (or Community Noise Equivalent Level [CNEL]) of 80 dBA for outdoor noise levels in industrial and agricultural districts. The Sutter County 2030 General Plan calls for maximum allowable environmental noise standard for exterior noise levels not to exceed 75 dBA CNEL. If existing levels are found to be above the guideline up to 90 dBA, then the level is "conditionally acceptable" and additional acoustical analyses are required to demonstrate that noise impacts would be mitigated to a less than significant level by appropriate project design. Based on previous noise studies within the County, existing noise levels within the proposed VESI 10 Tierra Buena BESS project area is 60-dB to 64.9-dB mostly associated with traffic on Tierra Buena Road and agricultural operations within nearby orchards. The Sutter County 2030 General Plan predicts future noise levels till 2030 to remain at 60-dB to 64.9-dB on Tierra Buena Road. Such levels are within the "acceptable" category for industrial/agricultural land use.

As a rule, sound from localized or point sound sources spreads out as it travels away from the source, and the sound level drops at a rate of 6 dBA for each doubling of distance (determined as measured from initial distance from the sound). If the sound source is long in 1 dimension, such as traffic on a highway, the sound source is considered to be a line source. The sound level from a line source generally would drop off at a rate of 3 dBA for each doubling of distance. If the intervening ground between the line source and the receptor is acoustically "soft" (e.g., ground vegetation, scattered trees, clumps of bushes), an attenuation rate of 4.5 dBA for each doubling of distance is generally used.

Any solid structure such as a berm, wall, or building that blocks the line of sight between a source and a receiver serves as a sound barrier and would result in additional sound attenuation (e.g., perimeter screening fence and vegetative hedge surrounding project lease area) The amount of additional attenuation is a function of the difference between the length of the sound path over the barrier and the

length of the direct-line-of-sight path. Thus, the sound attenuation of a barrier between a source and a receiver that are very far apart would be much less than the attenuation that would result if either the source or the receiver is very close to the barrier.

6.13.1.2 Regulatory Context

Federal Regulations

Although there is no singular body of federal environmental noise regulations, several Federal Agencies provide guidance documents which address environmental noise regulations for specific sources. These guidance documents include general residential guidelines and industry/agriculture specific guidelines (including regulations of construction noise sources).

EPA guidelines provide that a general level of an L_{dn} of 55 dBA (49 dBA energy equivalent sound level [L_{eq}]) would adequately protect residential neighborhoods from excessive ambient sounds (EPA, 1974).[1] The FAA and Federal Interagency Committee on Urban Noise have issued land use compatibility guidelines which indicate that a yearly L_{dn} of less than 65 dBA (59 dBA L_{eq}) is compatible with residential land uses; however, these guidelines provide that a community may determine that levels up to 75 dBA (69 dBA L_{eq}) are compatible with residential uses and transient lodgings (but not mobile homes), if such structures incorporate noise-reduction features (14 CFR 150, Appendix A). Lastly, under these formulae, a 3-dBA increase is generally considered the threshold of perceptible change, although a 5-dBA typically represents the minimum threshold increase that would generate a community response.

The Federal Transit Administration (FTA) of the U.S. Department of Transportation (USDOT) provides guideline criteria for assessing construction noise (FTA, 2006).[2] Per the FTA guidelines, construction noise that exceeds a 1-hour L_{eq} of 90 dBA or an 8-hour L_{eq} of 80 dBA during daytime hours would provoke adverse community reaction. [3] Furthermore, noise associated with construction is likely to be determined "significant" if: (1) the construction activity is permanent; (2) use of heavy equipment would occur *after* daytime hours; (3) noise exceeds applicable local standards or, in the absence of local standards, exceeds the FTA guidance; and (4) no feasible noise abatement measures can be implemented for noise-producing equipment[4]. Lastly, FTA and the Federal Railroad Administration (FRA) term increases in operational noise of 10 dBA as having an "impact," while increases of 15 dBA or more are "severe." (FRA 1998; FTA 2006). To ensure that the proposed VESI 10 Tierra Buena BESS project does not have any negative impacts or severe noise effects, appropriate mitigation measures would be taken. These mitigation measures would be discussed in detail in Section 6.13.5.2.

State Regulations

The State of California does not provide a specific threshold or definition for "substantial increase in noise." In fact, the State's regulation of "noise" is quite ambiguous and primarily envisions the creation of a noise control office to implement and enforce noise regulation through police powers offered by the Legislature.[5] However, the CEQA Checklist identifies criteria that must be considered when analyzing a project's potential to result in either temporary or permanent impacts on sensitive receptors. These criteria are discussed in detail in Section 6.13.4.

[1] Where Leq represents *Equivalent Sound Level*: a steady-state sound that has the same energy and A-weighted level as the community noise over a given time interval and Ldn represents *Day-Night Averaged Sound Level*: the 24-hour Leq obtained after addition of 10 dBA to the sound levels from 10 P.M. to 7 A.M.
[2] *Construction Noise Handbook*. Federal Highway Administration, August 2006. Available at:http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/. Site last visited: October 08,2013.
[3] Federal agencies have differing opinions on determining acceptable levels of noise when considering harm to nearby human receptors.
[4] *Id.* at

[5] NOISE CONTROL ACT. California Health and Safety Code §46000-46080 (2013). Available at: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC&sectionNum=46000 Last accessed: March 23, 2019.

Local Regulations

Sutter County Noise Control Ordinance

The Sutter County Noise Control Ordinance (Zoning Code Article 21.5), adopted on June 11, 2019, is enforceable by the Development Services Director, County Sheriff, and/or other assigned County officials. The ordinance includes definitions, general noise regulations, and incorporates existing General Plan Noise Element standards. It provides a framework allowing the County to address noise complaints when the need arises.

Sutter County 2030 General Plan Noise Element

The Sutter County 2030 General Plan Noise Element lists goals, policies, and implementation programs to carry out the County's goals for controlling hazards associated with noise within the County. The main goal listed in the Sutter County 2030 General Plan Noise Element is "...*Protect the health and safety of County residents from the harmful effects of exposure to excessive noise and vibration*." The following are listed policies within the Sutter County 2030 General Plan that may be applicable to the proposed VESI 10 Tierra Buena BESS project:

N-1.1 **Exterior Environmental Noise Standards.** Require development of new noise-sensitive land uses to mitigate noise impacts where the projected exterior environmental noise levels exceed those shown in Table 11-1 (Maximum Allowable Environmental Noise Standards). (N 1-A/N 1-C/N 1-D)

N-1.4 **New Stationary Noise Sources.** Require new stationary noise sources to mitigate noise impacts on noise-sensitive uses wherever the noise from that source alone exceeds the exterior levels specified in Table 11-3 (Noise Level Standards from Stationary Sources). (N 1-B through N 1-D)

N-1.6 **Construction Noise.** Require discretionary projects to limit noise-generating construction activities within 1,000 feet of noise-sensitive uses (i.e., residential uses, daycares, schools, convalescent homes, and medical care facilities) to daytime hours between 7:00 A.M. and 6:00 P.M. on weekdays, 8:00 A.M. and 5:00 P.M. on Saturdays, and prohibit construction on Sundays and holidays unless permission for the latter has been applied for and granted by the County. *(N 1-C/N 1-D)*

N-1.B Require new development that has the potential to generate noise that will exceed the levels contained in Table 11-1 through Table 11-4 that may affect a noise-sensitive use to prepare an acoustical study.
Implements Policy(ies): N 1.2 through N 1.4, N 1.7, N 1.8
Responsibility: Community Services Department
Priority/Timeframe: High (Ongoing)

N-1.C Where required as part of the environmental review process, a project applicant shall be required to have an acoustical study prepared. The acoustical study shall:

- Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics who is included on the County's approved consultant list; the person preparing the acoustical study shall consult with Planning Division staff to review specific issues or circumstances prior to commencing the study
- Provide a general description of the project and the noise sources of concern; appropriate maps shall be included
- Describe the methodology that will be used to assess noise impacts. If computer models are to be used for noise predictions, they should be standard versions approved by the FHWA, FAA, Caltrans, or other government agencies
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and predominant noise sources

- Estimate existing and projected noise levels and compare those levels to the adopted policies and standards of the Noise Element
- Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element; where feasible, noise mitigation measures should focus on site planning and project design solutions rather than the creation of noise barriers; mitigation measures must be written with specific mitigation needed (e.g., solid masonry wall) and include any proposed follow-up noise monitoring if needed
- Estimate noise exposure after the prescribed mitigation measures have been implemented

Implements Policy(ies): N 1.1 through N 1.8
Responsibility: Community Services Department
Priority/Timeframe: High (Ongoing)

Table 6.13-1: Definitions of Acoustical Terms

Term	Definition
dB, Decibel	Unit of measurement of sound level
dBA, decibel A-Weighted	A unit of measurement of sound level corrected to the A–weighted scale, as defined in ANSI S1.4–1971 (R1976), using a reference level of 20 micro pascals (0.00002 Newtons per square meter).
A – Weighted Scale	A sound measurement scale, which corrects the pressures of individual frequencies according to human sensitivities. The scale is based upon the fact that the region of highest sensitivity for the average ear is between 2,000 and 4,000 Hz. Sound levels are measured on a logarithmic scale in decibels, dB. The universal measure for environmental sound is the A–weighted sound level, dBA.
Hz, Hertz	Unit of measurement of frequency, numerically equal to cycles per second.
Loudness	A listener's perception of sound pressure incident in his ear.
L_1, L_{10}, L_{50}, L_{90}	The A–weighted noise levels that are exceeded 1 percent, 10 percent, 50 percent, and 90 percent of the time during the measurement period.
L_{eq}, Equivalent Noise Level	Also called the equivalent continuous noise level. It is the continuous sound level that is equivalent, in terms of noise energy content, to the actual fluctuating noise existing at the location over a given period, usually one hour. L_{eq} is usually measured in hourly intervals over long periods in order to develop 24–hour noise levels.
CNEL, Community Noise Equivalent Level	The CNEL is a measure of the cumulative noise exposure in the community, with greater weights applied to evening and nighttime periods. This noise descriptor is the equivalent noise level over a 24–hour period mathematically weighted during the evening and night when residents are more sensitive to intrusive noise. The daytime period is from 7:00 a.m. to 7:00 p.m.; evening from 7:00 p.m. to 10:00 p.m.; and nighttime from 10:00 p.m. to 7:00 a.m. A weighting factor of 1 dB is added to the measured day levels defined as 7 a.m. to 7 p.m., evening levels (7 p.m. to 10 p.m.) have a weighting factor of three and 10 dB to the nighttime levels (10 p.m. to 7 a.m.). The weighted levels over a 24–hour period is then averaged to produce the single number CNEL rating.
L_{dn}, Day/Night Noise Level	The same as CNEL except that the evening time period is not considered separately, but instead it is included as part of the daytime period. Measurements of both CNEL and L_{dn} in the same residential environments reveal that CNEL is usually slightly higher (by less than 1 dB) than L_{dn} due to the evening factor weighting.
Lmin, Lmax	The minimum and maximum A–weighted noise level during the measurement period.

Term	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

6.13.1.3 Effects of Noise

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The OSHA has a worker noise exposure standard, which is set at the noise threshold where hearing loss may occur from long–term exposure. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is significantly shorter.

Sleep and Speech Interference

The thresholds for speech interference indoors are 45 dBA if the noise is steady and 55 dBA if the noise is fluctuating. Outdoor thresholds are 15 dBA higher. Steady noise of enough intensity (above 35 dBA), and fluctuating noise levels above 45 dBA have been shown to affect sleep. Interior residential standards for multi–family residences are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is equal to the L_{dn}, and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12–17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is 20 dBA for an older structure and 25 dBA for a newer structure. Sleep and speech interference are therefore possible when exterior noise levels are 57–62 dBA L_{dn} with open windows and 65–70 dBA L_{dn} if the windows are closed. Levels of 55–60 dBA are common along collector streets and secondary arterials, while 65–70 dBA is a typical value for a primary/major arterial. Levels of 75–80 dBA are normal noise levels at the first row of development outside a freeway right–of–way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed and those facing major roadways and freeways typically need special glass windows.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noise intruding into homes or affecting outdoor activity areas. Attitude surveys determined that the causes for annoyance include interference with speech, radio, and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is 55 dBA L_{dn}. At a L_{dn} of 60 dBA, approximately 2 percent of the population is highly annoyed. When the Ldn increases to 70 dBA, the percentage of the population increases to 12 percent highly annoyed. This corresponds to an increase of 1 percent per dBA between a L_{dn} of 60–70 dBA. Between a L^{dn} of 70–80 dBA, each increase in decibels increases the population highly annoyed by 2 percent.

People appear to respond more adversely to aircraft noise as opposed to general community noise levels. When the L_{dn} is 60 dBA; approximately 10 percent of the population is highly annoyed. Each decibel increase to 70 dBA adds 2 percentage points to the number of people highly annoyed. Above 70

dBA, each decibel increases results in a 3 percent increase in the percentage of the population highly annoyed. Representative outdoor and indoor noise levels in units of dBA are shown in Table 6.13-2.

Table 6.13-2: Typical Sound Levels Measured in the Environment

At a Given Distance from Noise Source	A–Weighted Sound Level in dBA	Noise Environments	Subjective Impression
	140		
Civil Defense Siren (100')	130	Rock Music Concert	
Jet Takeoff (200')	120		Pain Threshold
	110		
Diesel Pile Driver (100')	100		Very Loud
	90	Boiler Room Printing Press Plant	
Freight Cars (50')			
Pneumatic Drill (50')	80		
Freeway (100')	70		Moderately Loud
Vacuum Cleaner (10')		In Kitchen with Garbage Disposal	
	60	Running	
		Data Processing Center	
Light Traffic (100')	50		
Large Transformer (200')		Department Store	
	40		Quiet
Soft Whisper (5')	30		
	20	Private Business Office Quiet Bedroom	
	10	Recording Studio	Threshold of Hearing
	0		

Source: EPA, 1971; Barnes, et al., 1976.

6.13.2 Methodology

The Noise Element of the Sutter County 2030 General Plan establishes goals, policies, and criteria for determining land use compatibility with major noise sources within the community.[6] The Plan provides one main goal:

Goal N-1: Protect the health and safety of County residents from the harmful effects of exposure to excessive noise and vibration.

Additionally, the General Plan provides eight (8) Policies concerning noise. The first three policies establish exterior and interior noise standards. The fourth policy requires new stationary noise sources to mitigate noise impacts on sensitive receptors. The fifth policy calls for frequent high-noise events to be mitigated. The sixth policy relates to construction noise and limiting construction noise within 1,000 feet of sensitive receptors. The seventh policy establishes vibration standards. The eighth policy deals with airport noise and established airport noise contours. As such, the proposed VESI 10 Tierra Buena BESS project would be limited to producing 75 dB L_{dn}/CNEL (as measured at the nearest property line).

[6] Sutter County 2030 General Plan, Table 11-1 Maximum Allowable Environmental Noise Standards.

Noise standards governing development activities within Sutter County are found in the Sutter County 2030 General Plan. The Sutter County Noise Control Ordinance (Zoning Code Article 21.5) includes definitions, general noise regulations, and incorporates existing General Plan Noise Element standards. The Noise Standards found in the Sutter County 2030 General Plan will be applied to the proposed VESI 10 Tierra Buena BESS project. The County's 2030 General Plan provides guidelines for controlling the noise emanating from industrial and agricultural facilities and for planning new development. Sutter County's 2030 General Plan lists goals, policies, and implementation programs to carry out the County's goals for controlling impacts associated with noise within the County.

The County's 2030 General Plan provides guidelines for controlling the noise emanating from industrial/agricultural facilities and for planning new development. Table 6.13-3*, Maximum Allowable Ambient Noise Exposure by Land Use*, provides noise level criteria to be used for determining the level of acceptability for various types of land uses as set out in the Sutter County 2030 General Plan, Noise Element.

The proposed VESI 10 Tierra Buena BESS project would cause a significant impact if it were to violate a local noise ordinance, regulation, or standard. For the project, there are two sets of criteria that must be met. The first is the Sutter County Noise Standards as established by the adopted Sutter County 2030 General Plan, which specify a maximum property line noise level of 70 dBA at most Noise-Sensitive Land Use Types for industrial/agricultural related noise standards. The second is the OSHA worker safety standards, which have a level of 90 dBA, as previously discussed. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers at the property line.

6.13.2.1 Impact Assessment Methods

Potential sources of noise associated with the proposed VESI 10 Tierra Buena BESS project include:

- Construction noise
- Operational noise

Sound levels produced by these various sources are based on data from standard references, previous studies, and equipment manufacturers' data. Projected sound levels from these sources are then estimated using a point source attenuation model. With this model, noise from the source is assumed to attenuate at a rate of 6dB for each doubling of distance from geometry. Additional attenuation is assumed to result from molecular absorption and anomalous excess attenuation (Hoover and Keith 1996). For standard conditions of 59º F, at 70% relative humidity, molecular absorption is taken to be 0.7 dBA per 1,000 feet and anomalous excess attenuation is assumed to be 1.0 dBA per 1,000 feet. To determine potential noise impacts, the distance needed for noise to attenuate to Sutter County noise-level standards for industrial/agricultural land uses of maximum allowable noise exposure 66-dBA to 70 dBA are assessed for each sensitive receptor.

Table 6.13-3. Sutter County Maximum Allowable Ambient Noise Exposure by Land Use

Land Use Type	Noise Level (L_{dn})						
	0 - 55	56 - 60	61 - 65	66 - 70	71 - 75	75 - 80	> 81
Residential							
Hotels, Motels							
Schools, Libraries, Churches, Hospitals, Extended Care Facilities							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Mining, Industrial, Manufacturing, Utilities, Agriculture							

Normally Acceptable. Specified land use is satisfactory, based on the assumption that any buildings involved are of normal, conventional construction, without any special noise insulation requirements.

Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design.

Unacceptable. New construction or development should not be undertaken.

If existing noise standards are currently exceeded, a proposed project shall not incrementally increase noise levels by more than 3 dBA

6.13.3 Environmental Setting

6.13.3.1 Project Area Setting

The proposed project lease area is located on the northern portion of APN 10-250-060 adjacent to Tierra Buena Road in Sutter County, approximately 1.50 miles west of State Route 99 and approximately 730 feet north of Pease Road. The proposed project lease area is on a parcel within an area characterized by agricultural truck yards, agricultural storage buildings, orchard operations, residential land uses, major rural collector road, including repair buildings for agricultural equipment. Tierra Buena Road acts as a major rural collector roadway within Sutter County and is located immediately adjacent to the western boundary of the proposed project lease area.

The nearest residences are located approximately 505 feet to the south, 265 feet to the northwest, 850 feet to the north and 1,100 feet to the east of the proposed project lease area but are zoned as AG (Agriculture) and RAN (Ranchette). The nearest school is approximately one (1.0) mile to the southeast (Butte Vista Elementary School) of the proposed project lease area. The nearest church (Islamic Center of Yuba City) is located approximately a half (½) mile to the north of the proposed project lease area.

The current noise environment surrounding the proposed project lease area consists of noise contributed by several agricultural operations in the vicinity as well as traffic noise associated with Tierra Buena Road. Noise measurements along Tierra Buena Road indicates Ldn levels of 60 dBA to 65 dBA due to traffic closest to the proposed project lease area.

6.13.4 Standards of Significance

Based on the following criteria from Appendix G of the State CEQA Guidelines, a project may have a significant adverse impact on the environment if it would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

- Generation of excessive groundborne vibration or groundborne noise levels; and/or

- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

6.13.5 Impacts and Mitigation Measures

6.13.5.1 Anticipated BESS Facility Construction Noise Levels

Noise calculations have suggested that the construction noise produced at the proposed project lease area would range around 100-110 dBA which would be temporary and would occur intermittently throughout the construction phase (5 months). Construction noise levels would be limited by the County Noise Standards outlined in the Sutter County 2030 General Plan, Noise Element including time of day restrictions. However, because of the distance to the nearest residential area, noise levels perceived at that area would be less than 60 dBA, clearly placing the effect of the construction noise from the proposed VESI 10 Tierra Buena BESS project well under the maximum noise level for an agricultural or community utility site.

While the proposed project lease area is located approximately 265 feet from the nearest residences, the site is also visually obstructed from the residences by the existing fencing, vegetative hedges, ag-buildings and trees, which would provide noise-reducing barrier or "shielding" effects. Additionally, as the project construction timeframes for these heavy equipment activities would be brief and would occur at small intervals over the project 5-month construction timeframe, primarily during the first few weeks of site preparation and earthwork. See Table 6.13-4: *Estimated Noise Levels*, below for likely construction noise levels to be generated by the proposed VESI 10 Tierra Buena BESS project. Therefore, construction noise impacts would be temporary and less than significant so long as construction activities occur on weekdays and within the allowable 8:00 a.m. to 5:00 p.m. timeframe.

Generation of excessive ground borne vibration or ground borne noise levels

Excessive ground borne vibration or noise levels are not anticipated during either construction or operation of the proposed VESI 10 Tierra Buena BESS project. Construction would entail use of equipment and techniques prevalent throughout the region and would be temporary in nature. No impact has been identified. Ground borne vibration or noise, which may result from the proposed VESI 10 Tierra Buena BESS project are considered to be less than significant.

Table 6.13-4 Estimated Noise Levels

Construction Equipment Noise Source	Typical Noise Level (dBA)	
	50 feet	100 feet
Pneumatic tools	85	79
Truck (e.g., dump, water)	88	82
Concrete mixer (truck)	85	79
Backhoe	80	74
Generator	81	75
Portable air compressor	81	75
Combined equipment	109	103

Source: Federal Transit Agency, 1995.

6.13.5.2 Anticipated BESS Facility Operating Noise Levels

To estimate proposed project operational noise levels, noise modeling completed for a separate, larger BESS project in El Centro, California, was utilized (Appendix J: El Centro BESS Project Noise Study). The El Centro BESS Project consists of an array of rechargeable batteries, with a total capacity of 30 MW, housed inside of a building. The building is of a metal frame construction and insulated and air conditioned. Although the proposed VESI 10 Tierra Buena BESS project would not utilize a building to

house the battery cells, and instead separate battery storage enclosures, each enclosure would be of metal frame construction, insulated, and air conditioned. Thus, the battery enclosure materials and construction would be anticipated to be equivalent to the El Centro BESS Project in terms of noise attenuation.

Operation of the air conditioning equipment used to cool the batteries would be the dominant source of noise during operation of the proposed BESS facility. The El Centro BESS Project utilizes 12 air conditioning units to provide air conditioning to the building. The proposed project would utilize a separate air conditioning unit for each of the battery storage enclosures (estimated at 8). However, the proposed VESI 10 Tierra Buena project would locate the air conditioning units within the interior of the storage enclosures. The air conditioning units at the El Centro BESS Project are located on the exterior of structures.

With the air conditioning units in operation, the El Centro BESS Project was determined to produce noise of 80.8 dBA Leq at a distance of approximately 10 feet from BESS building (approximately 5 feet from an air conditioning unit). At a distance of approximately 100 feet from the building, but within direct line-of-sight of air conditioning units, noise was determined to be 61.6 dBA Leq. Thus, attenuation of noise at the El Centro BESS Project site was approximately 6 dBA per distance doubled, as described above.

During summer, when ambient air temperatures are exceedingly high, there would be potential for the air conditioning unit in each of the battery storage enclosures to operate concurrently. Based on the noise produced by the air conditioning units at the El Centro BESS Project, 8 air conditioning units operating concurrently would be anticipated to produce a noise level of approximately 83 dBA Leq at a distance of approximately 10 feet when located in an exterior location with no barriers.

As described above, a barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. The proposed VESI 10 Tierra Buena BESS project would locate air conditioning units within the fully enclosed battery enclosures, thereby creating barrier that breaks the line of sight between the air conditioning units and receptors. Each battery enclosure would be insulated, which would further attenuate any noise emitted from within the enclosure. Insulation absorbs sound waves and adding insulation to metal construction can reduce noise by an additional 5 to 6 dB (North American Insulation Manufacturers Association 2015). Thus, when all 8 air conditionings units operate concurrently within the insulated battery storage enclosures, noise levels would be approximately 73 dBA Leq at a distance of 10 feet from the enclosures. Using the doubling of distance attenuation rate of 6 dBA, project noises levels would attenuate to 43 dBA Leq at the northern parcel boundary which is approximately 50 feet from the proposed placement of air conditioning units (noise source) and 1 dBA Leq at the southern boundary where the residence is located at.

No additional noise will be contributed to nearby schools or churches from the proposed VESI 10 Tierra Buena project. Butte Vista Elementary School, the closest school to the proposed project lease area, is located over one (1) mile away, a distance considered large enough to attenuate all noise generated from the VESI 10 Tierra Buena BESS project. The Islamic Center of Yuba City is located half (½) mile north, and the Sikh Temple, Gurdwara Sahib Yuba City is located a half (½) mile south of the proposed project lease area which is also considered a distance large enough to attenuate all noise generated by the VESI 10 Tierra Buena BESS project. Pre-existing land uses, including numerous agricultural activities as well as major roads such as Tierra Buena Road and Pease Road, separate the proposed project lease area from the school and churches, thus no increases in ambient noise levels will occur from VESI 10 Tierra Buena BESS project activities.

As discussed above, the proposed VESI 10 Tierra Buena BESS project will not contribute new levels of noise that could impact sensitive land uses surrounding the proposed project lease area. In addition, the BESS facility will comply with all regulations and standards for Sutter County regarding noise. The proposed project lease area is located within a large area zoned for agricultural land uses and noise levels will remain compatible with agricultural land uses as specified in the Sutter County 2030 General

Plan, Noise Element. The proposed VESI 10 Tierra Buena BESS project is compatible with the existing agricultural land uses in the area and will not create significant impacts regarding noise.

As the VESI 10 Tierra Buena BESS project design is finalized, engineering mitigation measures will be incorporated as necessary to ensure project noise levels do not exceed the adopted standards of the Sutter County 2030 General Plan, Noise Element at the surrounding land uses. The following mitigation measures will be incorporated by the proposed VESI 10 Tierra Buena BESS project to reduce all impacts to noise to a less than significant level:

N-1: Air conditioners will be housed in an acoustical enclosure.

N-2: Noise perimeter fencing and vegetative hedge around the BESS facility will be placed which will further minimize noise off site.

N-3: VESI 10, LLC, will establish a telephone number for use by public to report any undesirable noise conditions associated with construction and operations. Telephone number will be posted at the project site in a manner visible to passersby.

N-4: All power equipment and vehicles associated with the project will have proper muffler devices.

N-5: VESI 10, LLC, will document, investigate, evaluate, and attempt to resolve all project related noise complaints. VESI 10, LLC, will conduct the following: Use a Noise Complaint Resolution Form to respond to each complaint; Attempt to contact the person making the noise complaint in 24 hrs.; Conduct investigation to determine source of noise; Reduce noise with all feasible measures upon a complaint.

N-6: Wherever feasible, erect barriers or shields near construction equipment (e.g., compressors, pneumatic tools, drills, generators) considered major sources of noise.

6.13.6 Noise Initial Study Responses

Table 6.13-5: Noise Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☑	☐	☐
b) Generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☑	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

6.13.7 Responses to Initial Study Questions

6.13.7.1 Noise Level Standards: Less than Significant with Mitigation Incorporated

The VESI 10 Tierra Buena BESS project would create an increase in ambient noise associated with the construction and operation of the proposed BESS facility. Operational noise levels would be below Sutter County 2030 General Plan specifications for land use compatibility as outlined in the Noise Element. The project would potentially add to ambient noise levels currently found at residences nearest to the project (roughly 265 feet northwest of the proposed project lease area); however, fugitive noises which reach those sensitive receptors would be at low levels (10 dBA or less) which would not result in violation of the Sutter County's Noise policies found in the Sutter County 2030 General Plan, Noise Element.

It is anticipated that the construction noise at the nearest off-site receptor will be considered normally and conditionally acceptable for agricultural uses. Furthermore, the General Plan states that construction noise occurring between 7 a.m. and 6 p.m. is acceptable.[7] As such, by maintaining these hours of operation, construction at the proposed VESI Tierra Buena BESS project's lease area would ensure that the noise levels fall within guidelines provided by the County's Noise Element in the Sutter County 2030 General Plan.

The proposed VESI 10 Tierra Buena BESS facility operations would produce noise levels below the standard of 75 dB L_{dn}/CNEL, as outlined by the Sutter County 2030 General Plan, Noise Element. Such noise levels would not cause an increase in noise levels for the residential properties nearest to the proposed BESS facilities. These residences, over 265 feet from the proposed project lease area are located across the Tierra Buena Road and behind an ag-butler building, perimeter fencing, and vegetative hedge that works as sound barriers. Due to the distance between the proposed VESI 10 Tierra Buena

[7] 2030 General Plan, N 1.6 Construction Noise.

BESS project and the residences and the natural noise barriers between the proposed project lease area and the residences, the proposed VESI 10 Tierra Buena BESS project would not add to the residences' pre-existing ambient noise level. As such, noise generated from the proposed project lease area would not significantly change the pre-existing noise environment found at the residences and would result in less than significant impacts to the existing ambient environment.

With the addition of the above-mentioned mitigation measures, fugitive noise was calculated at the nearest residential area to the proposed project lease area at the level of less than 40 dB(A) CNEL. Because the noise received from the construction site at the nearest residences is less than the Sutter County 2030 General Plan policy CNEL, the proposed VESI 10 Tierra Buena BESS project's construction noise falls within the ambit of "conditionally acceptable" noise levels.[8] Conditionally acceptable noises require no more than "detailed analysis of the noise reduction requirements…and noise insulation features are included in the design."[9] As such, with the aforementioned mitigation measures, the proposed VESI 10 Tierra Buena BESS project would be found to have less than significant noise effects.

6.13.7.2 Ground-borne Noise or Vibrations: Less than Significant Impact

The project would create an increase in ground-borne noise or vibrations associated with the construction of the BESS facilities, and truck traffic during construction. Even with the utilization of heavy equipment, ground borne vibrations and heightened noise levels will be temporary and limited. As such, ground borne vibration or noise, which may result from the proposed VESI 10 Tierra Buena BESS project, are considered to be less than significant.

The operational noise levels of the proposed VESI 10 Tierra Buena BESS project will result in a permanent increase in ambient noise levels. The BESS facility has air conditioners enclosed in battery enclosures within the proposed project lease area, with a noise level of approximately 73 dBA Leq at a distance of 10 feet from the battery enclosures. Using the doubling of distance attenuation rate of 6 dBA, project noise levels would attenuate to 43 dBA Leq at the northern parcel boundary which is approximately 50 feet from the placement of the air conditioners and 1 dBA Leq at the southern boundary approximately 730 feet from the proposed air conditioning equipment. Given the design of the BESS facility, the total cumulative noise level of the site is approximately 55 dB, under Sutter County's conditionally acceptable agricultural zone threshold of 75 dBA.

6.13.7.3 Airports or Airstrips: No Impact

The proposed VESI 10 Tierra Buena BESS project is not located within an airport land use plan area, or within two miles of a public airport. Therefore, there is No Impact from an airport within two miles of the proposed project lease area, and no additional mitigation measures are required. The proposed project lease area is not in the vicinity of a private airstrip.[10] Therefore, there is No Impact from an airstrip within two miles of the proposed project lease area.

[8] Sutter County 2030 General Plan, Noise Element.

[9] *Id.*

[10] *Id.*

6.14 POPULATION AND HOUSING

This section describes population and housing in the Sutter County area and analyzes the potential impacts on population and housing resources that may result from the proposed VESI 10 Tierra Buena BESS project. The discussion is based primarily on information contained in the State of California Department of Finance, and other available population and housing literature pertinent to the proposed VESI 10 Tierra Buena BESS project, Sutter County, and City of Yuba City.

6.14.1 Background

Sutter County and California have experienced dramatic population growth since 1970. The total population in Sutter County increased by approximately 132 percent between 1970 and 2018, and California's total population doubled from 20 million to almost 40 million. Sutter County's household growth rate was approximately 0.3 percent, in the last year with a current population estimated at 97,238 with the City of Yuba City accounting for 67,280 of the county population according to the California Department of Finance population estimates.

The California Department of Transportation (Caltrans) predicts Sutter County's population will reach 113,483 by 2030 which becomes the basis of transportation planning and programing for Caltrans. Caltrans predicts population growth will accelerate, averaging 0.9 percent between 2019 and 2024. Sutter County is expected to get an influx of new residents over the next two decades. A large development project is expected to break ground in the southwest corner of the County, containing more than 17,000 new homes and accommodating more than 45,000 new residents. The first homes are likely to be constructed in 2020, and complete build out could extend beyond the year 2040. Because of this project, the outlook for housing production and population growth has increased.

In general, counties on a freeway within an hour of major job centers have grown faster than anywhere else in the state. This primarily includes the Inland Empire, the Sierra Foothills, and the Northern Central Valley. Sutter County is one of those areas which are within commuting distance of the State Capitol, Sacramento Metropolitan Area. As California grapples with its housing crisis, housing policy will have to decide whether to continue the de facto policy of the past 50 years and build more homes where they're cheaper but farther from jobs, or increase density in the nearer, but dearer, urban cores. The California Department of Finance E-4 Population Estimates for Cities and Counties 1970-2018 is assuming the past 50 years development pressures and policies will continue.

The construction period of the proposed VESI 10 Tierra Buena BESS project is expected to take approximately 5 months or less. Construction would provide job opportunities for approximately 25 construction workers. Operations of the proposed VESI 10 Tierra Buena BESS project would employ approximately three employees who will be located remotely from the project lease area monitoring the BESS by SCADA.

6.14.2 Methodology

Information on population and housing was obtained from the U.S. Census Bureau 2010 Census data and the California Department of Finance population projections for cities and counties and Caltrans population and growth projections for Sutter County prepared for regional transportation planning and programming.

6.14.3 Standards of Significance

An impact to population and housing would be considered significant if the proposed project would:

- Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); and/or

- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

6.14.4 Environmental Setting

6.14.4.1 Population

The January 2018 California Department of Finance estimated population for Sutter County was 97,238 and the City of Yuba City accounted for 67,280 of the county population according to the California Department of Finance projections. According to the California Employment Development Department unemployment rate in the Yuba City Metropolitan Statistical Area (MSA) was 9.0 percent in January 2019, up from a revised 7.4 percent in December 2018, and above the year-ago estimate of 8.7 percent. This compares with an unadjusted unemployment rate of 4.8 percent for California and 4.5 percent for the nation during the same period.

6.14.4.2 Housing

In 2019, Sutter County was estimated to have 34,204 housing units at a density of 57 housing units per square mile. Sutter County has a vacancy rate of approximately 6% as compared to a California statewide average vacancy rate of 8%. Caltrans economic forecasters predict during 2019 Sutter County will issue 198 permits for new homes. Approximately 13,831 housing units are renter occupied or 40% of the housing within Sutter County are rentals.

6.14.5 Impacts and Mitigation Measures

Construction

Construction of the proposed VESI 10 Tierra Buena BESS project would not affect the population of the City of Yuba City nor Sutter County due to the construction workforce currently available within the City of Yuba City, Sutter County and nearby areas. Since the proposed project lease area is also within commuting distance of the greater Sacramento Metropolitan area, no construction workers are expected to relocate as a result of project construction. Construction of the proposed VESI 10 Tierra Buena BESS project is not expected to increase the demand for housing. Therefore, the VESI 10 Tierra Buena BESS project would not cause a significant increase in population in Sutter County nor the City of Yuba City or other communities near the proposed project lease area.

Operations

The proposed VESI 10 Tierra Buena BESS project would be an unmanned facility that would not induce substantial population growth in the area either directly or indirectly. Workers would be present onsite during short-term temporary construction activities. Once operational, the BESS facility would be unmanned with workers anticipated only for intermittent maintenance activities. Therefore, no impact would occur, and no mitigation measures specific to the project would be necessary.

6.14.6 Population and Housing Initial Study Responses

Table 6.14-1: Population and Housing Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☑	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

6.14.7 Responses to Initial Study Questions

6.14.7.1 Induce Population Growth: Less than Significant Impact

The proposed VESI 10 Tierra Buena BESS project is a replacement peaker power project for the Pease sub-area of the statewide electrical grid and would not induce development within the area. The proposed VESI 10 Tierra Buena BESS project would have a less than significant impact on population growth as construction of the facility would be only 5 months or less with a peak employment of 25 temporary construction workers, and the operation of the BESS facility would require no permanent workers as the BESS facility will be unmanned and monitored remotely.

6.14.7.2 Displacement of Substantial Numbers of Existing People or Housing: No Impact

No housing exists on the proposed project lease area. Therefore, there would be No Impact.
The proposed VESI 10 Tierra Buena BESS project would not displace people or necessitate the construction of replacement housing. Therefore, there would be No Impact.

6.15 PUBLIC SERVICES

This chapter describes existing public services and facilities and analyzes the project's potential effects on these resources that may occur with the implementation of the proposed VESI 10 Tierra Buena BESS project. Growth and development can directly impact the delivery of critical County services to residents, workers, and visitors. In Sutter County, services are delivered in many cases by County Service Areas. These services include police and fire protection, law enforcement, public works, planning, water and wastewater treatment, library, solid waste/recycling, and others. The location of development is guided by the Sutter County 2030 General Plan, which considers the spatial relationship of urban activities and the delivery of public services. The proposed project lease area was designated as Agriculture (AG) zone which includes agricultural industrial and community facilities land uses.

6.15.1 Background

6.15.1.1 Regulatory Context

Federal Regulations

No federal regulations apply to the proposed VESI 10 Tierra Buena BESS project's public services and facilities issues.

State Regulations

Uniform Fire Code

The Uniform Fire Code (UFC) contains regulations pertaining to the construction and maintenance of buildings and uses of the BESS facility. Topics addressed in the UFC include fire hydrants, fire department access, fire alarm systems, fire and explosion hazard safety, industrial processes, and many other generalized and fire-specific safety requirements for new and existing buildings. "UFC Standards" is a companion publication to the Uniform Building Code (UBC) and contains standards of the American Society for Testing and Materials and of the National Fire Protection Association. The UBC is the primary guiding document that sets the standards for the built environment and is closely tied to the UFC to protect human life and safety. The UFC and UBC are widely accepted at the national level and adopted by individual states. California codes are nearly identical.

California Integrated Waste Management Act

In 1989, Assembly Bill 939 (AB 939), known as the Integrated Waste Management Act, was passed into law. The enactment of AB 939 established the California Integrated Waste Management Board (CIWMB) and set forth aggressive solid waste diversion requirements. Under AB 939, every city and county in California was required to reduce the volume of waste sent to landfills by 50 percent, through recycling, reuse, composting, and by other means. In July 2009, Senate Bill 63 was chaptered into law eliminating the CIWMB effective January 1, 2010. All CIWMB duties and responsibilities have been transferred to the new Department of Resources Recycling and Recovery (CalRecycle), under the Natural Resources Agency California Solid Waste Reuse and Recycling Access Act.

The California Solid Waste Reuse and Recycling Access Act of 1991 required each jurisdiction to adopt an ordinance by September 1, 1994, requiring any "development project" for which an application for a building permit is submitted to provide an adequate storage area for collection and removal of recyclable materials.

California's Building Code CCR, Title 24, Part 6

Title 24, Part 6 of the CBC describes California's energy efficiency standards for residential and nonresidential buildings. These standards were established in 1978 in response to a legislative mandate to reduce California's energy consumption and have been updated periodically to include new energy efficiency technologies and methods. Title 24 requires constructing according to energy efficient standards for all new construction, including new residential and non-residential buildings, additions, alternations, and buildings repairs.

State Pre-construction Notification and Agency Coordination

California laws require pre-construction notification and agency coordination to protect infrastructure from damage caused by construction activities. Contractor State License Board Enforcement Business and Professions Code 7110, Assembly Bill (AB) 2719, AB 73 (Chapter 328), and Government Section Code Sections 4216-4216.9, requires that contractors must provide proper notification and coordination with appropriate groups before commencing construction activities. In addition, VESI 10, LLC would obtain permits which address potential impacts on groups or agencies that use, or own utilities affected by the proposed VESI 10 Tierra Buena BESS project.

Underground Service Alert

California state law (Government Code Sections 4216, 4216.2, 4216.9) requires that an excavator contact a regional notification center at least two days prior to excavation of any subsurface installations. The regional notification center for northern California is Underground Service Alert. Underground Service Alert, in turn, would notify the utilities that may have buried lines within 1,000 feet of the excavation. Representatives of the utilities are required to mark the specific locations of their facilities within the work area prior to the start of excavation. The excavator is required to probe and expose the underground facilities by hand prior to using power equipment.

Local Regulations

The Sutter County 2030 General Plan Public Services Element includes goals and policies for law enforcement, fire protection, schools, libraries, parks and recreation, civic and cultural facilities.

Relevant goals and policies from the Sutter County 2030 General Plan related to law enforcement include:

PS-1.1 **Law Enforcement Services and Facilities.** Ensure the provision of appropriate law enforcement services and facilities to protect existing and future citizens and businesses. *(PS 1-A)*

PS-1.3 **Funding for New Development.** Require new development to provide the revenue and fiscal resources necessary to fund sufficient law enforcement services and facilities with no adverse fiscal effects to the County or decline in current law enforcement service levels. *(PS 1-A)*

PS-1.5 **Development Review.** Include the Sherriff's Department in the review of new private and public development projects to ensure that public safety and crime prevention concerns are addressed. *(PS 1-B)* PFS-1.8

Relevant goals and policies from the Sutter County 2030 General Plan related to fire protection include:

PS-2.6 **Funding for New Development.** Require new development to provide the revenue and fiscal resources necessary to fund sufficient fire protection services and facilities with no adverse fiscal effects to the County or decline in current fire protection service levels. *(PS 2-A)*

PS-2.7 **Will-Serve Letters.** Require that a will-serve letter be secured from the appropriate fire agency confirming the ability to provide fire services to new development.

PS-2.9 Development Review. Include the appropriate fire agency in the review of new private and public development plans to ensure compliance with state and other adopted fire safety standards and that fire protection and prevention concerns are addressed.

Relevant goals and policies from the Sutter County 2030 General Plan related to schools include:

PS-4.1 Cooperative Effort. Work cooperatively with local school districts and the Sutter County Superintendent of Schools to address ongoing issues, including school capacities, overcrowding, facility needs, funding, and raising the quality of public education.PFS-8.2

Relevant goals and policies from the Sutter County 2030 General Plan related to libraries include:

PS-5.1 Library Services and Facilities. Ensure adequate public library services and facilities are maintained for all residents. Adequate services and facilities include full-service libraries with trained staff, and collections, programs, and computer access for residents of all ages. *(PS 5-A)* PFS-9.4

Relevant goals and policies from the Sutter County 2030 General Plan related to parks and recreation include:

PS-6.1 Park Facilities. Support the development of new parks and recreational facilities, and the maintenance and enhancement of existing parks and recreational facilities, to provide for a variety of active and passive recreational needs.

6.15.2 Methodology

Potential effects on public services were determined by identifying existing services and considering the potential for interference with or increased requirements for such services that would occur as a result of project construction and/or operation of the BESS facility. Construction of the proposed VESI 10 Tierra Buena BESS project is not expected to generate a need for Sheriff law enforcement service or fire protection above existing levels of service. Project construction and operation is not expected to be growth inducing.

Necessary agencies were contacted to obtain information regarding their existing and projected service capacity, as well as the projected impacts that would result from implementation of the proposed VESI 10 Tierra Buena BESS project. Wherever possible (i.e., for agencies that provided a demand factor or service ratio), quantifications were included to demonstrate specific demands.

6.15.3 Environmental Setting

The study area for the analysis of public services is the rural area of Sutter County, which provides law enforcement and fire service to the proposed project lease area. Sutter County provides additional services to the general public located near to the proposed project lease area. The following sections describe the environmental setting for public services within the study area.

6.15.3.1 Fire Protection

Fire protection and emergency response capability is available from local fire and emergency response services. The proposed VESI 10 Tierra Buena BESS project is located within the County Service Area G (CSA-G) for fire protection. The nearest fire station to the proposed project lease area is Station 7 located approximately 1.6 miles to the southwest at 2855 Butte House Road, Yuba City, near the intersection of Coy Drive and Butte House Road in Yuba City. Response time to the proposed project lease area is approximately three to five minutes.

The Yuba City Fire Department/CSA-G is under the City of Yuba City. The Yuba City Fire Department is responsible for providing fire protection and prevention, emergency medical care, hazardous materials mitigation and rescue operations for the citizens of Yuba City and citizens of Sutter County within CSA-G.

There are automatic and mutual aid agreements in place with all other agencies in Sutter County. They include: the Sutter County Fire Services, Meridian Fire Protection District and the Sutter Basin Fire Protection District (Robbins Fire Department). Fire Station #7 is operated by the Yuba City Fire Department and will respond to the proposed project lease area. CSA-G/Yuba City Fire Station #7 personnel are dispatched by the Yuba City Police Department and Yolo County receives emergency calls and dispatches Sutter Basin personnel. The Yuba City Fire Department has 54 paid full-time personnel which includes: chief officers, fire officers, firefighters and administrative support staff. The response time goal for the Sutter County Fire Stations is to provide service within five minutes of notification, 90 percent of the time. Generally, service can be provided in this timeframe to areas within 1.5 miles of a fire station.

6.15.3.2 Law Enforcement (Sutter County Sheriff)

The Sutter County Sheriff's Department operates two stations: dispatch center located at 1077 Civic Center Boulevard in Yuba City; and Sheriff's substation located at 9867 O Street in the City of Live Oak. The dispatch center houses the Sheriff's Department headquarters and dispatch office and serves as the hub of all dispatch activity for both law enforcement and fire protection services within Sutter County. Assigned officers are considered County Deputy Sheriff's and use vehicles identified by the Sutter County Sheriff logo. Law enforcement services include 24-hour law enforcement patrol for traffic enforcement, accident investigation, vehicle abatement, and parking control, as well as detective services for special investigations. Specialized functions through the Sutter County Sheriff's Department are provided as needed. These specialized services include K-9, mounted unit patrol, search and rescue, hostage negotiations, intelligence gathering, special enforcement (SWAT) team, dive team, mobile command unit, hazardous devices team, internal affairs investigation, organized crime/gang intelligence unit, polygraph services, reserve forces, and fugitive/warrant detail. There are also services available for special events and/or natural disaster response.

The County Sheriff's Department adopted officer-to-residential ratio is 1.1 sworn officer per 1,000 persons and 0.06 support personnel per 1,000 persons (ratio based on population including incorporated areas of Sutter County). When computing officer to citizen ratios only fully sworn deputies are accounted for in the computation. Based on a conversation with the Sheriff's department (Sarah Davis, Executive Secretary), the current population-to-officer ratio is approximately 2.1 sworn officers per 1,000 persons.

6.15.3.3 Homeland Security/CPUC Security

Physical Security for Electric Power and Distribution System

Numerous security measures have been implemented in the electric utility industry in the wake of the terrorist attacks of September 11, 2001. Federal, state, and local agencies, as well as private industry, have implemented and coordinated many security operations and physical security enhancements. The result is a layered approach to utility security that includes the security program of the Sutter County Sheriff's Department.

The Federal Energy Regulatory Commission (FERC) tasked the North American Electric Reliability Corporation (NERC) with developing a standard for physical security at the most critical bulk-power level substations. While these new federal standards are limited to a select group of transmission level substations, the CPUC as established grid security at all levels of the electric supply system, including the distribution level, and is updating existing policies and oversight activities for electric system security as the threat evolves.

CPUC policies and regulations have long included provisions related to electric grid physical security. CPUC staff regularly inspects and investigates existing security measures at electrical facilities, such as the proposed VESI 10 Tierra Buena BESS facility. During inspections of power plants, underground and overhead facilities and substations under General Orders 174, 165, 167, 128 and 95, CPUC staff verifies the condition and operation of existing physical security protections such as substation fences and lighting, pad mount locks, vault covers, battery enclosures and electric generating station security plans. The CPUC evaluates security measures as part of electric utility rate cases. CPUC policies now require the utilities to discuss both safety and risk assessment in every rate case. CPUC staff annually review

electric utility emergency plans, and regularly monitor utility emergency exercises as required by General Order 166.

6.15.3.4 Libraries

The Sutter County Public Library creates an environment for connecting people and ideas by providing residents of all ages with resources to pursue their educational, civic, business and personal interests. Library resources and services are provided at the Main Branch Library in Yuba City, and two branches in Live Oak and Sutter. In addition, Library outreach efforts target infants, children and adults with a variety of volunteer-based literacy and reading enhancement programs. The proposed VESI 10 Tierra Buena BESS project is located approximately 3 miles from the Sutter County Main Branch Library.

6.15.3.5 Schools

The Yuba City Unified School District includes seven trustee areas served by two high schools, seven middle schools, twelve elementary schools, and several other miscellaneous schools (Yuba City Unified School District, 2019). Yuba College also maintains a campus in Yuba City. There are no schools within one mile of the proposed VESI 10 Tierra Buena BESS project; the nearest schools are Encinal Elementary School 3.6 miles north, Nuestro Elementary School 1.3 miles northwest, Butte Vista Elementary K-8 School one (1) mile southeast and Tierra Buena Elementary School located 1.4 miles south of the proposed VESI 10 Tierra Buena BESS project.

6.15.3.6 Parks and Recreation

The nearest park to the proposed project lease area is Regency Park located in Yuba City just south of Pease Road off Stabler Lane, approximately one (1) mile from the proposed BESS facility.
Sutter County does not have a park and recreation service district, the County Board of Supervisors assigned the Public Works/Support Services Committee to provide advice on existing park services and expansions. Numerous park and recreation facilities are located within Sutter County and include State wildlife areas for hunting, fishing, hiking; river recreation areas for boating, picnicking, and fishing; parks for recreation and community events; and sports facilities for baseball, soccer and golf. There is a total of 58,548.74 acres of parks and recreation facilities within Sutter County, plus over six (6.1) miles of bikeway.

6.15.4 Standards of Significance

An impact to public services would be considered significant if the project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:
  - Fire protection
  - Police protection
  - Schools
  - Parks
  - Other public facilities

6.15.5 Impacts and Mitigation Measures

The proposed VESI 10 Tierra Buena BESS project is an unmanned battery storage facility that does not include housing (with associated population growth) that could generate increased demand for public services. The proposed project lease area is currently used for an agricultural truck yard and adjacent PG&E electric distribution lines and the proposed BESS facility will occupy a portion of the agricultural truck yard and utilize the electric distribution line. See Section 6.9 above for Hazards and Hazardous Materials for a discussion of fire response to potential emergencies within the proposed BESS facility. No

new or physically altered government facilities are proposed as part of the project. Therefore, project impacts on public services would be less than significant.

6.15.6 Public Services Initial Study Responses

Table 6.15-1: Public Services Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
a) Fire Protection?	☐	☐	☑	☐
b) Police Protection?	☐	☐	☑	☐
c) Schools?	☐	☐	☑	☐
d) Parks?	☐	☐	☑	☐
e) Other Public Facilities?	☐	☐	☑	☐

6.15.7 Responses to Initial Study Questions

6.15.7.1 Provision of New or Physically Altered Government Facilities or Need for New Government Facilities: Less Than Significant Impact

The project would not result in a need for additional public services. Approximately 25 construction personnel would be employed during peak construction activities, with construction lasting less than 5 months. The proposed BESS facility is an unmanned battery storage facility that does not include housing (with associated population growth) that could generate increased demand for public services. The proposed project lease area is currently used for agricultural and electric distribution line uses and would continue to do so with the proposed BESS facility. See Section 6.9, Hazards and Hazardous Materials for a discussion of fire response to potential emergencies within the proposed BESS facility. No new or physically altered government facilities would be needed to accommodate the proposed BESS facility and/or its support personnel (up to 25 temporary construction workers and an intermittent visitor for maintenance/inspection, as needed) as part of the BESS facility. In addition, construction phasing and traffic control plans (see discussion in Transportation Section of this document) would mitigate any impacts on emergency service, school, and park accessibility to the surrounding community. Therefore, project impacts on public services would be less than significant.

The VESI 10 Tierra Buena BESS facility might be recognized as a site with heightened risk for terrorism, which is a special circumstance under which the Sutter County Sheriff's Department would respond. Therefore, protocols have been implemented which require a security plan and strict procedures for VESI 10, LLC in operating a BESS facility. The proposed VESI 10 Tierra Buena BESS project would include development and approval of a security plan, which meet the requirements of the CPUC and Homeland Security. In order to maintain security, the specifics of the plans would not be released to the public. The security plan's design would include local and remote monitoring systems, equipment systems, VESI 10,

LLC, personnel training programs, and emergency response procedures. The proposed project lease area would be within a perimeter security barrier/fence. These strict individual security parameters for the proposed VESI 10 Tierra Buena BESS project will contribute considerably to managing potential crime and work in concert with local law enforcement authorities. With the implementation of the security measures described above, the proposed VESI 10 Tierra Buena BESS project would result in a minimal increased likelihood that a special circumstance situation might occur (i.e., terrorism). This would result in a negligible increase in demand on the Sutter County Sheriff's Department because such situations would be rare or would not occur at all. Additionally, the proposed VESI 10 Tierra Buena BESS project would not increase the demand for additional law enforcement officers and/or facilities, and impacts would be less than significant. No mitigation is required.

6.16 RECREATION

This section addresses the potential impacts that the proposed VESI 10 Tierra Buena BESS project would have on the recreation needs of Sutter County. This section discusses potential impacts to recreation resources and open space in the vicinity of the proposed VESI 10 Tierra Buena BESS project. As a basis for evaluation, the affected environment section summarizes existing conditions related to the proposed project lease area characteristics and recreation providers.

6.16.1 Background

Recreation planning is a process that relates people's leisure time and activities to particular spaces. The responsibility for providing leisure opportunities is normally shared between the private sector and the public sector. Community recreation programs in Sutter County and the nearby Yuba City cover a wide range of interests and activities including after school programs, community centers, concerts in the park, day camps, instruction classes, sports programs, teen activities, and volunteer opportunities.

Parks and other recreation facilities in Yuba City are under the jurisdiction of the Yuba City Parks and Recreation Department. Sutter County does not have a park and recreation service district, the County Board of Supervisors assigned the Public Works/Support Services Committee to provide advice on existing park services and expansions.

6.16.2 Methodology

Information for this section was obtained from the Sutter County 2030 General Plan Background Report, Sutter County 2030 General Plan EIR, and from Google maps. Site inspection of the proposed project lease area confirmed the existing conditions of the proposed project vicinity and the surrounding land uses.

6.16.3 Environmental Setting

6.16.3.1 Regional Overview

Numerous park and recreation facilities are located within Sutter County and include State wildlife areas for hunting, fishing, hiking; river recreation areas for boating, picnicking, and fishing; parks for recreation and community events; and sports facilities for baseball, soccer and golf. There is a total of 58,548.74 acres of parks and recreation facilities within the county, plus 6.1 miles of bikeway. Recreational activities can also be found on the waterways in the region which include, the Feather River; natural rivers and creeks; and manmade canals, channels, sloughs and ditches. There is a total of 20 active and passive parks in Yuba City that total 84.5 acres.

6.16.3.2 Study Area Setting

There is only one active park in the vicinity of the proposed project lease area (one mile away) known as Regency Park located off Stabler Lane just south of Pease Road. The Feather River to the east of the proposed project lease area is used for recreational purposes.

6.16.4 Standards of Significance

An impact to recreation would be considered significant if the proposed project would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; and/or

- Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

6.16.5 Impacts and Mitigation Measures

The proposed VESI 10 Tierra Buena BESS project will have no effect on recreation; there are no proposed recreation facilities as a part of the proposed VESI 10 Tierra Buena BESS project, nor will there be any increase in the use of existing recreational facilities. There is No Impact.

6.16.6 Recreation Initial Study Responses

Table 6.16-1: Recreation Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

6.16.7 Responses to Initial Study Questions

6.16.7.1 Use of Parks and Recreational Facilities: No Impact

The proposed VESI 10 Tierra Buena BESS project is an unmanned battery storage facility and does not include housing that could result in increased demand for park and recreational facilities. No recreational facilities are included in the project nor would it require the expansion of existing recreational facilities that could have an adverse impact on the environment. Therefore, there would be No Impact.

6.16.7.2 Expansion of Recreational Facilities: No Impact

The proposed VESI 10 Tierra Buena BESS project does not include recreational facilities nor does it require the construction or expansion of recreational facilities. Therefore, there would be No Impact.

6.17 TRANSPORTATION

This section describes transportation systems and the project's potential effects on transportation and existing traffic that may occur with implementation of the proposed VESI 10 Tierra Buena BESS project. This section presents information on traffic and transportation as required by CEQA regulations. This section contains information on the existing transportation system together with a discussion of the potential effects of the proposed VESI 10 Tierra Buena BESS project.

6.17.1 Background

6.17.1.1 Regulatory Context

All applicable laws, ordinances, regulations, and standards and their conformance measures are discussed below. Regulations, analysis methodologies, and transportation/circulation policies used to analyze the proposed VESI 10 Tierra Buena BESS project impacts were taken from the following agencies and their applicable documents.

Federal Regulations

The Hazardous Materials Transportation Act of 1974, 49 Code of Federal Regulations (CFR) 397.9, is a federal law applicable to the proposed VESI 10 Tierra Buena BESS project. It directs the U.S. Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials. There are no specific conformance measures necessary for this law.

- Transportation of Hazardous Materials requires transporters to adhere to established regulations adopted with the Hazardous Materials Transportation Act of 1974 and implemented by regulations adopted by the U.S. Department of Transportation.
- California Vehicle Code Section 35730 requires transport of oversized or excessive loads over state highways requires an oversize permit issued by Caltrans North Region Permitting Department and enforced by the California Highway Patrol.
- California Vehicle Code Section 31303 (b) requires that the transportation of hazardous materials be on State or interstate highways that offer the shortest overall transit time possible. Such code is enforced by the California Highway Patrol.
- California Vehicle Code Section 31303(c) requires that the transportation of hazardous materials avoid, whenever practicable, places where crowds are assembled, and residential districts.
- California Vehicle Code Section 32000.5 requires that transporters of hazardous materials contact the California Highway Patrol to apply for and receive a Hazardous Material Transportation License.
- California Streets and Highway Code, Division 2 Chapter 5.5 Sections 1460-1470 requires an encroachment permit from Sutter County Development Services Department to make an opening or excavation for any purpose in a roadway.

State Regulations

State laws that apply to the proposed VESI 10 Tierra Buena BESS project include the following:

- California Vehicle Code Section 35730: Requires approval for a permit to transport oversized or excessive loads over State highways. The project would conform to Section 35730 by requiring that shippers obtain a Single Trip Transportation Permit for oversized loads, as required by the California Department of Transportation (Caltrans), for each vehicle.

- California Vehicle Code Section 31303(b): Requires that the transportation of hazardous materials occur on state or interstate highways offering the shortest overall transit time possible. The proposed VESI 10 Tierra Buena BESS project would conform to Section 31303(b) by requiring that shippers of hazardous materials use the shortest route possible to and from the lease area.

- California Vehicle Code Section 31303(c): Requires that the transporters of hazardous materials avoid, whenever practicable, congested thoroughfares, places where crowds are assembled, and

residential districts. The proposed VESI 10 Tierra Buena BESS project would conform to Section 31303(c) by requiring transporters to use routes that avoid these areas, if possible.

- California Vehicle Code Section 32000.5: Requires that shippers of hazardous materials must contact the California Highway Patrol to apply for and receive a Hazardous Material Transportation License. The proposed VESI Tierra Buena BESS project would conform to Section 32000.5 by requiring hazardous materials transporters to be licensed when transporting to and from the lease area.

- California State Planning Law, Government Code Section 65302: Requires each city and county to adopt a general plan consisting of seven mandatory elements to guide its physical development. Section 65302 (b) requires that a circulation (transportation) element be one of the mandatory elements. The scope of a circulation element consists of the "general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan." Compliance with this section is described below.

Local Regulations

The mobility element of the Sutter County 2030 General Plan sets forth goals, policies, and implementation programs related to traffic issues in Sutter County. The proposed VESI 10 Tierra Buena BESS project would be consistent with the County's General Plan Mobility Element goals and policies due to the minimal amounts of construction and operational traffic associated with the proposed VESI 10 Tierra Buena BESS project. Furthermore, the proposed VESI 10 Tierra Buena BESS project would implement appropriate mitigation measures during construction to ensure that safe, reliable transportation is maintained within the County for automobiles as well as bicycle and pedestrian traffic.

The Sutter County 2030 General Plan Mobility Element Policy, M-2.5: Level of Service on County Roads, states: "*Develop and manage the County roadway segments and intersections to maintain LOS D or better during peak hour, and LOS C or better at all other times. Adjust for seasonality. These standards shall apply to all County roadway segments and intersections, unless otherwise addressed in an adopted specific plan or community plan. (M 2-C/M 2-D).*

In addition to general plan requirements, the California Streets and Highways Code, Division 2, Chapter 5.5, Sections 1460-1470, requires an encroachment permit if there is an opening or excavation for any purpose in any County Roads. The project would conform to Section 1460-1470 by obtaining an encroachment permit from the Sutter County Development Services Department prior to any modifications of the existing driveways on Tierra Buena Road (ingress/egress) to the proposed project lease area.

6.17.1.2 Required Permits and Approvals

Sutter County Development Services Department Encroachment Permit for all work within public rights-of-way.

6.17.2 Methodology

6.17.2.1 Ground Transportation

To assess the potential of the proposed VESI 10 Tierra Buena project-related traffic to impact local traffic congestion, the number of project-related trips through each key intersection and the intersection LOS were estimated for conditions before project construction, during construction, and during project operation. The trip-estimating methodology is based on the Planning Method in the *Highway Capacity Manual 2000*, which provides a general discussion of intersection operations that is used to define the overall LOS at a traffic-controlled intersection, given existing traffic volumes and projected project-related traffic. The Planning Method calculates a "*sum of critical volumes*" for the critical traffic-control phases of an intersection (phases for which there might be significant delay or obstruction), and a corresponding

LOS. The critical volume is the volume of traffic that would cause a significant conflict with opposing traffic. This occurs where left-turning traffic obstructs through traffic at an intersection. The critical volume for an intersection as a whole is calculated as the number of vehicles turning left plus the number of through vehicles at a given intersection, for each flow direction possible at that intersection.

According to the *Highway Capacity Manual* (2000) by the Transportation Research Board, LOS ratings are assigned as a function of control delay, as shown in Table 6.17-1. Table 6.17-1 shows critical average delay thresholds for each LOS, A through F (the average delay below which a given intersection remains at a given LOS). To define the LOS of an intersection with two-phase control, for example, given actual hourly traffic counts for the daily peak period of travel, one would add the left-turn volume to the opposing direction's through volume for all applicable travel directions at that intersection (for example, east-west, west-east, north-south, south-north). If the resulting sum of critical volumes produces an average delay of 10 seconds or less, the LOS would be A. If a project were to add a volume of traffic to an intersection that would increase this sum of critical volumes and thus the average delay to more than 10 seconds, it would cause a change in LOS from A to B.

Table 6.17-1: Intersection Level of Service (LOS) Definitions

Level of Service	Type of Flow	Delay	Maneuverability	Volume/Capacity Ratio	Average Stop Delay/Vehicle (seconds)
A	Stable flow	Very slight or no delay. If signalized, conditions are such that no approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.	Turning movements are easily made, and nearly all drivers find freedom of operation.	0.00–0.60	Less than 5.0
B	Stable flow	Slight delay. If signalized, an occasional approach phase is fully utilized.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	0.61–0.70	5.1 to 15.0
C	Stable flow	Acceptable delay. If signalized, a few drivers arriving at the end of a queue may occasionally have to wait through one signal cycle.	Backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.71–0.80	15.1 to 25.0
D	Approaching unstable flow	Tolerable delay. Delays may be substantial during short periods, but excessive backups do not occur.	Maneuverability is severely limited during short periods due to temporary backups.	0.81–0.90	25.1 to 40.0
E	Unstable flow	Intolerable delay. Delay may be considerable (up to several signal cycles).	There are typically long queues of vehicles waiting upstream of the intersection.	0.91–1.00	40.1 to 60.0
F	Forced	Excessive delay.	Jammed conditions. Backups from other locations restrict or prevent movement. Volumes may vary widely, depending on the downstream backup conditions.	Varies	Greater than 60.0

Source: Highway Capacity Manual, 2000

For this analysis, the traffic generated by the proposed VESI 10 Tierra Buena BESS project in the study area during construction and operation was assigned to the surrounding street system for a hypothetical return commute. The resulting trip numbers were then added to the existing critical volumes (based on Traffic Census from Sutter County, Yuba City, and Caltrans) for each key intersection and compared with the LOS thresholds listed in Table 6.17-1.

The key analysis assumptions were as follows:

- No public transit to the proposed project lease area.
- The normal construction workday would begin at 7 a.m. and ends at 3:30 p.m.
- All construction traffic would arrive during off peak traffic periods.

Project trip generation was estimated for construction traffic and operations traffic based on VESI 10, LLC's experience in constructing and operating BESS facilities. The ability of any roadway network to accommodate anticipated traffic volumes is measured by comparing Peak Hour Traffic Volumes to roadway capacities. Thus, it is essential to determine the hourly traffic volumes to be generated by the proposed VESI 10 Tierra Buena BESS project and add them to the existing traffic volumes. It is estimated that during the construction phase of the proposed VESI 10 Tierra Buena project, the Peak AM Hour trips generated would be 25 new vehicles entering the proposed project lease area, while during the construction Peak PM Hour, there would be 25 new vehicles exiting the proposed project lease area.

During operations of the proposed VESI 10 Tierra Buena BESS project, it is estimated that there would be zero new vehicles entering the proposed project lease area due to the BESS facility is unmanned and controlled remotely by SCADA.

Access to the proposed project lease area will be off Tierra Buena Road and no restrictions will be made to left turns into the project lease area. Existing driveways being utilized by Valdez Trucking at the agricultural truck yard will provide ingress/egress to the proposed project lease area. Arriving traffic was assumed to approach from Tierra Buena Road and Pease Road intersection, northbound on Tierra Buena Road and right turn into the proposed project lease area. Departing traffic was assumed to make a left turn on Tierra Buena Road and proceed south to the intersection of Pease Road and Tierra Buena. The proposed project lease area is in close proximity to state freeways (State Route 99) and state highways that allow easy access to the proposed project lease area. It is, therefore, assumed that much of the construction workforce could arrive from outside the immediate area and would thus access State Route 99 and State Route 20 to disperse through the freeway system.

6.17.3 Environmental Setting

6.17.3.1 Land Traffic and Transportation Conditions

Roadway System

The following are the key roadways in the vicinity of the proposed VESI 10 Tierra Buena BESS project:

Tierra Buena Road – Tierra Buena Road traverses in a north/south direction and is the frontage road to the entire length of the parcel from which the proposed project lease area would be leased. Tierra Buena Road begins at Eager Road to the north approximately one and a quarter (1 ¼) miles from the proposed project lease area and extends to Butte House Road to the south approximately one and a quarter (1 ¼) miles from the proposed project lease area and consists of one lane per direction. Access to the proposed project lease area is provided along Tierra Buena Road. The Sutter County 2030 General Plan Mobility Element calls for Tierra Buena Road to become a "*Rural Major Collector – 2 Lanes*" in the future.

The Sutter County 2030 General Plan, Mobility Element describes Tierra Buena Road as a Rural Major Collector which should: (1) provide service to any county seat not on an arterial route, to the larger towns not directly served by the higher systems, and to other traffic generators of equivalent intra-county importance, such as consolidated schools, shipping points, county parks, important mining and agricultural areas, critical facilities, etc.; (2) link these places with nearby larger towns or cities, or with routes of higher classification; and (3) serve the more important intercounty travel corridors.

Pease Road – Pease Road traverses in an east/west direction and is the Sutter County 2030 General Plan, Mobility Element designated Rural Major Collector on the southern border of the main parcel the

proposed project lease area is extracted from. The intersection of Pease Road and Tierra Buena Road will be approximately 930 feet south of the ingress/egress driveway for the VESI 10 Tierra Buena BESS facility. Pease Road begins at Live Oak Boulevard to the east of the proposed project lease area and connects the BESS facility to the E/W Onstott Frontage Road and State Route 99. Pease Road ends on North Township Road to the west approximately one and a half (1 ½) miles west of the intersection with Tierra Buena Road. Pease Road consists of one lane per direction.

State Route 99 – State Route 99 is the adjacent freeway servicing the Yuba City Metropolitan area and traverses in a north/south direction through Sutter County. State Route 99 is located to the east of the site approximately one and a half (1 ½) miles.

6.17.3.2 Other Land Transportation Issues and Plans

This section describes other traffic and transportation-related issues and plans important for the subsequent analysis of potential project impacts.

Public Safety

There are no road features or characteristics in the vicinity of the proposed project lease area that would affect public safety nor are there any sub-standard bridges along the potential access routes to the proposed project lease area. In addition, there are no Sutter County roadways that are subject to normal weather-related closures such as localized flooding or fog.

Hazardous Materials

The Sutter County 2030 General Plan does not address hazardous materials transportation permits or routes.

Truck Traffic and Agricultural Vehicles

Truck traffic on rural roadways near the proposed project lease area represents less than 10 percent of all vehicle traffic. Truck traffic is a common daily contributor to localized traffic in the rural agricultural sector of Sutter County. The proposed project lease area is located in close proximity to State Route 99 freeway and State highways that allow easy access to the proposed project lease area for truck traffic and large loads. All roadways leading to the proposed project lease area off State Route 99, State Route 20, and Interstate 5 are designated as truck routes for delivery and services purposes.

6.17.3.3 Regional Transportation Setting

The proposed project lease area is in Sutter County approximately one mile north of Yuba City, California. The project site is 2.8 miles northwest of the intersection of State Route 99 and Queens Avenue interchange, 2.8 miles southwest of the intersection of State Route 99 and Eager Road and east side of Tierra Buena Road just north of Pease Road. The transportation corridors which services the project site include: State Route 99, State Route 70, and State Route 20, which connects to Interstate 5, State Route 70 and State Route 99. The proposed project lease area ingress/egress will be off Tierra Buena Road which is classified as a Rural Major Collector Road under the Roadway Functional Classification Plan depicted in the Sutter County 2030 General Plan, Mobility Element, as well as the Sacramento Area Council of Governments (SACOG), 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy. The Rural Major Collector is planned to carry typical average daily traffic (ADT) minimum 4,500 vehicles and maximum of 16,400 vehicles and maintain a level of service D. Tierra Buena Road will carry proposed project traffic south to Pease Road another designated Rural Major Collector roadway, where project traffic can then either go east to W/E Onstott Frontage Road, another designated Rural Major Collector, and then onto State Route 99 classified as a Freeway/Expressway or west to North Township Road another Rural Major Collector and then south to State Route 20 which is a 4 lane surface arterial state highway. State Route 20 connects to both State Route 99 and Interstate 5 which are four lane freeway facilities which has “limited-access, high-speed travel way included in the State and federal highway systems whose purpose is to carry regional through traffic. In general, freeways are under the jurisdiction of Caltrans, while local roadways, collectors, and arterials fall under the jurisdiction of Sutter County Development Services Department. The SACOG is responsible for regional transportation

planning and coordination between all levels of government with jurisdiction over transportation development and maintenance in the greater Sacramento Region within Sutter County.

6.17.4 Standards of Significance

Criteria used in determining whether project-related traffic impacts are significant are consistent with standard industry practice and California Code of Regulations Title 14, §15065. An impact to transportation would be considered significant if the project would:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and/or
- Result in inadequate emergency access.

6.17.5 Impacts and Mitigation Measures

Construction Ground Transportation

Construction of the proposed VESI Tierra Buena BESS project would take place in five or less months. It is anticipated that the on-site construction workforce would be drawn from the Yuba City regional labor pool and many workers would commute approximately 1 to 5 miles. The average daily construction workforce would be approximately 25 persons, based on previous BESS projects of similar nature and size, with a peak construction workforce of 50 persons. The construction workforce of 50 persons is estimated to generate 45 vehicle trips to the proposed project lease area assuming approximately 10 percent of the vehicles will have more than one occupant. Carpooling would be encouraged to reduce traffic flow to the proposed project lease area.

A conservative approach was incorporated into the analysis, whereby it was assumed that all vehicle trips generated by construction workers would arrive and depart during peak traffic hours. However, in reality, construction personnel would arrive at the proposed project lease area at or near 6 a.m., before the morning peak hour (7 a.m. to 8 a.m.) and would depart the project lease area between 3 p.m. and 4 p.m., avoiding the evening peak hour (5 p.m. to 6 p.m.). In addition, the traffic analysis uses the estimated number of workers during peak construction, rather than the average number of workers. Trip-generation data used in this analysis are based on VESI 10, LLC's, extensive experience with the planning and construction phases of a variety of BESS projects. This approach illustrates the worst-case scenario for traffic at all potentially affected intersections during construction. Therefore, this impact analysis incorporates very conservative assumptions for planning and impact analysis purposes.

The primary roadways that would be used for travel to and from the proposed project lease area are Tierra Buena Road, Eager Road, E/W Onstott Frontage Road, Pease Road, and State Route 99, which would experience the greatest volume of construction traffic. The estimated amount of additional traffic on each street due to project construction activities are shown on Table 6.17-2: Existing V/C ratio and Projected Construction-related V/C ratio at Selected Intersections.

Table 6.17-2. Existing V/C Ratio and Projected Construction-Related V/C Ratio at Selected Intersections.

Intersection	Existing[1]		Construction Phase	
	Total Peak-hour In/Out Vehicle Trips at Intersection	V/C Ratio	Total Peak-hour In/Out Vehicle Trips at Intersection	V/C Ratio
Tierra Buena Road at Pease Road	2,180	0.20	2,225	0.21
Pease Road at State Route 99	3,788	0.35	3,883	0.36

[1] *Yuba City/Sutter County/SACOG Traffic Data 2016*

Projected traffic impacts from construction traffic that would affect the v/c ratio during construction for selected roadway intersections are summarized in Table 6.17-2. No intersection would have a v/c ratio greater than 0.90 as required by the traffic performance standard in the Sutter County 2030 General Plan, Mobility Element. The two key intersections, the project's effect on traffic conditions, indicated by the v/c ratio, would be minor and would not cause a decrease in level of service rating. Further away from the key intersections, the project's effect on traffic conditions, indicated by v/c ratio, would be barely perceptible.

Any noticeable impact in traffic composition due to truck traffic would be limited to a relatively small number of days, as most deliveries would be spread over the entire construction period. Therefore, impacts from construction-related truck traffic would be less than significant. There would be approximately 250 truck deliveries associated with construction of the proposed VESI 10 Tierra Buena BESS project, spread out over the course of the five months construction period (possibly several on some days and none on other days). Deliveries would include shipments of modules, enclosures, batteries, transformers, inverters, and related electrical wiring and balance of BESS facility components; concrete deliveries; water truck; and construction trailer delivery/pickup. Whenever possible, construction traffic trips to and from the proposed project lease area would be planned during non-commuter peak hours of 10:00 a.m. to 4:00 p.m. weekdays, Monday through Friday. Therefore, impacts from construction-related truck traffic would be less than significant, with the following mitigation measures incorporated.

T-1: A traffic control plan will be developed in coordination with the Engineering Division of the Sutter County Development Services Department for any work requiring a County Encroachment Permit.

T-2: Start times and end times of the construction day will be offset from identified peak traffic hours to mitigate traffic congestion on local streets and highways. Construction personnel will typically arrive at the project site around 6:00 AM, before the morning peak hour (7:00 AM to 8:00 AM). Construction employees will typically leave between 3:00 PM and 4:00 PM, before the evening peak hour (4:00 PM and 5:00 PM).

Operations Ground Transportation

An estimated two or three workers would be required for operation, maintenance, and security of the BESS facility on a bi-monthly basis. Operation and security would be conducted from an offsite location by SCADA remote monitoring, and maintenance crews would be dispatched to the BESS facility as needed during operation. Additional incremental vehicle trips specifically for inspection of the battery storage system would typically occur only one time per year. However, for the purpose of this traffic impact assessment, a more conservative estimate of one inspection event per quarter (four vehicle trips

per year) is used. Due to the fact that the trips would not occur on a daily basis, and the number of trips would be minimal, impacts would be less than significant from maintenance and inspections activities at the BESS facility.

Thus, operation and maintenance of the proposed VESI 10 Tierra Buena BESS project would not generate any substantial or potentially significant traffic volumes. Two to three workers travelling to the site for periodic maintenance and infrequent intervals would not generate enough traffic to change level of service standards or other travel demand measures for any roadways within Sutter County. All intersections would continue to operate at level of service levels above the threshold of significance (LOS D during peak hours) set by the Sutter County 2030 General Plan, Mobility Element, during operation of the proposed VESI 10 Tierra Buena BESS project. The proposed VESI 10 Tierra Buena BESS project would not impact any mass transit services or facilities or pedestrian or bicycle paths. Project-related impacts would be less than significant. No mitigation measures required for potential operations transportation impacts.

Access to VESI 10 Tierra Buena BESS Facility

Access to the proposed project lease area would be provided by an un-signalized driveway located at the western edge of the proposed project lease area at the driveways utilized by Valdez Trucking for the existing agricultural truck yard operations. This location is ideal due to the distance from the intersection to the south, so as not to interfere with safe, unobstructed flow through the intersection. The ingress/egress for the proposed project lease area will allow both left turns and right turns off Tierra Buena Road, entering and exiting. An additional driveway on the north end of the proposed project lease area is proposed for emergency responder vehicles only in case of an emergency event and the main entrance is blocked, requiring an alternative access to the BESS facility. No Impact will occur from utilization of Valdez Trucking ingress/egress of the parcel or adding an additional emergency access off Tierra Buena Road to the BESS facility.

Parking

Enough parking will be provided on-site to accommodate the construction workers during the construction phase. Operational phase parking will be limited to the access roads within the BESS facility, since the BESS facility is unmanned, and only occasional inspections or maintenance will occur. No Impact to parking.

6.17.6 Transportation Initial Study Responses

Table 6.17-3: Transportation Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☑	☐	☐
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☐	☐	☑	☐

c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☑	☐
d)	Result in inadequate emergency access?	☐	☐	☐	☑

6.17.7 Responses to Initial Study Questions

6.17.7.1 No Conflict with Program, Plan, Ordinance, or Policy Addressing the Circulation System: Less than Significant with Mitigation Incorporated

There would be a temporary increase in traffic in the vicinity of the proposed project lease area during construction activities, resulting from the construction workers and trucks required during the construction process. Since the VESI 10 Tierra Buena BESS project is not expected to cause a change in the level of service for surrounding road segments likely to be used during construction or operation and a traffic control plan is required by Sutter County encroachment permit for all work within the public right-of-way associated with BESS facility construction, the proposed VESI 10 Tierra Buena BESS project would not result in a significant impact on existing traffic in the vicinity of the proposed project lease area. The proposed temporary increase would not conflict with any such plan as required by the CEQA guidelines. As such, the increase in traffic would result in less than significant impacts. Furthermore, the increase in traffic volume will decline upon completion of the construction phase of the BESS facility (as BESS is an unmanned facility remotely monitored and managed). There would be adequate internal circulation and parking. Laydown of materials during the construction period would take place on an empty field just south of the proposed project lease area.

The proposed VESI 10 Tierra Buena BESS project is an unmanned battery storage facility that would not generate frequent daily vehicle trips as part of long-term operations. Construction trips would occur over a 16 to 20-week period. Construction vehicles would access the site via the State Route 99/Eager Road interchange, State Route 99/Queens Avenue Interchange, E/W Onstott Frontage Road, Eager Road, Pease Road, and Tierra Buena Road. Vehicles would enter the existing Valdez Trucking driveway at Tierra Buena Road. Trip generation would entail:

- One-time mobilization and demobilization of heavy equipment (e.g., excavator, backhoe) at the start and end of earthwork or other construction stage, as needed
- One-time delivery of the major battery storage system equipment components
- Up to 45 worker vehicles per day (peak) over 5 months during sequential phases of work (civil, erection, and electrical)
- Up to two worker vehicles per day, up to seven days per week, for five weeks for site commissioning. Commissioning vehicle trips would originate from VESI 10, LLC's Reno Offices (approximately 120 miles one-way trip).

No vehicle parking would occur on Tierra Buena Road or other surface streets unless necessary to complete a specific construction task (e.g., electrical interconnection to the PG&E Pease Road substation). After commissioning and during the operational life of the BESS facility most routine inspections of the battery storage system would occur concurrently with maintenance. Additional incremental vehicle trips specifically for inspection of the battery storage system would typically occur only one time per year. However, for the purpose of this traffic impact assessment, a more conservative estimate of one inspection event per quarter (four vehicle trips per year) is used. Due to the fact that the trips would not occur on a daily basis, and the number of trips would be minimal, impacts would be less than significant.

Delivery of Hazardous Materials

Lithium-ion batteries malfunctions can cause overheating, or thermal runaways. This may result in fires, explosions or gas leaks. Additionally, lithium batteries can go into thermal runaway when they come in contact with an external heat source, such as fire. Due to these safety concerns, lithium batteries are considered hazardous materials or dangerous goods and shippers must adhere to strict regulatory requirements. In general, other small quantities of hazardous materials would be used during construction activities, and all hazardous materials would be shipped by truck. This may consist of welding flux and various solvents. All applicable requirements will be meet in shipping lithium batteries and other hazardous materials, including the use of transporters with a Hazardous Material Transportation License. Additionally, all deliveries would follow the County-designated truck route, which offers the shortest overall transit time possible and avoids congested thoroughfares, places where crowds are assembled, and residential districts, thereby ensuring that such deliveries do not conflict with a local plan, ordinance, or circulation element.

VESI 10, LLC, would obtain the appropriate permits required by the State of California. Transport of hazardous materials on Sutter County roadways would be limited in that the proposed project lease area is within (2.8) miles of the interchanges for State Route 99 (Eager Road and Queens Avenue).

Oversize or Overweight Shipments

Certain components of the BESS facility are of such dimension and weight that special delivery may be required during construction. Oversize/overweight shipments are anticipated to be transported by heavy-load truck delivery. According to Sutter County, there are no sub-standard bridges along any County roadways. Any necessary ground shipment exceeding the size and/or weight/load limits described would require a Single Trip Transportation Permit (State of California Vehicle Code, Sections 35730-35796). Appropriate permits would be obtained for all deliveries.

The proposed VESI 10 Tierra Buena BESS project is consistent with the goals and policies of the Sutter County 2030 General Plan, Mobility Element. The proposed VESI Tierra Buena BESS project would contribute less than 0.0042 percent of the total volume of traffic of nearby intersections to the proposed BESS facilities. The transportation element also calls for maintaining a minimum level of service on all regional routes of significance of D, and the proposed VESI 10 Tierra Buena BESS project does not degrade any regional routes of significance beyond the adopted level of service standard. Furthermore, the Sutter County 2030 General Plan, Mobility Element, calls for limited driveways on all major rural collectors, and the proposed VESI 10 Tierra Buena BESS project has limited ingress/egress to the project lease area by utilizing exiting drives. Thus, by following the Sutter County 2030 General Plan, Mobility Element, the proposed VESI 10 Tierra Buena project will have a less than significant effect on the General Plan or other regional plans and policies.

There is a potential for minor, short-term increases in motor vehicle hazards due to the operation of construction equipment. However, adoption of the mitigation measures detailed above (Section 6.17.5, T-1 and T-2) would ensure that any impacts occasioned during construction activities would be less than significant. Overall, construction of the proposed BESS facility and interconnection to PG&E Pease Road substation is not anticipated to create long-term effects on the transportation system in the project vicinity. As discussed throughout this section, the proposed VESI 10 Tierra Buena BESS project will not cause a significant increase in local traffic flows, and therefore, the effect on the local circulation system will be less than significant as a result of the implementation of the proposed VESI 10 Tierra Buena BESS project.

6.17.7.2 Conflict or be Inconsistent with CEQA Guidelines § 15064.3, Subdivision (b): Less than Significant Impact

In 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines which included implementation of Senate Bill 743 (Section 15064.3) (SB 743). SB 743 identified a new

way to analyze transportation impacts under CEQA. The Office of Planning and Research amended the CEQA guidelines to provide an alternate to 'Level of Service' (LOS) to evaluate transportation impacts. Under SB 743, auto delays in traffic would not be considered a significant impact under CEQA. Rather, vehicle miles traveled (VMT) would be the primary metric for environmental impacts. VMT measures the sum of the number of miles traveled by each vehicle.

Per the CEQA Guidelines section 15064.3, subdivision (b)(1), projects that reduce vehicle miles traveled, such as pedestrian, bicycle and transit projects, should have a less than significant impact. Per the CEQA Guidelines section 15064.3, subdivision (b)(2), transportation projects which reduce vehicle miles traveled should be presumed to cause a less than significant transportation impact.

The proposed BESS facility will be replacing the Calpine Feather River Energy Center which is a gas fired turbine which requires personnel on the power generation site three shifts per day, every day of the week creating vehicle miles traveled by Calpine employees servicing the power plant. The proposed BESS facility is an unmanned energy storage facility which will not generate trips, and will replace the trips and vehicle miles of travel once contributed to the Calpine Feather River Energy Center resulting in a net decrease in vehicle miles traveled in Sutter County and the region. The proposed BESS facility is not identified to be a transportation project.

While the proposed BESS facility would introduce new site uses such the storage of batteries, and electrical equipment, the proposed BESS facilities would not introduce new activities to the parcel that would result in significant trips to and from the area. The proposed project would not modify the existing public transit stops or access. Based on these conditions, impact would be less than significant.

Sutter County's roadway performance requirement outlined in the Mobility Element of the 2030 Sutter County General Plan is level of service D during peak hours. Level of service on existing County intersections that will be used by the proposed VESI 10 Tierra Buena BESS project are now at or above the acceptable LOS D during peak hours as specified by the Sutter County 2030 General Plan, Mobility Element. All roadway segments and intersections within the proposed project lease area currently operate at a LOS classification of between A and C. Given the low volume of existing traffic on roads in the project vicinity, additional project traffic during project construction and operations would not cause an exceedance of LOS D on Sutter County roadways. Implementation of the proposed VESI Tierra Buena BESS project would have a less than significant impact on level of service standards established by Sutter County and SACOG.

6.17.7.3 Substantially Increase Hazards Caused by a Geometric Design Feature: Less than Significant Impact

The proposed VESI 10 Tierra Buena BESS project will utilize existing driveways, with the possibility of having to create one new driveway on the north end of the parcel for emergency access only. The existing and the proposed additional emergency ingress/egress location would provide excellent sight distance, with no obstructions of views. No impact is anticipated with access to the proposed project lease area.

The proposed VESI 10 Tierra Buena BESS project does not include the construction of any new roads, other than the access drive aisle that would be entirely onsite and used only by project workers and emergency responders in the event of an emergency. Turning radius on the BESS facility internal access roads would accommodate maneuverability on the site of large trucks and vehicles, including fire trucks. The BESS facility access road would have a single driveway entrance from Tierra Buena Road. This entrance would be designed and constructed to Sutter County standards and include a driveway apron. During construction of the BESS facility, construction equipment and project materials would be delivered via trucks. Large flatbed trucks, dump trucks, and water trucks would travel on Pease Road, Tierra Buena

Road, E/W Onstott Frontage Road, Eager Road, State Route 99, and other roads in the area while delivering supplies and equipment. Certain maintenance activities during operation may also require large trucks. Sutter County roads used to access the BESS facilities are public roadways designed for use by large trucks (80,000 gross weight). Project-related impacts would be less than significant.

6.17.7.4 Result in Inadequate Emergency Access: No Impact

The proposed VESI 10 Tierra Buena BESS project would not alter any existing emergency access routes or change existing patterns of emergency access. The proposed VESI 10 Tierra Buena BESS project would not require closures of public roads, which could inhibit access by emergency vehicles. As described above, increased project-related traffic would not cause a significant increase in congestion or affect the existing level of service on roads, which could indirectly affect emergency access. The proposed VESI 10 Tierra Buena BESS project circulation design includes the use of existing local access roadways to all elements of the proposed project lease area and paved access to all points within the proposed project lease area, which would facilitate emergency access in the event of an emergency at the BESS facilities. Furthermore, the proposed project lease area design includes two emergency access points, one at the southern end, and one at the northern end. Turning radius on the internal BESS facility road would accommodate maneuverability on the site of large emergency vehicles, including fire trucks and ambulances. The proposed VESI 10 Tierra Buena BESS project would have No Impact.

6.18 TRIBAL CULTURAL RESOURCES

This section assesses the tribal cultural resources within the vicinity or within the proposed VESI 10 Tierra Buena BESS project lease area which could be adversely affected. This section fulfills the requirements of AB 52 (Chapter 532, Statutes 2014) by documenting the inclusion of tribal cultural resources early in the CEQA process, to ensure that local Tribal governments, public agencies, identify and address potential impacts to tribal cultural resources. Tribal cultural resources are defined by the Public Resources Code Section 21074 as "*Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe that are listed, or determined to be eligible for listing, in the national or state register of historical resources, or listed in a local register of historic resources"*. Furthermore, a tribal cultural resource could be a resource that the lead agency (Sutter County) determines, in its discretion is a tribal cultural resource.

6.18.1 Background

6.18.1.1 Regulatory Context

Federal Regulations

Native American Graves Repatriation Act (43 CFR Section 10.14 (d))
Federal law provides examples of potential sources of tribal knowledge and cultural resources. The Native American Graves Repatriation Act recognizes the following type of evidence of cultural affiliation: geographical, kinship, biological, archaeological, anthropological, linguistic, folklore, oral tradition, historical or other relevant information or expert opinion.

State Regulations
California law, Public Resources Code 21080.3.1 requires a CEQA lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. The consultation must take place prior to the release of a Negative Declaration, Mitigated Negative Declaration or Environmental Impact Report for a project.

California Government Code Section 65352.4 applies when local governments (Sutter County) consult with tribes on certain planning documents. This section of the government code states: *"Consultation" means the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional tribal cultural significance.* Governor's Office of Planning and Research's SB 18 *Tribal Consultation Guidelines* provide further explanation of what "consultation" means.

Under existing law, environmental documents must not include information about the location of an archeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records Act. (*Cal. Code Regs. § 15120(d); Clover Valley Foundation v. City of Rocklin (201 I) I 97 Cal.App.4th 200, 220*).

6.18.2 Methodology

AB 52 consultation letters were sent out to 2 tribal councils based on a list provided by the Native American Heritage Commission. No response letters have been received to date.

The following activity was conducted to determine the potential of cultural resources present: search of cultural literature, Sacred Lands File records searches, and an intensive-level pedestrian survey of the proposed project lease area. Tribal cultural resources analysis was completed in compliance with the CEQA, for which the County of Sutter Development Services Department/Planning is the State Lead Agency for the proposed VESI 10 Tierra Buena BESS project.

The cultural literature search was completed by the Northeast Information Center at California State University, Chico on February 26, 2019; a Sacred Lands File search by the Native American Heritage Commission on February 13, 2019; and a search by Natural Investigations of the University of California Museum of Paleontology (UCMP) database on February 21, 2019. The Native American Heritage Commission indicated their search did not find sacred sites in the vicinity of the proposed VESI 10 Tierra Buena BESS project. Investigations conducted an intensive-level pedestrian survey of the proposed project lease area and surrounding parcel on March 18, 2019, which showed no evidence of cultural resources. Ground visibility in most of the proposed project lease area and surrounding parcel ranged from fair to good depending on the density of the vegetation cover.

6.18.3 Environmental Setting

The proposed VESI 10 Tierra Buena BESS project lease area has been previously disturbed. The proposed project lease area historically was developed as a rail road track which removed top soils and laid railroad base material, then ballast was placed to support the railroad tracks. The railroad was abandoned, and the raised historical railroad and ballast was spread-out and leveled over the parcel. The past 20 years the parcel was used as an agricultural truck yard which resulted in further compaction of the soils and surface by truck movements. The Sutter County 2030 General Plan, Background Report, does not recognize any historical or cultural resources in the project vicinity according to Figure 6.7-1 *Historic Resources*.

6.18.4 Standards of Significance

The State CEQA Guidelines state that a project's impacts will normally be considered potentially significant if they substantially adversely change a significant tribal cultural resource:

- Resources listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources;
- A resource determined by Sutter County in its discretion to be significant; and/or
- A significant tribal cultural resource such as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.

6.18.5 Impacts and Mitigation Measures

Tribal cultural resources are defined in Public Resources Code 21074 as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either:

- Included or determined to be eligible for inclusion in the California Register of Historical Resources
- Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1

No requests, in writing pursuant to AB 52, from geographically affiliated tribes for consultation under the requirements of AB 52 regarding the potential of the project to impact tribal cultural resources have been received prior to the date of this document. Therefore, no tribal cultural resources have been identified within the proposed project lease area and the project would have no impact. No mitigation measures for tribal cultural resources are required. The project involves limited ground disturbing activity within an existing agricultural truck yard. No structures listed or eligible for listing are present on the proposed project lease area. The proposed project lease area has been previously disturbed and graded. There are no known archaeological resources on the proposed project lease area. No known burial sites have been

identified within in the proposed project lease area. Minimal grading could be required prior to installation of the BESS facility. Although the likelihood of encountering isolated archaeological resources is very low, mitigation measure CR-1 is required in the unlikely event the proposed construction activities encounter remains. Impacts to tribal cultural resources would be less than significant with mitigation measure CR-1.

CR-1 In the event that unanticipated archaeological resources should be accidentally discovered during project construction, a qualified archaeologist or paleontologist will be retained for evaluation of the find. If the find is determined to be a historical or unique archaeological resource, appropriate mitigation or avoidance measures will be taken in accordance with CEQA Guidelines 15064.5(f). During mitigation of unanticipated archaeological resources, it would not be necessary for work to halt in construction areas not affected by such finds. Any historically significant cultural materials discovered during project construction will be the subject of professional scientific analysis and a report to be prepared by a qualified archaeologist. In the event that such a discovery should contain human remains, the following steps shall be taken as outlined in CEQA Guidelines 15064.5 (e)(1):

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
(B) If the coroner determines the remains to be Native American:

1. The coroner shall contact the Native American Heritage Commission within 24 hours.
2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98 or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
(B) The Descendant identified fails to make a recommendation; or
(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

6.18.6 Tribal Cultural Resources Responses

Table 6.18-1: Tribal Cultural Resources Initial Study Responses

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

6.18.7 Responses to Initial Study Questions

6.18.7.1 Cause adverse change to Listed or Eligible for Listing in California Register of Historical Resources or Local Register: Less than Significant with Mitigation Incorporated

No requests, in writing pursuant to AB 52, from geographically affiliated tribes for consultation under the requirements of AB 52 regarding the potential of the project to impact tribal cultural resources have been received prior to the date of this document. Therefore, no tribal cultural resources have been identified within the proposed project lease area and the BESS facility would have no impact. No mitigation measures for tribal cultural resources are required. The project involves limited ground disturbing activity within an existing agricultural truck yard. No structures listed or eligible for listing are present on the proposed project lease area. The proposed project lease area has been previously disturbed and graded. There are no known archaeological resources on the proposed project lease area. No known burial sites

have been identified within in the proposed project lease area. Minor grading could be required prior to installation of the BESS facility. Although the likelihood of encountering isolated archaeological resources is very low, mitigation measure CR-1 is required in the unlikely event the proposed construction activities encounter remains. Impacts to tribal resources would be less than significant.

6.18.7.2 Cause adverse change to resource determined by Sutter County in its discretion to be a significant resource: Less than Significant with Mitigation Incorporated

No requests, in writing pursuant to AB 52, from geographically affiliated tribes for consultation under the requirements of AB 52 regarding the potential of the project to impact tribal cultural resources have been received prior to the date of this document. Therefore, no tribal cultural resources have been identified within the proposed project lease area and the BESS facility would have no impact. No mitigation measures for tribal cultural resources are required. The project involves limited ground disturbing activity within an existing agricultural truck yard. No structures listed or eligible for listing are present on the proposed project lease area. The proposed project lease area has been previously disturbed and graded. There are no known archaeological resources on the proposed project lease area. No known burial sites have been identified within in the proposed project lease area. Minor grading could be required prior to installation of the BESS facility. Although the likelihood of encountering isolated archaeological resources is very low, mitigation measure CR-1 is required in the unlikely event the proposed construction activities encounter remains. Impacts to tribal resources would be less than significant with mitigation measure CR-1.

6.19 UTILITIES AND SERVICE SYSTEMS

This section assesses the existing public utilities and service systems that support the proposed VESI 10 Tierra Buena BESS project and identifies the potential impacts posed by the proposed VESI 10 Tierra Buena BESS project, and presents recommended mitigation where necessary. The public utilities and services analyzed in this section includes electricity, gas, water, wastewater, stormwater, and solid waste. Each subsection describes the utility, the provider of the utility, and the infrastructure of the utility as it relates to the proposed VESI 10 Tierra Buena BESS project.

6.19.1 Background

6.19.1.1 Regulatory Context

Federal Regulations

Federal water, wastewater, and waste regulations have been provided and discussed in previous sections of this document (see Section 6.9: *Hazards and Hazardous Materials* for discussion on hazardous waste and Section 6.10: *Hydrology and Water Quality* for discussion on water and waste water regulations). As previously discussed, the primary wastewater regulation that will be applicable to the proposed VESI 10 Tierra Buena BESS project is the NPDES permitting regulation provided in the Clean Water Act. Additionally, the controlling federal law surrounding hazardous waste and waste disposal include CERCLA and RCRA (as discussed in section 6.9).

State Regulations

California law requires pre-construction notification and agency coordination to protect infrastructure from damage caused by construction activities. Contractor State License Board Enforcement Business and Professions Code 7110, Assembly Bill (AB) 2719, AB 73 (Chapter 328), and Government Section Code Sections 4216-4216.9 require that contractors must provide proper notification and coordination with appropriate groups before commencing construction (i.e., digging) activities. In addition to coordinating activities and providing proper notification, the Project Applicant must obtain permits which address potential impacts on groups or agencies that use, or own utilities affected by the proposed VESI Tierra Buena BESS project.

California state law (Government Code Sections 4216, 4216.2, 4216.9) requires that an excavator contact a regional notification center at least two days prior to excavation of any subsurface installations. The center for northern California is Underground Service Alert. Any utility provider seeking to begin an excavation project can call Underground Service Alert's toll-free hotline. Underground Service Alert, in turn, will notify the utilities that may have buried lines within 1,000 feet of the excavation. Representatives of the utilities are required to mark the specific locations of their facilities within the work area prior to the start of excavation. The excavator is required to probe and expose the underground facilities by hand prior to using power equipment.

Assembly Bill (AB) 939

In 1989, the California legislature enacted the California Integrated Waste Management Act (AB 939) requiring all cities and counties in California to divert 50 percent of their solid waste from landfills by the end of 2000. This Act further required every city and county in California to prepare a Source Reduction and Recycling Element (SRRE), a report describing: (1) the chief characteristics of each jurisdiction's waste, (2) existing waste-diversion programs and rates of waste diversion, and (3) the new or expanded programs the jurisdiction intended to implement to achieve the mandated rates of diversion.

6.19.1.2 Local Regulations

The proposed VESI 10 Tierra Buena BESS project is subject to Sutter County 2030 General Plan, Infrastructure Element goals and policies listed below (the goals are listed as I—Infrastructure).

I-1.9 **Connection to Community Water System.** Connect existing developed areas to community water systems where practical (I1-K)

I-1.10 **Individual Water Wells.** New individual wells shall meet County well construction and water quality standards. *(I 1-L/I 1-M)*

I-1.10 **Individual Water Wells.** New individual wells shall meet County well construction and water quality standards. *(I 1-L/I 1-M)*

I-1.12 **Water Conservation.** Support water conservation programs that increase water use efficiency and provide incentives for adoption of water-efficiency measures. *(I 1-N)*

I-1.13 **Water-Efficient Landscaping.** Require the use of water efficient landscaping in new development. *(I 1-N)*

I-2.9 **Connection to Publicly Owned Wastewater System.** Connect existing developed areas to publicly owned treatment works where practical. *(I 2-J, I 2-K)*

I- 3.1 **Availability.** Require new development to study, coordinate, and plan the provision of stormwater services to support the new development and demonstrate the availability of long-term, safe, and reliable stormwater collection, and conveyance. *(I 3-A)*

I- 3.9 **Connection to Publicly Owned System.** Connect existing developed areas to publicly owned stormwater drains or open channel systems where practical. *(I 3-I)*

I- 3.10 **Mitigation of Stormwater Flows.** Require new development to adequately mitigate increases in stormwater flow rates and volume. *(I 3-J)*

I- 3.11 **Stormwater Quality.** Ensure that new development protects water quality in runoff, streams, and rivers. *(I 3-J)*

I-4.1 **Reduced Waste Stream.** Implement, as appropriate, the reduction measures in the Climate Action Plan targeted to reduce the County's waste stream. Such measures may include reducing solid waste, diverting construction waste, and educating the public on solid waste reduction and recycling.

I-5.3 **Adequate Energy Supplies.** Work with local utility providers to ensure adequate and affordable supplies of energy are available for existing and future development.

I-5.4 **New Utility Lines.** Construct new utility lines along existing utility corridors, when feasible.

I-6.1 **Adequate Facilities and Services.** Work with telecommunication companies to provide services to areas that are not currently served or are underserved, and to provide for the long-range planning of telecommunication facilities for newly developing areas.

I-6.2 **New Developments.** Require the installation of state-of-the-art telecommunication technologies in new large-scale developments, and in public buildings for public use.

I-6.3 **Location.** Ensure that the location and design of telecommunication facilities is functionally and aesthetically compatible with adjacent uses.

6.19.2 Methodology

Assessment of the proposed VESI 10 Tierra Buena BESS project on utilities (water, wastewater, storm drainage, solid waste) and energy providers (electricity) varies depending on the utility, but generally includes a comparison of the project generated demand against existing and anticipated resource supplies and/or conveyance capacity. Quantifications of demands and generations were included based on factors provided by the applicable agencies. Overall the proposed VESI 10 Tierra Buena BESS project will have very little demand on all utilities since the facility will be an unmanned operation not requiring potable water, wastewater, or solid waste services.

Water Supply

Water supply or conveyance impacts are typically evaluated by estimating water consumption factors associated with proposed project land use(s). The only water demand of the proposed VESI 10 Tierra Buena is for vegetative hedges planted for screening along Tierra Buena Road and the northern perimeter fence of the proposed project lease area. Using the landscape water requirement calculator for *Groupings and Mass Plantings of Trees or Shrubs*, developed by University of California Division of Agriculture and Natural Resources, at website:

https://ucanr.edu/sites/UrbanHort/Water_Use_of_Turfgrass_and_Landscape_Plant_Materials/Water_Demand_Calculators/Water_Demand_Calculators/index.cfm

The area of planting was estimated at approximately 3,000 square feet; with average evapotranspiration inches per day of 0.12 for the Yuba City area; the estimated water requirements for the vegetative hedge was 112.21 gallons per day. By agreement with Mr. Luis Garcia Valdez the parcel owner, the water will be supplied by the water well located on the parcel just south of the proposed project lease area. The proposed VESI 10 Tierra Buena BESS facility will have no fire protection water flow demands since the only combustible items placed within the lease area (lithium-ion batteries) cannot be extinguished by water, but rather requires the use of a Class D fire extinguishing agent specifically designed for extinguishing Lithium battery fires. Lithium-ion batteries contains plenty of lithium that reacts with water and makes the fire worse (See Section 6.9).

Sewers and Wastewater Capacity

Assessment of impacts on sewers or wastewater treatment systems generally includes the comparison of the project-related, land use-based wastewater flow generation to the existing and projected wastewater treatment capacity of the local treatment plant. The wastewater generation factor, for the proposed VESI 10 Tierra Buena BESS project during operations as an unmanned facility with no sinks, toilets or other water fixtures is zero.

Wastewater generated during the BESS facility construction would consist primarily of sanitary waste, which would be managed using portable toilets. Portable toilets would be removed from the project site once construction is completed. Wastewater collected in portable toilets would be transported to a local Water Recycling Facility for treatment.

Stormwater Systems

Assessment of impacts to the storm drainage within the parcel is based primarily on the determination of the contribution of the proposed VESI 10 Tierra Buena BESS project to stormwater runoff. These contributions are compared to existing conditions or the diversion and disruption of surface water flows if flooding would occur. The battery storage location is presently gravel surfaced or compacted soil, with limited landscaping around the proposed project lease area perimeter. Drainage inside the BESS facility lease area infiltrates onsite.

Solid Wastes

Impacts related to solid waste generally involve the estimation of the project-related, land use-based, solid waste generation, as compared to the capacity of the landfill(s) serving the proposed VESI 10 Tierra

Buena BESS project area. Solid waste generated from project construction activities, such as paper, wood, and plastic packing material would be segregated, where practical, for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at the Recology Ostrom Landfill. Vegetation wastes generated by site clearing and grubbing would be chipped/mulched and spread on site or hauled off site for composting at the Recology Ostrom Landfill.

The waste generation rates provided by CalRecycle were used to calculate the approximate waste generated by the project operations. Operation of the BESS facility and electrical components of the project would generally not produce solid waste. Solid wastes generated from project operations would generally be from activities associated with yearly maintenance of the BESS facility. For impact analysis purposes, a waste generation rate for office uses of 3 pounds per 1,000 square feet per day was used as opposed to a generation rate for industrial uses. Assuming no recycling of refuse, the project would generate an estimated 0.0015 tons of solid waste per day during the operational phase of the project. This is approximately 0.000025 percent of the daily capacity (3,000 tons) permitted at the Recology Ostrom Landfill. This is a conservative estimate, as recycling would occur where possible, and because personnel would rarely be present at the site (once or twice per year for maintenance or security check).

Electricity and Natural Gas

The proposed VESI 10 Tierra Buena BESS project is being developed to meet the identified 18 megawatts local capacity shortfall within the Pease electric service sub-area of the CAISO grid. The proposed VESI 10 Tierra Buena BESS project will not require natural gas service. Electrical demand to recharge BESS facilities to meet peak load power generation has been determined by PG&E and VESI 10, LLC, to be feasible and this IS/MND does not analyze PG&E and VESI 10 LLC stated findings or ability to meet the requirements of CPUC as stipulated in Resolution E-4909.

6.19.3 Environmental Setting

6.19.3.1 Stormwater Drainage and Flood Controls

Stormwater and flood control issues were discussed at length in section 6.10 (Hydrology and Water Quality). The VESI 10, LLC will specify several Best Management Practices (BMP) requirements to ensure compliance with all applicable local, state, and federal stormwater management requirements. The proposed project's stormwater collection system will collect and convey runoff within the proposed project lease area and parcel for infiltration.

6.19.3.2 Water Supply

The water purveyor for the proposed project is Mr. Luis Garcia Valdez the VESI 10 Tierra Buena BESS facility landlord. Water is only provided for irrigation of a perimeter vegetative hedge which is limited to a coverage area of approximately 3,000 square feet. Vegetative hedge is estimated to require approximately 112.21 gallons per day to maintain the hedge during the months of no rain fall. Water pipe from the existing water well on the Valdez parcel will service the estimated water demand for irrigation water. Additionally, the irrigation system for the BESS facility perimeter vegetative hedge will require several gate valves and a permanent blow off apparatus for flushing and isolating the mains.

6.19.3.3 Wastewater Infrastructure

The Valdez parcel is equipped with a septic and leach field system sized for the single-family dwelling located on the parcel. No other wastewater system is available on the parcel or for the proposed project lease area. The proposed VESI 10 Tierra Buena BESS project produces no wastewater effluent since it is an unmanned facility.

6.19.3.4 Waste Removal

According to the Regional Waste Management Authority (RWMA) (RWMA includes six member jurisdictions-Sutter County, Yuba County, Live Oak, Yuba City, Marysville and Wheatland), the Yuba-Sutter region was compliant with meeting AB 939's 25 percent recycling requirement in 2015. The RWMA

has entered into Collection Service Agreements (CSA) which require commercial recycling and ensure that all programs meet or exceed the requirements of AB 939, AB 341, and AB 1826.

6.19.3.5 Gas and Electrical Services

Electric and natural gas services are provided within the vicinity of the proposed project lease area by Pacific Gas and Electric (PG&E). The Sutter County 2030 General Plan Goals require coordination efforts by the County with service providers in planning the expansion of gas and electrical facilities to meet the future needs of County residents (and businesses).

PG&E has a 12.47kV electrical distribution line which can service the proposed project lease area as well as a 60kV transmission line a few hundred feet to the east of the proposed project lease area. PG&E by order of the CPUC Resolution E-4909 has authorized PG&E to procure energy storage and to address local deficiencies and ensure local reliability. Following the CPUC Order Resolution E-4909 has accepted VESI 10, LLC's proposal to construct a BESS facility on the proposed project lease area and interconnect the BESS into the Pease Road substation. The proposed BESS facility would utilize the existing 12.47kV distribution line as first preference; however, if PG&E determines that the load is better served directly off the 60kV line, then the proposed BESS facility would utilize the 60kV line. The PG&E Greenbook manual (current revision June 2013) will be used for connection requirements.

Based on the BESS facility design and layout plan, the total estimated connected load for the system is 5 MW (Megawatt). The electrical system will consist of one 3.75/4.2 MVA (55°C/65°C) transformer (12.47kV to 480V) allowing for future capacity. The transformer will feed a 5000A 480V Switchboard which will also contain the Utility meter and CTs. The estimated peak demand is approximately 18 MW. PG&E will be able to provide the necessary electrical load for the proposed BESS facility to recharge the lithium ion-batteries during non-peak loads.

6.19.4 Standards of Significance

The State CEQA Guidelines state that a project's impacts will normally be considered potentially significant if they violate any of the following criteria:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; and/or
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

6.19.5 Impacts and Mitigation Measures

6.19.5.1 Water Supply

The water supply for the proposed project lease area will be supplied by the existing water well on the parcel managed and operated by the property owner, Luis Garcia Valdez. The operational water demand of the proposed VESI 10 Tierra Buena BESS project is for irrigation water only in the maximum demand of 112.21 gallons per day. The proposed BESS facility is an unmanned facility that would not require new or expanded water on the parcel. No Impacts to the private water supply system are anticipated as a result of developing the proposed VESI 10 Tierra Buena BESS facility.

Additionally, construction activities would result in a total water demand of approximately 1-acre foot for the proposed BESS facility construction phase. Water will be trucked in to the construction site with water tender trucks. Due to the limited duration of construction activities and the relatively small water requirements of the construction phase of the BESS facility, no significant adverse impacts to water supply are expected to result. Potential water supply impacts due to construction will be limited to surface water runoff during excavation and construction of these elements of the infrastructure. Such construction impacts are small and can be controlled through best management practices and proper housekeeping at the construction site. No mitigation measures are required. No Impact.

6.19.5.2 Sewers and Wastewater Capacity

The proposed VESI 10 Tierra Buena BESS project will have no wastewater effluent generation since the BESS facility is designed as an unmanned facility and will not use domestic water (water from sinks, showers, toilets, etc.). Thus, the proposed VESI 10 Tierra Buena BESS project would not be a new demand or service for water supply or sanitary sewer system (Septic/Leach field System on Parcel). Instead, it would be a continuation of the demand that has been associated with the residential dwelling and Valdez Truck yard operations. Wastewater generated during project construction would consist primarily of sanitary waste, which would be managed using portable toilets. Portable toilets would be removed from the project site once construction is completed. Wastewater collected in portable toilets would be transported to the nearest local recycling facility for treatment. Impacts on sewer/wastewater capacity have No Impact.

6.19.5.3 Stormwater Systems

Stormwater and flood control issues were discussed at length in section 6.10 (Hydrology and Water Quality). The VESI 10, LLC will specify several Best Management Practices (BMP) requirements to ensure compliance with all applicable local, state, and federal stormwater management requirements. The proposed VESI 10 Tierra Buena BESS project would create minor additional impervious surfaces, such as the battery storage enclosures and the PCS and the medium voltage control system pads. Water from the impervious areas of the proposed BESS facility will move to pervious areas. Within pervious areas of the BESS facility stormwater would be expected to largely infiltrate or evaporate. Lithium- ion batteries would be fully contained in battery storage enclosures, and in the event of a rupture or otherwise defective battery, no battery fluids would discharge from within the enclosures. Given that much of the BESS facility would be pervious and nearly flat, and implementation of BMPs operation of the BESS facility would not substantially degrade water quality or exceed the capacity of the parcel to accept stormwater as infiltration and evaporation on site. Impacts would be less than significant.

6.19.5.4 Solid Waste

The term “solid waste” is defined at 40 CFR 261.2(a)(1): “A solid waste is any discarded material that is not excluded by § 261.4(a) or that is not excluded by variance granted under §§ 260.30 and 260.31.” A solid waste can include solid materials, liquids, and contained gases. The definition of discarded material includes:

- Abandoned material (including burned, disposed, or discarded materials)
- Recycled material (including accumulated, stored, or treated materials)

- Inherently waste-like material (materials managed as wastes), and
- Military munitions, as defined

VESI 10 Tierra Buena BESS facility will develop a Solid Waste Diversion and Recycling Plan, pursuant to AB 341, and recycle 50 percent of the industrial waste from the proposed project lease area during construction and operation. Compliance with AB 341 will ensure no impact will result from the proposed VESI 10 Tierra Buena BESS project on solid waste.

Solid waste generated from project construction activities, such as paper, wood, and plastic packing material would be segregated, where practical, for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at the Recology Ostrom Landfill. Vegetation wastes generated by site clearing and grubbing would be chipped/mulched and spread on site or hauled off site for composting at the Recology Ostrom Landfill. Solid waste generated by the BESS facility would have a less than significant impact on the permitted remaining daily capacity (3,000 tons) of the Recology Ostrom Landfill.

6.19.5.5 Electrical and Natural Gas Systems

PG&E has a 12.47kV electrical distribution line which can service the proposed project lease area as well as a 60kV transmission line a few hundred feet to the east of the proposed project lease area. PG&E by order of the CPUC Resolution E-4909 has authorized PG&E to procure energy storage and to address local deficiencies and ensure local reliability. Following the CPUC Order Resolution E-4909 has accepted VESI 10, LLC's proposal to construct a BESS facility on the proposed project lease area and interconnect the BESS into the Pease Road substation. The proposed BESS facility would utilize the existing 12.47kV distribution line as first preference; however, if PG&E determines that the load is better served directly off the 60kV line, then the proposed BESS facility would utilize the 60kV line. The PG&E Greenbook manual (current revision June 2013) will be used for connection requirements.

Based on the BESS facility design and layout plan, the total estimated connected load for the system is 5 MW (Megawatt). The electrical system will consist of one 3.75/4.2 MVA (55°C/65°C) transformer (12.47kV to 480V) allowing for future capacity. The transformer will feed a 5000A 480V Switchboard which will also contain the Utility meter and CTs. The estimated peak demand is approximately 18 MW. PG&E will be able to provide the necessary electrical load for the proposed BESS facility to recharge the lithium ion-batteries during non-peak loads. Impacts would be less than significant.

The proposed VESI 10 Tierra Buena BESS project will employ the following Mitigation Measures to reduce the impacts on utilities and services to a less than significant level:

UTL-1 Employ an approved Solid Waste Diversion and Recycling Plan. VESI 10, LLC, will develop a solid waste diversion and recycling plan in accordance with AB 341 (Solid Waste Diversion), which requires industrial and commercial construction efforts to recycle fifty percent of their industrial wastes. Such a plan would be implemented in conjunction with CalRecycle (formerly CIWMB) and RWMA. In addition, to the requirement of diverting commercial and construction debris, VESI 10, LLC, will submit a Diversion Report within 30 days of completing the project to the RWMA.

6.19.6 Utilities and Service Systems Responses

Table 6.19-1: Utilities and Service Systems Initial Study Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☑
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☑
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☑	☐	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☑	☐	☐

6.19.7 Responses to Initial Study Questions

6.19.7.1 Require Relocation or Construction of New Expanded Water, Wastewater Treatment, Storm Water Drainage, Electric Power, Natural Gas, or Telecommunications Facilities: No Impact

The proposed BESS project consists of existing facilities requiring construction and operation of the proposed elements of the BESS facilities. The BESS facilities will require no new water service, wastewater treatment service, storm water drainage, electric power, natural gas or telecommunications facilities as discussed earlier in this IS. Any additional utility needs would tie in to existing utilities being provided to the Valdez property. There would be no proposed activities that would require significant water needs. Operations of the proposed BESS project would not introduce residential, commercial, or industrial facilities that would require new or expanded water, wastewater, and other utility systems. The installation of new BESS facility lighting would not require additional electrical facilities or result in a significant increase in electrical usage. The proposed BESS facilities would not result in a significant increase in utility demands. No Impacts.

Stormwater and flood control issues were discussed at length in section 6.10 (*Hydrology and Water Quality*). The VESI 10, LLC will specify several Best Management Practices (BMP) requirements to ensure compliance with all applicable local, state, and federal stormwater management requirements. The proposed BESS facility would create minor additional impervious surfaces, such as the battery storage enclosures and the PCS and the medium voltage control system pads. An earthen drainage swale lined with gravel would be constructed along the southern edge of the battery storage enclosures to capture runoff from the impervious enclosures. This swale would discharge to a nearly flat area in the middle portion of the parcel. This area is pervious, and stormwater would be expected to largely infiltrate or evaporate. Lithium- ion batteries would be fully contained in battery storage enclosures, and in the event of a rupture or otherwise defective battery, no battery fluids would discharge from within the enclosures. Given that much of the project site would be pervious and nearly flat, and implementation of BMPs operation of the BESS facility would not substantially degrade water quality or exceed the capacity of the parcel to accept stormwater as infiltration and evaporation on site. No Impacts.

6.19.7.2 Have Sufficient Water Supplies: No Impact

The water supply for the proposed project lease area will be supplied by the existing water well on the parcel managed and operated by the property owner, Luis Garcia Valdez. The operational water demand of the proposed VESI 10 Tierra Buena BESS project is for irrigation water only with the maximum demand of 112.21 gallons per day. The proposed BESS facility is an unmanned facility that would not require new or expanded water on the parcel. No Impacts to the private water supply system are anticipated as a result of developing the proposed VESI 10 Tierra Buena BESS facility. No Impacts.

6.19.7.3 Result in a Determination that the Wastewater Treatment Provider Has Adequate Capacity to Service the Project: No Impact

The proposed VESI 10 Tierra Buena BESS project will have no wastewater effluent generation since the BESS facility is designed as an unmanned facility and will not use domestic water (water from sinks, showers, toilets, etc.). Thus, the proposed VESI 10 Tierra Buena BESS project would not be a new demand or service for water supply or sanitary sewer system (Septic/Leach field System on Parcel). Instead, it would be a continuation of the demand that has been associated with the residential dwelling and Valdez Truck yard operations. Wastewater generated during project construction would consist primarily of sanitary waste, which would be managed using portable toilets. Portable toilets would be removed from the project site once construction is completed. Wastewater collected in portable toilets would be transported to the nearest local recycling facility for treatment. As such, there are No Impacts relating to exceedances of wastewater treatment requirements.

6.19.7.4 Be Served by a Landfill that Lacks Capacity for the Project's Solid Waste Needs: Less Than Significant with Mitigation Incorporated

It is anticipated that the proposed VESI 10 Tierra Buena BESS project will utilize solid waste collection services currently provided to Sutter County. Additionally, the local landfill, the Recology Ostrom Landfill is not currently experiencing any shortage in available capacity. Based on the type of use proposed by the BESS facility, it is not expected that the site will create substantial amounts of solid waste during operation. However, solid waste would be generated during BESS facility construction which can be separated into the following categories:

- Non-hazardous metal waste, consisting of metal scrap
- Non-hazardous non-metal waste, including boxes and crates used in shipment of materials and daily refuse from construction workers
- Trenching spoils, consisting of such materials as rubble, soils, and broken asphalt
- Hazardous wastes, including contaminated soils and wastes from construction of electrical facilities.

Non-hazardous metal and non-metal waste can be hauled to local disposal centers for recycling. Hazardous wastes would be sent to a permitted treatment or disposal facility. Trenching and excavation

spoils would be screened and separated for use as backfill materials at the site of origin to the maximum extent possible. Spoils unsuitable for backfill use would be disposed of in available county landfills. To further minimize the proposed VESI 10 Tierra Buena BESS project's contribution to landfill capacity, implementation of Mitigation Measure UTL-1 would reduce potential impacts to a less than significant level.

6.19.7.5 Comply with Federal, State, and Local Solid Waste Regulations: Less Than Significant with Mitigation Incorporated

The proposed VESI 10 Tierra Buena BESS project will be designed, constructed, and operated within the parameters of applicable Federal, State, and Local solid waste regulations. Any necessary permit will be obtained from local, state, and federal agencies having jurisdiction over the proposed VESI 10 Tierra Buena BESS project. As such, less than significant impact with mitigation measure UTL-1 will occur with the construction and operation of the proposed VESI 10 Tierra Buena BESS project.

6.20 WILDFIRE

This section assesses the risk of wildfires impacting the operations of the proposed BESS facilities, and identifies the potential impacts posed by the proposed BESS project, and presents recommended mitigation where necessary. This section complies with California Government Code Sections 65040.20 and 66474.02 and the California Public Resources Code Section 21083.01, relating to fire hazard impacts of new projects. This section applies when the proposed project site is located on or near lands classified as state responsibility areas, as defined in California Public Resources Code, Section 4102, and on or near lands classified as very high fire hazard severity zones, as defined in subdivision (i) of Section 51177 of the Government Code.

6.20.1 Background

6.20.1.1 Regulatory Context

Federal Regulations

No federal regulations apply to the proposed BESS project as it relates to wildfire risks.

State Regulations

California laws under the California Public Resources Code Section 21083.01 requires new projects be reviewed for wildfire risks and impacts. Fire hazard impacts for projects located on lands classified as state responsibility areas, as defined in the California Public Resources Code Section 4102, and on lands classified as very high fire hazard severity zones, as defined in subdivision (i) of Section 51177 of the Government Code must be reviewed for impacts and risks associated with wildfires.

2016 California Fire Code, California Code of Regulations Title 24, Part 9, based on the 2015 International Fire Code. The 2016 California Fire Code (CFC)/International Fire Code® (IFC®) is a model code that regulates minimum fire safety requirements for new and existing buildings, facilities, storage and processes. The CFC/IFC addresses fire prevention, fire protection, life safety and safe storage and use of hazardous materials in new and existing buildings, facilities and processes. The CFC/IFC provides a total approach of controlling hazards in all buildings and sites, regardless of the hazard being indoors or outdoors.

Local Regulations

Sutter County Code of Ordinance Chapter 600 Fire Prevention.

The following goal, policies, and implementation programs of the Sutter County 2030 General Plan are applicable to the proposed BESS project found in the Public Health and Safety Element:

GOAL PHS 4 Respond appropriately, effectively, and efficiently to natural and human-made emergencies and disasters.

PHS 4.1 POLICY Emergency Operation Plans. Continue to implement and regularly update countywide emergency operation plans to reduce or eliminate long-term risk to life and property from natural or human-made emergencies and disasters. (PHS 4-A)

PHS 4.2 POLICY Evacuation Routes. Regularly review established evacuation routes to ensure emergency access to and from all parts of the County. (PHS 4-A and 4-B)

PHS 4.3 POLICY Post-Disaster Response. Plan for the continued function of essential facilities following a major disaster to facilitate post disaster response. (PHS 4-B)

PHS 4.4 POLICY Emergency Access. Require minimum road and driveway widths and clearances around structures consistent with established requirements in order to ensure emergency access.

PHS 4.5 POLICY Emergency and Disaster Preparedness Training. Coordinate with local and regional agencies to regularly conduct emergency and disaster preparedness training to test operational and emergency plans. (PHS 4-C)

PHS 4.7 POLICY Coordination. Continue to be responsible for planning, preparedness, emergency response, and recovery activities associated with natural and human-made disasters. Provide communication and coordination between local and federal agencies, medical facilities, schools, local radio stations, and special needs service providers.

6.20.2 Methodology

Information for this section was obtained from the Sutter County 2030 General Plan, General Plan Background Report and the Sutter County 2030 General Plan Draft EIR. In addition, Fire Hazards Severity Zones were determined by reviewing the CAL FIRE, Fire and Resources Assessment Program, Local Responsibility Area Maps for Sutter County found on the CAL FIRE website: *https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/.* CAL FIRE has determined that Sutter County has no Very High Fire Hazard Severity Zones in Local Responsibility Area.

6.20.3 Environmental Setting

6.20.3.1 Local Responsibility Area

CAL FIRE has determined that Sutter County has no Very High Fire Hazard Severity Zones in the Local Responsibility Area. The proposed BESS project is located within an Unzoned Area in regards to fire hazards and the Local Responsibility Area. A moderate Fire Hazard Severity Zone is found approximately three miles to the west of the project lease area in the open space ranges of the Sutter Buttes and outside of the agricultural areas.

No wildland is within the vicinity of the proposed VESI10 Tierra Buena BESS project, and as such, the proposed BESS facility does not pose a threat to destruction of any such lands. The site is surrounded by agricultural orchard lands, ag-industrial land uses, and rural residential land uses, and no wildlands or Very High Fire Hazard Severity Zones as mapped by CAL FIRE.

6.20.4 Standards of Significance

An impact from Wildfire would be considered significant if the proposed project is within or near state responsibility areas or a Very High Fire Hazard Severity Zone and the project would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan;
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; and/or
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

6.20.5 Impacts and Mitigation Measures

CAL FIRE has determined that Sutter County has no Very High Fire Hazard Severity Zones in the Local Responsibility Area. The proposed BESS project is located within an Unzoned Area in regards to fire

hazards and the Local Responsibility Area. A moderate Fire Hazard Severity Zone is found approximately three miles to the west of the project lease area in the open space ranges of the Sutter Buttes and outside of the agricultural areas.

No wildland is within the vicinity of the proposed VESI10 Tierra Buena BESS project, and as such, the proposed BESS facility does not pose a threat to destruction of any such lands. The site is surrounded by agricultural orchard lands, ag-industrial land uses, and rural residential land uses, and no wildlands or Very High Fire Hazard Severity Zones as mapped by CAL FIRE. No mitigation measures are required. No Impact.

6.20.6 Wildfire Responses

Table 6.20-1: Wildfire Responses

WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☑
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☑
d) Expose people or structures to significant risks, including down slope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☑

6.20.7 Responses to Initial Study Questions

6.20.7.1 Impair an Adopted Emergency Response Plan or Evacuation Plan: No Impact

The proposed VESI 10 Tierra Buena BESS project is not located within a very high fire hazard severity zone (CAL FIRE 2020 *https://osfm.fire.ca.gov/media/6829/fhszl06_1_map51.pdf*). The proposed construction and operational activities would not result in the impairment of an adopted emergency response plan or evacuation plan within a very high fire hazard severity zone. No Impact.

6.20.7.2 Due to Slope, Prevailing Winds, and Other Factors Exacerbate Wildfire Risks: No Impact

The proposed VESI 10 Tierra Buena BESS project is not located within a very high fire hazard severity zone (CAL FIRE 2020 *https://osfm.fire.ca.gov/media/6829/fhszl06_1_map51.pdf*). The proposed construction and operational activities would not exacerbate wildlife risks or expose residents and businesses to pollutant concentrations from wildfires. The project site is located on the valley floor on relatively flat land with no slope. No Impact.

6.20.7.3 Will Installation or Maintenance of Associated Infrastructure (Such as Roads, Fuel Breaks, Emergency Water Sources, Power Lines or Other Utilities) Exacerbate Fire Risks: No Impact

The proposed VESI 10 Tierra Buena BESS project is not located within a very high fire hazard severity zone (CAL FIRE 2020 *https://osfm.fire.ca.gov/media/6829/fhszl06_1_map51.pdf*). The proposed construction and operational activities would not require installation of maintenance or associated structures that would exacerbate wildfire risk. No Impacts.

6.20.7.4 Expose People or Structures to Significant Risks, Including Downslope or Downstream Flooding or Landslides, Post Fire: No Impact

The proposed VESI 10 Tierra Buena BESS project is not located within a very high fire hazard severity zone (CAL FIRE 2020 *https://osfm.fire.ca.gov/media/6829/fhszl06_1_map51.pdf*). The proposed construction and operational activities would not expose people or structures to risks involving post-fire slope instability or drainage changes. No Impact.

6.21 MANDATORY FINDINGS OF SIGNIFICANCE

6.21.1 Mandatory Findings of Significance Responses

Table 6.21-1: Mandatory Findings of Significance Responses

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

6.21.2 Responses to Initial Study Questions

6.21.2.1 Does the project have the potential to substantially degrade the quality of the environment: Less Than Significant with Mitigation Incorporated

Under Section 15065(a)(1) of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has the potential to (1) substantially reduce the habitat of a fish or wildlife species; (2) cause a fish or wildlife population to drop below self-sustaining levels; or (3) substantially reduce the number or restrict the range of an endangered, rare, or threatened species. Section 6.4 (*Biological Resources*) of the Initial Study fully addresses impacts related to the reduction of fish or wildlife habitat, the reduction of fish or wildlife populations, and the reduction or restriction of the range of special-status species. Section 6.4 indicates that the proposed VESI 10 Tierra Buena BESS project has the potential to adversely affect nesting birds as the VESI 10 Tierra Buena BESS project could affect potential habitat for nesting birds. However, implementation of Mitigation Measure BIO-1 would reduce this impact to a less than significant level. Thus, the level of impact from the proposed VESI 10 Tierra Buena BESS project is "less than significant with mitigation incorporated."

6.21.2.2 Does the project have impacts that are individually limited, but cumulatively considerable: Less Than Significant Impact

Under Section 15065 of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has potential environmental effects that are individually limited but cumulatively considerable. As defined in Section 15065(a)(3) of the CEQA Guidelines, cumulatively considerable means "*that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects*." The proposed VESI 10 Tierra Buena BESS project would not result in significant unavoidable impacts. A cumulative impact analysis is only provided for those thresholds that result in a less-than significant or significant and unavoidable impact. A cumulative impact analysis is not provided for Effects Found Not to Be Significant, which result in no project-related impacts.

Aesthetics

The VESI 10 Tierra Buena BESS project will not result in cumulative significant impacts to Aesthetics within the vicinity. The following features are incorporated into the BESS facility that would minimize potential cumulative impacts to aesthetic resources:

- All structures and building associated with the proposed VESI 10 Tierra Buena BESS project would be enclosed inside an existing perimeter screening fence and vegetative screening hedge.
- Any new security lighting would be inside the perimeter screening fence, shielded, and focused inward toward the battery storage system equipment. Lighting specifications and fixture locations would be indicated on the site plans.
- No trees or other significant vegetation would be removed.
- The proposed BESS facility would be an in-fill project adjacent to an existing electric utility site and within an existing agricultural truck yard. The project would have a low visual profile behind a perimeter screening fence, it would not emit a visual plume or odor, it would not require tree removal, and it would be generally out of view from public and private vantage points. Operations and maintenance activities would be generally consistent with the current pattern of vehicles entering and leaving the parcel as an agricultural truck yard.

Therefore, the project's contribution to cumulative aesthetic impacts would not be cumulatively considerable.

Agriculture and Forestry Resources
Since the proposed VESI 10 Tierra Buena BESS project would not conflict with any existing zoning for agricultural use, Williamson Act Contracts or other changes to the environment resulting in conversion of farmland to non-agricultural use or forestland or timberland to non-forest use, no cumulative impacts would result.

Air Quality
The VESI 10 Tierra Buena BESS project will not result in cumulative significant impacts to air quality in the Sacramento Valley. Per the FRAQMD's *Environmental Thresholds and Guidelines*, a project's contribution to cumulative air quality impacts is considered significant if the project's total emissions of either NO_X or ROG exceed the long-term threshold of 25 lbs./day. The BESS facility's construction-related contributions to cumulative NO_X and ROG emissions were below this threshold. The project's contribution to cumulative air quality impacts were not cumulatively considerable, as these emissions have been incorporated into the 2015 Clean Air Plan in terms of the overall emissions inventory for construction activities.

Biological Resources
The proposed VESI 10 Tierra Buena BESS project will not significantly impact protected species or habitats with incorporation of VESI 10, LLC's, proposed mitigation measure. It is specifically designed to avoid and minimize impacts to biological resources (see Section 6.4). The cumulative effects of the BESS facility in conjunction with current and potential future projects in the vicinity is not deemed cumulatively considerable because the limited biological impacts of the VESI 10 Tierra Buena BESS project in conjunction with other projects that will be responsible for minimizing their impacts and mitigating impacts to a less than significant level. Based on the above analysis and the BESS facility's consistency with local, regional and state conservation plans, the BESS facility's contribution cumulative policy impacts on biological resources would not be cumulatively considerable.

Cultural Resources
The proposed VESI 10 Tierra Buena BESS project would not contribute to any cumulative permanent adverse impacts on cultural resources. No undeveloped land would be developed by the proposed VESI 10 Tierra Buena BESS project.

Energy
The proposed VESI 10 Tierra Buena BESS project objectives are to construct and operate a battery energy storage that would help California achieve its ambitious Renewables Portfolio Standard goals and enhance grid reliability through the provision of key operational flexibility and dispatchability attributes. For this reason, operation of the proposed BESS project would not be considered a wasteful, inefficient, or unnecessary consumption of energy resources.

Geology and Soils
The project VESI 10 Tierra Buena BESS project poses no potentially significant project specific geohazard or erosion impacts; therefore, potential cumulative impacts would not be cumulatively considerable.

Greenhouse Gas Emissions
Modeled annual emissions from the proposed project were compared to the Sutter County CAP thresholds for GHG emissions. The total emissions from both construction and operations of the BESS facility does not exceed the Sutter County CAP threshold. Therefore, because the BESS facility's estimated GHG emissions are below the applicable Sutter County CAP threshold the BESS facility would result in less than significant project-specific and cumulative impacts from GHG emissions.

Hazards and Hazardous Materials
Based on a review of the proposed project lease area, past and present site conditions, the proposed battery storage design safety features, and emergency response capability, with implementation of the mitigation measures included, no significant direct or cumulatively considerable impacts would result from project implementation.

Hydrology and Water Quality
Residual impacts (either project-specific or cumulative) on Hydrology and Water Quality would remain less than significant as a result of project implementation.

Land Use and Planning
The VESI 10 Tierra Buena BESS project conforms with the Sutter County 2030 General Plan land use designations and the Sutter County Zoning Code classifications. The proposed VESI 10 Tierra Buena BESS project is an infill project being built within an existing agricultural truck yard reducing land use intensity. Therefore, the project's contribution to potential cumulative impacts would not be considerable.

Mineral Resources
The proposed VESI 10 Tierra Buena BESS project would not affect mineral resources and, therefore, the project's contribution to cumulative mineral resource impacts would not be considerable.

Noise
Based on the project lease area inside an enclosed perimeter screening fence and the very low potential noise-generating equipment (8 air conditioners), the BESS facility's contribution to cumulative noise impacts would not be considerable.

Population and Housing
The proposed VESI 10 Tierra Buena BESS project would not displace any existing housing, nor would it develop new housing or result in an increased demand for existing housing. Therefore, the BESS facility's contribution to cumulative impacts on population and housing would not be considerable.

Public Services
The proposed VESI 10 Tierra Buena BESS project is an infill project that would add a battery storage facility to the existing agricultural truck yard site. The BESS facility would be unmanned and does not include housing (with associated population growth) that could generate increased demand for public services. The VESI 10 Tierra Buena BESS project is used for energy uses associated with the existing PG&E Pease Road power substation and would continue to do so with the proposed BESS facility. Additional public services would not likely be required to accommodate construction crews, and if required such as an ambulance, it would be a minimal increase that would occur for 16 to 20 weeks. Therefore, the project's contribution to cumulative impacts related to public services would not be considerable.

Recreation
The proposed VESI 10 Tierra Buena BESS project would not impact existing recreational facilities, add recreational facilities or generate substantial increased demand for park and recreational facilities. Therefore, the project's contribution to cumulative impacts on park and recreational facilities would not be considerable.

Transportation
The approximately 1 ¼ mile east of the proposed VESI 10 Tierra Buena BESS project south of Pease Road, has experienced and continues to experience increased urbanization compared to past years when the project vicinity had been surrounded in agricultural uses or lower intensity uses. New urbanization has increased the number of present and planned residents in the nearby parcels and associated traffic.

The proposed BESS facility would require short-term construction-related traffic over a 16 to 20-week period, and then a very low volume of utility truck and passenger vehicle trips for routine inspections and maintenance. Construction-related heavy equipment deliveries and oversized vehicles would avoid entering and exiting Tierra Buena Road during a.m. and p.m. peak hours. Therefore, given the current and projected traffic volumes, and the low volume of new trips associated with the proposed VESI 10 Tierra Buena BESS project, the proposed project's contribution to potential cumulative impact to transportation and traffic conditions would not be considerable.

Tribal Cultural Resources
The proposed VESI 10 Tiera Buena BESS project would not contribute to any cumulative permanent adverse impacts on tribal cultural resources. No undeveloped land would be developed by the BESS facility.

Utilities and Service Systems
The proposed VESI 10 Tierra Buena BESS project would not result in an increase in demands on water supply, sewage treatment capacity or the storm drain system. Therefore, the project would not contribute to cumulative impacts on utilities and service systems.

Small quantities of solid waste generated during initial construction and routine maintenance and repairs would be well below the County's established threshold tons/year and would therefore not result in an adverse contribution to cumulative impacts on the Recology Ostrom Landfill or other waste handling facilities. Construction and maintenance debris and waste materials would be recycled to the extent practical.

Wildfire
The project VESI 10 Tierra Buena BESS project poses no potentially significant project specific wildfire risk or hazard. The proposed project lease area is not located within or near a very high fire hazard severity zone (CAL FIRE 2020 *https://osfm.fire.ca.gov/media/6829/fhszl06_1_map51.pdf*); therefore, potential cumulative impacts would not be cumulatively considerable.

6.21.2.3 Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly: No Impact

As discussed throughout this CEQA document, the proposed VESI 10 Tierra Buena BESS project would not include uses which could result in substantial adverse effects on human beings. In fact, the proposed VESI 10 Tierra Buena BESS project will result in positive results to human beings (such as meeting California's AB 32 and ensure a reliable electric grid system). Therefore, the project entails no impact to human beings. No additional mitigation beyond the proposed noise mitigation measures would be required to limit effects on human beings.

7.0 FISH AND WILDLIFE DETERMINATION

FISH AND WILDLIFE DETERMINATION

Based on the information presented in this IS, the project has a potential to adversely affect wildlife or the habitat upon which wildlife depend. Therefore, a filing fee will be paid. Without proof of fee payment, the VESI 10 Tierra Buena BESS Project will not be operative, vested, or final, and any local permits issued for the project will be invalid, pursuant to California Fish and Game Code 711.4 (c)(3).

___ Certificate of Fee Exemption

_X_ Pay Fee

County of Sutter, Office of the Assessor, Recorder, & County Clerk
CEQA Document Declaration
Environmental Filing Fee Information

1. **Lead Agency:** Sutter County Development Services Department, Planning Division
2. **Project Title:** VESI 10 LLC, Tierra Buena Battery Energy Storage System Project
3. **Applicant Name:** Viridity Energy Solutions, Inc. 10, LLC – An Ormat Company Applicant Phone: (775) 356-9029 Extension 32203 (Connie Stechman)
4. **Applicant Address:** 6140 Plumas Street, Reno, NV 89519
5. **Project Applicant:** Private Entity
6. **Notice to be Posted:** 30 days
7. **Classification of Environmental Document:** Mitigated Negative Declaration (Public Resources Code Section 21080 (c)
8. **Fish and Wildlife Fee:** $2,406.75 as of January 1, 2020
9. **County Administrative Fee:** $50.00

8.0 REFERENCES

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Libby, Doug, AICP, Sutter County Principal Planner, Sutter County Development Services Department, Office Meeting to discuss issues to address in CEQA documentation and Use Permit Application.

Spaethe, Sondra. CEQA Planner. Feather River Air Quality Management District, Telephone communication with Brent Moore.

Valdez, Garcia, Luis, Property Owner of Project Lease Area. Meeting at Project Lease Area with Brent Moore

9.0 AGENCIES AND PERSONS CONTACTED

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Native American Heritage Commission

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Appendix A: Mitigated Negative Declaration

APPENDIX A

COUNTY OF SUTTER
MITIGATED NEGATIVE DECLARATION

Lead Agency:	Sutter County Development Services Department, Planning Division
Project Title:	Project #U-19-033, VESI 10, LLC, Tierra Buena Battery Energy Storage System (BESS) Project
Project Proponent:	Viridity Energy Solutions, Inc. (VESI) 10, LLC 6140 Plumas Street Reno, NV 89519
Project Location:	Assessor Parcel Number 10-250-060; Street Address 3025 Tierra Buena Road, Yuba City, CA 95993; Located approximately 325 feet north of the Pease Road and Tierra Buena intersection on the east side of Tierra Buena Road, Sutter County, California.
Project Description:	VESI 10, LLC, proposes to construct a battery energy storage system facility consisting of a battery electrical storage system (BESS) that would store 5 megawatts (MW) or 20 MW hours of electricity for dispatch into the local Pacific Gas and Electric (PG&E) grid via the existing adjacent PG&E Pease Road power substation. The proposed BESS facility will connect to the adjacent PG&E electric power distribution line which would both provide energy to recharge the battery storage system as well as dispatch energy generated by the battery storage system. The proposed BESS facility will be used to reduce greenhouse gas emissions associated with gas-fired power generation facilities by storing energy during off-peak hours (lower energy usage/demand times) and dispatching this energy on an as-needed basis during peak demand hours. The BESS facility is responding to California Public Utilities Commission Resolution E-4909 authorizing PG&E to procure energy storage to address local deficiencies and ensure local reliability.
Mitigation Measures:	**AQ-1:** Suspend excavation and grading activity when sustained winds exceed 20 mph or when gusts exceed 25 mph. **AQ-2:** Install wheel washers for all exiting trucks and equipment leaving the site. **AQ- 3:** Use alternative fuel or catalyst-equipped diesel construction equipment. **AQ- 4:** Minimize idling time (e.g., 10-minute maximum). **AQ- 5:** Replace fossil-fueled equipment with electrically driven equivalents when possible**.** **AQ- 6:** Limit or curtail construction activity during periods of high ambient pollution. **BIO-1:** Prior to starting construction a biologist will perform a pre-construction survey of the site prior to any project-related ground disturbance to verify vegetation types affected by the project. The results of the pre-construction survey will determine which Incidental Take Minimization Measures (if any) will be required for project approval. Incidental Take Minimization Measures for each species will be implemented to ensure that all impacts to covered species are minimized and mitigated appropriately under FESA, CESA, and CEQA. **CR-1:** In the event that unanticipated archaeological resources should be accidentally discovered during project construction, a qualified archaeologist or paleontologist will be retained for evaluation of the find. If the find is determined to be a historical or unique archaeological resource, appropriate mitigation or avoidance measures will be taken in

accordance with CEQA Guidelines 15064.5(f). During mitigation of unanticipated archaeological resources, it would not be necessary for work to halt in construction areas not affected by such finds. Any historically significant cultural materials discovered during project construction will be the subject of professional scientific analysis and a report to be prepared by a qualified archaeologist. In the event that such a discovery should contain human remains, the following steps shall be taken as outlined in CEQA Guidelines 15064.5 (e)(1):

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and

(B) If the coroner determines the remains to be Native American:

1. The coroner shall contact the Native American Heritage Commission within 24 hours.
2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98 or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

(B) The Descendant identified fails to make a recommendation; or

(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

HM-1: Contingency Plans. VESI10 Tierra Buena BESS facility contingency plans shall be prepared to address potential contingency situations associated with the battery storage systems. These existing contingency plans include: Fire Protection Plan, Emergency Response Plan, and Hazardous Materials Business Plan. In addition, the plans will include where fire suppression material is stored on the site, how the fire department will access the material, what the material is, and where copies of the plan are stored. All updates will occur in coordination with applicable agencies, including but not limited to the Yuba City Fire Department/CSA-G, and the Sutter County Environmental Health Services-CUPA. Contingency plans shall be stored onsite.

Plan Requirements and Timing: Contingency plans shall be completed prior to the initiation of construction activities for the proposed battery storage system, in order to ensure that appropriate contingency plans are in place through all project phases. The Sutter County Development Services Department/Planning, or their designee, shall ensure completion of contingency plans and approval by Yuba City Fire Department/CSA-G and Sutter County Environmental Health Services-CUPA.

Monitoring: The Yuba City Fire Department/CSA-G, or their designee, shall inspect the contingency plans on an annual basis, and following any emergency or unanticipated situation during which contingency plan procedures are required to be implemented, in order to ensure that contingency plans remain relevant and applicable to the VESI10 Tierra Buena BESS facilities and surroundings.

WQ-1: VESI 10, LLC and/or contractor will develop and implement a SWPPP and adopt BMPs prior to beginning construction activities.

WQ-2: Spill prevention kits shall always be in close proximity when using hazardous materials (e.g. crew trucks and other appropriate locations).

WQ-3: For equipment that must be fueled on-site, containment shall be provided in such a manner that any accidental spill of fuel shall not be able to enter the water or contaminate sediments that may come in contact with water.

WQ-4: VESI 10, LLC, or construction contractor will prepare a pollutant control plan that specifies logistics and schedule for construction activities that will minimize the potential for erosion and standard practices that include monitoring and maintenance of control measures.

N-1: Air conditioners will be housed in an acoustical enclosure.

N-2: Noise perimeter fencing and vegetative hedge around the BESS facility will be placed which will further minimize noise off site.

N-3: VESI 10, LLC, will establish a telephone number for use by public to report any undesirable noise conditions associated with construction and operations. Telephone number will be posted at the project site in a manner visible to passersby.

N-4: All power equipment and vehicles associated with the project will have proper muffler devices.

N-5: VESI 10, LLC, will document, investigate, evaluate, and attempt to resolve all project related noise complaints. VESI 10, LLC, will conduct the following: Use a Noise Complaint Resolution Form to respond to each complaint; Attempt to contact the person making the noise complaint in 24 hrs; Conduct investigation to determine source of noise; Reduce noise with all feasible measures upon a complaint.

N-6: Wherever feasible, erect barriers or shields near construction equipment (e.g., compressors, pneumatic tools, drills, generators) considered major sources of noise.

T-1: A traffic control plan will be developed in coordination with the Engineering Division off the Sutter County Development Services Department for any work requiring a County Encroachment Permit.

T-2: Start times and end times of the construction day will be offset from identified peak traffic hours to mitigate traffic congestion on local streets and highways. Construction personnel will typically arrive at the project site around 6:00 AM, before the morning peak hour (7:00 AM to 8:00 AM). Construction employees will typically leave between 3:00 PM and 4:00 PM, before the evening peak hour (4:00 PM and 5:00 PM).

UTL-1: Employ an approved Solid Waste Diversion and Recycling Plan. VESI 10, LLC, will develop a solid waste diversion and recycling plan in accordance with AB 341 (Solid Waste Diversion), which requires industrial and commercial construction efforts to recycle fifty percent of their industrial wastes. Such a plan would be implemented in conjunction with CalRecycle (formerly CIWMB) and RWMA. In addition to the requirement of diverting commercial and construction debris, VESI 10, LLC, will submit a Diversion Report within 30 days of completing the project to the RWMA.

Determination:

In accordance with CEQA, an Initial Study has been prepared by the Sutter County Development Services Department, Planning Division that evaluates the environmental effects of the proposed project. On the basis of the project's Initial Study, the Sutter County found that although the proposed project could have a significant effect on the environment,

however, there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce all potential significant effects to a less than significant level. A Mitigated Negative Declaration has been prepared.

Public Review: In accordance with Section 15073 of the CEQA Guidelines, the Draft Initial Study for the project was circulated for public and agency review from **July 7, 2020** to **August 5, 2020**.

ATTEST: July 7, 2020
Date

Casey Murray, Associate Planner
Sutter County Development Services Department,
Planning Division

Appendix B: Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

PROJECT #U-19-033, VESI 10, LLC, TIERRA BUENA BATTERY ENERGY STORAGE SYSTEM FACILITY PROJECT

SUTTER COUNTY DEVELOPMENT SERVICES DEPARTMENT, PLANNING DIVISION

1130 Civic Center Boulevard
Yuba City, CA 95993
Phone: (530) 822-7400

July 2020

MITIGATION MONITORING AND REPORTING PROGRAM
VESI 10 LLC, TIERRA BUENA BATTER ENERGY STORAGE SYSTEM FACILITY PROJECT

Appendix B

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1.0 Mitigation Monitoring and Reporting Program

1.1 INTRODUCTION

The purpose of the Mitigation, Monitoring, and Reporting Plan (MMRP) is to briefly identify mitigation measures that were provided in the VESI 10, LLC Tierra Buena Battery Energy Storage System Facility Project Initial Study and Mitigated Negative Declaration and to describe the roles and responsibilities of government agencies in implementing and enforcing the adopted mitigation measures provided therein. The MMRP provides the recommended framework for monitoring and reporting on the implementation of mitigation measures as it would be handled by the California Environmental Quality Act Lead Agency: the Sutter County Development Services Department, Planning Division. While all adopted mitigation measures will be implemented by Viridity Energy Solutions, Inc., 10 LLC (VESI 10, LLC), several of the proposed measures will require oversight by varying public agencies (Sutter County, Feather River Air Quality Management District [FRAQMD]).

Public Resources Code, section 21081.6, and Section 15097 of the CEQA guidelines require a public agency to adopt an MMRP when it approves an environmental review document under CEQA that identifies mitigation measures to reduce environmental effects that would otherwise be significant. It is the standard practice of Sutter County, pursuant to its statutory responsibility to protect the environment, to require that mitigation measures stipulated as conditions of approval be implemented properly, monitored, and compliance reported.

The Sutter County Development Services Department, Planning Division views the MMRP as a working guide to facilitate both the implementation of the mitigation measures by Sutter County personnel and the monitoring, compliance and reporting activities of Sutter County and any monitors it may designate. If Sutter County adopts the recommended Mitigated Negative Declaration for the Proposed Project, it will also adopt this MMRP.

1.2 OVERVIEW OF THE MMRP

VESI 10, LLC, and its contractors will be required to comply with this MMRP in all respects in the effort to mitigated identified significant environmental impacts and rendering such impacts *less than significant*. In any instance where non-compliance occurs, the Sutter County designated environmental monitors will issue a warning to the construction supervisor and VESI 10 LLC's Project Manager. Any decisions to halt work due to non-compliance will be made by Sutter County. Sutter County's designated environmental monitors will keep records of any incidents on non-compliance with mitigation measures. Copies of these documents will be supplied to Sutter County personnel. Compliance reports will be filed with the Sutter County on a minimum of once every three months.

1.3 PROJECT MONITORING AND REPORTING PLAN

The MMRP table, which constitutes the monitoring and reporting program, includes the following:

- Identification of the mitigation measure.
- Identification of individuals or organizations responsible for monitoring and/or reporting.
- Identification of individuals or organizations responsible for verifying compliance.
- Identification of the phase of the permit process when each mitigation measure shall be initially implemented.
- Identification of the frequency and duration of required monitoring, if a measure requires continuous, frequent, monthly or annual monitoring.
- Identification of the performance criteria for determining the success of the mitigation measure, if appropriate.
- Identification of the effectiveness of the mitigation measure.

1.4 PROJECT MONITORING AND REPORTING RESPONSIBILITY

Sutter County will be responsible for ensuring compliance with mitigation applicable to the Proposed Project. Staff will prepare, or require preparation of, reports identifying compliance with mitigation measures. Once construction has begun and is underway, Sutter County will carry out monitoring of the mitigation measures associated with construction.

1.5 MITIGATION AND MONITORING PROGRAM

The table below provides a compilation of the mitigation measures identified in the Initial Study and Mitigated Negative Declaration for the Proposed Project. The purpose of the table is to provide Sutter County, its environmental monitors, and other regulatory agencies with a single, comprehensive list of mitigation measures and their associated effectiveness criteria, timing, and enforcing agencies or departments.

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Aesthetics					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required
Agriculture and Forestry Resources					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required
Air Quality					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
Construction Emissions	**AQ-1** Suspend excavation and grading activity when sustained winds exceed 20 mph or when gusts exceed 25 mph.	Documentation required in quarterly compliance reports; Incorporate restrictions into contractor's bid package to limit impacts.	Reduction in Fugitive Dust	Sutter County Development Services Department/ FRAQMD	Pre-Construction and Construction phase
Construction Emissions	**AQ-2** Install wheel washers for all exiting trucks and equipment leaving the site.	Documentation required in quarterly compliance reports; Incorporate restrictions into contractor's bid package to limit impacts.	Reduction in Fugitive Dust	Sutter County Development Services Department/ FRAQMD	Pre-Construction and Construction phase
Construction Emissions	**AQ-3** Use alternative fuel or catalyst-equipped diesel construction equipment.	Documentation required in quarterly compliance reports; Incorporate restrictions into contractor's bid package to limit impacts.	Reduction in Fugitive Dust	Sutter County Development Services Department/ FRAQMD	Pre-Construction and Construction phase
Construction Emissions	**AQ-4** Minimize idling time (e.g., 10-minute maximum).	Documentation required in quarterly compliance reports; Incorporate restrictions into contractor's bid package to limit impacts.	Reduction in NO_X, CO, and CO_2 emissions throughout construction.	Sutter County Development Services Department/ FRAQMD	Pre-Construction and Construction phase

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Construction Emissions	**AQ-5** Replace fossil-fueled equipment with electrically driven equivalents when possible.	Documentation required in quarterly compliance reports; Incorporate restrictions into contractor's bid package to limit impacts.	Reduction in NO_X, CO, and CO_2 emissions throughout construction	Sutter County Development Services Department/ FRAQMD	Pre-Construction and Construction phase
Construction Emissions	**AQ-6** Limit or curtail construction activity during periods of high ambient pollution.	Documentation required in quarterly compliance reports; Incorporate restrictions into contractor's bid package to limit impacts.	Reduction in NO_X, CO, and CO_2 emissions throughout construction	Sutter County Development Services Department/ FRAQMD	Pre-Construction and Construction phase
Biological Resources					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
Substantial Adverse Effect on Candidate, Special-Status or Sensitive Species	**BIO-1:** Prior to starting construction a biologist will perform a pre-construction survey of the site prior to any project-related ground disturbance to verify vegetation types affected by the project. The results of the pre-construction survey will determine which Incidental Take Minimization Measures (if any) will be required for project approval. Incidental Take Minimization Measures for each species will be implemented to ensure that all impacts to covered species are minimized and mitigated appropriately under FESA, CESA, and CEQA.	Contact Sutter County Development Services Department, Planning Division prior to construction; monitor throughout construction phase. If species noted, log and contact Sutter County.	Measure will leave the impacts as Less Than Significant	Sutter County Development Services Department	Prior to Construction

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Cultural Resources					
	VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring				
Disturbance of Cultural or Historical Resources, Skeletal Remains	**CR-1:** In the event that unanticipated archaeological resources should be accidentally discovered during project construction, a qualified archaeologist or paleontologist will be retained for evaluation of the find. If the find is determined to be a historical or unique archaeological resource, appropriate mitigation or avoidance measures will be taken in accordance with CEQA Guidelines 15064.5(f). During mitigation of unanticipated archaeological resources, it would not be necessary for work to halt in construction areas not affected by such finds. Any historically significant cultural materials discovered during project construction will be the subject of professional scientific analysis and a report to be prepared by a qualified archaeologist. In the event that such a discovery should contain human remains, the following steps shall be taken as outlined in CEQA Guidelines 15064.5 (e)(1): (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and (B) If the coroner determines the remains to be Native American: 1. The coroner shall contact the Native American Heritage Commission within 24 hours. 2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. 3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98 or (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. (B) The Descendant identified fails to make a recommendation; or (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	Monitor throughout the construction phase for the presence of archeological resources.	Measure will leave the impacts as Less Than Significant	Sutter County Development Services Department	Construction phase

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Energy					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required
Geology and Soils					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required
Greenhouse Gas Emissions					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Hazards and Hazardous Materials					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
Significant Hazard to the Public or Environment through Reasonably Foreseeable Accident	**HM-1: Contingency Plans.** VESI 10 Tierra Buena BESS facility contingency plans shall be prepared to address potential contingency situations associated with the battery storage systems. These existing contingency plans include: Fire Protection Plan, Emergency Response Plan, and Hazardous Materials Business Plan. In addition, the plans will include where fire suppression material is stored on the site, how the fire department will access the material, what the material is, and where copies of the plan are stored. All updates will occur in coordination with applicable agencies, including but not limited to the Yuba City Fire Department/CSA-G, and the Sutter County Environmental Health Services-CUPA. Contingency plans shall be stored onsite. **Plan Requirements and Timing:** Contingency plans shall be completed prior to the initiation of construction activities for the proposed battery storage system, in order to ensure that appropriate contingency plans are in place through all project phases. The Sutter County Development Services Department/Planning, or their designee, shall ensure completion of contingency plans and approval by Yuba City Fire Department/CSA-G and Sutter County Environmental Health Services-CUPA. **Monitoring:** The Yuba City Fire Department/CSA-G, or their designee, shall inspect the contingency plans on an annual basis, and following any emergency or unanticipated situation during which contingency plan procedures are required to be implemented, in order to ensure that contingency plans remain relevant and applicable to the VESI 10 Tierra Buena BESS facilities and surroundings.	Submit Contingency Plans for approval to appropriate agencies: Fire Protection Plan Emergency Response Plan Hazardous Materials Business Plan	Measure will leave the impacts as Less Than Significant	Sutter County Environmental Health Services-CUPA/Yuba City Fire Department-CSA-G	Prior to Commissioning/ and Operations of Facility

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Hydrology and Water Quality					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
Potential of project to pollute surface water	**WQ-1:** VESI 10, LLC and/or contractor will develop and implement a SWPPP and adopt BMPs prior to beginning construction activities.	Submit SWPPP and BMPs to Sutter County.	Measure will leave the impacts as Less than Significant	Sutter County Development Services Department	Design and Construction Phase
Potential of project to pollute surface water	**WQ-2:** Spill prevention kits shall always be in close proximity when using hazardous materials (e.g. crew trucks and other appropriate locations).	Provide spill prevention kits on site and document with Sutter County.	Measure will leave the impacts as Less than Significant	Sutter County Development Services Department	Construction and Operational Phase
Potential of project to pollute surface water	**WQ-3:** For equipment that must be fueled on-site, containment shall be provided in such a manner that any accidental spill of fuel shall not be able to enter the water or contaminate sediments that may come in contact with water.	VESI 10, LLC, Project Manager shall insure compliance and instruct all contractors on site regarding WQ-3.	Measure will leave the impacts as Less than Significant	Sutter County Development Services Department	Construction and Operational Phase
Potential of project to pollute surface water	**WQ-4:** VESI 10, LLC, or construction contractor will prepare a pollutant control plan that specifies logistics and schedule for construction activities that will minimize the potential for erosion and standard practices that include monitoring and maintenance of control measures.	Develop a pollutant control plan that specifies the use of BMPs throughout the construction phase. Provide a weekly inspection of the BMPs to ensure they are adequately implemented throughout the duration of construction.	Measure will leave the impacts as Less than Significant	Sutter County Development Services Department	Construction Phase
Land Use and Planning					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required
Mineral Resources					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Noise					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
Noise Level Standards	**N-1:** Air conditioners will be housed in an acoustical enclosure.	Inspection upon completion of construction	Measure will reduce impact to less than significant level	Sutter County Development Services Department	Upon completion of project construction
Noise Level Standards	**N-2:** Noise perimeter fencing and vegetative hedge around the BESS facility will be placed which will further minimize noise off site.	Inspection upon completion of installation	Measure will reduce impact to less than significant level	Sutter County Development Services Department	Upon completion of project construction
Noise Level Standards	**N- 3:** VESI 10, LLC will establish a telephone number for use by public to report any undesirable noise conditions associated with construction and operations. Telephone number will be posted at the project site in a manner visible to passersby.	N/A	Ensures prompt response to potential impacts	Sutter County Development Services Department	N/A
Noise Level Standards	**N-4:** All power equipment and vehicles associated with the project will have proper muffler devices.	Inspections to be performed in the event of noise complaints	Measure will reduce impact to less than significant level	Sutter County Development Services Department	Throughout construction and operations
Noise Level Standards	**N-5:** VESI 10, LLC, will document, investigate, evaluate, and attempt to resolve all project related noise complaints. VESI 10, LLC, will conduct the following: Use a Noise Complaint Resolution Form to respond to each complaint; Attempt to contact the person making the noise complaint in 24 hrs; Conduct investigation to determine source of noise; Reduce noise with all feasible measures upon a complaint.	Maintain and submit noise complaint report to the Sutter County Development Services Department monthly during construction.	Measure will leave the impacts as Less Than Significant	Sutter County Development Services Department	Throughout Construction
Noise Level Standards	**N-6:** Wherever feasible, erect barriers or shields near construction equipment (e.g., compressors, pneumatic tools, drills, generators) considered major sources of noise.	Erect barriers or shields near construction where feasible. Inspect upon completion of construction and annually thereafter; maintain complaint log for affected residents.	Measure will leave the impacts as Less Than Significant	Sutter County Development Services Department	Throughout Construction

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Population and Housing					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required
Public Services					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required
Recreation					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impacts Defined	None Required	None Required	None Required	None Required	None Required
Transportation					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
Conflict with Program, Plan, Ordinance, or Policy Addressing the Circulation System	**T-1** A traffic control plan will be developed in coordination with the Engineering Division of the Sutter County Development Services Department for any work requiring a County Encroachment Permit.	Submit Traffic Control Plan to the approval of the Sutter County Development Services Department	Measure will leave the impacts as Less Than Significant	Sutter County Development Services Department	Construction Phase
Conflict with Program, Plan, Ordinance, or Policy Addressing the Circulation System	**T-2** Start times and end times of the construction day will be offset from identified peak traffic hours to mitigate traffic congestion on local streets and highways. Construction personnel will typically arrive at the project site around 6:00 AM, before the morning peak hour (7:00 AM to 8:00 AM). Construction employees will typically leave between 3:00 PM and 4:00 PM, before the evening peak hour (4:00 PM and 5:00 PM).	Provide documentation that on monthly basis construction employee's work hours begin and end prior to peak hour traffic.	Measure will leave the impacts as Less Than Significant	Sutter County Development Services Department	Construction Phase

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Tribal Cultural Resources					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
Disturbance of Cultural or Historical Resources, Skeletal Remains	**CR-1:** In the event that unanticipated archaeological resources should be accidentally discovered during project construction, a qualified archaeologist or paleontologist will be retained for evaluation of the find. If the find is determined to be a historical or unique archaeological resource, appropriate mitigation or avoidance measures will be taken in accordance with CEQA Guidelines 15064.5(f). During mitigation of unanticipated archaeological resources, it would not be necessary for work to halt in construction areas not affected by such finds. Any historically significant cultural materials discovered during project construction will be the subject of professional scientific analysis and a report to be prepared by a qualified archaeologist. In the event that such a discovery should contain human remains, the following steps shall be taken as outlined in CEQA Guidelines 15064.5: (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and (B) If the coroner determines the remains to be Native American: 1. The coroner shall contact the Native American Heritage Commission within 24 hours. 2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. 3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98 or (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. (B) The Descendant identified fails to make a recommendation; or (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	Monitor throughout the construction phase for the presence of archeological resources.	Measure will leave the impacts as Less Than Significant	Sutter County Development Services Department	Construction phase

Impacts	Mitigation Measures	Monitoring/Reporting Action	Criteria Effect	Monitoring Agency	Monitor/ Reporting Schedule
Utilities and Service Systems					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
Impact to regional solid waste recovery processing infrastructure	**UTL-1:** Employ an approved Solid Waste Diversion and Recycling Plan. VESI 10, LLC, will develop a solid waste diversion and recycling plan in accordance with AB 341 (Solid Waste Diversion), which requires industrial and commercial construction efforts to recycle fifty percent of their industrial wastes. Such a plan would be implemented in conjunction with CalRecycle (formerly CIWMB) and RWMA. In addition to the requirement of diverting commercial and construction debris, VESI 10, LLC, will submit a Diversion Report within 30 days of completing the project to the RWMA.	Plans addressing solid waste recycling and handling will be filed with appropriate agencies.	Reduces impacts to less than Significant levels	Sutter County Development Services Department/ CalRecycle/ Yuba-Sutter RWMA	Design phase
Wildfire					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
No Impact Defined	None Required	None Required	None Required	None Required	None Required
Mandatory Findings of Significance					
VESI 10, LLC TIERRA BUENA BESS Project Mitigation Monitoring					
Recommended mitigation above will reduce all impacts regarding Mandatory Findings to less than significant.	None Required	None Required	None Required	None Required	None Required

Appendix C: Sutter County Zoning Clearance # M-19-036 for Valdez Trucking

SUTTER COUNTY
DEVELOPMENT SERVICES DEPARTMENT

Building Inspection
Code Enforcement
Planning
Environmental Health
Fire Services
Engineering
Road Maintenance
Water Resources

August 23, 2019

Lee Kosla
616 Meridian Way
Rocklin, CA 95765

Re: Zoning Clearance #M-19-036 – A request for a small agricultural truck yard accommodating five or fewer agricultural trucks and trailers; located at 3025 Tierra Buena Road (Assessor's Parcel No. 10-250-060), Yuba City.

Dear Mr. Kosla,

The Planning Division has reviewed your application for a zoning clearance for a small agricultural truck yard accommodating five or fewer agricultural trucks and trailers, at the location referenced above. Staff's understanding is the landowner wishes to park five or fewer of his own agricultural trucks and trailers on his property as part of his family owned agricultural trucking business. No maintenance, repair, or servicing of trucks and trailers will occur on the property. Based upon our review, Zoning Clearance #M-19-036 is approved, subject to the proposed site plan submitted with the application, and the following Findings and Conditions:

Findings

In accordance with Zoning Code Section 1500-25-030(D), the following required findings are met by the application:

1. This zoning clearance is consistent with the General Plan.

2. The proposed use provided for by this zoning clearance is allowed within the AG (Agriculture) District and complies with all other relevant provisions of the Zoning Code.

3. Approval of this zoning clearance will not be detrimental to the health, safety, and general welfare of persons residing or working in the area, or be detrimental or injurious to property and improvements in the area or to the general welfare of the County.

Conditions

Approval of Zoning Clearance #M-19-036 is subject to the following requirements and conditions:

1. The use allowed by this zoning clearance shall be effectuated and all improvements made within 24 months (2 years) from the date of its approval or this zoning clearance approval shall become null and void.

2. The proposed agricultural truck yard shall accommodate no more than five (5) agricultural trucks and trailers at any one time. The yard is to be used exclusively for the transportation of bulk raw agricultural products directly from the harvest location to a processing or storage location by appropriate commodity transporters such as grain trailers with tarps and flat bed/portable bin trailers (Zoning Code Section 1500-03-040G).

3. Driveways, parking, storage, and maneuvering areas for agricultural trucks and trailers shall be surfaced with aggregate, paving or other materials which adequately prevent dust from becoming airborne and prevent the tracking of dirt and/or mud onto public roadways. Adequate provision shall be made for safe ingress and egress to the adjacent street (Zoning Code Section 1500-05-030E). Aggregate surfacing materials shall, at a minimum, be four (4) inches of either Class 2 aggregate base or Butte Rock (Zoning Code Section 1500-20-080B2).

4. The proposed new access to the site requires approval of an encroachment permit from the Engineering Division of the Development Services Department.

5. As shown on the site plan, a three-foot-wide vegetative screening hedge is proposed for screening. The proposed vegetative screening hedge shall consist of photinia (*Photinia fraseri*) or equivalent from the Sutter County Preferred Landscape Plant Materials List spaced at a minimum of 6 feet on center to provide a continuous solid screen. A final landscape and irrigation plan that demonstrates compliance with the State's Water Efficient Landscape Standards shall be submitted prior to installation of landscaping. The plan shall contain the required calculations demonstrating compliance with the State's requirements.

6. As shown on the site plan, chain-link fencing with privacy slats is proposed to be located behind the proposed vegetative screening. This fencing shall be at least six feet in height but shall not exceed seven feet in height. Privacy slats used shall have a 90 percent or greater screening ability such as "viewguard plus" or equivalent.

7. No access gates are to be installed along the proposed fence into the site as the site cannot accommodate required setbacks for access gates.

8. No maintenance, repair, or servicing of trucks and trailers is to occur on the property. This requirement shall not apply to windshield, wiper, or truck and trailer light replacement.

9. There shall be no outdoor storage of loose materials onsite, including but not limited to, truck parts, tires, and/or related items.

The above determination may be appealed within ten (10) days of the date of this letter by submitting a written appeal request and fee to the Development Services Department (Zoning Code Section 1500-23-080). This approval must be effectuated within 24 months (2 years) from the date of this letter (Zoning Code Section 1500-24-020) or the zoning clearance approval will expire and become null and void.

If you have any questions concerning this matter, please feel free to contact me at 530-822-7400 ext. 245 or by email at cmurray@co.sutter.ca.us.

Sincerely,



Casey Murray
Associate Planner

CM:km

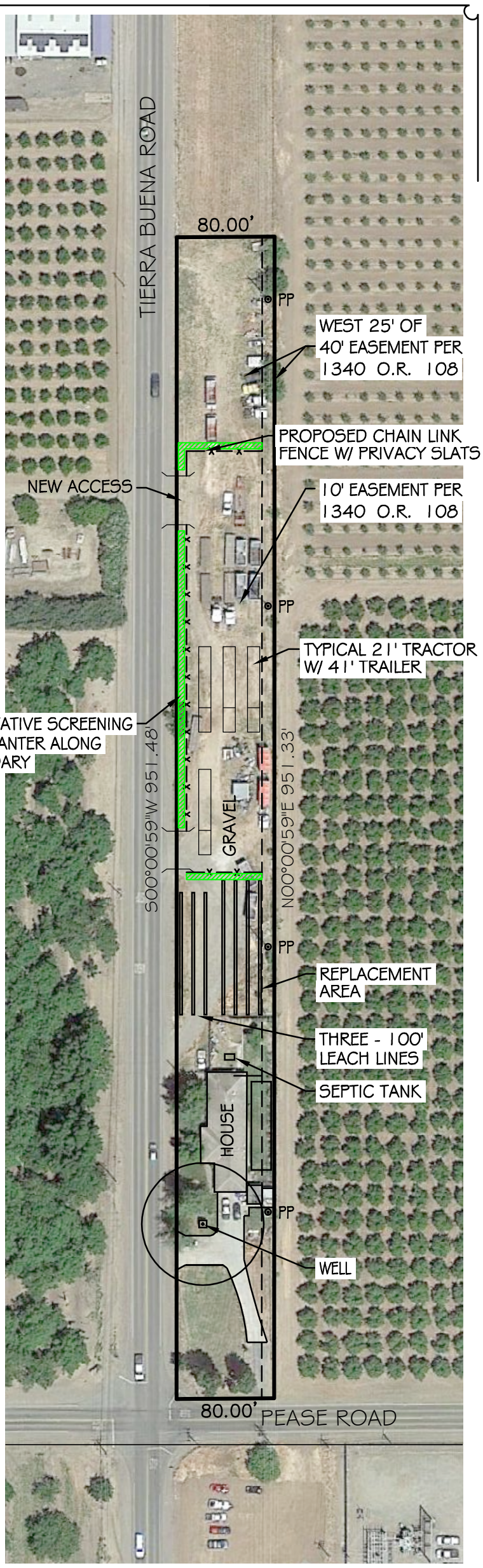
cc: Luis G. Valdez, 3025 Tierra Buena Road, Yuba City, CA 95993

P:\Planning\Projects\2019\Zoning Clearance M-19-036 (Kosla)\ZC M-19-036 - approval letter.doc



SITE PLAN DETAIL
1" = 30'

0 10 30 60
FEET



OVERALL SITE PLAN
1" = 100'

0 50 100 200
FEET

THIS MAP IS NOT BASED ON A SURVEY.
IT IS ONLY A VISUAL AID TO ACCOMPANY AN APPLICATION AND SHALL NOT BE RELIED ON TO TRANSFER TITLE NOR TO DETERMINE EXACT LOCATION OR AREA. IT SHALL NOT BE RECORDED.

SITE PLAN

FOR

LUIS VALDEZ

3025 TIERRA BUENA RD
YUBA CITY, CA 95993

APN 10-250-060

Prepared By :
von Geldern Engineering Company
430 Second Street, Yuba City, California
by W. EAGLE

AUGUST 9, 2019

Appendix D: BESS Equipment Specifications

BATTERY ENERGY STORAGE SYSTEM

PowinEnergy



POWIN 40FT BATTERY ENCLOSURE

40FT BATTERY ENCLOSURE

Powin Energy's cost effective 40ft enclosure is a scalable, purpose-built battery solution that includes all of the balance of system (BOS) equipment that can be modified to meet the AHJ's requirements. The thermal management of this enclosure has been meticulously designed through air ducting and HVAC, providing an optimal temperature controlled environment for the battery enabling deployment in many different geographical climate types.

FULLY INTEGRATED

- Up to 16 Stack140s or 14 Stack225s per enclosure in parallel
- Powin's patented bp-OS Battery Management System
- Energy Management System (EMS)
- HVAC and forced air with ducting that directly targets the stacks
- AC breaker panel for coms and aux loads
- Fire suppression system that also provides detection and monitoring
- DC Collection, cable and tray
- IP 54 rated
- Insulation options for hot and cold climates
- Isolation, and over current and fault protection
- Minimal on site installation requirements

COMMUNICATION CABINET

- Full state of awareness monitoring for fire suppression/ HVAC/inverter and transformer status/E stop/UPS aux
- Switch
- Router
- UPS – Control
- Linux computer
- HMI
- Controls interface can connect to any SCADA system

CONTACT US powinenergy.com sales@powinenergy.com

POWIN ENERGY 40FT TECHNICAL SPECIFICATIONS

PowinEnergy

ELECTRICAL CHARACTERISTICS		
MODEL	**Block2.2**	**Block3.1**
Intended Use	Power Applications	Energy Applications
Battery Chemistry	Lithium Iron Phosphate [LFP]	Lithium Iron Phosphate [LFP]
BMS	Powin bp-OS	Powin bp-OS
Usable Energy Capacity (kWh)	2,240	3,150
Rated Power (kW)	2,240	2,800
DC Voltage Range (VDC)	762-993	739-963
Max Current [Charge / Discharge]* (A)	3,840 / 3,840	3,024 / 3,794
Depth of Discharge (%)	100	100
DC Round Trip Efficiency [2 hr rating] (%)	95	95
Performance Guarantee	80% SOH after 3,650 cycles Or after 10 yrs	80% SOH after 3,650 cycles Or 70% SOH after 15 yrs
* Lower currents available		

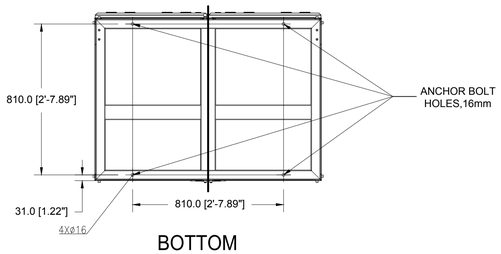
PHYSICAL CHARACTERISTICS		
MODEL	**Block2.2**	**Block3.1**
Weight (lbs. / kg)	72,000 / 32,659	90,000 / 40,823
Dimensions (ft.)	40' L x 8' W x 6'6" H	40' L x 8' W x 6'6" H
Enclosure Type / Rating	HIGH CUBE / IP 54	HIGH CUBE / IP 54
Ambient Temperature Range	-30 TO +50 °C	-30 TO +50 °C
Number of Stacks (fully populated)	16	14
**Energy per Area (kWh / ft^2) **	7.00	9.84
Fire Suppression	StatX (aerosol)	StatX (aerosol)
Cooling	FORCED AIR & HVAC	FORCED AIR & HVAC
Codes & Standards Compliance	UL 1642, UL 1973, IEC 62619	UL 1642, UL 1973, IEC 62619
** Does not include setbacks, PCS or BOP		

ABOUT POWIN ENERGY

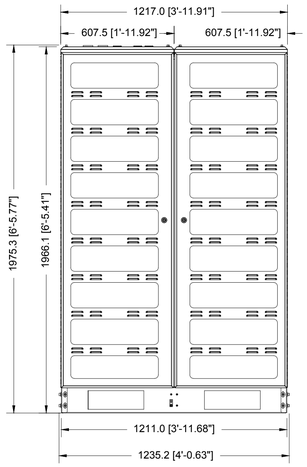
Powin Energy is creating the next wave of safe and scalable battery energy storage that is purpose-built for the demands of utility-scale, commercial and industrial, and microgrid applications. With an unrivaled team of experts from across the energy industry, almost three decades of supply chain management expertise, extensive battery management software proficiency, a modular architecture, and a streamlined installation processes, Powin is making energy storage highly cost-effective and relatively pain free.

CONTACT US powinenergy.com sales@powinenergy.com

ALL UNITS - mm / [inch]

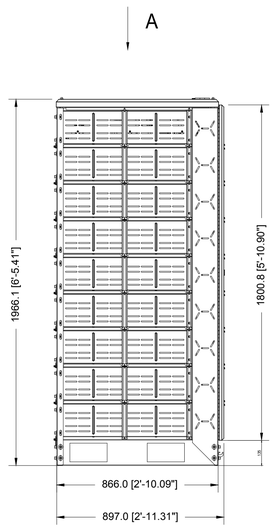


BOTTOM
VIEW C

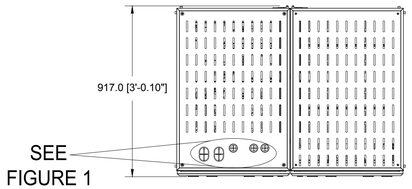


D

FRONT
VIEW B

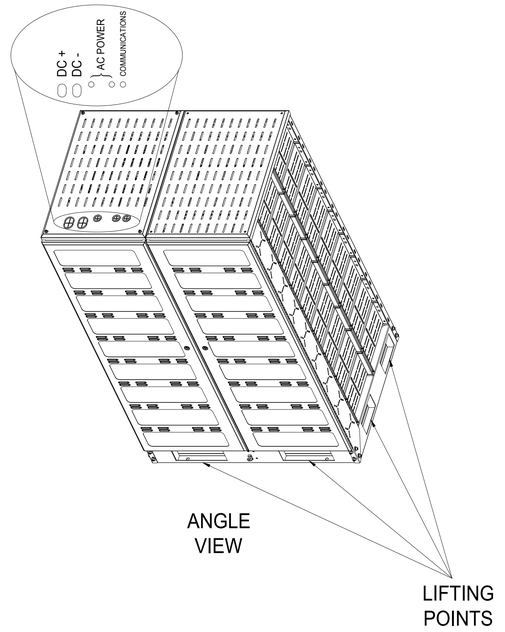


SIDE
VIEW D



TOP
VIEW A

FIGURE 1 - CABLE ENTRY



ANGLE
VIEW

LIFTING
POINTS

GENERAL NOTES

- STACK WEIGHT IS 1700 Kg.
- MOVING OF STACK NEEDS TO BE DONE USING A FORKLIFT OR HEAVY-DUTY PALLET JACK.
- SEE POWIN ENERGY 'STACK 140 INSTALLATION MANUAL' FOR HANDLING INSTRUCTIONS.

NO.	DATE	REVISION	DR	BY	APVD

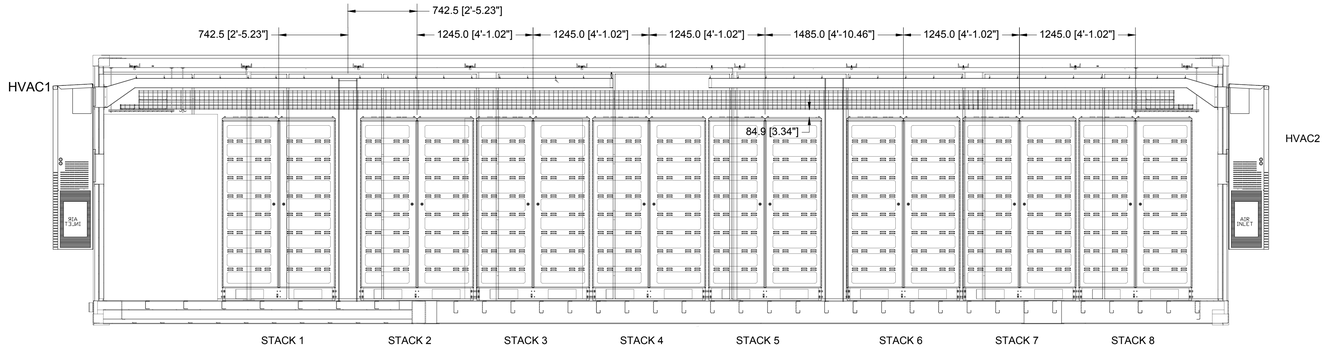
DESIGNED BY:	DATE: 03/15/19
REVIEWED BY:	DRAWING NO.:
APPROVED BY:	PROJECT NO.:
	REVISION NO.: A

NOT FOR CONSTRUCTION

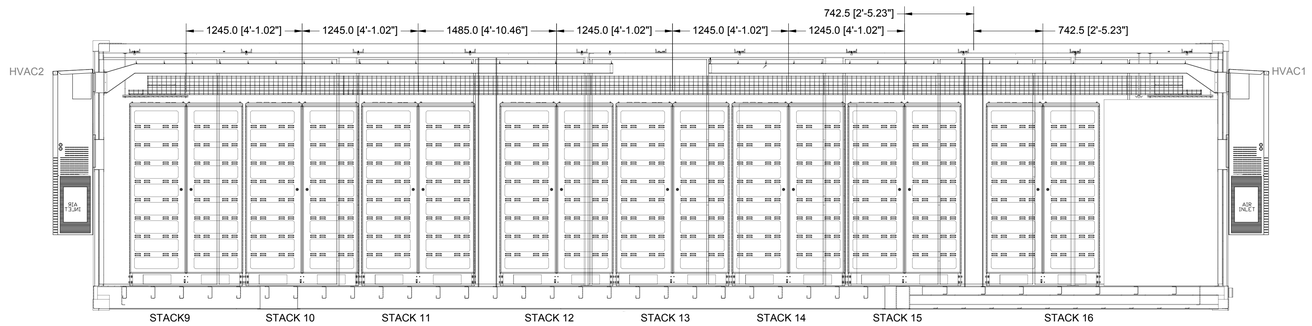
POWIN BESS ENCLOSURE ELECTRICAL
POWIN STACK140 LAYOUT

SHEET NO.
E.21

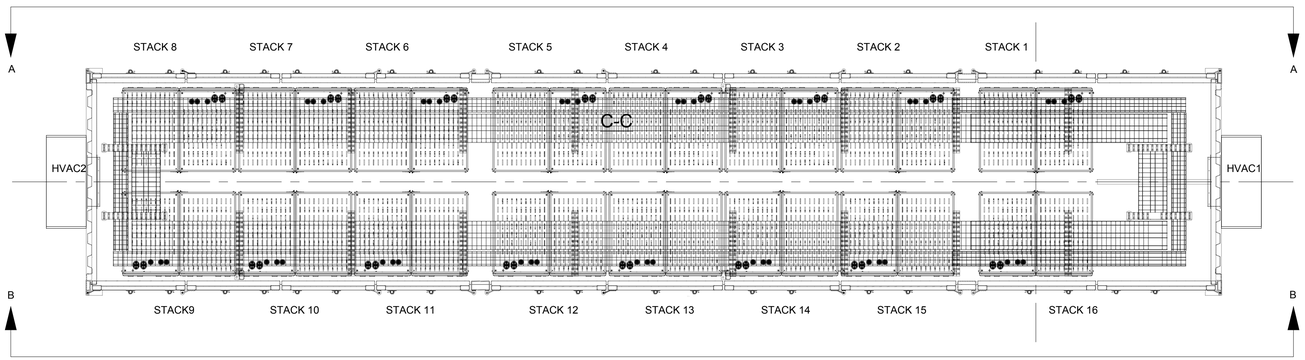
Powin Energy



A-A FRONT VIEW WITH DOOR OPEN



B-B FRONT VIEW WITH DOOR OPEN



TOP VIEW INTERIOR

GENERAL NOTES

1. REFER TO DWG S2, S3, ENCLOSURE LAYOUT FOR SPECIFIC BATTERY STACK PLACEMENT IN THE INDIVIDUAL ENCLOSURES.
2. REFER TO DWG E25,E26,E26,E28, FOR DC COMBINER CABINET, AC PANELBOARD FIRE SUPPRESSION AND COMMUNICATION PANEL DETAILS.

Powin Energy

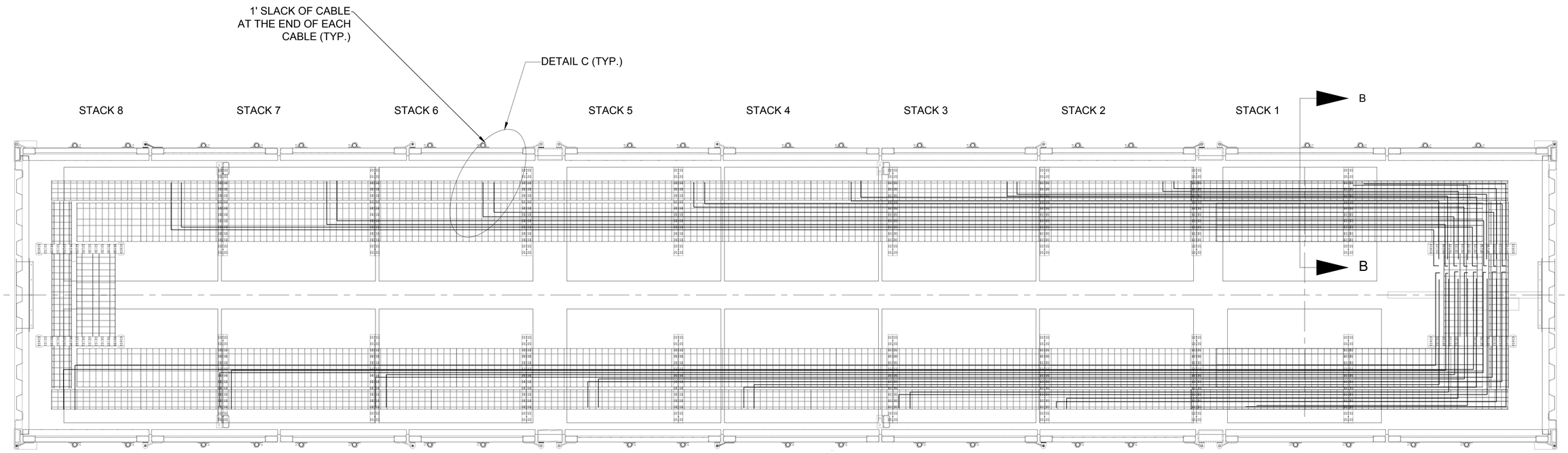
NO.	DATE	REVISION	DR	BY	APVD

DESIGNED BY:	DATE: 03/15/19
REVIEWED BY:	DRAWING NO.:
APPROVED BY:	PROJECT NO.:
	REVISION NO.: A

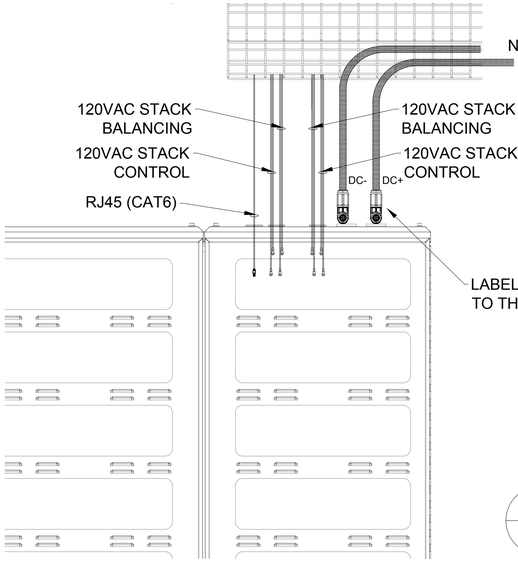
NOT FOR CONSTRUCTION

POWIN BESS ENCLOSURE ELECTRICAL
STACK PLACEMENT LAYOUT – IN ENCLOSURE

SHEET NO.
E22



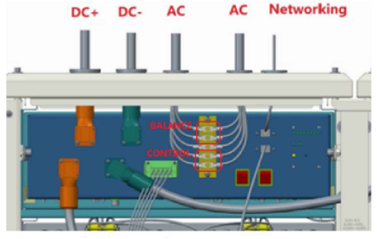
A-A TOP VIEW INTERIOR



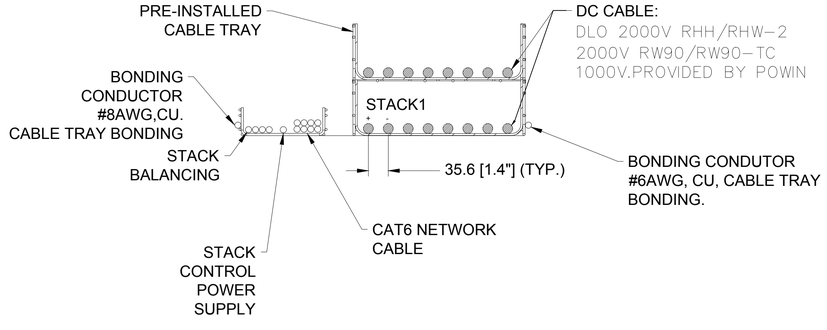
NOTE:

1. PROVIDE 1' SLACK CABLE BELOW THE CABLE TRAY FOR ALL AC, DC AND COMM. CABLE.
2. TERMINATE THE DC CABLE USING THE PROVIDED AMPHANOL CONNECTORS FOLLOWING THE MANUFACTURE'S RECOMMENDED METHODOLOGY. AND LABEL ACCORDINGLY.
3. CRIMP THE END OF AC CABLE WITH RING LUG WITH M6 HOLE. AND LABEL
4. TERMINATE THE CAT6 CABLE WITH RJ45 CONNECTOR, AND LABEL

LABEL ALL CABLE AND POLARITY ACCORDING TO THE CORRESPONDING STACK ID.

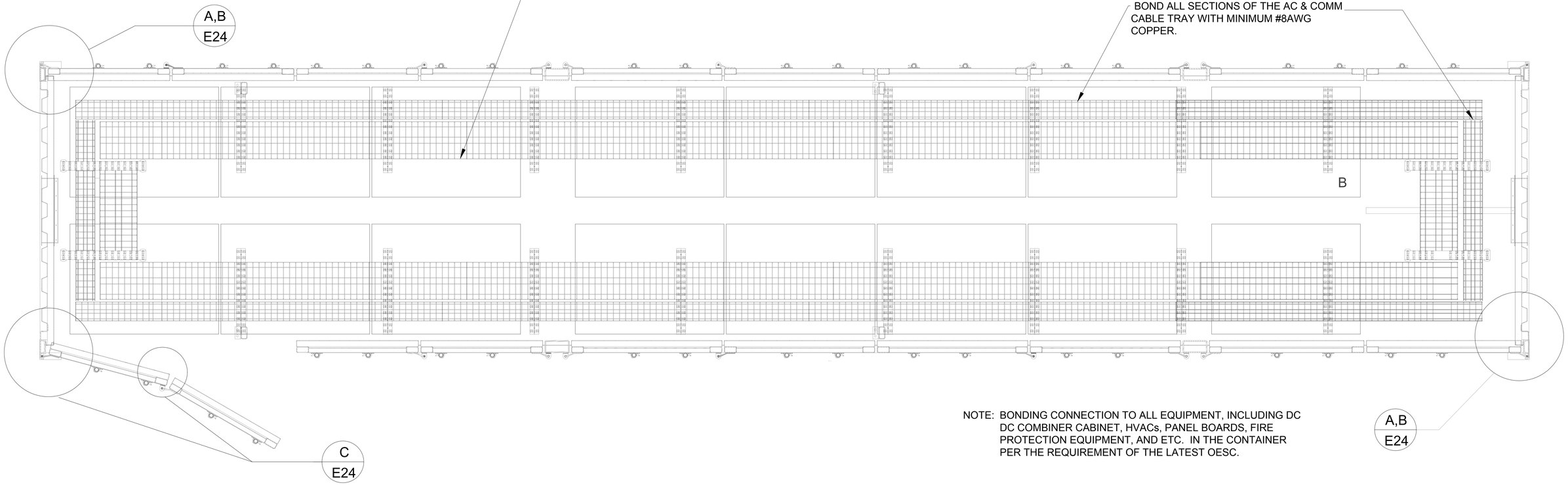


C CABLE TERMINATION
E004 N.T.S.

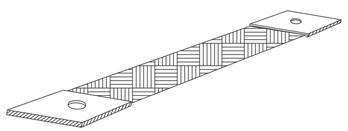


B-B: CABLE TRAY CROSS SECTION VIEW

Powin Energy		NO.	DATE	REVISION	DR	BY	APVD	DESIGNED BY: / DATE: 03/15/19 REVIEWED BY: / DRAWING NO.: APPROVED BY: / PROJECT NO.: REVISION NO.: A	NOT FOR CONSTRUCTION	POWIN BESS ENCLOSURE ELECTRICAL CABLE ARRANGEMENT	SHEET NO. E.23

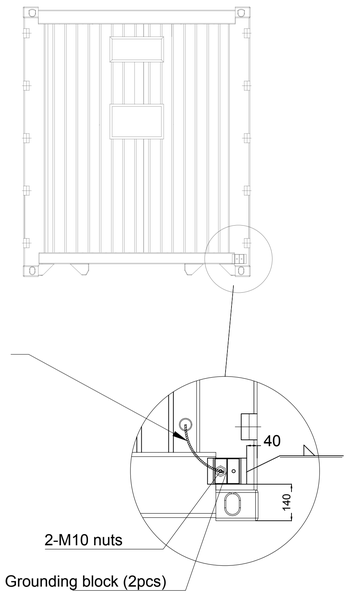


NOTE: BONDING CONNECTION TO ALL EQUIPMENT, INCLUDING DC COMBINER CABINET, HVACs, PANEL BOARDS, FIRE PROTECTION EQUIPMENT, AND ETC. IN THE CONTAINER PER THE REQUIREMENT OF THE LATEST OESC.



NOTE: BONDING OF ALL SWING DOORS, AND HINGES, WITH COPPER BRAID, 1 " WIDTH MINIMUM.

C E24 COPPER BRAID FOR DOOR BONDING
N.T.S.



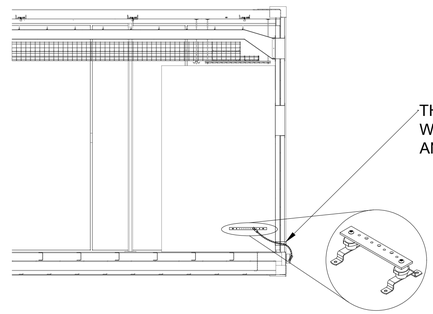
NOTE: GROUNDING BLOCKS WELD TO THE TWO OPPOSITE BOTTOM CORNERS OF THE ENCLOSURE.

INTERIOR EQUIPMENT BONDING AND ENCLOSURE GROUNDING POINT TO BE CONNECTED WITH #4/0 COPPER WIRE

A E24 ENCLOSURE GROUNDING
N.T.S.

NOTE: COPPER GROUNDING BUSBAR FOR INTERIOR EQUIPMENT BONDING. 1"x18"X$\frac{1}{2}$" BOLTED TO METAL FLOOR.

THE EQUIPMENT BONDING BUSBAR TIED CONNECTED EXTERIOR ENCLOSURE GROUNDING (DETAIL A) WITH #4/0 CU CONDUCTOR.



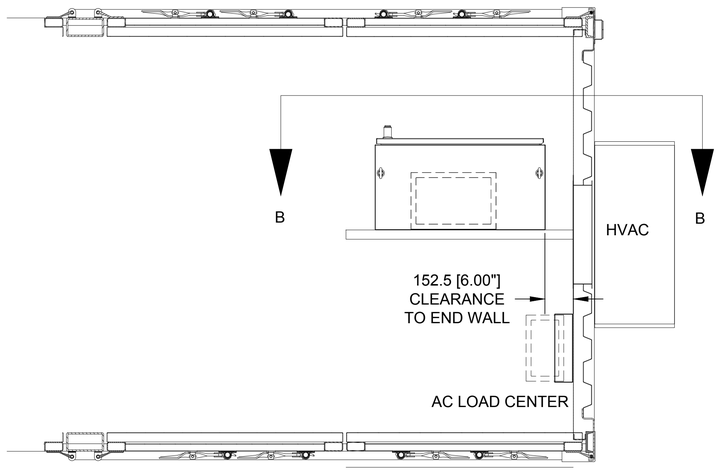
B E24 EQUIPMENT BONDING POINT
AT TWO OPPOSITE CORNERS

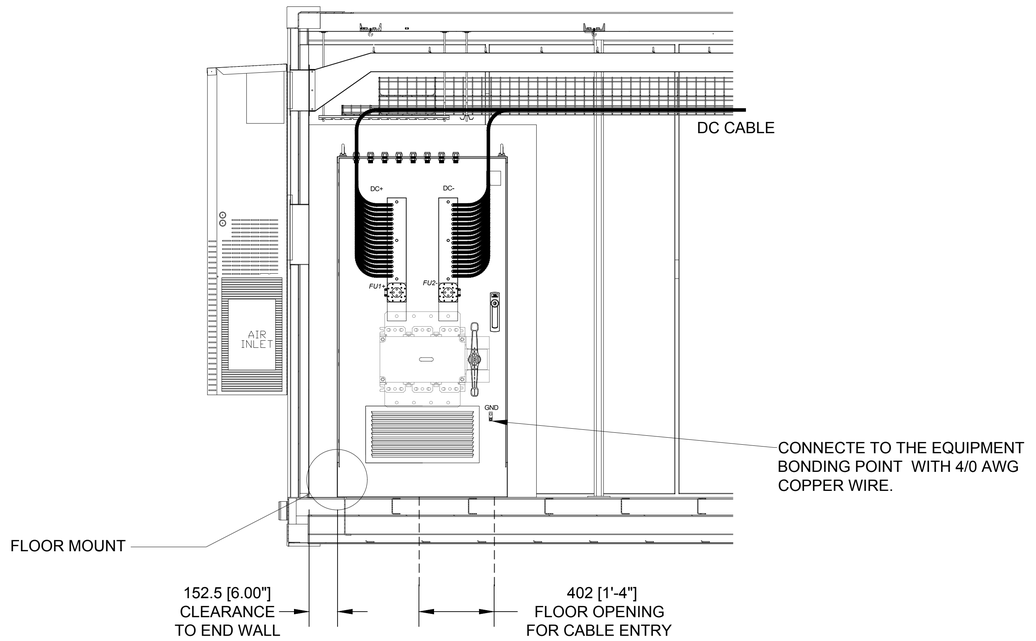
Powin Energy		NO.	DATE	REVISION	DR	BY	APVD	DESIGNED BY:	DATE: 03/15/19
								REVIEWED BY:	DRAWING NO.:
								APPROVED BY:	PROJECT NO.:
									REVISION NO.: A

NOT FOR CONSTRUCTION

POWIN BESS ENCLOSURE ELECTRICAL BONDING AND GROUNDING

SHEET NO.
E.24





A-A TOP VIEW INTERIOR
TYPE 1 ENCLOSURE

B-B FRONT VIEW DC COMBINER CABINET
TYPE 1 ENCLOSURE

NO.	DATE	REVISION	DR	BY	APVD

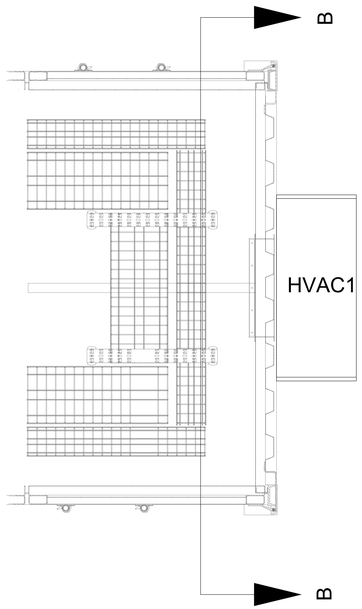
DESIGNED BY:	DATE: 03/15/19
REVIEWED BY:	DRAWING NO.:
APPROVED BY:	PROJECT NO.:
	REVISION NO.: A

NOT FOR CONSTRUCTION

POWIN BESS ENCLOSURE ELECTRICAL
TYPE 1 ENCLOSURE
1500A DC COMBINER CABINET DETAILS

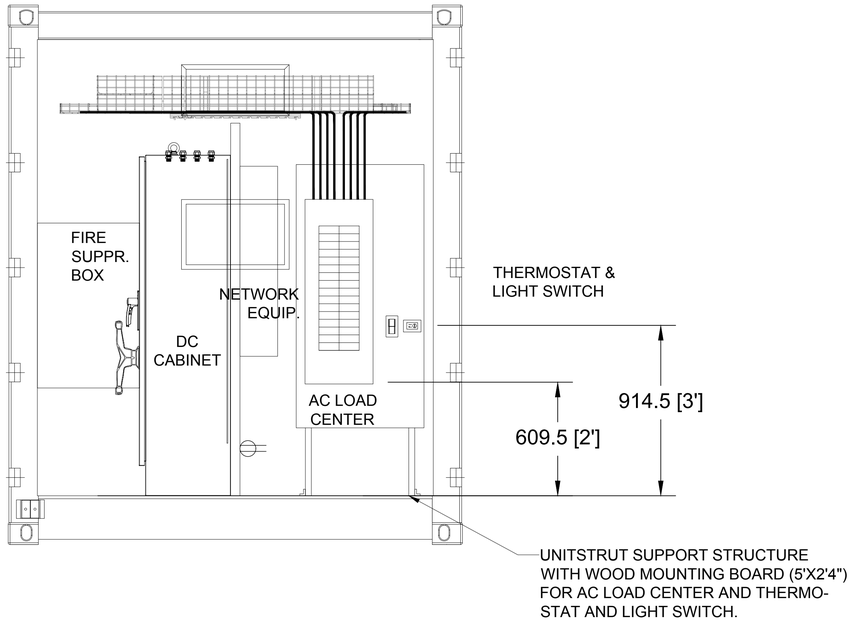
SHEET NO.
E.25

Powin Energy



A-A TOP VIEW INTERIOR

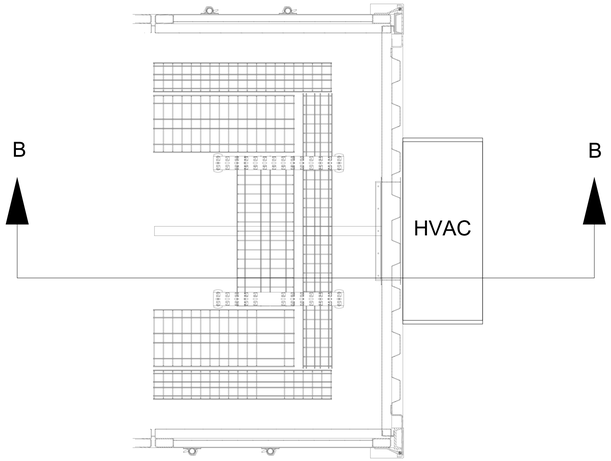
END WALL



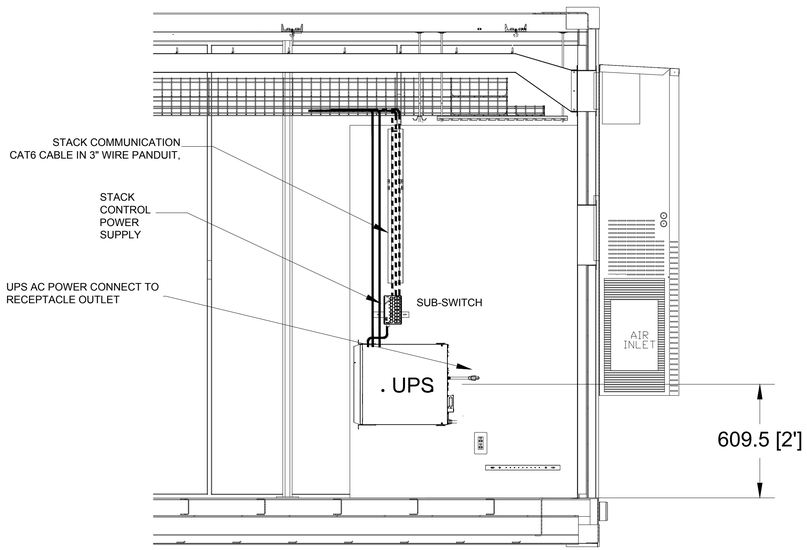
B-B FRONT VIEW INTERIOR

END WALL DETAILS

Powin Energy		NO.	DATE	REVISION	DR	BY	APVD	DESIGNED BY: / DATE: 03/15/19 REVIEWED BY: / DRAWING NO.: APPROVED BY: / PROJECT NO.: C REVISION NO.: A	NOT FOR CONSTRUCTION	POWIN BESS ENCLOSURE ELECTRICAL END WALL DETAIL	SHEET NO. E.27

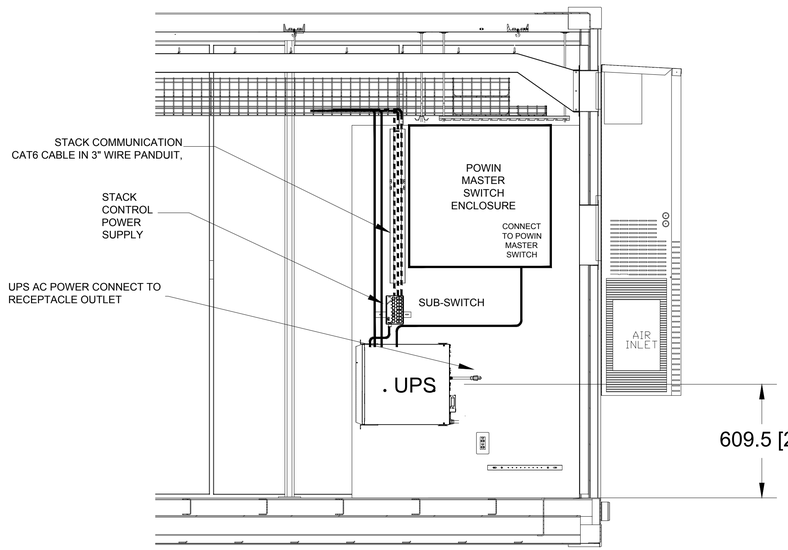


A-A TOP VIEW INTERIOR



B.1-B.1 FRONT VIEW - SLAVE

COMMUNICATION WALL DETAILS
ENCLOSURE A,B,D,E



B.2-B.2 FRONT VIEW - MASTER (ENCLOSURE C)

COMMUNICATION WALL DETAILS

Powin Energy		NO.	DATE	REVISION	DR	BY	APVD	DESIGNED BY: / REVIEWED BY: / APPROVED BY:	DATE: 03/15/19 / DRAWING NO.: / PROJECT NO.: / REVISION NO.: A
									NOT FOR CONSTRUCTION
									POWIN BESS ENCLOSURE ELECTRICAL COMMUNICATION WALL DETAILS
									SHEET NO. E.28

GENERAL NOTES:

1. IMPORTANT: THIS DESIGN IS NOT SITE SPECIFIC AND IS ONLY INTENDED TO PROVIDE GUIDANCE FOR A FOUNDATION DESIGN FOR THE PROPOSED SHIPPING CONTAINERS. A LICENSED ENGINEER AND/OR GEOTECHNICAL ENGINEER SHALL PROVIDE SITE SPECIFIC DESIGN.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK AND SHALL NOTIFY AOstructures, INC - STRUCTURAL ENGINEERS, (AOstructures, INC) OF ANY DISCREPANCIES.
3. ALL OMISSIONS AND CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/ OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF POWERIN BEFORE PROCEEDING WITH WORK SO INVOLVED.
3. RESOLVE ANY CONFLICTS ON THE DRAWINGS WITH POWERIN BEFORE PROCEEDING WITH CONSTRUCTION.
4. ALL MATERIAL AND WORK SHALL CONFORM TO THE REQUIREMENTS OF THE 2015 IBC.
5. NEITHER THE OWNER NOR POWERIN WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT, AND MAINTAIN ALL SAFETY DEVICES INCLUDING SHORING AND BRACING, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE METHODS, PROCEDURES OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE DURING CONSTRUCTION. IF A LAWSUIT IS FILED BY ONE OF THE CONTRACTOR'S OR SUBCONTRACTOR'S EMPLOYEES, OR ANY ONE ELSE, THE CONTRACTOR WILL INDEMNIFY, DEFEND AND HOLD THE OWNER AND POWERIN HARMLESS OF ANY AND ALL SUCH CLAIMS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT ALL STRUCTURAL ELEMENTS AND MEMBERS (I.E. ROOF, SLAB, COLUMNS ETC.) ARE ADEQUATELY BRACED DURING CONSTRUCTION. BRACING OF SUCH ELEMENTS AND MEMBERS SHALL REMAIN IN PLACE UNTIL THEY ARE PROPERLY SECURED.
7. CONSTRUCTION MATERIAL SHALL BE EVENLY DISTRIBUTED IF PLACED ON FRAMED FLOORS OR ROOFS. LOADS SHALL NOT EXCEED THE ALLOWABLE LOADING FOR THE SUPPORTING MEMBERS AND THEIR CONNECTIONS.
8. SPECIFIC DETAILS OR NOTES ON OTHER SHEETS SHALL PREVAIL OVER STANDARD NOTES ON THIS SHEET. WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, SUCH DETAILS SHALL BE THE SAME AS FOR SIMILAR WORK SHOWN ON THE DRAWINGS.
9. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF THE UTILITY SERVICE IN THE AREA TO BE EXCAVATED PRIOR TO BEGINNING EXCAVATION.
10. NO PIPES, DUCTS, SLEEVES, CHASE ETC., SHALL BE PLACED IN SLABS, BEAMS, COLUMNS, WALLS, ETC., UNLESS SPECIFICALLY SHOWN OR NOTED. NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC., UNLESS SPECIFICALLY SHOWN. OBTAIN PRIOR WRITTEN APPROVAL FOR INSTALLATION OF ANY ADDITIONAL PIPES, DUCTS, ETC.

REINFORCED CONCRETE NOTES:

1. CEMENT SHALL CONFORM TO ASTM C-150, TYPE II.
2. AGGREGATES SHALL CONFORM TO ASTM C-33 FOR NORMAL WEIGHT CONCRETE AND ASTM C-330 FOR LIGHT WEIGHT CONCRETE.
3. ANCHOR BOLTS SHALL CONFORM TO ASTM ASTM F1554 GRADE 36.
4. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND OTHER INSERTS SHALL BE SECURED IN POSITION AND INSPECTED BY THE LOCAL BUILDING DEPARTMENT INSPECTOR PRIOR TO THE POURING OF ANY CONCRETE.
5. FINISHED SURFACES OF FLOOR SLABS SHALL NOT DEVIATE MORE THAN 1/8" FROM THE LOWER EDGE OF A 10 FOOT STRAIGHT EDGE.
6. CONCRETE SHALL MEET THE FOLLOWING DESIGN CRITERIA:

LOCATION	MIN 28 DAY COMP STRENGTH	MIN CEMENT	MAX AGGREGATE	MAX SLUMP
FOUNDATION	2500 psi	5.5 SACKS/ YD	1"	4"
NONSTRUCTURAL SLAB ON GRADE	2500 psi	5.0 SACKS/ YD SLAB ON GRADE	1"	4"

7. CONCRETE MIX TESTING AND DESIGN SHALL MEET THE REQUIREMENTS OF CHAPTER 3 OF ACI 318-11 AND SECTION 1904 OF THE 2013 CBC RESPECTIVELY, AND THESE SPECIFICATIONS.
8. ADMIXTURES SHALL BE REVIEWED BY AOstructure, INC. CALCIUM CHLORIDE OR ADDED CHLORIDES ARE NOT PERMITTED.
9. DRY PACK SHALL BE 1 PART CEMENT AND 2 PARTS SAND BY VOLUME.
10. PROVIDE A 3/4 INCH CHAMFER ON EXPOSED CORNERS.
11. CONSTRUCTION JOINTS SHALL BE ROUGHENED TO 1/4" AMPLITUDE MINIMUM OR KEYED JOINTS PER PLAN. WAIT 48 HOURS BETWEEN POURS.
12. THE LOCATION OF ALL SLAB ON GRADE CONSTRUCTION, CONTROL, AND WEAKENED PLANE JOINTS NOT SPECIFICALLY INDICATED ON THE DRAWINGS SHALL BE REVIEWED AND APPROVED BY AOstructure, INC PRIOR TO THE PLACING OF REINFORCEMENT.
13. CONCRETE CURING SHALL BE PER THE PROVISIONS OF THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE OF THE AMERICAN CONCRETE INSTITUTE.
14. ALL CONCRETE SHALL BE CONSOLIDATED WITH MECHANICAL VIBRATORS.

REINFORCING STEEL NOTES:

1. BAR REINFORCING SHALL CONFORM TO ASTM A615, GRADE 40.
2. REINFORCING DETAILING, FABRICATION AND PLACING SHALL CONFORM TO THE PROVISIONS OF THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE OF THE AMERICAN CONCRETE INSTITUTE.
3. ALL REINFORCING STEEL, ANCHOR BOLTS, HOLD DOWN ANCHORS, DOWELS AND INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE OR GROUT.
4. REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING AMOUNTS OF CONCRETE COVER UNLESS OTHERWISE NOTED:
   CONCRETE CAST AGAINST EARTH.....3"
   FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:
   NO. 5 OR SMALL BARS.....1-1/2"
5. SPLICES:
   SPLICES IN NO. 8 OR SMALLER BARS SHALL BE 45 DIAMETERS. SPLICES IN ADJACENT BARS SHALL BE STAGGERED 5'-0".

DESIGN CRITERIA:

40'-0" LONG CONTAINER DESIGN WEIGHT:	72.8k
53'-6" LONG CONTAINER DESIGN WEIGHT:	115k
ROOF LIVE LOAD:	20 PSF
ASSUMED SOIL BRG:	1,500 PSF
ASSUMED SKIN FRICTION:	150 PSF
ASSUMED LATERAL PASSIVE PRES:	150 PSF/FT
MAX DESIGN SDS:	1.0g

SCOPE OF WORK:

PROVIDE DESIGN GUIDANCE FOR FOUNDATION SYSTEM TO SUPPORT PRE-MANUFACTURED SHIPPING CONTAINERS.

PowinEnergy

REVISIONS

STAMP

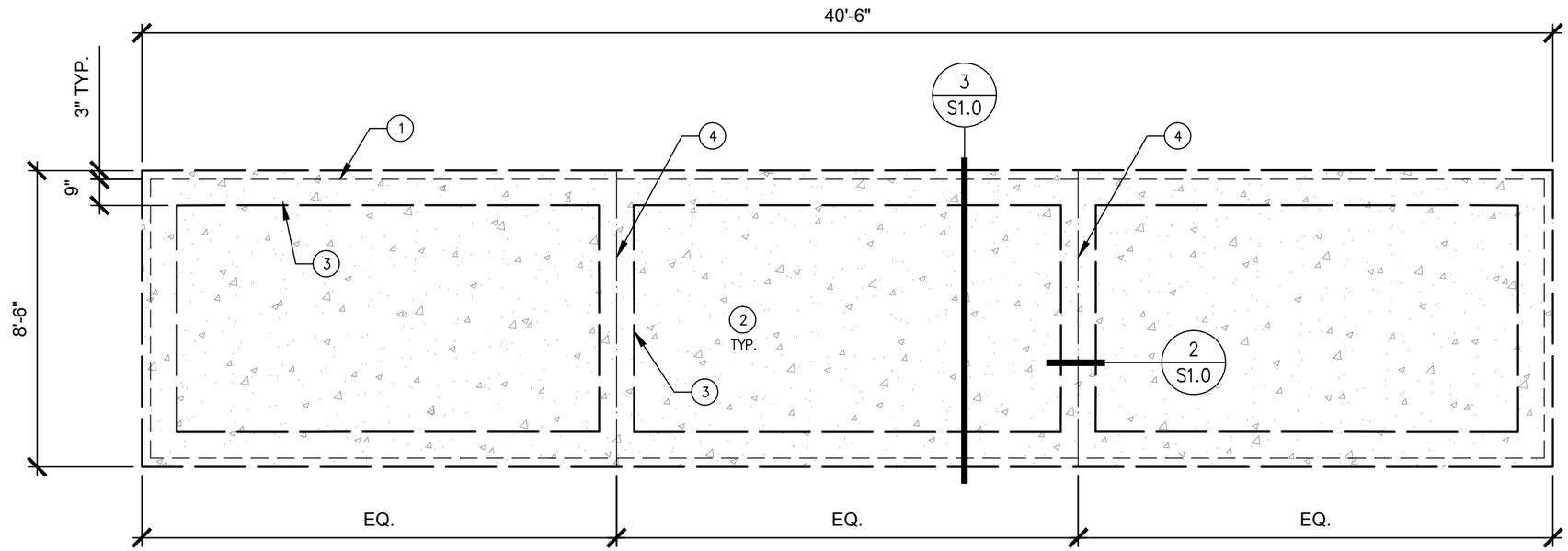
DATE: 12/14/18

PROJECT:

FOUNDATION DESIGN
SHIPPING CONTAINER
SUPPORT SYSTEM

SHEET TITLE:
GENERAL NOTES

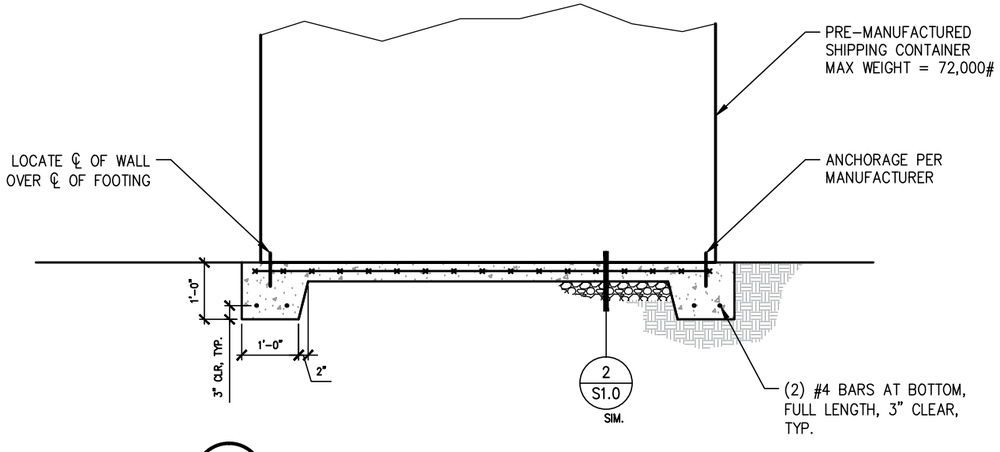
SHEET NUMBER:
S0



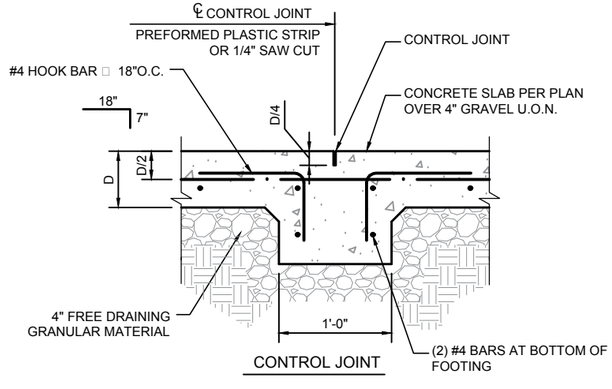
FOUNDATION NOTES:

1. OUTLINE OF SHIPPING CONTAINER STRUCTURE ABOVE, BY OTHERS.
2. 6" THICK CONCRETE SLAB w/ #4 BARS AT 18"O.C. BOTH WAY.
3. EDGE OF THICKENED SLAB EDGE, 12" FROM PERIMETER.
4. CONTROL JOINT, SEE DETAIL 2/S1.0

1 8'-0" x 40'-0" CONTAINER FOUNDATION PLAN
SCALE: 1/4" □ 1'-0"



3 FOOTING SECTION
SCALE: 3/8" □ 1'-0"



NOTES:
1. CONTROL JOINTS SHALL BE PROVIDED IN A CHECKERBOARD PATTERN AT NO MORE THAN 12'-0" ON CENTER EACH WAY, U.O.N

2 CONTROL JOINT
SCALE: NTS

PowinEnergy

REVISIONS

STAMP

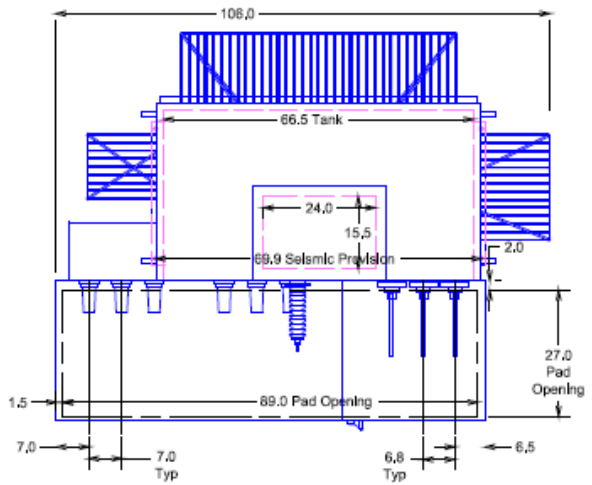
DATE: 12/14/18

PROJECT:
FOUNDATION DESIGN
SHIPPING CONTAINER
SUPPORT SYSTEM

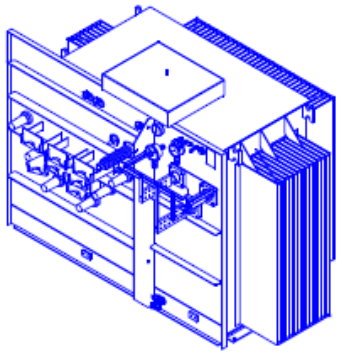
SHEET TITLE:
8' x 40'
SLAB PLAN

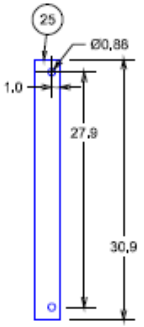
SHEET NUMBER:
S1.0

ITE	DESCRIPTION
1	Welded Cover w/ Handhole
2	Cooling Corrugate
3	Cooper Bayonet Fusing w/ Dripshield
4	Current Limiting Backup Fuses (Internal)
5	Drain Valve with Sampler
6	Ground Pad ,50-13 Tap
7	Ground Pad ,50-13 Tap
8	H0 Bushing
9	High Security Cabinet w/ Pentahead Door Bolts
10	35kV 200 Amp Loadbreak HV Bushing
11	LV Bushing Support
12	Lifting Lug
13	Liquid Temperature Gauge w/ Alarm Contacts
14	1.2kV LV Bushing w/12 Hole Spade Supported
15	Magnetic Oil Level Gauge w/ Alarm Contacts
16	Nameplate
17	One Inch Upper Press. Conn. and Fill Plug
18	Four Position T-Blade Loadbreak Switch
19	Parking Stand
20	Pressure Relief Device w/ Alarm Contacts
21	Pressure Relief Valve
22	Pressure Switch w/ Alarm Contacts
23	Pressure Vacuum Gauge
24	Schrader Valve
25	Seismic Anchor Provisions
26	Tank Base w/ Jacking and Rolling Facilities
27	5-Position Tap Changer
28	Vacuum Switch w/ Alarm Contacts
29	27.0kV (22.0kV MCOV) Arrester (Internal)

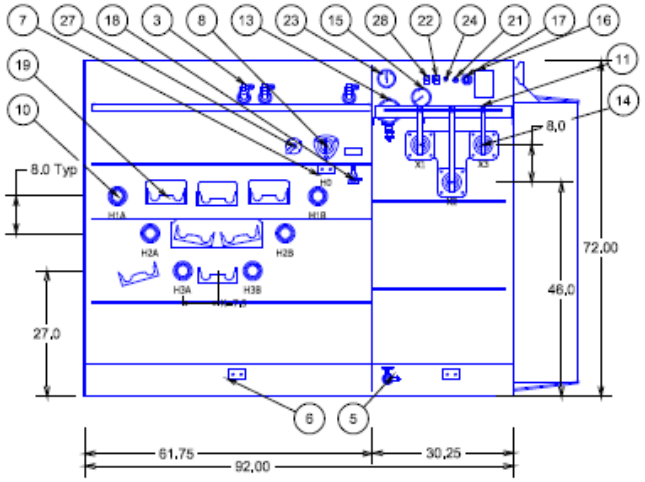


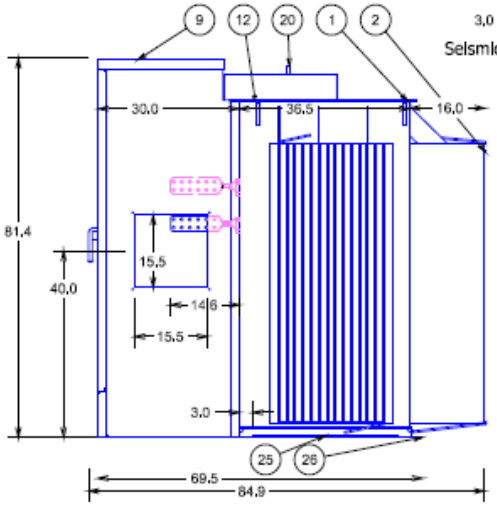
Cabinet Removed





Seismic Provision Detail





3PH Padmount Transformer 60Hz
2232.0 kVA ONAN 65 AWR Mineral Oil
HV 34500Y/19920 150 kV BIL
LV 480D 30 kV BIL
5.75 %IZ

ANSI 70 Gray Topcoat
Mild Steel Construction

Customer: DYNAPOWER CORPORATION

Project: DYNAPOWER

MATERIAL:	
ALL DIMENSIONS ARE IN INCHES [MM]	
THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.	
THIS DRAWING HAS BEEN GENERATED FROM A 3D MODEL.	

EATON
Powering Business Worldwide

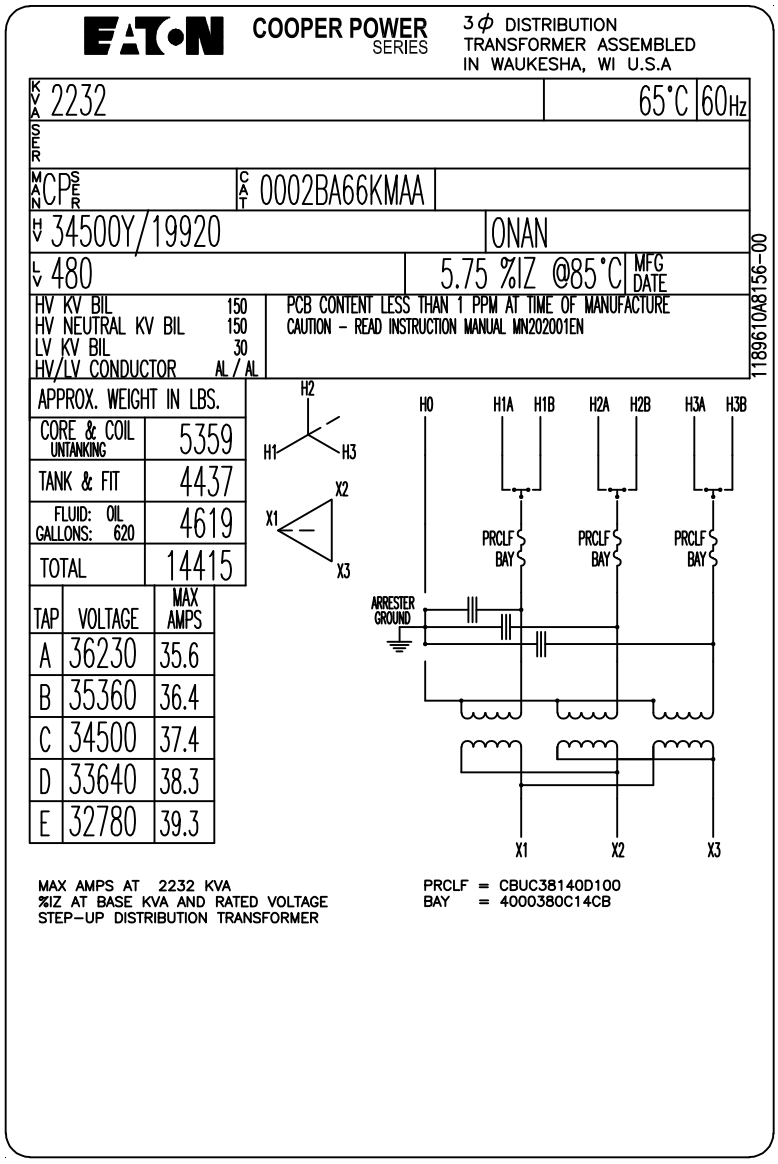
TITLE: Distribution Transformer Outline Drawing

DESC: **COOPER POWER SERIES** THREE-PHASE PAD-MOUNTED COMPARTMENTAL TYPE

DWG:	DATE:	REF:	SHEET #:	SCALE:	REV:
PTP	3/19/2018	P3D V03R09M00	1 OF 1		00

0002BA66KMAA

0002BA66KMAA
REVISIONS



NOTES: **1) ACTUAL PLATE IS A NEGATIVE OF THE ABOVE DRAWING.**
2) ACTUAL %IZ TO BE STAMPED IN AFTER TESTING.

NAMEPLATE MATERIAL: ALUMINUM

213223568,60

1189610A8156
REVISIONS

MATERIAL:

ALL DIMENSIONS ARE IN INCHES [MM]

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Powering Business Worldwide

TITLE: LASER NAMEPLATE
DESC: **COOPER POWER SERIES** 0002BA66KMAA

DWG:	DATE:	REF:	SHEET #:	SCALE:	REV:
PTP	3/19/2018		1 of 1	1=1	00

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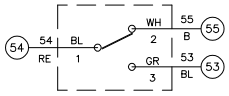
REVISIONS

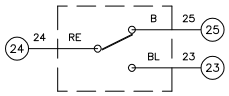
VS - 1 *



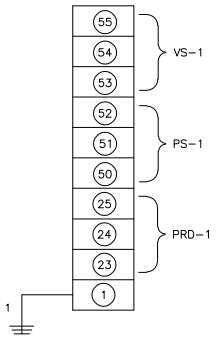
PS - 1 *



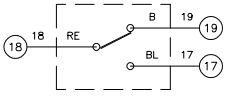
PRD - 1



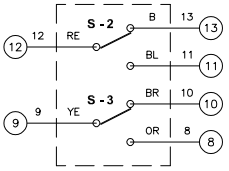
TB - 2



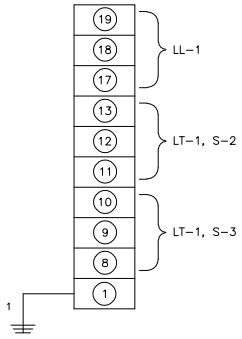
LL - 1



LT - 1



TB - 1



GAGE SWITCH SETTINGS						
DEVICE	LT 55°C AWR	LT 65°C, 55/65 AWR	LT 75°C, 55/75, 65/75 AWR	WTI 55°C AWR	WTI 65°C, 55/65 AWR	WTI 75°C, 55/75, 65/75 AWR
S-1 (FANS)	60°C	70°C	80°C	70°C	80°C	90°C
S-2 (ALARM)	80°C	90°C	100°C	110°C	120°C	130°C
S-3 (TRIP)	105°C FIXED	105°C FIXED	120°C FIXED	120°C FIXED	130°C FIXED	140°C FIXED

PS-1 PRESSURE SWITCH, GEMS PS-E (63PV)
ACTIVATES AT +6.0±0.5 PSIG (+41±3 kPa) RISING
VS-1 VACUUM SWITCH, GEMS PS-EV (63PV)
ACTIVATES AT -2.5±0.5 PSIG (-17±3 kPa) FALLING
PRD-1 PRESSURE RELIEF DEVICE (63PR)
ACTIVATES AT 10±1 PSIG (69±7 kPa) RISING
LL-1 LIQUID LEVEL GAGE (71Q)
S-1 ACTIVATES LOW LEVEL ALARM CIRCUIT
LT-1 LIQUID TEMPERATURE GAGE (26Q)
TB-(1-2) TERMINAL BLOCK, 600V, 35A

- USE COOPER CONDUCTORS ONLY, #22 - 10 AWG
- TB-(1-2) SCREW TIGHTENING TORQUE 18-20.0 IN-LB

WH - WHITE
GR - GREEN
BL - BLACK
B - BLUE
OR - ORANGE
RE - RED
BR - BROWN
YE - YELLOW

GAGE SWITCH RATINGS (AMPS)				
DEVICE	120/240VAC	48VDC	125VDC	250VDC
LT/LL/ PRD/RRR	15	1.3	.50	.25
SPC	10	2.0	.50	.25
PS/VS	5	1.0	.40	.20
WTI	15	1.3	.50	.25
TPG	1	--	--	--
LCP	3	--	--	--
U	5	2.0	2.0	N/A

NOTE: AC LOADS = INDUCTIVE P.F. 75%
DC LOADS = NON-INDUCTIVE

LEGEND

- INDICATES PREWIRED DEVICE
- INDICATES REMOTE DEVICE
- 26 — INDICATES WIRE HEAT SHRINK NUMBER LABEL
- (26) OR [26] — INDICATES TERMINAL BLOCK CONNECTION
- 26 — INDICATES INTRINSICALLY SAFE TERM BLOCK CONN
- 12 — INDICATES RELAY TERM AND #
- INDICATES SPLICE
- INDICATES NORMALLY CLOSED CONTACT (NC)
- INDICATES NORMALLY OPEN CONTACT (NO)
- INDICATES CUSTOMER CONNECTION
- POLARITY MARK
- ^ INDICATES CT SHORTING PINS - TO BE REMOVED WHEN LOAD IS CONNECTED TO CT
- * WIRE COLORS APPLICABLE ONLY WHEN USING CORD CONNECTORS TO SWITCHES

MATERIAL:

ALL DIMENSIONS ARE IN INCHES [MM]

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EATON
Powering Business Worldwide

TITLE: SCHEMATIC LT,LL,PRD,PV
DESC: **COOPER POWER SERIES** 3PH PAD

DWG:	DATE:	REF:	SHEET #:	SCALE:	REV:
PTP	04/13/15		1 of 1	1=1	00

4257572C0018

SUNNY CENTRAL
2200 / 2475 / 2500-EV / 2750-EV / 3000-EV

SC-2200-10 / SC-2475-10 / SC-2500-EV-10 / SC-2750-EV-10 / SC-3000-EV-10



Efficient

- Up to 4 inverters can be transported in one standard shipping container
- Overdimensioning up to 225% is possible
- Full power at ambient temperatures of up to 35 °C

Robust

- Intelligent air cooling system OptiCool for efficient cooling
- Suitable for outdoor use in all climatic ambient conditions worldwide

Flexible

- Conforms to all known grid requirements worldwide
- Q on demand
- Available as a single device or turnkey solution, including medium-voltage block

Easy to Use

- Improved DC connection area
- Connection area for customer equipment
- Integrated voltage support for internal and external loads

SUNNY CENTRAL 2200 / 2475 / 2500-EV / 2750-EV / 3000-EV

The new Sunny Central: more power per cubic meter

With an output of up to 3000 kVA and system voltages of 1100 V DC or 1500 V DC, the SMA central inverter allows for more efficient system design and a reduction in specific costs for PV power plants. A separate voltage supply and additional space are available for the installation of customer equipment. True 1500 V technology and the intelligent cooling system OptiCool ensure smooth operation even in extreme ambient temperature as well as a long service life of 25 years.

SUNNY CENTRAL 1000 V

Technical Data	Sunny Central 2200	Sunny Central 2475*
Input (DC)		
MPP voltage range V_{DC} (at 25 °C / at 35 °C / at 50 °C)	570 to 950 V / 800 V / 800 V	638 V to 950 V / 800 V / 800 V
Min. input voltage $V_{DC, min}$ / Start voltage $V_{DC, Start}$	545 V / 645 V	614 V / 714 V
Max. input voltage $V_{DC, max}$	1100 V	1100 V
Max. input current $I_{DC, max}$ (at 35°C / at 50°C)	3960 A / 3600 A	3960 A / 3600 A
Max. short-circuit current $I_{DC, sc}$	6400 A	6400 A
Number of DC inputs	24 double pole fused (32 single pole fused)	
Max. number of DC cables per DC input (for each polarity)	2 x 800 kcmil, 2 x 400 mm²	
Integrated zone monitoring	○	
Available DC fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A	
Output (AC)		
Nominal AC power at cos φ =1 (at 35°C / at 50°C)	2200 kVA / 2000 kVA	2475 kVA / 2250 kVA
Nominal AC power at cos φ =0.8 (at 35°C / at 50°C)	1760 kW / 1600 kW	1980 kW / 1800 kW
Nominal AC current $I_{AC, nom}$ = Max. output current $I_{AC, max}$	3300 A	3300 A
Max. total harmonic distortion	< 3% at nominal power	< 3% at nominal power
Nominal AC voltage / nominal AC voltage range[1) 8)]	385 V / 308 V to 462 V	434 V / 347 V to 521 V
AC power frequency / range	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz	
Min. short-circuit ratio at the AC terminals[9)]	> 2	
Power factor at rated power / displacement power factor adjustable[8) 10)]	● 1 / 0.8 overexcited to 0.8 underexcited ○ 1 / 0.0 overexcited to 0.0 underexcited	
Efficiency		
Max. efficiency[2)] / European efficiency[2)] / CEC efficiency[3)]	98.6% / 98.4% / 98.0%	98.6% / 98.4% / 98.0%
Protective Devices		
Input-side disconnection point	DC load break switch	
Output-side disconnection point	AC circuit breaker	
DC overvoltage protection	Surge arrester, type I	
AC overvoltage protection (optional)	Surge arrester, class I	
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III	
Ground-fault monitoring / remote ground-fault monitoring	○ / ○	
Insulation monitoring	○	
Degree of protection: electronics / air duct / connection area (as per IEC 60529)	IP65 / IP34 / IP34	
General Data		
Dimensions (W / H / D)	2780 / 2318 / 1588 mm (109.4 / 91.3 / 62.5 inch)	
Weight	< 3400 kg / < 7496 lb	
Self-consumption (max.[4)] / partial load[5)] / average[6)])	< 8100 W / < 1800 W / < 2000 W	
Self-consumption (standby)	< 300 W	
Internal auxiliary power supply	Integrated 8.4 kVA transformer	
Operating temperature range[8)]	−25°C to 60°C / −13°F to 140°F	
Noise emission[7)]	67.0 dB(A)	
Temperature range (standby)	−40°C to 60°C / −40°F to 140°F	
Temperature range (storage)	−40°C to 70°C / −40°F to 158°F	
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month/year) / 0% to 95%	
Maximum operating altitude above MSL[8)] 1000 m / 2000 m / 3000 m / 4000 m	● / ○ / ○ / ○ (earlier temperature-dependent derating)	
Fresh air consumption	6500 m³/h	
Features		
DC connection	Terminal lug on each input (without fuse)	
AC connection	With busbar system (three busbars, one per line conductor)	
Communication	Ethernet, Modbus Master, Modbus Slave	
Communication with SMA string monitor (transmission medium)	Modbus TCP / Ethernet (FO MM, Cat-5)	
Enclosure / roof color	RAL 9016 / RAL 7004	
Supply transformer for external loads	○ (2.5 kVA)	
Standards and directives complied with	CE, IEC / EN 62109-1, IEC / EN 62109-2, BDEW-MSRL, IEEE1547, UL 840 Cat. IV, Arrêté du 23/04/08	
EMC standards	IEC / EN 61000-6-4, IEC / EN 61000-6-2, EN 55022, IEC 62920, FCC Part 15 Class A, Cispr 11, DIN EN55011:2017	
Quality standards and directives complied with	VDI/VDE 2862 page 2, DIN EN ISO 9001	
● Standard features ○ Optional * preliminary		
Type designation	SC-2200-10	SC-2475-10

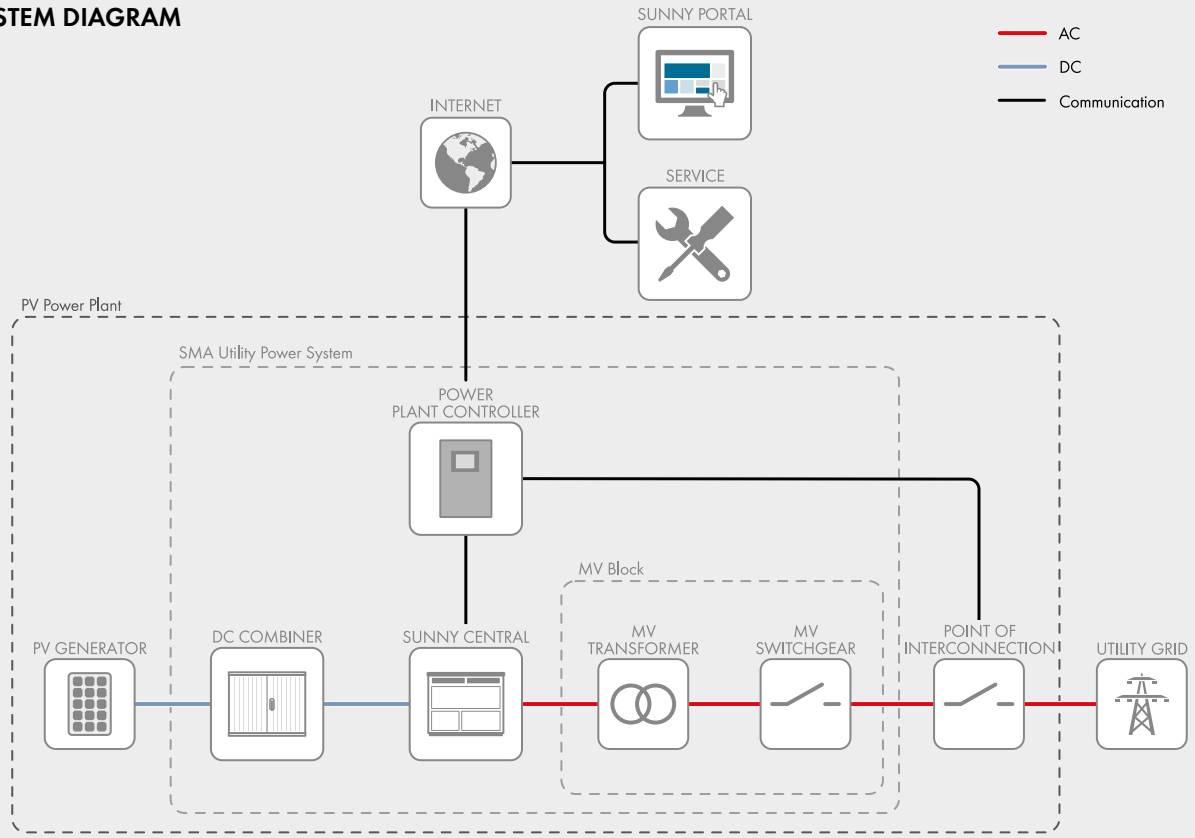
1) At nominal AC voltage, nominal AC power decreases in the same proportion
2) Efficiency measured without internal power supply
3) Efficiency measured with internal power supply
4) Self-consumption at rated operation
5) Self-consumption at < 75% Pn at 25°C
6) Self-consumption averaged out from 5% to 100% Pn at 25°C
7) Sound pressure level at a distance of 10 m
8) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.
9) A short-circuit ratio of < 2 requires a special approval from SMA
10) Depending on the DC voltage

SUNNY CENTRAL 1500 V

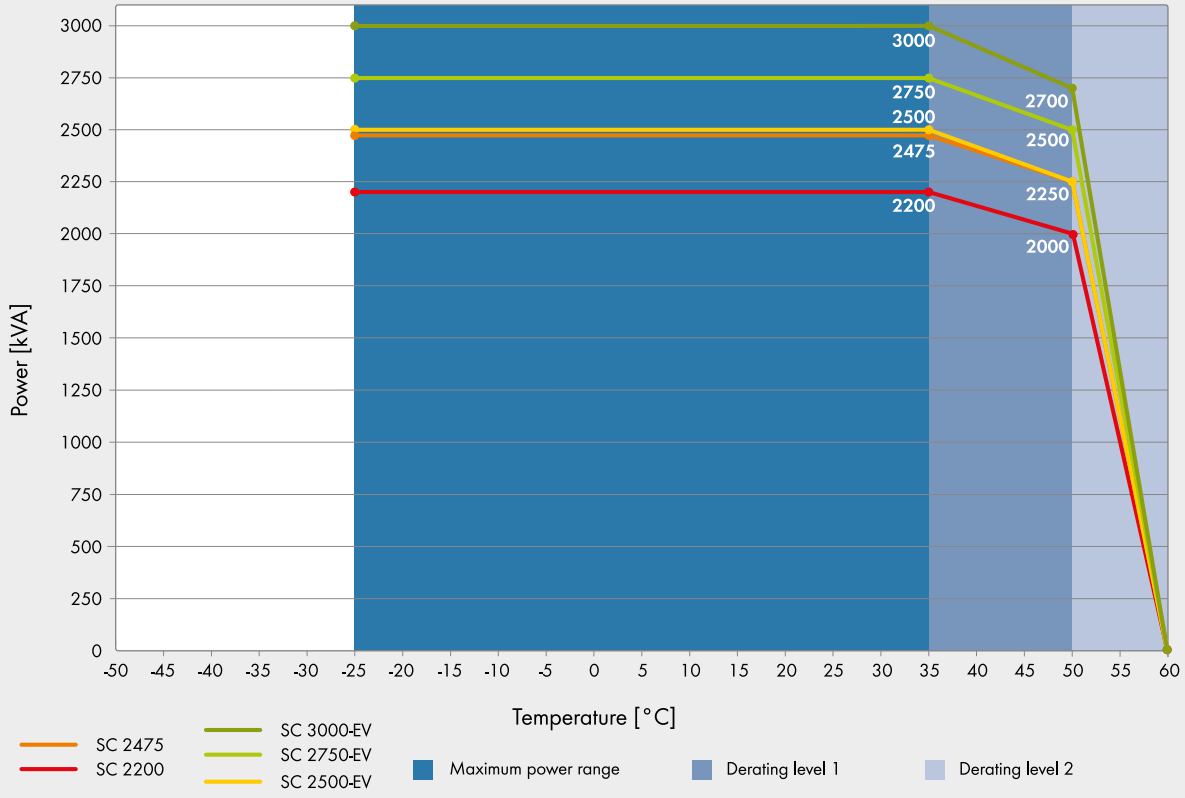
Technical Data	Sunny Central 2500-EV	Sunny Central 2750-EV	Sunny Central 3000-EV
Input (DC)			
MPP voltage range V_{DC} (at 25°C / at 35°C / at 50°C)	850 V to 1425 V / 1200 V / 1200 V	875 V to 1425 V / 1200 V / 1200 V	956 V to 1425 V / 1200 V / 1200 V
Min. input voltage $V_{DC, min}$ / Start voltage $V_{DC, Start}$	778 V / 928 V	849 V / 999 V	927 V / 1077 V
Max. input voltage $V_{DC, max}$	1500 V	1500 V	1500 V
Max. input current $I_{DC, max}$ (at 35°C / at 50°C)	3200 A / 2956 A	3200 A / 2956 A	3200 A / 2970 A
Max. short-circuit current rating	6400 A	6400 A	6400 A
Number of DC inputs	24 double pole fused (32 single pole fused) for PV		
Number of DC inputs with optional DC battery coupling	18 double pole fused (36 single pole fused) for PV and 6 double pole fused for batteries		
Max. number of DC cables per DC input (for each polarity)	2 x 800 kcmil, 2 x 400 mm²		
Integrated zone monitoring	○		
Available DC fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A		
Output (AC)			
Nominal AC power at cos φ =1 (at 35°C / at 50°C)	2500 kVA / 2250 kVA	2750 kVA / 2500 kVA	3000 kVA / 2700 kVA
Nominal AC power at cos φ =0.8 (at 35°C / at 50°C)	2000 kW / 1800 kW	2200 kW / 2000 kW	2400 kW / 2160 kW
Nominal AC current $I_{AC, nom}$ = Max. output current $I_{AC, max}$	2624 A	2646 A	2646 A
Max. total harmonic distortion	< 3% at nominal power	< 3% at nominal power	< 3% at nominal power
Nominal AC voltage / nominal AC voltage range[1) 8)]	550 V / 440 V to 660 V	600 V / 480 V to 690 V	655 V / 524 V to 721 V[9)]
AC power frequency	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz		
Min. short-circuit ratio at the AC terminals[10)]	> 2		
Power factor at rated power / displacement power factor adjustable[8) 11)]	● 1 / 0.8 overexcited to 0.8 underexcited ○ 1 / 0.0 overexcited to 0.0 underexcited		
Efficiency			
Max. efficiency[2)] / European efficiency[2)] / CEC efficiency[3)]	98.6% / 98.3% / 98.0%	98.7% / 98.5% / 98.5%	98.8% / 98.6% / 98.5%
Protective Devices			
Input-side disconnection point	DC load-break switch		
Output-side disconnection point	AC circuit breaker		
DC overvoltage protection	Surge arrester, type I		
AC overvoltage protection (optional)	Surge arrester, class I		
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III		
Ground-fault monitoring / remote ground-fault monitoring	○ / ○		
Insulation monitoring	○		
Degree of protection: electronics / air duct / connection area (as per IEC 60529)	IP65 / IP34 / IP34		
General Data			
Dimensions (W / H / D)	2780 / 2318 / 1588 mm (109.4 / 91.3 / 62.5 inch)		
Weight	< 3400 kg / < 7496 lb		
Self-consumption (max.[4)] / partial load[5)] / average[6)])	< 8100 W / < 1800 W / < 2000 W		
Self-consumption (standby)	< 370 W		
Internal auxiliary power supply	Integrated 8.4 kVA transformer		
Operating temperature range[8)]	−25 to 60°C / −13 to 140°F		
Noise emission[7)]	67.8 dB(A)		
Temperature range (standby)	−40 to 60°C / −40 to 140°F		
Temperature range (storage)	−40 to 70°C / −40 to 158°F		
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month / year) / 0 % to 95%		
Maximum operating altitude above MSL[8)] 1000 m / 2000 m / 3000 m	● / ○ / ○ (earlier temperature-dependent derating)		
Fresh air consumption	6500 m³/h		
Features			
DC connection	Terminal lug on each input (without fuse)		
AC connection	With busbar system (three busbars, one per line conductor)		
Communication	Ethernet, Modbus Master, Modbus Slave		
Communication with SMA string monitor (transmission medium)	Modbus TCP / Ethernet (FO MM, Cat-5)		
Enclosure / roof color	RAL 9016 / RAL 7004		
Supply transformer for external loads	○ (2.5 kVA)		
Standards and directives complied with	CE, IEC / EN 62109-1, IEC / EN 62109-2, BDEW-MSRL, IEEE1547, Arrêté du 23/04/08		
EMC standards	CISPR 11, CISPR 22, EN55011:2017, EN 55022, IEC/EN 61000-6-4, IEC/EN 61000-6-2, IEC 62920, FCC Part 15 Class A	CISPR 11, CISPR 22, EN55011:2017, EN 55022, IEC 62920, FCC Part 15 Class A	
Quality standards and directives complied with	VDI/VDE 2862 page 2, DIN EN ISO 9001		
● Standard features ○ Optional			
Type designation	SC-2500-EV-10	SC-2750-EV-10	SC-3000-EV-10

1) At nominal AC voltage, nominal AC power decreases in the same proportion
2) Efficiency measured without internal power supply
3) Efficiency measured with internal power supply
4) Self-consumption at rated operation
5) Self-consumption at < 75% Pn at 25°C
6) Self-consumption averaged out from 5% to 100% Pn at 35°C
7) Sound pressure level at a distance of 10 m
8) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.
9) AC voltage range can be extended to 753V for 50Hz grids only (option „Aux power supply: external" must be selected, option "housekeeping" not combinable).
10) A short-circuit ratio of < 2 requires a special approval from SMA
11) Depending on the DC voltage

SYSTEM DIAGRAM



TEMPERATURE BEHAVIOR (at 1000 m)



SC2200-3000-EV-DEN1903-V54 Printed on FSC paper. All products and services described and all technical data are subject to change, even for reasons of country-specific deviations, at any time without notice. SMA assumes no liability for typographical or other errors. For current information, please visit www.SMA-Solar.com.

Appendix E: Fidelity National Title Report and Lease

Fidelity National Title Company

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein, ***Fidelity National Title Company*** *hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a policy or policies of title insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.*

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said policy or policies are set forth in Attachment One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Attachment One. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

The policy(ies) of title insurance to be issued hereunder will be policy(ies) of Fidelity National Title Insurance Company, a Florida corporation.

Please read the exceptions shown or referred to herein and the exceptions and exclusions set forth in Attachment One of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

Fidelity National Title Insurance Company

By:

President

Countersigned By:

Authorized Officer or Agent

Attest:

Secretary

Visit Us on our Website: www.fntic.com

Fidelity National Title Company

ISSUING OFFICE: 11050 Olson Dr., Suite 200, Rancho Cordova, CA 95670

Another Prompt Delivery From Fidelity National Title Company Title Department
Where Local Experience And Expertise Make A Difference

PRELIMINARY REPORT

Amendment A

Title Officer: Cathy Clark
Email: Cathy.Clark@fnf.com
Title No.: FSSE-FTO1801473-CC

TO: FNTG Western Region Energy Services
4210 Riverwalk Parkway, Suite 200
Riverside, CA 92505
Attn: Mitch La Riva

PROPERTY ADDRESS(ES): 3025 Tierra Buena Road, Yuba City, CA

EFFECTIVE DATE: November 30, 2018 at 07:30 AM

The form of policy or policies of title insurance contemplated by this report is:

ALTA Loan Policy 2006

1. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee

2. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   Luis Garcia Valdez, a single man

3. THE LAND REFERRED TO IN THIS REPORT IS DESCRIBED AS FOLLOWS:

   SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

2011-0010391

LSI TITLE COMPANY

Recorded Official Records County of Sutter Donna M. Johnston Clerk Recorder	REC FEE	17.00
	TAX	192.50
	PCOR FEES	20.00
01:00PM 25-Jul-2011	CM Page 1 of 2	

Recording Requested By

North American Title Company
File No. 56103-1090033-11

AND WHEN RECORDED MAIL TO:
Name: Luis Garcia Valdez
Street Address 3025 Tierra Buena Road
City & State Yuba City, CA 95993

SPACE ABOVE THIS LINE FOR RECORDER'S USE

A.P. No. 10250060

GRANT DEED

The Undersigned Grantor(s) Declare(s): DOCUMENTARY TRANSFER TAX **$192.50**; CITY TRANSFER TAX $NONE;
[ ] computed on the consideration or full value of property conveyed, OR
[ ] computed on the consideration or full value less value of liens and/or encumbrances remaining at time of sale,
[X] unincorporated area; [ ] City of **Yuba City**, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, **Aurora Loan Services, LLC** hereby GRANTS to **Luis Garcia Valdez**, A SINGLE MAN

the following described property in the unincorporated of **Yuba City**, County of **Sutter**, State of **California**:

See Exhibit "ONE" attached hereto and made a part thereof

Dated: **07/07/2011**

STATE OF ~~CALIFORNIA~~ Colorado)
COUNTY OF Jefferson)ss

On July 7 2011, before me,
Diane C. Jones, Notary Public, personally
appeared Pamela J Crocker

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

I Certify under PENALTY OF PERJURY under the laws of the State of ~~California~~ Colorado that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature

This area for official notarial seal

DIANE C. JONES
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires 10/17/2012

Aurora Loan Services, LLC

By: LPS Asset Management Solutions, Inc., as Attorney in Fact

Pamela J. Crocker, Vice President

PRELIMINARY REPORT - CALIFORNIA
LEGAL DESCRIPTION

EXHIBIT "ONE"

BEGINNING AT A TOPPER MARKING THE NORTHEAST CORNER OF ECKART WILBER TRACT, IN THE COUNTY OF SUTTER, STATE OF CALIFORNIA, AS SAID TRACT IS SHOWN ON THAT PLAT MAP RECORDED IN BOOK 2 OF SURVEYS, PAGE 12, ON FILE IN THE OFFICE OF SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, AND ALSO BEING THE WEST LINE OF THE OLD SACRAMENTO NORTHERN RAILWAY; THENCE

(1) SOUTH 00 DEGREES 00' 59" WEST, A DISTANCE OF 1,680.28 FEET TO A 5/8 INCH REBAR MARKED RCE 17809 AND BEING THE TRUE POINT OF BEGINNING; THENCE

(2) NORTH 89 DEGREES 40' 45" EAST, A DISTANCE OF 80.00 FEET TO A 5/8 INCH REBAR MARKED RCE 17809; THENCE

(3) SOUTH 00 DEGREES 00' 59" WEST, A DISTANCE OF 951.33 FEET TO A 5/8 INCH REBAR MARKED RCE 11809; THENCE

(4) SOUTH 89 DEGREES 35' 33" WEST, A DISTANCE OF 73.00 FEET TO A RAILROAD SPIKE WITH CHISELED "X" AND ALSO BEING THE SOUTH 1/4 CORNER OF SECTION 5; THENCE

(5) SOUTH 89 DEGREES 20' 59" WEST, A DISTANCE OF 7.00 FEET TO A 5/8 INCH REBAR MARKED RCE 17809; THENCE

(6) NORTH 00 DEGREES 00' 59" EAST, A DISTANCE OF 951.48 FEET TO THE POINT OF BEGINNING AND CONTAINING 1.75 ACRES OF LAND, MORE OR LESS AND BEING A PORTION OF THE SOUTH 1/2 OF SECTION 5, TOWNSHIP 15 NORTH, RANGE 3 EAST, M.D.B. & M.

SUBJECT TO THOSE RIGHT-OF-WAY AND EASEMENTS FOR PACIFIC GAS & ELECTRIC COMPANY RECORDED IN BOOK 1340 OF OFFICIAL RECORDS AT PAGE 108.

END OF DOCUMENT

Description: Sutter,CA Document - Year.DocID 2011.10391 Page: 2 of 2
Order: Fsse-fto1801473 Comment:

EXHIBIT "A"

Legal Description

For APN/Parcel ID(s): 010-250-060

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE UNINCORPORATED AREA IN COUNTY OF SUTTER, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A TOPPER MARKING THE NORTHEAST CORNER OF ECKART WILBER TRACT, IN THE COUNTY OF SUTTER, STATE OF CALIFORNIA, AS SAID TRACT IS SHOWN ON THAT PLAT MAP RECORDED IN BOOK 2 OF SURVEYS, PAGE 12, ON FILE IN THE OFFICE OF SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, AND ALSO BEING THE WEST LINE OF THE OLD SACRAMENTO NORTHERN RAILWAY; THENCE

(1) SOUTH 00 DEGREES 00' 59" WEST, A DISTANCE OF 1,680.28 FEET TO A 5/8 INCH REBAR MARKED RCE 17809 AND BEING THE TRUE POINT OF BEGINNING; THENCE

(2) NORTH 89 DEGREES 40' 45" EAST, A DISTANCE OF 80.00 FEET TO A 5/8 INCH REBAR MARKED RCE 178O9;THENCE

(3) SOUTH 00 DEGREES 00' 59" WEST, A DISTANCE OF 951.33 FEET TO A 5/8 INCH REBAR MARKED RCE 11809; THENCE

(4) SOUTH 89 DEGREES 35' 33" WEST, A DISTANCE OF 73.00 FEET TO A RAILROAD SPIKE WITH CHISELED "X" AND ALSO BEING THE SOUTH 1/4 CORNER OF SECTION 5; THENCE

(5) SOUTH 89 DEGREES 20' 59" WEST, A DISTANCE OF 7.00 FEET TO A 5/8 INCH REBAR MARKED RCE 17809; THENCE

(6) NORTH 00 DEGREES 00' 59" EAST, A DISTANCE OF 951.48 FEET TO THE POINT OF BEGINNING AND CONTAINING 1.75 ACRES OF LAND, MORE OR LESS AND BEING A PORTION OF THE SOUTH 1/2 OF SECTION 5, TOWNSHIP 15 NORTH, RANGE 3 EAST, M.D.B. & M.

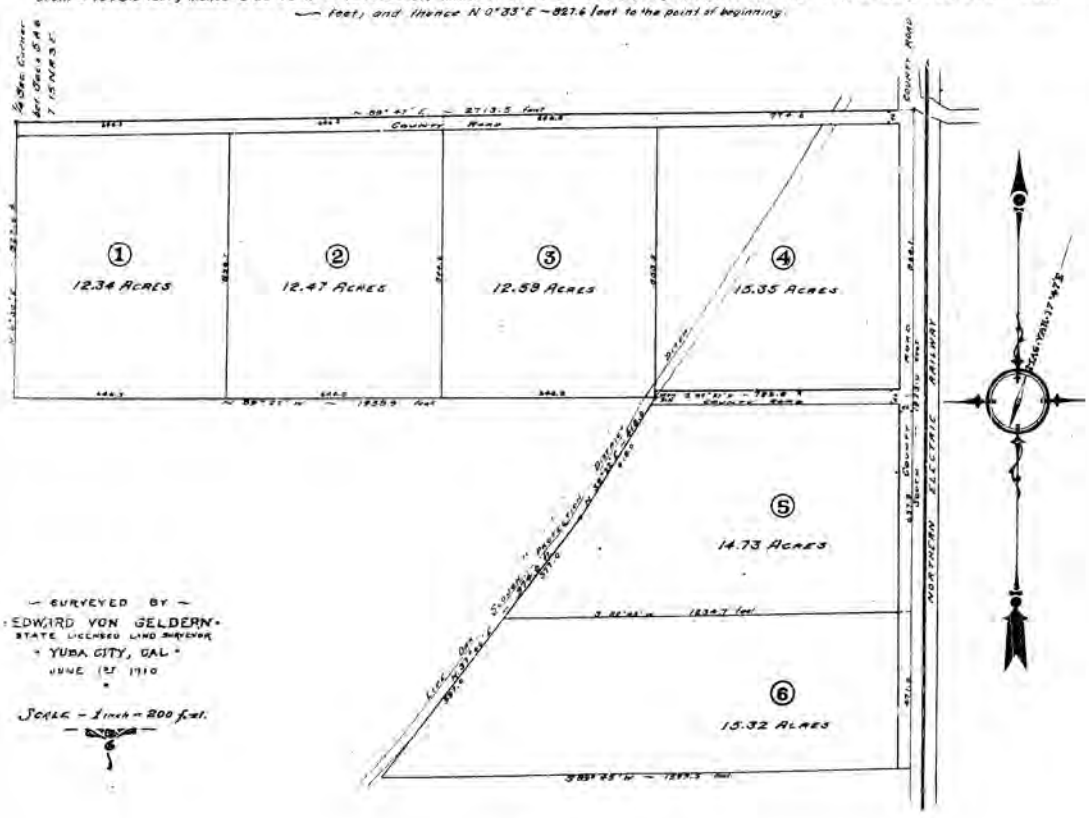
SUBJECT TO THOSE RIGHT-OF-WAY AND EASEMENTS FOR PACIFIC GAS & ELECTRIC COMPANY RECORDED IN BOOK 1340 OF OFFICIAL RECORDS AT PAGE 108.

PLAT OF THE

ECKART ~ WILBUR TRACT

BEING THAT PORTION OF SEC. 5 ~ T.15 N.R.3 E.M.D.M. ~ DESCRIBED AS FOLLOWS

Beginning at the ¼ Sec. Corner between Sections 5 & 6 ~ T.15 N.R.3 E. ~ run thence (Var 17°47'E) N 89°47'E ~ 2713.5 feet; thence South ~ 1973.0 feet; thence S 88°48'W ~ 1539.5 feet; thence N 37°40'E ~ 974.0 feet; thence N 32°52'E ~ 418.0 feet, N 89°27 W ~ 1938.9 ~ feet, and thence N 0°33'E ~ 821.6 feet to the point of beginning.



~ SURVEYED BY ~
EDWARD VON GELDERN
STATE LICENSED LAND SURVEYOR
YUBA CITY, CAL.
JUNE 1ST 1910

SCALE ~ 1 inch = 200 feet.

We hereby acknowledge this to be the official plat of the "ECKART-WILBUR TRACT" owned by us and subdivided in accordance with our instructions and we hereby dedicate to the Public as "Public Highways" the parcels of land marked thereon as County Roads, as the within map or plat of the "ECKART-WILBUR TRACT."

George R. Eckart
Loyd H. Wilbur

State of California }
County of Sutter } ss

On this 21st day of July in the year 1910 before me M.E. Sanborn a Notary Public in and for the County of Sutter, State of California personally appeared George R. Eckart & Loyd H. Wilbur, known to me to be the persons whose names are subscribed to the within instrument and they acknowledged to me that they executed the same.

In witness whereof I have hereunto set my hand and affixed my official seal in the County of Sutter, State of California, the day and year in this certificate first above written.

M.E. Sanborn
Notary Public in and for the County of Sutter
State of California

Filed and recorded at the request of E.R. Eckart on the 6th day of August A.D. 1910, at 15 minutes past 1 o'clock P.M. in Book 2 page 12 of Surveys, Sutter County Records.

S.J. Flaherty
County Auditor of
SUTTER COUNTY, State of CALIFORNIA

State of California }
County of Sutter } ss

The Board of Supervisors of Sutter County, State of California have by resolution duly and regularly passed by said Board, accepted on behalf of the Public the highways dedicated to the Public by Loyd H. Wilbur on the within map or plat of the "ECKART-WILBUR TRACT"

Clerk of the BOARD OF SUPERVISORS

S.J. Michels
Chairman of the BOARD OF SUPERVISORS

I hereby certify that this is a true and correct plat of the "ECKART-WILBUR TRACT" as same was laid down and subdivided by me. June 1st 1910

Edward von Geldern
STATE LICENSED LAND SURVEYOR

State of California }
County of Sutter } ss

I, S.J. Flaherty, County Auditor of the County of Sutter, State of California, do hereby certify that there are no liens for unpaid State County or other taxes, except taxes not yet payable against the tract or subdivision of land known as the "ECKART-WILBUR TRACT" located in the said county of Sutter.

In witness whereof I have hereunto set my hand and affixed my official seal. This 6 day of Aug in the year 1910

S.J. Flaherty
County Auditor of
SUTTER COUNTY
STATE OF CALIFORNIA.

Description: Sutter,CA Tract Map 2.12 Page: 1 of 1
Order: Fsse-fto1801473 Comment:

2115-03-1529 4221

2000-1323 (SV 7.01) 1 90 2
UPRR Abandonment Live Oak to Tierra Buena

AFTER RECORDING, RETURN TO:

4221

OFFICIAL RECORDS
SUTTER COUNTY, CA.
RECORD REQUESTED BY
FIRST AMERICAN TITLE CO.
'90 MAR 6 PM 4 07

LONNA B. SMITH
COUNTY RECORDER
BOOK 1340 PAGE 108 FEE $21.00

PACIFIC GAS AND ELECTRIC COMPANY
2740 Gateway Oaks Drive
Sacramento, California 95833
Attention: Land Dept./G. C. Hall

Location: ~~City~~/Uninc Unincorporated area

Recording Fee

Documentary Transfer Tax $ 19.25

☒ Computed on Full Value of Property Conveyed, or
☐ Computed on Full Value Less Liens & Encumbrances Remaining at Time of Sale

Judy Dixon First American Title Co. AGREEMENT
Signature of Declarant or agent determining tax

APN 9-310-06-109

THIS AGREEMENT is made by and between the CENTER LAND COMPANY, INC., a California corporation, hereinafter called first party, and PACIFIC GAS AND ELECTRIC COMPANY a California corporation, hereinafter called second party, affecting first party's certain real property acquired from UNION PACIFIC RAILROAD COMPANY, hereinafter called railroad, situate in the County of Sutter, State of California.

WHEREAS, in the course of providing essential public services, second party has, under and by virtue of written or verbal permission from railroad, installed and has been maintaining and operating electric transmission and distribution facilities and gas transmission and distribution facilities at various locations within, over, and across first party's said real property; and

WHEREAS, in order to assure continuity of service to the public, second party desires to acquire the necessary rights of way and easements to cover all of its existing electric transmission and distribution facilities and gas transmission and distribution facilities within said real property, and first party is willing to accommodate second party's requirement.

PG&E'S COPY - PLEASE RETURN BOOK 1340 PAGE 108

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 1 of 9
Order: Fsse-fto1801473 Comment:

NOW THEREFORE, in consideration of the foregoing, the parties hereto agree as follows:

First party hereby grants, to the extent of its interest, to second party, the right from time to time to excavate for, construct, operate, install, inspect, maintain, repair, reconstruct, replace, remove, and use facilities of the types hereinafter set forth in paragraphs A, B, and C, for the transmission and distribution of electric energy, for communication purposes, and for the transmission and distribution of gas, together with a right of way therefor, within the strips of land hereinafter described in paragraphs a, b, c, and d, and also ingress thereto and egress therefrom, over and across first party's said real property.

Said facilities shall consist of:

A. Such electric transmission lines consisting of towers, poles and/or other structures, wires and cables, including both underground and overhead ground wires and all necessary foundations, footings, crossarms and other appliances and fixtures for use in connection with said towers, poles and/or other structures, wires and cables, as second party deems necessary within the strips of land described as follows:

a. The strips of land of the uniform width of 40 feet, the center line of each of said strips is the center line of each of second party's existing transmission lines as now actually erected over and across said real property, the locations of which are listed and further identified on EXHIBIT "A", and approximately shown on EXHIBIT "B", said EXHIBIT "A" and EXHIBIT "B" are attached hereto and made a part hereof.

B. Such distribution poles, communication poles, aerial wires, cables, electrical conductors with associated crossarms, braces, transformers, anchors, guy wires, guy stubs, and cables, fixtures, and such underground conduits, pipes, manholes, service boxes, wires, cables and other electrical conductors; above ground marker posts, risers and service pedestals; associated concrete

PG&E'S COPY - PLEASE RETURN

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 2 of 9
Order: Fsse-fto1801473 Comment:

pads; and fixtures and appurtenances necessary to any and all thereof, as second party deems necessary within the strips of land described as follows:

b. The strips of land of the uniform width of 10 feet, the center line of each of said strips is the center line of each of second party's existing lines of poles as now actually erected over and across said real property, the locations of which are listed and further identified on EXHIBIT "A", and approximately shown on EXHIBIT "B", said EXHIBIT "A" and EXHIBIT "B" are attached hereto and made a part hereof.

C. Such pipelines (of initial or any other size) as second party shall from time to time elect for conveying gas, with necessary and proper valves, other appliances, fittings and devices for controlling electrolysis for use in connection with said pipelines, together with adequate protection therefore, as second party deems necessary within the strips of land described as follows:

c. The strips of land of the uniform width of 20 feet, the center line of each of said strips is the center line of each of second party's existing pipeline transmission facilities now actually constructed within under or across said real property, the locations of which are listed and further identified on EXHIBIT "A", and approximately shown on EXHIBIT "B", said EXHIBIT "A" and EXHIBIT "B" are attached hereto and made a part hereof.

d. The strips of land of the uniform width of 10 feet, the center line of each of said strips is the center line of each of second party's existing pipeline distribution facilities now actually constructed within under or across said real property, the locations of which are listed and further identified on EXHIBIT "A", and approximately shown on EXHIBIT "B", said EXHIBIT "A" and EXHIBIT "B" are attached hereto and made a part hereof.

Second party may further define the locations of said strips by recording a "Notice of Final Description" referring to this instrument and setting forth precise descriptions of said strips.

First party further grants to second party:

(a) the right from time to time to trim and to cut down and clear away any and all trees and brush now or hereafter on said strips and to trim and to cut down and clear away any trees on either side of said strips which now or hereafter in the opinion of second party may be a hazard to said facilities by

PG&E'S COPY - PLEASE RETURN

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 3 of 9
Order: Fsse-fto1801473 Comment:

reason of the danger of falling thereon, provided, however, that all trees which second party is hereby authorized to cut and remove, if valuable for timber or wood, shall continue to be the property of first party, but all tops, lops and brush shall be burned or removed by second party;

(b) the right to install, maintain and use gates in all fences which now cross or shall hereafter cross said strips; and

(c) the right to mark the locations of said strips by suitable markers set in the ground; provided that said markers shall be placed in fences or other locations which will not interfere with any reasonable use first party shall make of said strips.

First party shall have the right to use said strips for purposes which will not interfere with second party's full enjoyment of the rights hereby granted, provided that first party shall not erect or construct any building or other structure, or drill or operate any well, or construct any reservoir or other obstruction on said strips, or diminish or substantially add to the ground elevation within said strips.

The provisions hereof shall inure to the benefit of and bind the successors and assigns of the respective parties hereto, and all terms of this agreement shall apply to and run with the land.

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Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 4 of 9
Order: Fsse-fto1801473 Comment:

IN WITNESS WHEREOF the parties have executed these presents this 11th day of January, 1990.

CENTER LAND COMPANY, INC.

By [signature]

By _____

PACIFIC GAS AND ELECTRIC COMPANY

By [signature]
Keith J. Lamb
Regional Land Superintendent

STATE OF CALIFORNIA
COUNTY OF Sutter } ss.

On February 26, 1990, before me, the undersigned, a Notary Public in and for said State, personally appeared Dean B. Truitt, personally known to me (or proved to me on the basis of satisfactory evidence) to be the persons who executed the within instrument as Vice President and Secretary, on behalf of Center Land Company, Inc., the corporation therein named, and acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

OFFICIAL SEAL
J. A. WILSON
NOTARY PUBLIC-CALIFORNIA
Principal Office in SUTTER County
My Commission Expires July 29, 1991

Signature [signature]

(This area for official notarial seal)

3002 (6/82) — (Corporation) First American Title Insurance Company

STATE OF CALIFORNIA)
County of Sacramento) ss.

On this 11th day of January, in the year 1990, before me J. M. Vandell, a Notary Public for the State of California, personally appeared Keith J. Lamb personally known to me to be the person who executed the within instrument as Regional Land Superintendent, on behalf of Pacific Gas & Electric Company, a corporation, and acknowledged to me that the corporation executed it pursuant to its by-laws or a resolution of its board of directors.

OFFICIAL SEAL
J. M. VANDELL
NOTARY PUBLIC - CALIFORNIA
SACRAMENTO COUNTY
My Comm. Expires April 10, 1990

[signature]
Notary Public for the State of California

PG&E'S COPY - PLEASE RETURN

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 5 of 9
Order: Fsse-fto1801473 Comment:

2000-1323 (SV 7.01) 11 89 1
UPRR Abandonment Live Oak to Tierra Buena

EXHIBIT A

RR STA.	PG&E L.D. NUMBER	TYPE OF PERMIT	LEASE AUDIT NO.	TYPE OF FACILITY
845+44	2117-03-0221	Crossing		Elect. distr. pole line
858+26	2116-03-0265	Crossing		Elect. distr. pole line
874+77		Crossing		Elect. distr. pole line
954+60	2116-03-0274	Crossing		16" Gas Main. trans.
973+90	2116-03-0273	Crossing		3/4" Gas Line. distr.
975+40	2116-03-0275	Crossing		Elect. distr. pole line
989+80	2116-03-0277	Crossing		Elect. distr. pole line
	2116-03-0064	Longitudinal		Elect. distr. pole line
1154+70	2116-03-0276	Crossing	2137	Elect. distr. pole line
1183+75 to 1313+44	2121-02-0265	Longitudinal	L-604	Elect. trans. pole line
1199+34	2115-03-0976	Crossing		Elect. trans. pole line
1218+60	2115-03-1351	Crossing	L-674	Elect. trans. pole line
1226+19	2115-03-0573	Crossing		Elect. distr. pole line
1245+63	2115-03-0572	Crossing		Elect. distr. pole line
1253+80	2115-03-1022	Crossing	L-508	Elect. distr. underground
1257+24 & 1257+53	2115-03-0447	Crossing		Elect. trans. pole lines
1278+70	2115-03-1021	Crossing	L-507	Elect. distr. pole line
1280+37	2115-03-1328	Crossing		Elect. distr. pole line
1283+16		Crossing		Elect. distr. pole line

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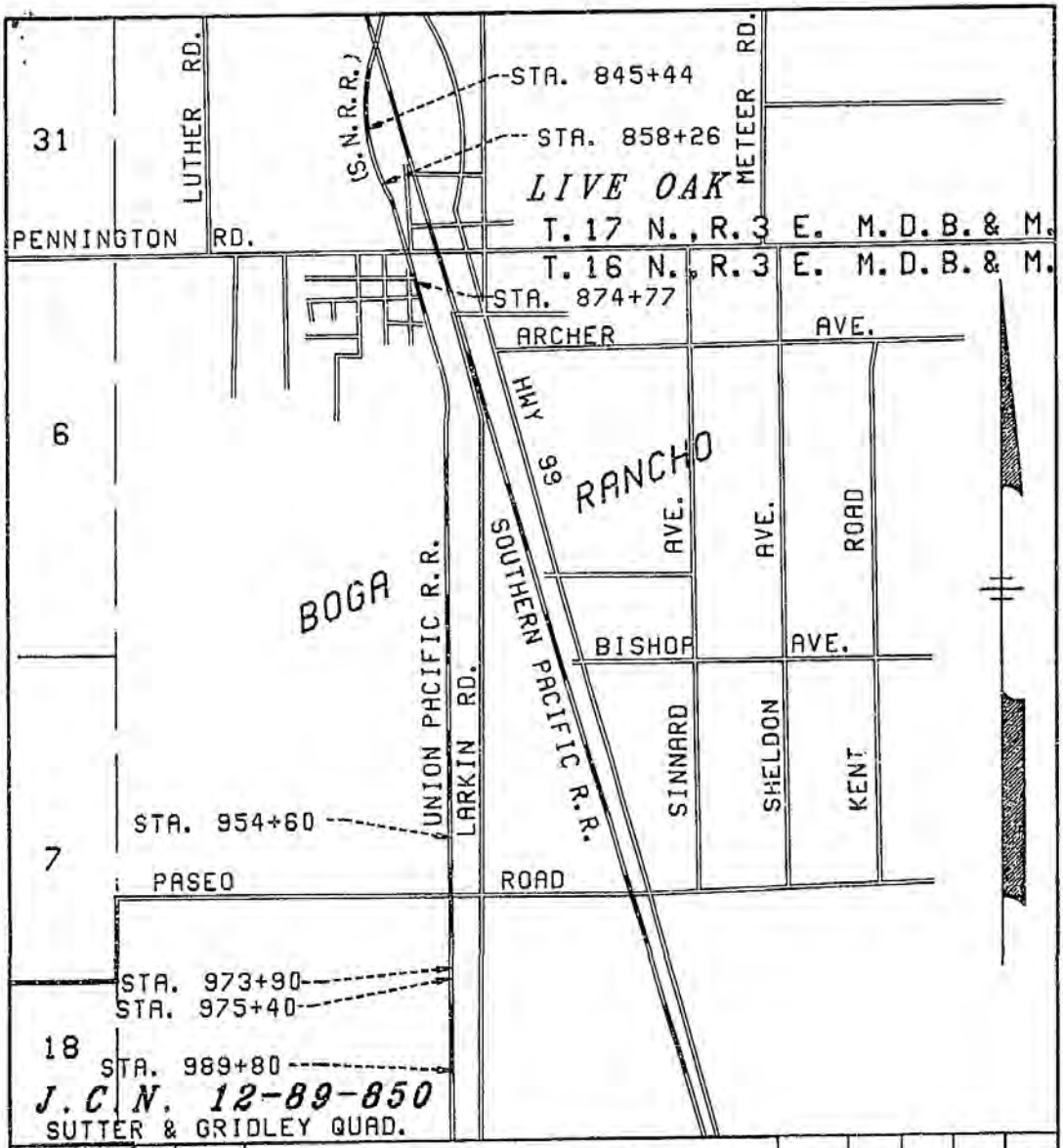
Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 6 of 9
Order: Fsse-fto1801473 Comment:

SUTTER COUNTY



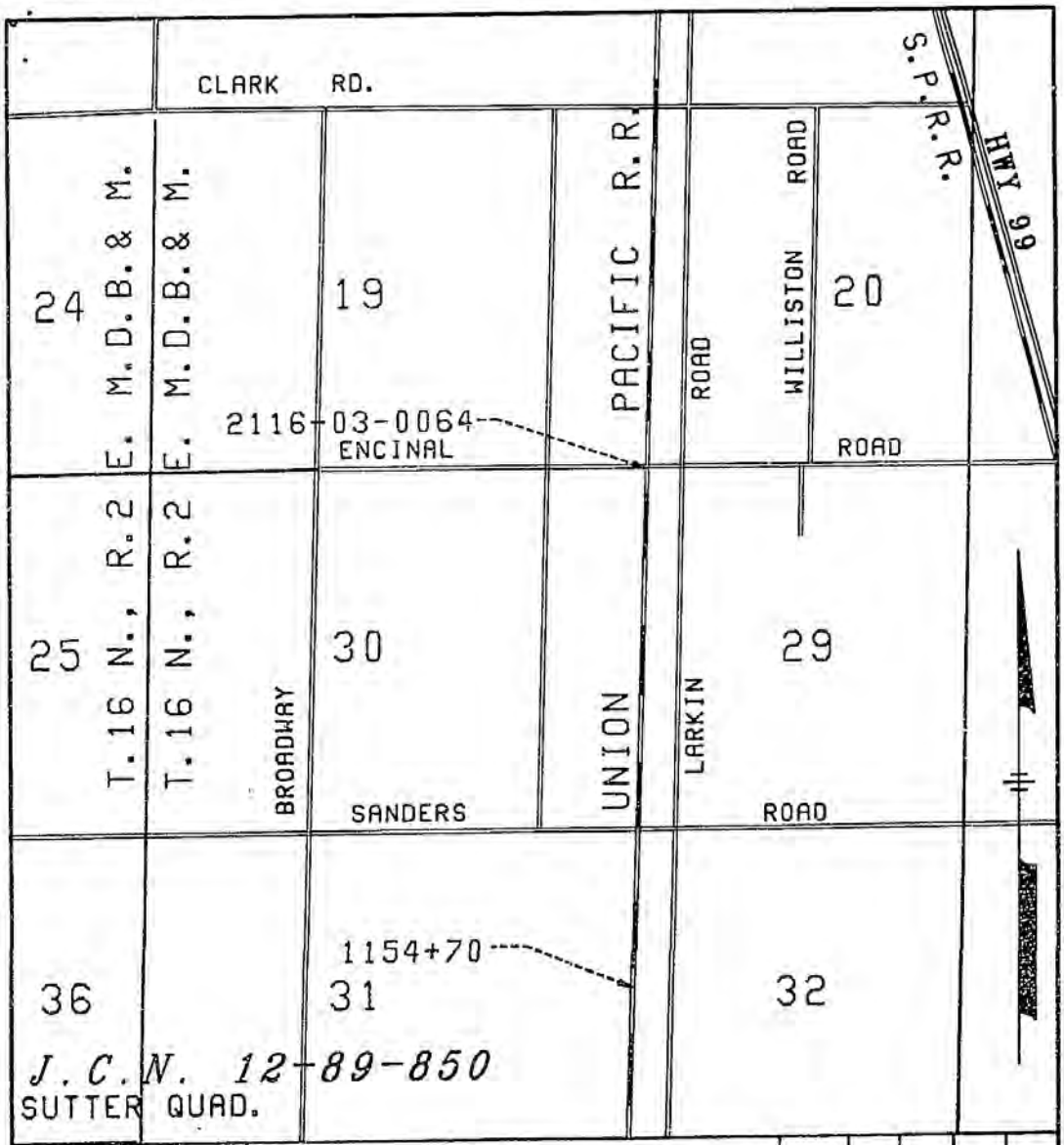
APPROVED BY									
REV.	DATE	DESCRIPTION	GM	DWN.	CHKD.	SUPV.	APVD.		

GM 473227-7	EXHIBIT "B"	B/M	
SUPV. R.D.F.		DWG. LIST	
DSGN.		SUPSDS	
DWN. WHS, SBJ	U.P.R.R. ABANDONMENT	SUPSD BY	
CHKD.	LIVE OAK TO TIERRA BUENA	SHEET NO. 1 OF 3 SHEETS	REV.
O.K. R.D.F.	VARIOUS P.G.&E. FACILITY CROSSINGS	SL-091	0
DATE 11/22/89	SCALE 1"=2000'		

PG&E'S COPY - PLEASE RETURN BOOK 1340 PAGE 114

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 7 of 9
Order: Fsse-fto1801473 Comment:

SUTTER COUNTY



APPROVED BY								
REV.	DATE	DESCRIPTION	GM	DWN.	CHKD.	SUPV.	APVD.

GM 473227-7			B/M
SUPV. R.D.F.			CHD. LIST
DSGN.			SUPSDS
DWN. W.M.S.			SUPSD BY
CHKD.			SHEET NO. 2 OF 3 SHEETS
O.K. R.D.F.			REV.
DATE 12-7-89	SCALE 1"=2000'		SL-091 0

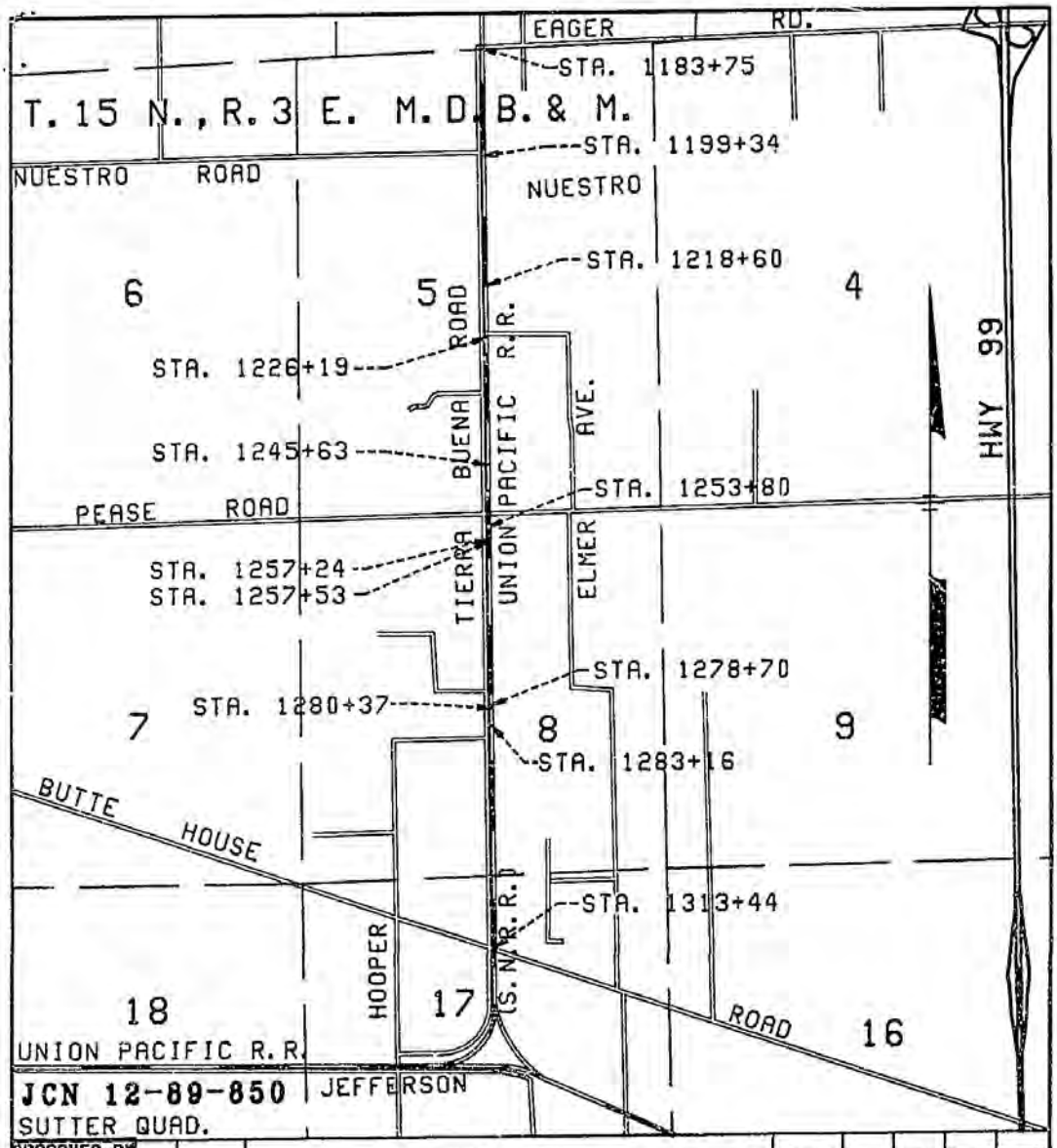
EXHIBIT "B"

U.P.R.R. ABANDONMENT

LIVE OAK TO TIERRA BUENA
SAN FRANCISCO, CALIFORNIA

PG&E'S COPY - PLEASE RETURN BOOK 1340 PAGE 115

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 8 of 9
Order: Fsse-fto1801473 Comment:



APPROVED BY	REV.	DATE	DESCRIPTION	GM	DWN.	CHKD.	SUPV.	APVD.

GM 4/33227-7	EXHIBIT "B"	B/M	
SUPV. R.D.F.		DWG. LIST	
DSGN.		SUPSDS	
DWN. WMS, SBJ	U.P.R.R. ABANDONMENT	SUPSD BY	
CHKD.	LIVE OAK TO TIERRA BUENA	SHEET NO. 3 OF 3 SHEETS	
O.K. R.D.F.	VARIOUS P.G.& E. FACILITY CROSSINGS	SL-091	REV. 0
DATE 11/21/89	SCALE 1"=2000'		

PG&E'S COPY - PLEASE RETURN BOOK 1340 PAGE 116

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 9 of 9
Order: Fsse-fto1801473 Comment:

AT THE DATE HEREOF, EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN SAID POLICY FORM WOULD BE AS FOLLOWS:

1. Property taxes, which are a lien not yet due and payable, including any assessments collected with taxes to be levied for the fiscal year 2019-2020.

2. Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

3. The lien of supplemental or escaped assessments of property taxes, if any, made pursuant to the provisions of Chapter 3.5 (commencing with Section 75) or Part 2, Chapter 3, Articles 3 and 4, respectively, of the Revenue and Taxation Code of the State of California as a result of the transfer of title to the vestee named in Schedule A or as a result of changes in ownership or new construction occurring prior to Date of Policy.

4. Water rights, claims or title to water, whether or not disclosed by the public records.

5. Easements as to any portions lying within the boundaries of existing roads, pole lines, pipe lines, ditches and/or canals.

6. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Center Land Company, Inc., a California corporation
Purpose:	Rights of way in connection with oil, gas and minerals
Recording Date:	December 6, 1989
Recording No.:	Book 1327, Page 700, of Official Records

7. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Pacific Gas and Electric Company
Purpose:	None shown
Recording Date:	March 6, 1990
Recording No.:	Book 1340, Page 108, of Official Records
Affects:	Said land

8. An unrecorded lease with certain terms, covenants, conditions and provisions set forth therein as disclosed by the document

Entitled:	Memorandum of Project Site Lease Agreement
Lessor:	Luis G Valdez
Lessee:	ORNI 34 LLC, a Delaware limited liability company
Recording Date:	June 5, 2018
Recording No.:	2018-0007469, of Official Records

9. Matters contained in that certain document

Entitled:	Memorandum of Project Site Lease Agreement
Dated:	June 5, 2018
Executed by:	Luis G Valdez and ORNI 34 LLC, a Delaware limited liability company
Recording Date:	June 5, 2018
Recording No.:	2018-0007469, of Official Records

   Reference is hereby made to said document for full particulars.

MAIL TAX STATEMENTS TO:

same as below

RECORDING REQUESTED BY:

19741

OFFICIAL RECORDS
SUTTER COUNTY, CA
RECORD REQUESTED BY
FIRST AMERICAN TITLE CO.
'89 DEC 6 AM 11 00

Original

WHEN RECORDED, MAIL TO:

19741

LONNA B SMITH
COUNTY RECORDER
BOOK 1327 PAGE 700 FEE $13.00

Center Land Company
1905 Harney #402
Omaha, NE 68102

DOCUMENTARY TRANSFER TAX $ Vested
☐ COMPUTED ON FULL VALUE OF PROPERTY CONVEYED, OR
☒ COMPUTED ON FULL VALUE LESS LIENS & ENCUMBRANCES REMAINING THEREON AT TIME OF SALE.

Signature of declarant or agent determining tax. Firm Name

380-48
9-310-06
9-310-08
9-310-09
UNINCORPORATED AREA

QUITCLAIM DEED

UNION PACIFIC RAILROAD COMPANY, a Utah corporation (which through merger with The Western Pacific Railroad Company became successor in interest to the real property described herein), Grantor, in consideration of the sum of Ten Dollars ($10.00), and other valuable consideration to it duly paid, the receipt whereof is hereby acknowledged, does hereby REMISE, RELEASE and forever QUITCLAIM unto CENTER LAND COMPANY, INC., a California corporation, Grantee, whose address is 1905 Harney Street, Suite 402, Omaha, Nebraska 68102 and unto its successors and assigns forever, all of Grantor's right, title, interest, estate, claim and demand, both at law and in equity, of, in, and to the real estate consisting of 87.141 acres more or less, situated in Sutter County, State of California, as more particularly described in Exhibit A, hereto attached and hereby made a part hereof.

RESERVING unto Grantor, its successors and assigns, forever, all minerals and all mineral rights of every kind and character now known to exist or hereafter discovered underlying the property described in Exhibit A, including without limiting the generality of the foregoing, oil and gas and rights thereto, together with the sole, exclusive and perpetual right to explore for, remove and dispose of said minerals by any means or methods suitable to the Grantor, its successors and assigns, but without entering upon or using the surface of said property, and in such manner as not to damage the surface of said property, or to interfere with the use thereof by the Grantee, its successors and assigns.

This deed is made SUBJECT to the condition that all taxes and all assessments levied upon or assessed against the said property for any period or time prior to and including the date of this deed shall be payable by the Grantor; that all taxes and all assessments levied upon or assessed against said property for any period or time after the date of this deed shall be payable by the Grantee, and that the Grantee assumes and agrees to pay, or to reimburse

7016i

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1327.700 Page: 1 of 5
Order: Fsse-fto1801473 Comment:

the Grantor for, if paid by it, all such taxes and assessments for the period or time after the date of this deed.

TOGETHER with all and singular the hereditaments and appurtenances thereunto belonging; TO HAVE AND TO HOLD, subject to the aforesaid provisions, the property described in Exhibit A unto the said Grantee and unto its successors and assigns.

IN WITNESS WHEREOF, the Grantor has caused this deed to be duly executed as of the 20th day of October, 1984.

Attest:

C. W. Saylors
Assistant Secretary

(Seal)

UNION PACIFIC RAILROAD COMPANY,

By R. K. Davidson
Executive Vice President-Operation

7016i

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1327.700 Page: 2 of 5
Order: Fsse-fto1801473 Comment:

SUTTER COUNTY, CALIFORNIA

Exhibit "A"
To
Quitclaim Deed

Union Pacific Railroad Company (Grantor)
Center Land Company, Inc. (Grantee)

All of the right of way of the abandoned Chico Branch of the Union Pacific Railroad Company lying between Milepost 149.32 and Milepost 140.28, said right of way lying in Section 32, T. 17 N., R. 3 E. of the Mount Diablo Meridian, Sections 5, 8, 17, 20, 29, and 32, T. 16 N., R. 3 E. of said Meridian and Sections 5, 8 and 17, T. 15 N., R. 3 E. of said Meridian, all in Sutter County, California, being more particularly described as follows:

All of that certain parcel of land identified as "4th Strip or Tract" in that certain Deed from Northern Realty Company to Northern Electric Railway Company (predecessor to Union Pacific Railroad Company), dated August 21, 1912, Recorded September 26, 1912, in Book 49 at page 326 of the Records of Sutter County, California.

Also, all of that certain parcel of land heretofore acquired by Northern Electric Railway Company (predecessor to Union Pacific Railroad Company) from Northern Realty Company by Deed dated July 22, 1911, Recorded February 1, 1912 in Book 46 at page 291 of the Records of Sutter County, California.

Also, all of those certain parcels of land identified as Parcel Nos. 1 and 2 in that certain Deed from Northern Realty Company to Sacramento Northern Railroad Company (predecessor to Union Pacific Railroad Company), dated November 29, 1920, recorded January 10, 1921 in Book 71 at page 297 of the Records of Sutter County, California.

Excepting and reserving from the above described parcels of land any and all portions thereof as heretofore conveyed by predecessors of Union Pacific Railroad Company by Deeds recorded in the Records of Sutter County, California, in the following Deed Books and pages:

Grantee	Recording Date	Book	Page
A.L. Stafford & T.C. Smith	June 1, 1934	47	175
Half Moon Fruit & Prod.	_____	538	261
Jerry W. Langley	July 24, 1980	994	540

Also, all of those certain parcels of land identified as Parcel Nos. 1 through 14, inclusive, in that certain Deed from David S. Edwards, et ux., to Northern Electric Company (predecessor to Union Pacific Railroad Company), dated September 10, 1907, recorded September 21, 1907 in Book 33 at page 571 of the Records of Sutter County, California.

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1327.700 Page: 3 of 5
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Also, all of that certain parcel of land heretofore acquired by Northern Realty Company (predecessor to Union Pacific Railroad Company) from George Rothney, et ux., et al., by deed dated March 27, 1912, Recorded May 10, 1912, in Book 46 at page 570 of the Records of Sutter County, California.

Also, all of that certain parcel of land identified as "2nd Parcel" in that certain Deed from Northern Realty Company to Northern Electric Railway Company (predecessor to Union Pacific Railroad Company), dated August 21, 1912, Recorded September 26, 1912, in Book 49 at page 330 of the Records of Sutter County, California.

Also, all of that certain parcel of land heretofore acquired by Northern Electric Company (predecessor to Union Pacific Railroad Company) from David S. Edwards, et ux., by Deed dated September 10, 1907, Recorded September 21, 1907, in Book 38 at page 282 of the Records of Sutter County, California.

Also, all of that certain parcel of land described first in that certain Deed from Elleta and Raymond F. Stocking to Northern Electric Company (predecessor to Union Pacific Railroad Company), dated March 21, 1906, Recorded July 9, 1906, in Book 33 at page 23 of the Records of Sutter County, California.

The above described parcels of land containing a total net area of 87.141 acres, more or less.

Office of Contracts and Real Estate
Omaha, Nebraska
September 29, 1989

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1327.700 Page: 4 of 5
Order: Fsse-fto1801473 Comment:

STATE OF NEBRASKA)
) ss.
COUNTY OF DOUGLAS)

The foregoing instrument was acknowledged before me this 20th day of October, 19 89, by Mr. R. K. Davidson, Executive Vice President-Operation of Union Pacific Railroad Company, a Utah Corporation, on behalf of the corporation.

Dennis D. Brown
Notary Public

(Seal)

GENERAL NOTARY-State of Nebraska
DENNIS D. BROWN
My Comm. Exp. Feb. 28, 1992

7016i

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1327.700 Page: 5 of 5
Order: Fsse-fto1801473 Comment:

2115-03-1529 4221

2000-1323 (SV 7.01) 1 90 2
UPRR Abandonment Live Oak to Tierra Buena

AFTER RECORDING, RETURN TO:

4221

OFFICIAL RECORDS
SUTTER COUNTY, CA.
RECORD REQUESTED BY
FIRST AMERICAN TITLE CO.
'90 MAR 6 PM 4 07

LONNA B. SMITH
COUNTY RECORDER
BOOK 1340 PAGE 108 FEE $21.00

PACIFIC GAS AND ELECTRIC COMPANY
2740 Gateway Oaks Drive
Sacramento, California 95833
Attention: Land Dept./G. C. Hall

Location: ~~City~~/Uninc Unincorporated area

Recording Fee

Documentary Transfer Tax $ 19.25

☒ Computed on Full Value of Property Conveyed, or
☐ Computed on Full Value Less Liens & Encumbrances Remaining at Time of Sale

Judy Dixon First American Title Co. AGREEMENT
Signature of Declarant or agent determining tax

APN 9-310-06-109

THIS AGREEMENT is made by and between the CENTER LAND COMPANY, INC., a California corporation, hereinafter called first party, and PACIFIC GAS AND ELECTRIC COMPANY a California corporation, hereinafter called second party, affecting first party's certain real property acquired from UNION PACIFIC RAILROAD COMPANY, hereinafter called railroad, situate in the County of Sutter, State of California.

WHEREAS, in the course of providing essential public services, second party has, under and by virtue of written or verbal permission from railroad, installed and has been maintaining and operating electric transmission and distribution facilities and gas transmission and distribution facilities at various locations within, over, and across first party's said real property; and

WHEREAS, in order to assure continuity of service to the public, second party desires to acquire the necessary rights of way and easements to cover all of its existing electric transmission and distribution facilities and gas transmission and distribution facilities within said real property, and first party is willing to accommodate second party's requirement.

PG&E'S COPY - PLEASE RETURN BOOK 1340 PAGE 108

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Order: Fsse-fto1801473 Comment:

NOW THEREFORE, in consideration of the foregoing, the parties hereto agree as follows:

First party hereby grants, to the extent of its interest, to second party, the right from time to time to excavate for, construct, operate, install, inspect, maintain, repair, reconstruct, replace, remove, and use facilities of the types hereinafter set forth in paragraphs A, B, and C, for the transmission and distribution of electric energy, for communication purposes, and for the transmission and distribution of gas, together with a right of way therefor, within the strips of land hereinafter described in paragraphs a, b, c, and d, and also ingress thereto and egress therefrom, over and across first party's said real property.

Said facilities shall consist of:

A. Such electric transmission lines consisting of towers, poles and/or other structures, wires and cables, including both underground and overhead ground wires and all necessary foundations, footings, crossarms and other appliances and fixtures for use in connection with said towers, poles and/or other structures, wires and cables, as second party deems necessary within the strips of land described as follows:

a. The strips of land of the uniform width of 40 feet, the center line of each of said strips is the center line of each of second party's existing transmission lines as now actually erected over and across said real property, the locations of which are listed and further identified on EXHIBIT "A", and approximately shown on EXHIBIT "B", said EXHIBIT "A" and EXHIBIT "B" are attached hereto and made a part hereof.

B. Such distribution poles, communication poles, aerial wires, cables, electrical conductors with associated crossarms, braces, transformers, anchors, guy wires, guy stubs, and cables, fixtures, and such underground conduits, pipes, manholes, service boxes, wires, cables and other electrical conductors; above ground marker posts, risers and service pedestals; associated concrete

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pads; and fixtures and appurtenances necessary to any and all thereof, as second party deems necessary within the strips of land described as follows:

b. The strips of land of the uniform width of 10 feet, the center line of each of said strips is the center line of each of second party's existing lines of poles as now actually erected over and across said real property, the locations of which are listed and further identified on EXHIBIT "A", and approximately shown on EXHIBIT "B", said EXHIBIT "A" and EXHIBIT "B" are attached hereto and made a part hereof.

C. Such pipelines (of initial or any other size) as second party shall from time to time elect for conveying gas, with necessary and proper valves, other appliances, fittings and devices for controlling electrolysis for use in connection with said pipelines, together with adequate protection therefore, as second party deems necessary within the strips of land described as follows:

c. The strips of land of the uniform width of 20 feet, the center line of each of said strips is the center line of each of second party's existing pipeline transmission facilities now actually constructed within under or across said real property, the locations of which are listed and further identified on EXHIBIT "A", and approximately shown on EXHIBIT "B", said EXHIBIT "A" and EXHIBIT "B" are attached hereto and made a part hereof.

d. The strips of land of the uniform width of 10 feet, the center line of each of said strips is the center line of each of second party's existing pipeline distribution facilities now actually constructed within under or across said real property, the locations of which are listed and further identified on EXHIBIT "A", and approximately shown on EXHIBIT "B", said EXHIBIT "A" and EXHIBIT "B" are attached hereto and made a part hereof.

Second party may further define the locations of said strips by recording a "Notice of Final Description" referring to this instrument and setting forth precise descriptions of said strips.

First party further grants to second party:

(a) the right from time to time to trim and to cut down and clear away any and all trees and brush now or hereafter on said strips and to trim and to cut down and clear away any trees on either side of said strips which now or hereafter in the opinion of second party may be a hazard to said facilities by

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Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 3 of 9
Order: Fsse-fto1801473 Comment:

reason of the danger of falling thereon, provided, however, that all trees which second party is hereby authorized to cut and remove, if valuable for timber or wood, shall continue to be the property of first party, but all tops, lops and brush shall be burned or removed by second party;

(b) the right to install, maintain and use gates in all fences which now cross or shall hereafter cross said strips; and

(c) the right to mark the locations of said strips by suitable markers set in the ground; provided that said markers shall be placed in fences or other locations which will not interfere with any reasonable use first party shall make of said strips.

First party shall have the right to use said strips for purposes which will not interfere with second party's full enjoyment of the rights hereby granted, provided that first party shall not erect or construct any building or other structure, or drill or operate any well, or construct any reservoir or other obstruction on said strips, or diminish or substantially add to the ground elevation within said strips.

The provisions hereof shall inure to the benefit of and bind the successors and assigns of the respective parties hereto, and all terms of this agreement shall apply to and run with the land.

PG&E'S COPY - PLEASE RETURN

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 4 of 9
Order: Fsse-fto1801473 Comment:

IN WITNESS WHEREOF the parties have executed these presents this 11th day of January, 1990.

CENTER LAND COMPANY, INC.

By [signature]

By _____

PACIFIC GAS AND ELECTRIC COMPANY

By [signature]
Keith J. Lamb
Regional Land Superintendent

STATE OF CALIFORNIA
COUNTY OF Sutter } ss.

On February 26, 1990, before me, the undersigned, a Notary Public in and for said State, personally appeared Dean B. Truitt, personally known to me (or proved to me on the basis of satisfactory evidence) to be the persons who executed the within instrument as Vice President and Secretary, on behalf of Center Land Company, Inc., the corporation therein named, and acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

OFFICIAL SEAL
J. A. WILSON
NOTARY PUBLIC-CALIFORNIA
Principal Office in SUTTER County
My Commission Expires July 29, 1991

Signature [signature]

(This area for official notarial seal)

3002 (6/82) — (Corporation) First American Title Insurance Company

STATE OF CALIFORNIA)
County of Sacramento) ss.

On this 11th day of January, in the year 1990, before me J. M. Vandell, a Notary Public for the State of California, personally appeared Keith J. Lamb personally known to me to be the person who executed the within instrument as Regional Land Superintendent, on behalf of Pacific Gas & Electric Company, a corporation, and acknowledged to me that the corporation executed it pursuant to its by-laws or a resolution of its board of directors.

OFFICIAL SEAL
J. M. VANDELL
NOTARY PUBLIC - CALIFORNIA
SACRAMENTO COUNTY
My Comm. Expires April 10, 1990

[signature]
Notary Public for the State of California

PG&E'S COPY - PLEASE RETURN

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 5 of 9
Order: Fsse-fto1801473 Comment:

2000-1323 (SV 7.01) 11 89 1
UPRR Abandonment Live Oak to Tierra Buena

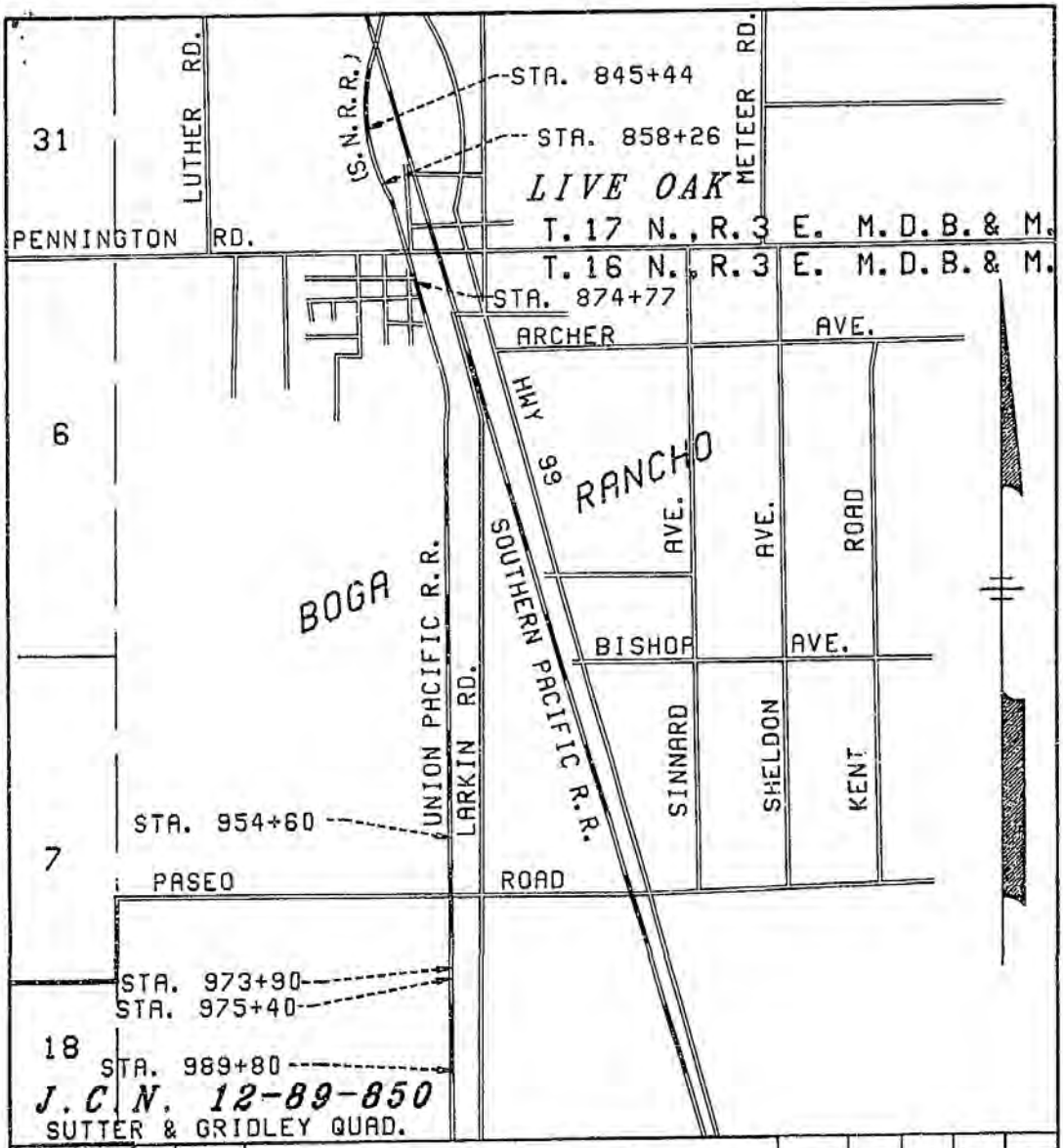
EXHIBIT A

RR STA.	PG&E L.D. NUMBER	TYPE OF PERMIT	LEASE AUDIT NO.	TYPE OF FACILITY
845+44	2117-03-0221	Crossing		Elect. distr. pole line
858+26	2116-03-0265	Crossing		Elect. distr. pole line
874+77		Crossing		Elect. distr. pole line
954+60	2116-03-0274	Crossing		16" Gas Main. trans.
973+90	2116-03-0273	Crossing		3/4" Gas Line. distr.
975+40	2116-03-0275	Crossing		Elect. distr. pole line
989+80	2116-03-0277	Crossing		Elect. distr. pole line
	2116-03-0064	Longitudinal		Elect. distr. pole line
1154+70	2116-03-0276	Crossing	2137	Elect. distr. pole line
1183+75 to 1313+44	2121-02-0265	Longitudinal	L-604	Elect. trans. pole line
1199+34	2115-03-0976	Crossing		Elect. trans. pole line
1218+60	2115-03-1351	Crossing	L-674	Elect. trans. pole line
1226+19	2115-03-0573	Crossing		Elect. distr. pole line
1245+63	2115-03-0572	Crossing		Elect. distr. pole line
1253+80	2115-03-1022	Crossing	L-508	Elect. distr. underground
1257+24 & 1257+53	2115-03-0447	Crossing		Elect. trans. pole lines
1278+70	2115-03-1021	Crossing	L-507	Elect. distr. pole line
1280+37	2115-03-1328	Crossing		Elect. distr. pole line
1283+16		Crossing		Elect. distr. pole line

PG&E'S COPY - PLEASE RETURN

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 6 of 9
Order: Fsse-fto1801473 Comment:

SUTTER COUNTY



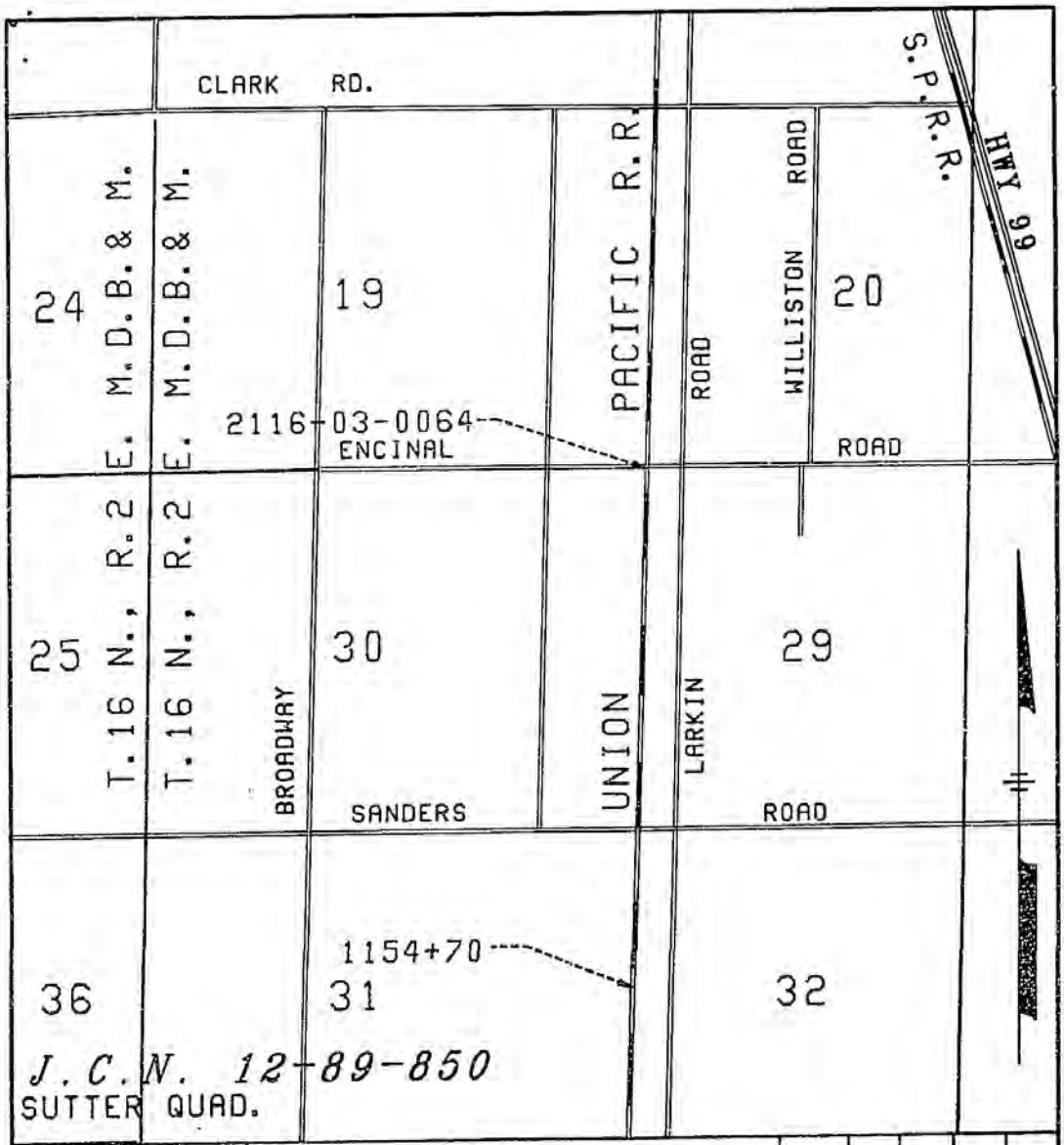
APPROVED BY									
REV.	DATE	DESCRIPTION	GM	DWN.	CHKD.	SUPV.	APVD.		

GM 473227-7	EXHIBIT "B"	B/M	
SUPV. R.D.F.		DWG. LIST	
DSGN.		SUPSDS	
DWN. WHS, SBJ	U.P.R.R. ABANDONMENT	SUPSD BY	
CHKD.	LIVE OAK TO TIERRA BUENA	SHEET NO. 1 OF 3 SHEETS	REV.
O.K. R.D.F.	VARIOUS P.G.&E. FACILITY CROSSINGS	SL-091	0
DATE 11/22/89	SCALE 1"=2000'		

PG&E'S COPY - PLEASE RETURN BOOK 1340 PAGE 114

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 7 of 9
Order: Fsse-fto1801473 Comment:

SUTTER COUNTY



APPROVED BY								
REV.	DATE	DESCRIPTION	GM	DWN.	CHKD.	SUPV.	APVD.

GM 473227-7			B/M
SUPV. R.D.F.			CHD. LIST
DSGN.			SUPSDS
DWN. W.M.S.			SUPSD BY
CHKD.			SHEET NO. 2 OF 3 SHEETS
O.K. R.D.F.			REV.
DATE 12-7-89	SCALE 1"=2000'		SL-091 0

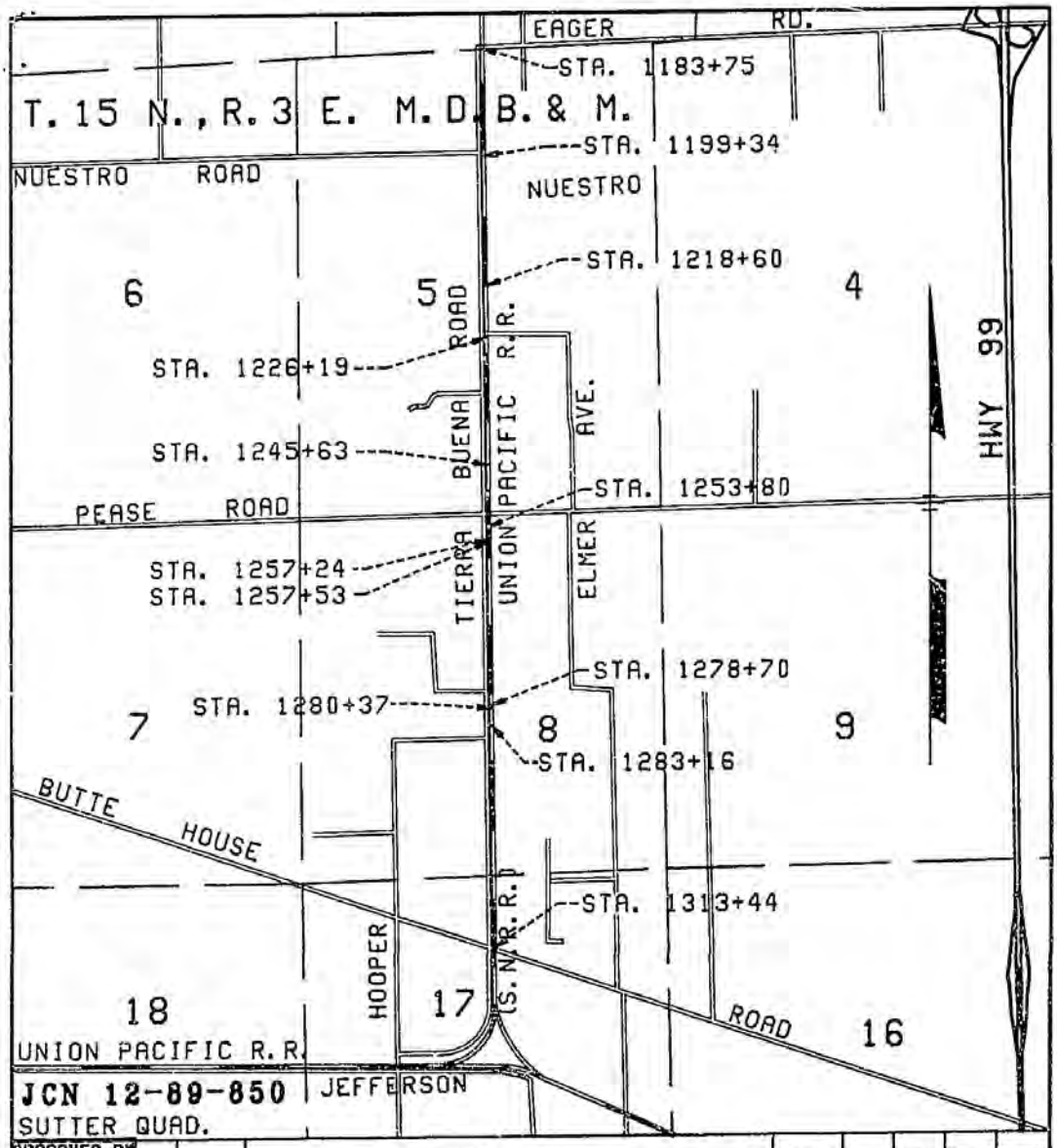
EXHIBIT "B"

U.P.R.R. ABANDONMENT

LIVE OAK TO TIERRA BUENA
SAN FRANCISCO, CALIFORNIA

PG&E'S COPY - PLEASE RETURN BOOK 1340 PAGE 115

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 8 of 9
Order: Fsse-fto1801473 Comment:



APPROVED BY	REV.	DATE	DESCRIPTION	GM	DWN.	CHKD.	SUPV.	APVD.

GM 4/33227-7	EXHIBIT "B"	B/M	
SUPV. R.D.F.		DWG. LIST	
DSGN.		SUPSDS	
DWN. WMS, SBJ	U.P.R.R. ABANDONMENT	SUPSD BY	
CHKD.	LIVE OAK TO TIERRA BUENA	SHEET NO. 3 OF 3 SHEETS	
O.K. R.D.F.	VARIOUS P.G.& E. FACILITY CROSSINGS	SL-091	REV. 0
DATE 11/21/89	SCALE 1"=2000'		

PG&E'S COPY - PLEASE RETURN BOOK 1340 PAGE 116

Description: Sutter,CA Document - Book.Page[Up to 01/95] 1340.108 Page: 9 of 9
Order: Fsse-fto1801473 Comment:

2018-0007469

Recorded
Official Records
County of
Sutter
Donna M. Johnston
Clerk Recorder

08:35AM 05-Jun-2018

REC FEE 34.00
CC1 - CONFORME 0.00
HOUSING FEE 75.00

GG
Page 1 of 7

APN# 10-250-06

Recording Requested by:

Name: ORNI 34, LLC
Address: 6225 Neil Road
City/State/Zip: Reno, Nevada 89511

When Recorded Mail to:

Name: ORNI 34, LLC
Address: 6225 Neil Road
City/State/Zip: Reno, Nevada 89511

Memorandum of Project Site Lease Agreement
(Title of Document)
Please complete Affirmation Statement below:

X I the undersigned hereby affirm that the attached document, including any exhibits, hereby submitted for recording does not contain the personal information of any person or persons.

Signature Title

Colin Cormier
Printed Name

8

Recording Requested By and
When Recorded Mail To:

ORNI 34 LLC
6225 Neil Road
Reno, Nevada 89511-1136
Attn: CEO

Assessor's Parcel Number: APN 10-250-06

The undersigned declare that the documentary transfer tax is $__None__, and is computed on the full value of the interest or property conveyed.

The real property is located in an unincorporated area of the County of Sutter, State of California.

MEMORANDUM OF PROJECT SITE LEASE AGREEMENT

THIS MEMORANDUM OF PROJECT SITE LEASE AGREEMENT (this "Memorandum") is made and entered into as of March 7, 2018 (the "Effective Date"), by and between Luis G Valdez. ("Lessor") and ORNI 34 LLC, a Delaware limited liability company ("Lessee"), with reference to the following facts:

1. The Property. Lessor owns that certain real property situate in the County of Sutter, State of California, described on Exhibit "A" attached hereto and incorporated herein by this reference (the "Property").

2. The Site. Located within the Property is an approximately 10,000 square foot area described on Exhibit "B" attached hereto and incorporated herein by this reference (the "Site").

3. Lease. Pursuant to that certain Project Site Lease Agreement by and between Lessor and Lessee dated of even date herewith (the "Agreement"), for valuable consideration, Lessor has leased the Site to Lessee and has agreed to grant certain easement rights to Lessee on, over, and through portions of the Property, all as more thoroughly described in the Agreement.

4. Term. The Agreement commenced on the Effective Date and shall continue in full force and effect for a period of twenty-four (24) months (the "Initial Term"); provided, that Lessee has the right to extend the Initial Term for an additional three (3) years (the "Extended Initial Term") by providing written notice to Lessor no later than thirty (30) days prior to the expiration of the Initial Term; and further provided, that, if, prior to the expiration of the Initial Term (or the Extended Initial Term, as applicable), Lessee provides the Development Term Notice to Lessor, then the Agreement shall continue in full force and effect for an additional period of two (2) years beginning on the date the Development Term Notice is provided to Lessor; and further provided, that the term of the Agreement shall continue for a period of ten (10) additional years after the Commercial Operations Date (the "Operational Term");

and further provided, that Lessee may, at its option, extend the Agreement for five (5) additional years by providing written notice to Lessor no later than thirty (30) days prior to the expiration of the Operational Term. Notwithstanding anything to the contrary in this Memorandum or the Agreement, Lessee may terminate the Agreement in its sole and absolute discretion: (i) upon ten (10) days' prior written notice to Lessor during the Initial Term; (ii) upon thirty (30) days' prior written notice to Lessor during the Development Term; and (iii) upon sixty (60) days' prior written notice to Lessor during the Operational Term.

5. Incorporation of Lease; Interpretation. Reference is hereby made to executed copies of the Agreement in possession of Lessee and Lessor, respectively, for all of the terms and provisions thereof, and such terms and provisions of the Agreement are hereby incorporated by this reference. This Memorandum is prepared for the purpose of providing public notice of the Agreement, and it in no way modifies the terms or provisions of the Agreement. If there is any inconsistency between this Memorandum and the Agreement, the terms and provisions of the Agreement shall control. Capitalized terms used but not specifically defined herein shall have the meanings ascribed to them in this Agreement.

6. Counterparts. This Memorandum may be executed in any number of counterparts, and all such counterparts shall be deemed to constitute a single Memorandum.

IN WITNESS WHEREOF, Lessee and Lessor have executed this Memorandum as of the date first set forth above.

LESSEE:

ORNI 34 LLC
a Delaware limited liability company

By: Ormat Nevada Inc.
Managing Member

Connie Stechman

Connie Stechman
Secretary

LESSOR:

Luis G Valdez

Luis Garcia Valdez

[Notary pages follow.]

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of SUTTER)

On 03/07/2018 before me, Alfredo L Madera (NOTARY)
(insert name and title of the officer)

personally appeared LUIS GARCIA VALDEZ,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

ALFREDO L. MADERA
Notary Public – California
Sutter County
Commission # 2210923
My Comm. Expires Aug 21, 2021

Signature Alfredo L. Madera (Seal)

STATE OF NEVADA)
)
COUNTY OF WASHOE)

This instrument was acknowledged before me on March 2, 2018, by Connie Stechman as Secretary of Ormat Nevada Inc. Managing Member of ORNI 34 LLC.

Laura Oltman
Notary Public
My Commission Expires: Mar 22, 2019

LAURA OLTMAN
Notary Public - State of Nevada
Appointment Recorded in Washoe County
No: 07-3716-2 - Expires March 22, 2019

Exhibit "A"

All that certain real property situate in the County of Sutter, State of California, described as follows:

Beginning at a topper marking the Northeast corner of Eckart Wilber Tract, in the county of Sutter, State of California, as said tract is shown on that Plat Map recorded in Book 2 of Surveys, Page 12, on file in the office of the Sutter County Records, Sutter County, California, and also being the west line of the Old Sacramento Northern Railway; thence

(1) South 00 degrees 00' 59" West, a distance of 1,680.28 feet to a 5/8 inch rebar marked RCE 17809 and being the true point of beginning; thence
(2) North 89 Degrees 40' 45" East, a distance of 80.00 feet to a 5/8 inch rebar marked RCE 17809; thence
(3) South 00 degrees 59" West, a distance of 951.33 feet to a 5/8 inch rebar marked RCE 11809; thence
(4) South 89 degrees 35' 33" West, a distance of 73.00 feet to a railroad spike with chiseled "X" and also being the South ¼ corner of Section 5; thence
(5) South 89 degrees 20' 59" West, a distance of 7.00 feet to a 5/8 inch rebar marked RCE 17809; thence
(6) North 00 degrees 00' 59" East, a distance of 951.48 feet to the point of beginning and containing 1.75 acres of land, more or less and being a portion of the South 1/2 of Section 5, Township 15 North, Range 3 East, M.D.B. &M.

Subject to those right-of-way and easements for pacific Gas & Electric Company recorded in book 1340 of Official records at Page 108.

APN: 10-250-06

Exhibit "A"

LEGAL DESCRIPTION OF THE PROPERTY

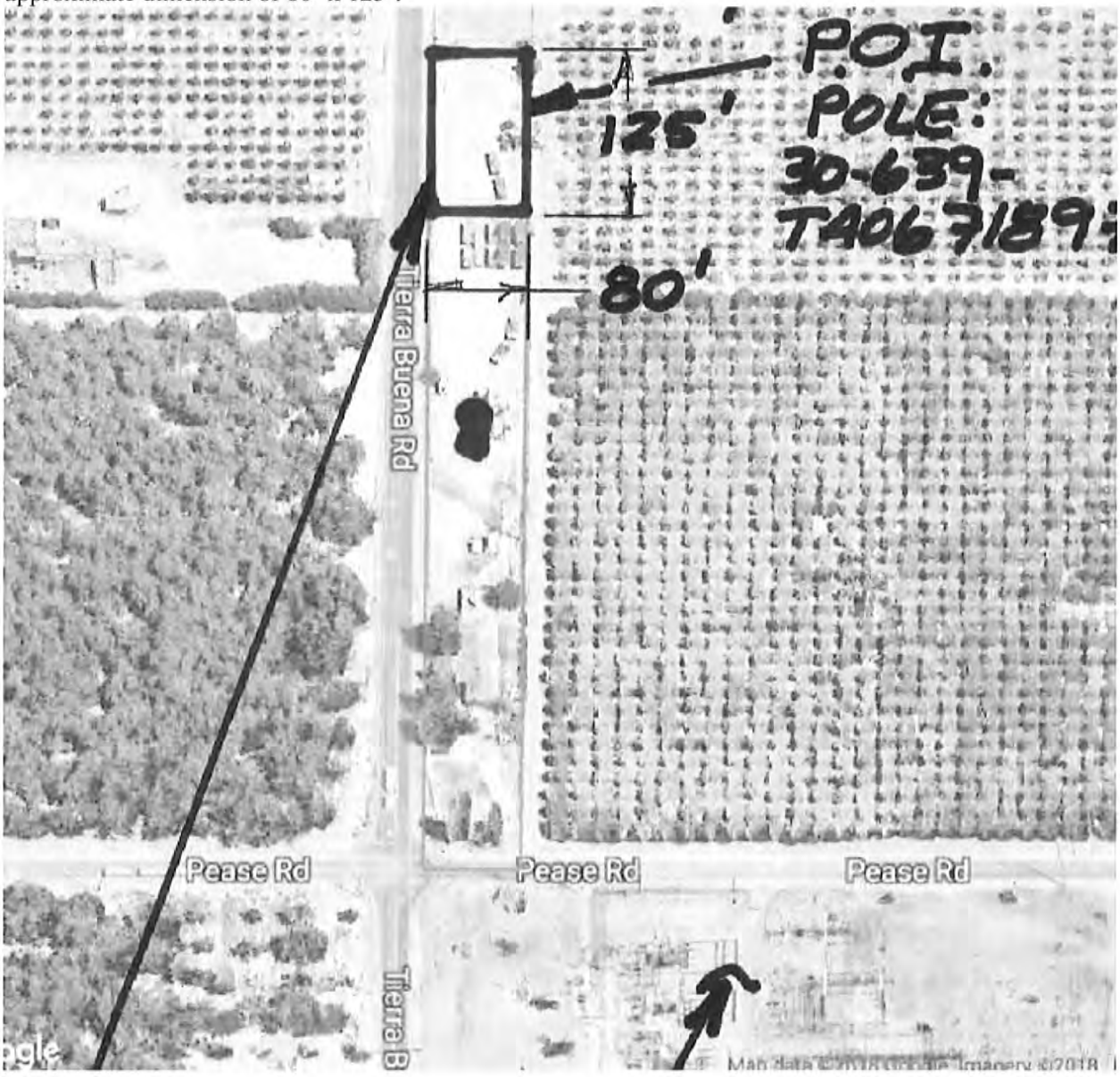
The property situated in the County of Sutter, State of California, with the APN of: 10-250-060, a street address of 3025 Tierra Buena Road, Yuba City, CA 95993. , and a census tract of 0506.03, as the same was referenced in a deed recorded as Document Number 2011-0010391 in the Official Records of Sutter County, California.

END OF DOCUMENT

EXHIBIT "B"

DEPICTION OF THE SITE

Generally described by the diagram below; the Site will be limited to 10,000 square feet with an approximate dimension of 80' x 125'.



EXCEPTIONS
(continued)

The present ownership of the leasehold created by said lease and other matters affecting the interest of the lessee are not shown herein.

10. The search did not disclose any open mortgages or deeds of trust of record, therefore the Company reserves the right to require further evidence to confirm that the property is unencumbered, and further reserves the right to make additional requirements or add additional items or exceptions upon receipt of the requested evidence.

11. Any rights of the parties in possession of a portion of, or all of, said Land, which rights are not disclosed by the public records.

    The Company will require, for review, a full and complete copy of any unrecorded agreement, contract, license and/or lease, together with all supplements, assignments and amendments thereto, before issuing any policy of title insurance without excepting this item from coverage.

    The Company reserves the right to except additional items and/or make additional requirements after reviewing said documents.

12. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other matters which a correct survey would disclose and which are not shown by the public records.

13. We find various Liens and Judgments that are of record against persons with similar or the same name as that of the vestee(s) shown herein. In order to complete this report, the Company requires a Statement of Information to be provided for the following vestee(s), which may allow and assist in the elimination of some or all of the said liens and judgments. After review of the requested Statement of Information, the Company reserves the right to add additional items or make further requirements prior to the issuance of any Policy of Title Insurance.

    Vestee(s): Luis Garcia Valdez, a single man

    NOTE: The Statement of Information is necessary to complete the search and examination of title under this order. Any title search includes matters that are indexed by name only, and having a completed Statement of Information assists the Company in the elimination of certain matters which appear to involve the parties but in fact affect another party with the same or similar name. Be assured that the Statement of Information is essential and will be kept strictly confidential to this file.

14. The Company will require that an Owner's Affidavit be completed by the party(s) named below before the issuance of any policy of title insurance.

    Party(ies): Luis Garcia Valdez, a single man

    The Company reserves the right to add additional items or make further requirements after review of the requested Affidavit.

END OF EXCEPTIONS

NOTES

Note 1. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

Note 2. Note: The Company is not aware of any matters which would cause it to decline to attach CLTA Endorsement Form 116 indicating that there is located on said Land Commercial Property, known as 3025 Tierra Buena Road, Yuba City, CA, to an Extended Coverage Loan Policy.

Note 3. Note: Property taxes for the fiscal year shown below are PAID. For proration purposes the amounts were:

Tax ID No.:	10-250-060
Fiscal Year:	2018-2019
1st Installment:	$1,096.45
2nd Installment:	$1,096.45
Exemption:	$7,000.00
Land:	$44,156.00
Improvements:	$149,028.00
Code Area:	51-121
Bill No.:	04717

Note 4. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

Note 5. Note: The charge for a policy of title insurance, when issued through this title order, will be based on the Basic Title Insurance Rate.

Note 6. Your application for title insurance was placed by reference to only a street address or tax identification number. Based on our records, we believe that the legal description in this report covers the parcel(s) of Land that you requested. If the legal description is incorrect, the seller/borrower must notify the Company and/or the settlement company in order to prevent errors and to be certain that the correct parcel(s) of Land will appear on any documents to be recorded in connection with this transaction and on the policy of title insurance.

Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

Note 7. Pursuant to Government Code Section 27388.1, as amended and effective as of 1-1-2018, a Documentary Transfer Tax (DTT) Affidavit may be required to be completed and submitted with each document when DTT is being paid or when an exemption is being claimed from paying the tax. If a governmental agency is a party to the document, the form will not be required. DTT Affidavits may be available at a Tax Assessor-County Clerk-Recorder.

Note 8. Any documents being executed in conjunction with this transaction must be signed in the presence of an authorized Company employee, an authorized employee of an agent, an authorized employee of the insured lender, or by using Bancserv or other approved third-party service. If the above requirements cannot be met, please call the company at the number provided in this report.

Tax Search

TITLEPOINT

Sutter, California
Searched: 10-250-060
Order: FSSE-FTO1801473

Company: FIDELITY NATIONAL TITLE | NORCAL CPF | 01 | CRN: 00036-00052

Tax Year: 2018-2019
Tax Cover: 12/07/2018
Searched By: MARIA RAMIREZ-JACK
Searched On: 12/12/2018 12:52 PM

APN:	**10-250-060**
Described As:	
Address:	**3025 TIERRA BUENA RD**
City:	**UNINCORPORATED - COUNTY OF SUTTER**
Billing Address:	**3025 TIERRA BUENA RD YUBA CITY CA 95993**
Assessed Owner(s):	**VALDEZ LUIS G**
Search As:	**Tax ID 10-250 Parcel 60**

Tax Rate Area:	**51-121**	**Value**		Conveyance Date:	
		Land:	**44,156.00**	Conveying Instrument:	
Use Code:	**221**	Improvements:	**149,028.00**	Date Transfer Acquired:	
HOMESITE UNDER 15 W/(1) SFR		Personal Property:		Vesting:	
Region Code:		Fixtures:		Year Built:	
Flood Zone:		Inventory:		Year Last Modified:	
Zoning Code:					
Taxability Code:		**Exemptions**			
		Homeowner:	**7,000.00**	**Square Footage**	
Tax Rate:	**1.115149 %**	Inventory:		Land:	**76230**
		Personal Property:		Improvements:	
		Religious:			
Bill #:	**04717**	All Other:		Tax Defaulted:	
Issue Date:		Net Taxable Value:	**186,184.00**	Total Tax:	**2,192.90**

Installment	Amount	Penalty	Due Date	Status	Payment Date	Balance
1st	**1,096.45**	**109.64**	**12/10/2018**	**PAID**	**11/13/2018**	**0.00**
2nd	**1,096.45**	**119.64**	**04/10/2019**	**PAID**	**11/13/2018**	**0.00**
					Total Balance:	**0.00**

Bonds: **0**	Parcel Changed:	Sold to State: **0**	Mello-Roos: **N**	NSF: **N**

Account	Special Lien Description	Amount
BM	**YUBA CITY UNIFIED 1999 DEBT SERVICE**	**91.96**
BQ	**YUBA CITY UNIFIED 2004 DEBT SERVICE**	**66.68**
BU	**YCCD 2006 D S - D**	**6.72**
BV	**YUBA COLLEGE COMM DIST DEBT SVC - C**	**4.38**
BX	**YUBA COLLEGE COMM DIST DEBT SVC - A**	**23.94**
BY	**YUBA COLLEGE COMM DIST DEBT SVC - B**	**20.72**
CW	**GENERAL TAX (1%)**	**1,861.84**
HY	**MAINTENANCE AREA NO. 16 ZONE-3**	**2.48**
SF	**SUTTER BUTTE FLOOD CONTROL**	**113.02**
TE	**MAINTENANCE AREA NO. 7 ZONE-4**	**1.16**

***** END OF REPORT *****

NOTES
(continued)

Note 9. If a county recorder, title insurance company, escrow company, real estate broker, real estate agent or association provides a copy of a declaration, governing document or deed to any person, California law requires that the document provided shall include a statement regarding any unlawful restrictions. Said statement is to be in at least 14-point bold face type and may be stamped on the first page of any document provided or included as a cover page attached to the requested document. Should a party to this transaction request a copy of any document reported herein that fits this category, the statement is to be included in the manner described.

END OF NOTES

WIRE SAFE™ | Inquire before you wire!

WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice.
If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
http://www.fbi.gov

Internet Crime Complain Center:
http://www.ic3.gov

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FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Revised May 1, 2018

Fidelity National Financial, Inc. and its majority-owned subsidiary companies (collectively, "FNF", "our," or "we") respect and are committed to protecting your privacy. This Privacy Notice explains how we collect, use, and protect personal information, when and to whom we disclose such information, and the choices you have about the use and disclosure of that information.

Types of Information Collected

We may collect two types of information from you: Personal Information and Browsing Information.

Personal Information. FNF may collect the following categories of Personal Information:

- contact information (e.g., name, address, phone number, email address);
- demographic information (e.g., date of birth, gender, marital status);
- identity information (e.g. Social Security Number, driver's license, passport, or other government ID number);
- financial account information (e.g. loan or bank account information); and
- other personal information necessary to provide products or services to you.

Browsing Information. FNF may automatically collect the following types of Browsing Information when you access an FNF website, online service, or application (each an "FNF Website") from your Internet browser, computer, and/or mobile device:

- Internet Protocol (IP) address and operating system;
- browser version, language, and type;
- domain name system requests; and
- browsing history on the FNF Website, such as date and time of your visit to the FNF Website and visits to the pages within the FNF Website.

How Personal Information is Collected

We may collect Personal Information about you from:

- information we receive from you on applications or other forms;
- information about your transactions with FNF, our affiliates, or others; and
- information we receive from consumer reporting agencies and/or governmental entities, either directly from these entities or through others.

How Browsing Information is Collected

If you visit or use an FNF Website, Browsing Information may be collected during your visit. Like most websites, our servers automatically log each visitor to the FNF Website and may collect the Browsing Information described above. We use Browsing Information for system administration, troubleshooting, fraud investigation, and to improve our websites. Browsing Information generally does not reveal anything personal about you, though if you have created a user account for an FNF Website and are logged into that account, the FNF Website may be able to link certain browsing activity to your user account.

Other Online Specifics

Cookies. When you visit an FNF Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. Information gathered using cookies helps us improve your user experience. For example, a cookie can help the website load properly or can customize the display page based on your browser type and user preferences. You can choose whether or not to accept cookies by changing your Internet browser settings. Be aware that doing so may impair or limit some functionality of the FNF Website.

Web Beacons. We use web beacons to determine when and how many times a page has been viewed. This information is used to improve our websites.

Do Not Track. Currently our FNF Websites do not respond to "Do Not Track" features enabled through your browser.

Links to Other Sites. FNF Websites may contain links to other websites. FNF is not responsible for the privacy practices or the content of any of those other websites. We advise you to read the privacy policy of every website you visit.

Use of Personal Information

FNF uses Personal Information for three main purposes:

- To provide products and services to you or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you about our, our affiliates', and third parties' products and services, jointly or independently.

When Information Is Disclosed

We may make disclosures of your Personal Information and Browsing Information in the following circumstances:

- to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to nonaffiliated service providers who provide or perform services or functions on our behalf and who agree to use the information only to provide such services or functions;
- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to jointly market financial products or services to you;
- to law enforcement or authorities in connection with an investigation, or in response to a subpoena or court order; or
- in the good-faith belief that such disclosure is necessary to comply with legal process or applicable laws, or to protect the rights, property, or safety of FNF, its customers, or the public.

The law does not require your prior authorization and does not allow you to restrict the disclosures described above. Additionally, we may disclose your information to third parties for whom you have given us authorization or consent to make such disclosure. We do not otherwise share your Personal Information or Browsing Information with nonaffiliated third parties, except as required or permitted by law.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of bankruptcy, reorganization, insolvency, receivership, or an assignment for the benefit of creditors. By submitting Personal Information and/or Browsing Information to FNF, you expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings.

Please see **"Choices With Your Information"** to learn the disclosures you can restrict.

Security of Your Information

We maintain physical, electronic, and procedural safeguards to guard your Personal Information. We limit access to nonpublic personal information about you to employees who need to know that information to do their job. When we provide Personal Information to others as discussed in this Privacy Notice, we expect that they process such information in compliance with our Privacy Notice and in compliance with applicable privacy laws.

Choices With Your Information

If you do not want FNF to share your information with our affiliates to directly market to you, you may send an "opt out" request by email, phone, or physical mail as directed at the end of this Privacy Notice. We do not share your Personal Information with nonaffiliates for their use to direct market to you.

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you.

For California Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties, except as permitted by California law.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not disclose information about you creditworthiness to our affiliates and will not disclose your personal information, financial information, credit report, or health information to nonaffiliated third parties to market to you, other than as permitted by Vermont law, unless you authorize us to make those disclosures.

Information From Children

The FNF Websites are meant for adults and are not intended or designed to attract persons under the age of eighteen (18). We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian.

International Users

FNF's headquarters is located within the United States. If you reside outside the United States and choose to provide Personal Information or Browsing Information to us, please note that we may transfer that information outside of your country of residence for any of the purposes described in this Privacy Notice. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection, transfer, and use of such information in accordance with this Privacy Notice.

FNF Website Services for Mortgage Loans

Certain FNF companies provide services to mortgage loan servicers, including hosting websites that collect customer information on behalf of mortgage loan servicers (the "Service Websites"). The Service Websites may contain links to both this Privacy Notice and the mortgage loan servicer or lender's privacy notice. The sections of this Privacy Notice titled When Information is Disclosed, Choices with Your Information, and Accessing and Correcting Information do not apply to the Service Websites. The mortgage loan servicer or lender's privacy notice governs use, disclosure, and access to your Personal Information. FNF does not share Personal Information collected through the Service Websites, except (1) as required or authorized by contract with the mortgage loan servicer or lender, or (2) as required by law or in the good-faith belief that such disclosure is necessary to comply with a legal process or applicable law, to enforce this Privacy Notice, or to protect the rights, property, or safety of FNF or the public.

Your Consent To This Privacy Notice; Notice Changes

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information in accordance with this Privacy Notice. We may change this Privacy Notice at any time. The revised Privacy Notice, showing the new revision date, will be posted on the FNF Website. Each time you provide information to us following any amendment of this Privacy Notice, your provision of information to us will signify your assent to and acceptance of the terms of the revised Privacy Notice for all previously collected information and information collected from you in the future. We may use comments, information or feedback that you submit to us in any manner that we may choose without notice or compensation to you.

Accessing and Correcting Information; Contact Us

If you have questions, would like to access or correct your Personal Information, or want to opt-out of information sharing for affiliate marketing, send your requests via email to privacy@fnf.com, by phone to (888) 934-3354, or by mail to:

Fidelity National Financial, Inc.
601 Riverside Avenue,
Jacksonville, Florida 32204
Attn: Chief Privacy Officer

ATTACHMENT ONE

CALIFORNIA LAND TITLE ASSOCIATION
STANDARD COVERAGE POLICY - 1990

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.

3. Defects, liens, encumbrances, adverse claims or other matters:

   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;

   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;

   (c) resulting in no loss or damage to the insured claimant;

   (d) attaching or created subsequent to Date of Policy; or

   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.

4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.

5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.

6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.

   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.

2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.

3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.

4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.

6. Any lien or right to a lien for services, labor or material not shown by the public records.

ATTACHMENT ONE
(CONTINUED)

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13)
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE

EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
   a. building;
   b. zoning;
   c. land use;
   d. improvements on the Land;
   e. land division; and
   f. environmental protection.

   This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.

   This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake or subsidence.
9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:

- For Covered Risk 16, 18, 19 and 21, Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.

The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

	Your Deductible Amount	Our Maximum Dollar Limit of Liability
Covered Risk 16:	1.00% of Policy Amount Shown in Schedule A or $2,500.00 (whichever is less)	$ 10,000.00
Covered Risk 18:	1.00% of Policy Amount Shown in Schedule A or $5,000.00 (whichever is less)	$ 25,000.00
Covered Risk 19:	1.00% of Policy Amount Shown in Schedule A or $5,000.00 (whichever is less)	$ 25,000.00
Covered Risk 21:	1.00% of Policy Amount Shown in Schedule A or $2,500.00 (whichever is less)	$ 5,000.00

ATTACHMENT ONE
(CONTINUED)

2006 ALTA LOAN POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

[Except as provided in Schedule B - Part II,[t[or T]his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees, or expenses that arise by reason of:

[PART I

[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.]

PART II

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:]

ATTACHMENT ONE
(CONTINUED)

2006 ALTA OWNER'S POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
   (a) a fraudulent conveyance or fraudulent transfer; or
   (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees, or expenses that arise by reason of:

[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.]
7. [Variable exceptions such as taxes, easements, CC&R's, etc., shown here.]

ATTACHMENT ONE
(CONTINUED)

ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY - ASSESSMENTS PRIORITY (04-02-15)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

Notice of Available Discounts

Pursuant to Section 2355.3 in Title 10 of the California Code of Regulations Fidelity National Financial, Inc. and its subsidiaries ("FNF") must deliver a notice of each discount available under our current rate filing along with the delivery of escrow instructions, a preliminary report or commitment. Please be aware that the provision of this notice does not constitute a waiver of the consumer's right to be charged the filed rate. As such, your transaction may not qualify for the below discounts.

You are encouraged to discuss the applicability of one or more of the below discounts with a Company representative. These discounts are generally described below; consult the rate manual for a full description of the terms, conditions and requirements for such discount. These discounts only apply to transactions involving services rendered by the FNF Family of Companies. This notice only applies to transactions involving property improved with a one-to-four family residential dwelling.

Not all discounts are offered by every FNF Company. The discount will only be applicable to the FNF Company as indicated by the named discount.

FNF Underwritten Title Companies	**Underwritten by FNF Underwriters**
CTC – Chicago Title Company	CTIC – Chicago Title Insurance Company
CLTC – Commonwealth Land Title Company	CLTIC – Commonwealth Land Title Insurance Company
FNTC – Fidelity National Title Company	FNTIC – Fidelity National Title Insurance Company
FNTCCA – Fidelity National Title Company of California	FNTIC – Fidelity National Title Insurance Company
TICOR – Ticor Title Company of California	CTIC – Chicago Title Insurance Company
LTC – Lawyer's Title Company	CLTIC – Commonwealth Land Title Insurance Company

Available Discounts

CREDIT FOR PRELIMINARY TITLE REPORTS AND/OR COMMITMENTS ON SUBSEQUENT POLICIES (CTIC, FNTIC)

Where no major change in the title has occurred since the issuance of the original report or commitment, the order may be reopened within twelve (12) to thirty-six (36) months and all or a portion of the charge previously paid for the report or commitment may be credited on a subsequent policy charge.

DISASTER LOANS (CTIC, CLTIC, FNTIC)

The charge for a Lender's Policy (Standard or Extended coverage) covering the financing or refinancing by an owner of record, within twenty-four (24) months of the date of a declaration of a disaster area by the government of the United States or the State of California on any land located in said area, which was partially or totally destroyed in the disaster, will be fifty percent (50%) of the appropriate title insurance rate.

CHURCHES OR CHARITABLE NON-PROFIT ORGANIZATIONS (CTIC, FNTIC)

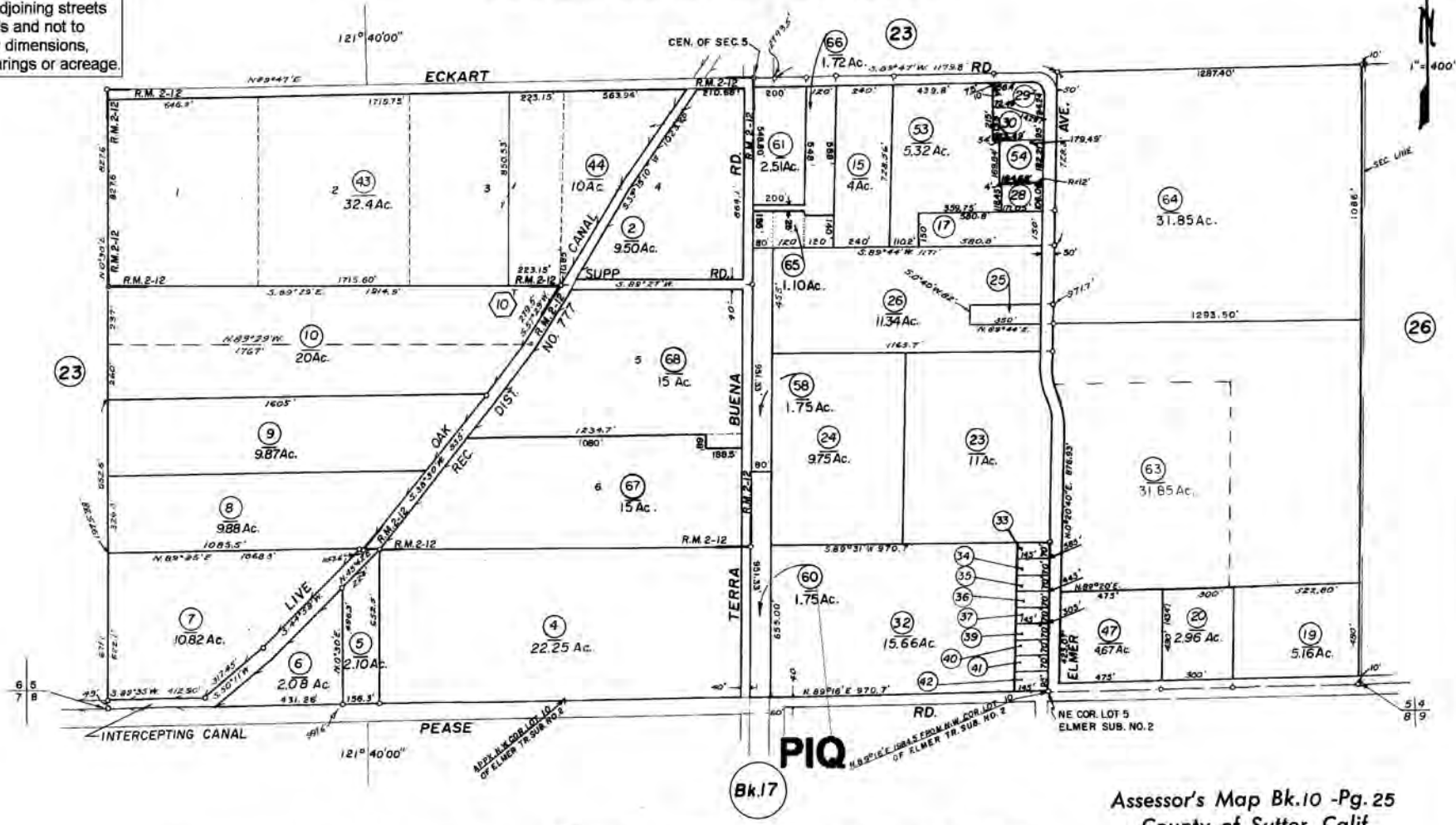
On properties used as a church or for charitable purposes within the scope of the normal activities of such entities, provided said charge is normally the church's obligation the charge for an owner's policy shall be fifty percent (50%) to seventy percent (70%) of the appropriate title insurance rate, depending on the type of coverage selected. The charge for a lender's policy shall be thirty-two percent (32%) to fifty percent (50%) of the appropriate title insurance rate, depending on the type of coverage selected.

Tax Area Code 51-121

10-25

Important: This plat is not a survey. It is furnished as a convenience to locate the land in relation to adjoining streets and other lands and not to guarantee any dimensions, distances, bearings or acreage.

POR. S.1/2 SEC. 5, T.15N., R.3E., M.D.B.&M.



TRANSITORY UNIT

NOTE - ASSESSOR'S BLOCK & LOT NUMBERS SHOWN IN CIRCLES

Eckart Wilbur Tract, R.M. Bk.2, Pg.12

Assessor's Map Bk.10 -Pg.25
County of Sutter, Calif.
2007 - 1

Appendix F: VESI 10 Tierra Buena BESS Project Cultural Report

CULTURAL AND PALEONTOLOGICAL RESOURCES INVENTORY FOR THE VESI 10 TIERRA BUENA BATTERY ENERGY STORAGE SYSTEM PROJECT, SUTTER COUNTY, CALIFORNIA

Prepared For:

VESI 10, LLC
6140 Plumas Street
Reno, Nevada 89519

Prepared By:

Nancy E. Sikes, Ph.D., RPA
Cindy J. Arrington, M.S., RPA

NATURAL INVESTIGATIONS COMPANY

3104 O Street, #221
Sacramento, CA 95816

USGS 7.5-Minute Quadrangle: Sutter 1952 (PR 1973)

Negative Survey; Sutter County

March 19, 2019

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 California Public Records Act under Government Code Section 6254.10.

ABSTRACT

Purpose and Scope: Sierra Geotech-Natural Investigations Company, Inc. (Natural Investigations) was retained by VESI 10, LLC. to provide cultural and paleontological resources services for the Tierra Buena Battery Energy Storage System (BESS) Project, located in northeastern Sutter County. Viridity Energy Solutions, Inc., 10 LLC (VESI 10), an Ormat Company, is proposing to develop a BESS facility on an approximately 0.75-acre parcel located 325 feet north of the Tierra Buena Road and Pease Road intersection and 0.3 miles northwest the Yuba City limits.

The services by Natural Investigations include cultural literature, Sacred Lands File and paleontological records searches, an intensive-level pedestrian survey of the Project area, and this report. This study was completed in compliance with the California Environmental Quality Act, for which the County of Sutter Development Services Department/Planning is the State Lead Agency for the Project.

Dates of Investigation: The cultural literature search was completed by the Northeast Information Center on February 26, 2019; a Sacred Lands File search by the Native American Heritage Commission on February 13, 2019; and a search by Natural Investigations of the University of California Museum of Paleontology (UCMP) database on February 21, 2019. The Commission indicated their search did not find sacred sites in the vicinity. Natural Investigations conducted an intensive-level pedestrian survey of the Project area on March 18, 2019.

Investigation Constraints: Ground visibility in the majority of the Project area ranged from fair to good depending on the density of the vegetation cover.

Findings of the Investigation: Prior cultural work entails three studies completed within a 0.25-mile search radius; none included the Project area. No cultural resources have been previously recorded within the current Project area or within the 0.25-mile search radius.

No archaeological or built-environment resources were identified during the survey. There was no evidence of the former tracks or grade of the Northern Electric/Sacramento Northern Railway in the leveled Project area. The sensitivity is low for discovery of archaeological deposits in the heavily disturbed Project area.

UCMP records indicate no fossils are known from the Project area. No fossils, geologic features, or deposits attributable to the underlying Modesto Formation were observed during the survey.

Recommendations: Construction monitoring of ground-disturbing activity is not recommended as the potential for discovery of cultural or paleontological resources is low. In the event resources are discovered during Project activities, work in the immediate area must be halted and a qualified specialist (archaeologist or paleontologist) notified, who will then evaluate the resource and consult with the County, property owner, VESI 10, and any other relevant regulatory agency, as appropriate.

Disposition of Data: This report will be filed with VESI 10, LLC; the Northeast Information Center at California State University, Chico; and Natural Investigations Company, Sacramento, California. All field notes and other documentation related to the study are on file at the Sacramento office of Natural Investigations.

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INTRODUCTION

Sierra Geotech-Natural Investigations Company, Inc. (Natural Investigations) was retained by Sierra Geotech, DVBE, Inc to provide cultural and paleontological resources services for the Tierra Buena Battery Energy Storage System (BESS) Project, located in northeastern Sutter County. Viridity Energy Solutions, Inc., 10 LLC (VESI 10), an Ormat Company, is proposing to develop a BESS facility on an approximately 0.75-acre parcel located 325 feet north of the Tierra Buena Road and Pease Road intersection and 0.3 miles northwest the Yuba City limits.

The services by Natural Investigations include cultural literature, Sacred Lands File and paleontological records searches, an intensive-level pedestrian survey of the Project area, and this report. This study was completed in compliance with the California Environmental Quality Act (CEQA) and in support of the Initial Study under preparation for the Project. The County Development Services Department/Planning is the State Lead Agency for the Project.

PROJECT DESCRIPTION AND LOCATION

VESI 10 proposes to construct and operate a BESS facility, consisting of a battery electrical storage system that would store 5 megawatts (MW) or 20 MW hours of electricity for dispatch into the local Pacific Gas and Electric (PG&E) grid via an adjacent PG&E distribution line and the existing adjacent PG&E Pease Road Substation. The proposed BESS facility would connect to the adjacent PG&E distribution line, which would both provide energy to recharge the battery storage system as well as dispatch energy generated by the battery storage system. The proposed BESS facility would be used to reduce greenhouse gas emissions associated with gas-fired power generation facilities by storing energy during off-peak hours (lower energy usage/demand times) and dispatching this energy on an as-needed basis during peak demand hours. The proposed Project would increase local electricity production, thereby supporting the stability of the local electrical grid. The Project's location adjacent to the PG&E distribution line and approximately 400 feet north of the PG&E Pease Road electrical substation, will enable connection to the existing grid.

At complete buildout, the BESS would consist of several fully enclosed battery storage containers that would each house battery modules mounted in racks and associated electrical equipment. Each battery storage container would have an access drive aisle. The entire Project would be fenced for security and to restrict access. Existing agricultural truck yard and storage on the Project parcel would be removed and cleared of all debris and truck yard equipment. No new landscaping is proposed as part of the Project. Existing vegetation along the site perimeter would not be modified.

Construction of the proposed Project would include implementation of driveway improvements, installation of footings and equipment pads, and installation of the battery storage system components. Construction vehicles and equipment would use the existing ingress/egress to the Project parcel and staging of equipment would be limited to the northern end of the parcel. The Project area is level and would require no grading to install the battery storage equipment. Earthwork would be limited to excavation of concrete footings and electrical conduit banks, the plant control system, and transformer pads. Total excavation would be approximately 10 cubic yards of soil.

The battery storage system enclosures would be placed in the center portion of the proposed Project area with an access road 20 feet surrounding the enclosures. The battery storage system enclosure would be placed on shallow, cast-in-place reinforced concrete piers (also referred to as footings) measuring about 2 feet in diameter and rising 4 to 6 inches aboveground. The footings would extend approximately 18 inches below the existing grade. There would be six footings for the battery storage unit: one at each corner and

two in the midsection. The auxiliary equipment would be mounted on individual reinforced concrete pad foundations sized for the equipment. The area under the battery storage system would be graveled in accordance with standard construction practices. The area would be impervious following project implementation.

The proposed Project is located within Assessor's Parcel No. 10-250-060, with a physical address of 3025 Tierra Buena Road. The rectangular parcel is located on the east side of Tierra Buena Road, immediately north (325 feet) of the intersection of Tierra Buena and Pease roads and 0.3 miles northwest of the limits of Yuba City. The Project parcel will be leased from the property owner, Mr. Luis Garcia. The approximately 0.75-acre Project area is located in Section 5 of Township 15 North, Range 3 East, as depicted on the Sutter 1952 (Photorevised 1973) USGS 7.5-minute quadrangle (Mount Diablo Base and Meridian) (Figure 1).

REGULATORY SETTING

The current study was completed under the provisions of the California Environmental Quality Act (CEQA). CEQA is the principal regulatory control addressing whether a project will have a significant effect on the environment, including impacts on historical resources, unique archaeological resources, tribal cultural resources, human remains, and paleontological resources in California.

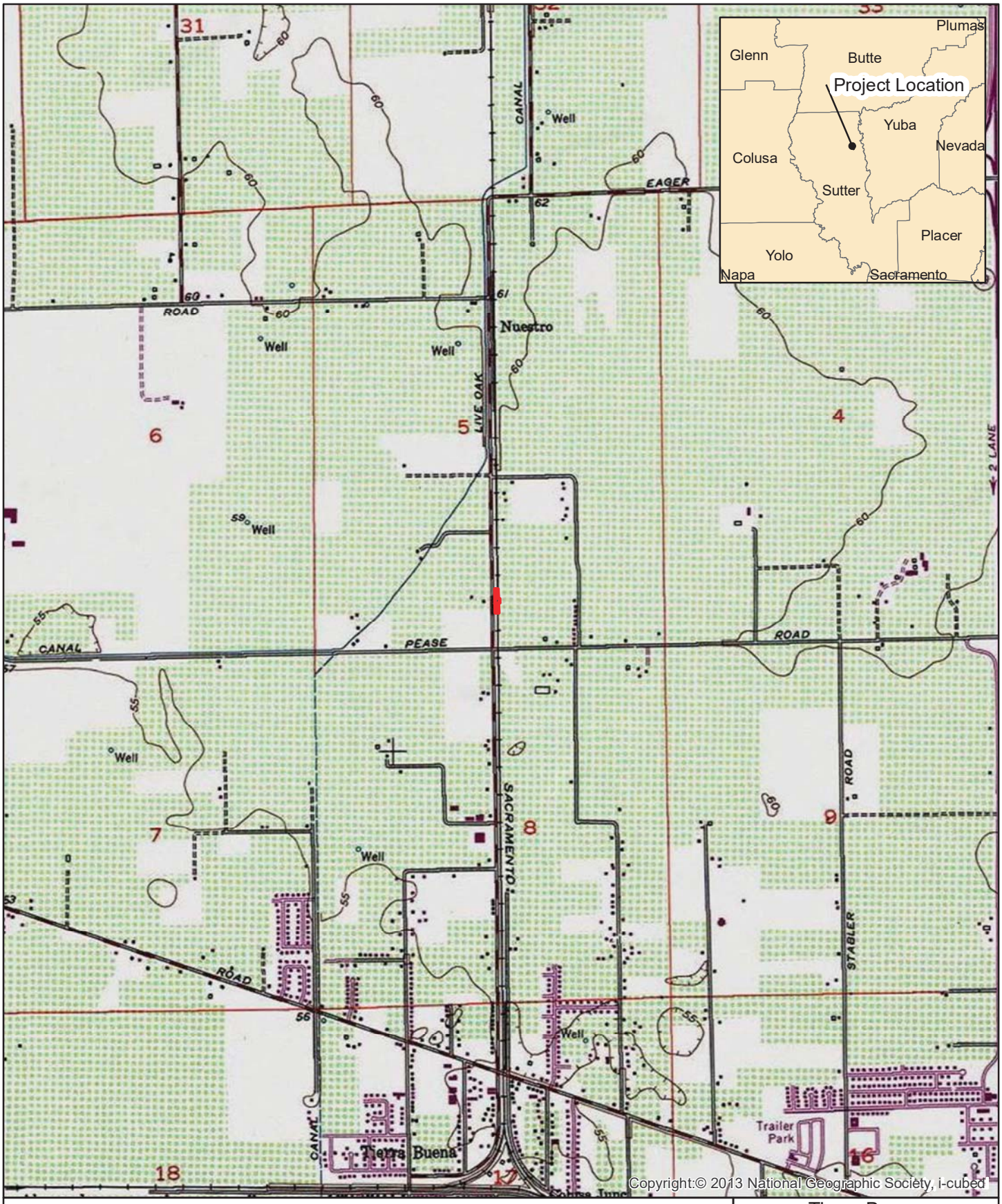
Cultural Resources

Section 21083.2 of the statute and Section 15064.5 of the CEQA Guidelines provide instructions for a lead agency to consider the effects of projects on historical resources and cultural resources. A *historical resource* is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] Section 21084.1), a resource included in a local register of historical resources (PRC Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (PRC Section 15064.5[a][3]).

PRC Section 5024.1 requires evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the register is to maintain listings of the State's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established federal criteria for listing in the National Register of Historic Places (NRHP).

According to PRC Section 5024.1(c)(1–4), as well as Section 15064.5(a)(3)(A–D) of the revised CEQA guidelines, a resource is considered historically significant if it meets at least one of the following 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 prehistory or history.



Project Location

0 0.5 1 Kilometers

0 0.5 1 Miles

1:24,000

Tierra Buena
Energy Storage Project
Figure 1 - Project Location

Natural Investigations Company

Map Date 2/11/2019

Sutter 1952 Quadrangle Photorevised 1973:Township 15N, Range 3E, Section 5

In order to be listed in the CRHR, historical resources must meet at least one of the significance criteria. Resources that do not meet any of these criteria are viewed as not significant. In addition to meeting at least one of the significance criteria, historical resources must possess the quality of *integrity* (location, design, setting, materials, workmanship, feeling, and association). Historic resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance.

Impacts to significant cultural resources from a proposed project are considered significant if the project physically destroys or damages all or part of a resource, changes the character of the use of the resource or physical feature within the setting of the resource that contribute to its significance, or introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

Under CEQA, if an archaeological site is not a historical resource but meets the definition of a *unique archaeological resource* as defined in PRC Section 21083.2, then it should be treated in accordance with the provisions of that section. PRC Section 21083.2(g) defines a unique archeological resource to mean 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 example available of its type

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Should a site qualify as a unique archaeological resource, it is protected under CEQA. If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require 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]). If the agency determines the site does not qualify, then the site merits no further consideration.

A “historical resource” as defined in PRC Section 21084.1, a “unique archaeological resource” as defined in PRC Section 21083.2(g), or a “nonunique archaeological resource” as defined in PRC Section 21083.2(h) may also be a *tribal cultural resource* (TCR). As defined under PRC Section 21074, TCRs are “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either: (1) included or determined to be eligible for inclusion in the CRHR; included in a local register of historical resources as defined in PRC Section 5020.1(k); or (2) determined by the lead agency to be significant pursuant to the criteria for inclusion in the CRHR set forth in PRC Section 5024.1(c), if supported by substantial evidence and taking into account the significance of the resource to a California Native American tribe. TCRs were established by Assembly Bill 52, effective July 1, 2015, as a new category of resource under CEQA.

Paleontological Resources

Paleontological resources are limited, non-renewable resources of scientific, cultural, and educational value that are explicitly afforded protection by CEQA, specifically Appendix G. Section VII(f) of Appendix G (revised December 2018) addresses the potential for adverse impacts to unique paleontological resources, sites, or geological features, and requires that impacts to such resources must be considered in the project

review process. While CEQA does not precisely define unique paleontological resources, the treatment of paleontological resources on non-federal lands is usually conducted in accordance with guidance from the criteria established by the Society for Vertebrate Paleontology (SVP 2010). Treatment usually consists of identification, assessment, and mitigation for potential impacts to significant paleontological resources.

PRC Section 5097.5 states that no person shall "knowingly and willfully" excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Public lands include those "owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof." If paleontological resources are identified within a given project area, the lead agency must take those resources into consideration when evaluating project impacts. The level of consideration may vary with the importance of the resource in question.

In accordance with guidelines established by the SVP (2010), assessments of the scientific significance of fossilized remains are based on whether they can provide data on the taxonomy and phylogeny of ancient organisms, the paleoecology and nature of paleoenvironments in the geologic past, or the stratigraphy and age of geologic units. Because most vertebrate fossils are rare, they are considered important paleontological resources. Conversely, marine invertebrates are generally common, the fossil record is well developed and well documented, and they would generally not be considered an important paleontological resource. Substantial damage to or destruction of significant paleontological resources as defined by the SVP (2010) would represent a significant impact.

REPORT PREPARATION

Nancy E. Sikes, Ph.D. was the Principal Investigator for this study and co-authored this report with Cindy Arrington, M.S. Dr. Sikes and Ms. Arrington each have more than 20 years of archaeological experience in California and exceed all requirements of the *Secretary of Interior's Qualifications Standards* (36 CFR Part 61; National Park Service 1983). Ms. Arrington, who performed the pedestrian survey, is also an osteologist and is cross-trained in paleontology.

The format of this report follows the *Archaeological Resource Management Reports: Recommended Contents and Format* by the Office of Historic Preservation (1990).

ENVIRONMENTAL SETTING

GEOLOGY, HYDROLOGY, AND SOILS

The relatively flat Project area is located at an elevation of 58–61 feet (18 meters) above mean sea level (msl) within the lower Sacramento Valley, in the northern half of the Central Valley geomorphic province. The landscape of central California is dominated by the Central Valley, which is surrounded by the Sierra Nevada, Coast Ranges, Siskiyou Range, and Tehachapi Range. The northern half of the valley (Sacramento Valley) is drained by the Sacramento River, while the southern half (San Joaquin Valley) is drained by the San Joaquin River. The two rivers converge at the Sacramento–San Joaquin Delta and then flow westward into Suisun Bay.

The sedimentary geologic formations in the Central Valley province vary in age from Jurassic (199 to 144 million years ago) to Quaternary (200 million years ago to present) (Norris and Webb 1990). The older deposits are primarily marine in origin, while the continentally derived, younger sediments, which are mainly sourced from the Sierra Nevada Range, typically were deposited in fluvial, alluvial, and lacustrine environments. In the Central Valley, the thickness of sedimentary deposits that fill the Sacramento and San Joaquin valleys to their present elevations varies. Along the eastern valley edge, the deposits are relatively thin, range from 300 to 2,100 feet in the southeastern Sacramento Valley, and are more than 20,000 feet in the south central portion of the valley (Page 1986). Less than 5 miles west of the Project area, the Sutter Buttes break the monotony of the long flat valley. The buttes and a ring of exposed Cretaceous and Tertiary sediments around the buttes were created by volcanic eruptions that intruded through the Great Valley sediments approximately 1.6 to 1.4 million years ago (Hausback et al. 2011).

Review of recent geologic mapping indicates the Project is underlain by the Modesto Formation (Qm) (Saucedo and Wagner 1992), which was deposited by rivers still existing today and forms alluvial terraces and fans of major rivers along the axis of the Central Valley (Helley and Harwood 1985). The alluvial sediments of the upper and lower members of this late Pleistocene rock unit were deposited between 40,000 and 11,500 years ago (Atwater et al. 1986; Busacca et al. 1989). Due to age, the presence of buried archaeological deposits in older Pleistocene (~1.9 million to ~22,000 years) and latest Pleistocene (~22,000–11,500 years) alluvium is extremely unlikely, a conclusion also reached by a comprehensive geoarchaeological study prepared for the California Department of Transportation (Caltrans), District 3, which includes Sutter County (Meyer and Rosenthal 2008: Map 1).

The proposed Project is located in the Lower Feather Watershed. Oroville Reservoir separates the lower watershed from the Upper Feather Watershed. Combined, the 3,200-square mile watershed encompasses the three branches of the Feather River, which flows 185 miles from the Sierra Nevada headwaters to its confluence with the Sacramento River. The lower Feather River, which is located approximately 2.5 miles east of the Project area, is confined by a system of levees, as flooding and flood management remain longstanding issues for this reach of the river.

Soils beneath the Project area are mapped by the Natural Resources Conservation Service as the clay loams of the Conejo-Tisdale series complex (California Soil Resource Lab 2019; Soil Survey Staff 2019). These moderately deep, well drained soils formed in alluvium weathered from mixed rock sources. Both soils have a disturbed upper plow zone (Ap horizon) above a dark brown to dark grayish brown A horizon. There is an increase in clay in the Tisdale series by 11 inches (Bt argillic horizon), with a depth to paralithic contact by 20–40 inches (Cr horizon). In the Conejo series, a weakly developed B horizon (Bw) is typically present below the A horizon, and extends from 30–70 inches.

CLIMATE, CURRENT LAND USES, AND FLORA/FAUNA

The Project vicinity is characterized by hot, dry summers and warm, moist winters. Annual precipitation in this region averages 18 inches, with most of the rain falling between October and March. The average low winter temperature is 38 degrees Fahrenheit, and the average summer temperature high is 96 degrees Fahrenheit. The current Mediterranean climate is dryer and hotter than the conditions present at the time of California's initial occupation (Major 1988).

The Project parcel is located 0.3 miles northwest of the Yuba City limits, which is bounded by Pease Road on the north. The immediate vicinity is characterized by agricultural industrial land uses, public utilities facilities (PG&E Pease Road Power Substation), and agricultural orchard land uses. The PG&E Pease Road Power Substation is the regional substation which services north Yuba City and Sutter County. The Valdez Trucking yard is immediately south of the Project parcel. State Route 99 is 1.5 miles east via Pease Road.

The nearest urban residential development is located at the intersection of Pease Road and Butte Vista Lane approximately 0.65 miles east of the Project area.

The Project vicinity was historically characterized by vegetation communities near permanent drainages, including grasslands, woodlands, riparian scrub/forest along drainages, with grasslands and oak woodlands in valley foothill areas. This mosaic of ecological communities would have provided a very productive environment. Based on ethnographic descriptions of the Native American groups, including the Nisenan who historically occupied this region, their hunting-gathering economy was supported by a variety of large and small mammals, edible plant species, fish, and birds (Kroeber 1925; Wilson and Towne 1978).

Over the past 150 years, the environment within the Central Valley has been greatly altered. The construction of extensive levee systems to control the Sacramento and San Joaquin rivers, reclamation of the Delta islands, and the introduction of agricultural practices, ranching and nonnative Mediterranean grasses are among the major historic modifications. Prior to these changes to the natural landscape, the region was covered with native annual and perennial grasses commonly found in the Valley Grassland Community, such as needlegrass (*Stipa* spp.), bluegrass (*Poa* spp.), and three awn (*Aristida divaricata*) (Munz and Keck 1973). Tule (*Scirpus* sp.) and stands of willow (*Salix* sp.), cottonwood (*Populus fremontii*), and sycamore (*Platanus racemosa*) were supported by the marshy wetlands (Wallace 1978:462). Regional oak groves would have included blue oak (*Quercus douglasii*), interior live oak (*Q. wislizeni*), and valley oak (*Q. lobata*). The plant resources utilized by populations during the prehistoric and ethnohistoric periods would have been available in this series of natural communities.

The larger mammals inhabiting the Project vicinity would have included mule deer (*Odocoileus hemionus californicus*), black-tailed deer (*O. hemionus columbianus*), tule elk (*Cervus elaphus nannoides*), pronghorn (*Antilocapra americana*), mountain lion (*Felis concolor*), and black bear (*Ursus americanus*). Once common in the valley, tule elk and pronghorn are now restricted to very limited areas and the range of black bears is now limited to the Sierran foothills and mountains (Jameson and Peeters 1988). Small animals, such as rabbit (*Sylvilagus* sp.), black-tailed jackrabbit (*Lepus californicus*), gray squirrel (*Sciurus griseus*), coyote (*Canis latrans*), and gray fox (*Urocyon cinereoargenteus*) would have also been available prior to the major alterations to the landscape in the historic period.

The Central Valley once held an extensive, rich, marshy wetland habitat. Among the migratory waterfowl and other birds that continue to utilize the remnants of this natural feeding ground are mallard duck (*Anas platyrhynchos*), green-winged teal (*A. crecca*), northern pintail (*A. acuta*), great blue heron (*Ardea herodias*), belted kingfisher (*Ceryle alcyon*), red-winged blackbird (*Agelaius phoeniceus*), rock dove *(Columba livia)*, northern flicker woodpecker (*Colaptes auratus*), black-shouldered kite *(Elanus caeruleus*), red-tailed hawk (*Buteo jamaicensis*), and northern harrier (*Circus cyaneus*). The region's rivers housed a variety of anadromous and freshwater fish species, such as sturgeon (*Acipenser transmontanus*), salmon (*Oncorhynchus* sp.), and rainbow trout/steelhead (*O. mykiss*), some of which are still fished today.

CULTURAL SETTING

PREHISTORIC OVERVIEW

A tripartite classification scheme for cultural change in California's Sacramento Valley, Sacramento–San Joaquin Delta, and San Joaquin Valley developed as the result of efforts of a number of researchers since the 1930s and has been further refined over the succeeding decades (e.g., Bennyhoff and Fredrickson 1994; Heizer and Fenenga 1939; Heizer 1949; Fredrickson 1973, 1974, 1994; Moratto 1984). As recently summarized by Rosenthal and others (2007), and with the timeframes adjusted for modern calibration

curves for radiocarbon dates, the chronological sequence for the Central Valley is: Paleo-Indian (11,500–8550 cal [calibrated] B.C.), Lower Archaic (8550–5550 cal B.C.), Middle Archaic (5550–550 cal B.C.), Upper Archaic (550 cal B.C.–cal A.D. 1100), and Emergent or Late Prehistoric Period (cal A.D. 1100–Historic Contact).

Subsequent to the Paleo-Indian and Lower Archaic periods, the cultural framework within the greater study region is further divided into three regionally based "patterns." Specific to Central Valley prehistory and the current study region, the regionally based patterns defined by Fredrickson (1973, 1974) are the Windmiller, Berkeley, and Augustine. The patterns mark changes in distinct artifact types, subsistence orientation, and settlement patterns, which began circa 5550 cal B.C. and lasted until historic contact in the early 1800s. They were initially identified at three archaeological sites: the Windmiller site (CA-SAC-107) near the Cosumnes River in Sacramento County; the West Berkeley site (CA-ALA-307) on the east side of the Bay in Alameda County; and the Augustine site (CA-SAC-127) in the Sacramento–San Joaquin Delta. In general, the patterns conform to three temporal divisions: Middle Archaic Period/Windmiller Pattern, Upper Archaic Period/Berkeley Pattern, Late Prehistoric Period/Augustine Pattern.

Paleo-Indian and Lower Archaic Periods (11,500–5550 cal B.C.)

There is little evidence of the Paleo-Indian and Lower Archaic periods in the Central Valley (Rosenthal et al. 2007:151; Dillon 2002). As shown by geoarchaeological studies (e.g., Meyer and Rosenthal 2008; Rosenthal and Meyer 2004a, 2004b; White 2003), large segments of the Late Pleistocene landscape throughout the central California lowlands have been buried or removed by periodic episodes of deposition or erosion. Periods of climate change and associated alluvial deposition occurred at the end of the Pleistocene (approximately 9050 cal B.C.) and at the beginning of the early Middle Holocene (approximately 5550 cal B.C.). Earlier studies had also estimated that Paleo-Indian and Lower Archaic sites along the lower stretch of the Sacramento River and San Joaquin River drainage systems had been buried by Holocene alluvium up to 33 feet (10 meters) thick that was deposited during the last 5,000 to 6,000 years (Moratto 1984:214). The formation of the Sacramento–San Joaquin Delta began during the early Middle Holocene (Atwater and Belknap 1980; Goman and Wells 2000). After approximately 1,000 cal B.C. during the Late Holocene, there were renewed episodes of alluvial fan and floodplain deposition (Rosenthal et al. 2007:155-156).

The archaeological evidence that is available for the Paleo-Indian Period is comprised primarily by basally thinned, fluted projectile points. These points are morphologically similar to well-dated Clovis points found elsewhere in North America. In the Central Valley, fluted points have been recovered from remnant features of the Pleistocene landscape at only three archaeological localities (Woolfsen Mound [CA-MER-215] in Merced County, Tracey Lake in San Joaquin County, and Tulare Lake basin in Kings County).

In the Central Valley, the Lower Archaic Period is mainly represented by isolated finds as the early landscape was buried by natural alluvial fan and floodplain deposition (Rosenthal et al. 2007:151-152). Cultural material dating to this period has been found at only one site in the Central Valley proper. CA-KER-116 is located in today's Kern County on the ancient shoreline of Buena Vista Lake. Stratified cultural deposits at the site have yielded a stemmed projectile point, chipped stone crescents, and the remains of fish, birds, and shellfish. Although abundant milling slabs and handstones have been recovered from Lower Archaic Period foothill sites in eastern Contra Costa County (CA-CCO-637; Meyer and Rosenthal 1998) and Calaveras County (Skyrocket site CA-CAL-629/630; LaJeunesse and Pryor 1996), no milling tools or plant remains have been found at the valley floor site.

Middle Archaic Period/Windmiller Pattern (5550–550 cal B.C.)

For the first 3,000 years of the Middle Archaic, archaeological sites on the valley floor are relatively scarce, in part due natural geomorphic processes, unlike the foothills where a number of buried sites have been found (Rosenthal et al. 2007:153). On the valley floor, sites are more common after 2550 cal. B.C. The archaeological record in the valley and foothills indicates the subsistence system during this period included a wide range of natural resources (e.g., plants, small and large mammals, fish, and waterfowl) that indicate people followed a seasonal foraging strategy (Fredrickson 1973; Heizer 1949; Ragir 1972; Moratto 1984). Some researchers (e.g., Moratto 1984:206) suggest populations may have occupied lower elevations during the winter and shifted to higher elevations in the summer. Others (e.g., Rosenthal et al. 2007:153) also suggest there was increasing residential stability along Central Valley river corridors during the Middle Archaic.

Excavations at Windmiller Pattern sites have yielded abundant remains of terrestrial fauna (deer, tule elk, pronghorn, and rabbits) and fish (sturgeon, salmon, and smaller fishes). Projectile points with a triangular blade and contracting stems are common at Windmiller Pattern sites. A variety of fishing implements such as angling hooks, composite bone hooks, spears, and baked clay artifacts, which may have been used as net or line sinkers, are also relatively common. The points are classified within the Sierra Contracting Stem and Houx Contracting Stem series (Justice 2002:266, 276). The presence of milling implements (grinding slabs, handstones, and mortar fragments) indicate acorns or seeds were an important part of the Middle Archaic diet (Moratto 1984:201; Rosenthal et al. 2007:153, 155). In the foothills, pine nut and acorn remains have been recovered from sites in Fresno (CA-FRE-61) and Calaveras (CA-CAL-629/630 and CA-CAL-789) counties.

The variety of artifacts recovered from Windmiller Pattern sites includes shell beads, ground and polished charmstones, and bone tools, as well as impressions of twined basketry. Baked clay items include pipes, discoids, and cooking "stones" as well as the net sinkers. Burials in cemetery areas, which were separate from habitation areas, were accompanied by a variety of grave goods. The presence of an established trade network is indicated by the recovery of *Olivella* shell beads, obsidian tools, and quartz crystals. Obsidian sources during the Middle Archaic included quarries in the North Coast Ranges, eastern Sierra, and Cascades (Rosenthal et al. 2007:153, 155).

Upper Archaic Period/Berkeley Pattern (550 cal B.C.–cal A.D. 1100)

Better understood than any of the preceding periods (Rosenthal et al. 2007:155-157), the Upper Archaic is characterized by a shift over a 1,000-year period to the more specialized, adaptive Berkeley Pattern. Excavated archaeological sites signal an increase in mortars and pestles, as well as archaeobotanical remains, accompanied by a decrease in slab milling stones and handstones. Archaeologists generally agree mortars and pestles are better suited to crushing and grinding acorns, while milling slabs and handstones may have been used primarily for grinding wild grass grains and seeds (Moratto 1984:209-210). The proportional change indicates a shift during the Berkeley Pattern to a greater reliance on acorns as a dietary staple (Fredrickson 1974:125; Moratto 1984:209; Wohlgemuth 2004). Innovations such as new types of shell beads, charmstones, bone tools, and ceremonial blades are additional evidence of the more specialized technology present during this period.

The artifact assemblage in Berkeley Pattern sites demonstrates that populations continued to exploit a variety of natural resources. In addition to seeds and acorns, hunting persisted as an important aspect of food procurement (Fredrickson 1973:125-126). Large, mounded villages that developed around 2,700 years ago in the Delta region included accumulations of habitation debris and features, such as hearths, house floors, rock-lined ovens, and burials (Rosenthal et al. 2007:156-157). The remains of a variety of aquatic

resources in the large shell midden/mounds that developed near salt or fresh water indicate exploitation of shellfish was relatively intensive.

Berkeley Pattern artifact assemblages are also characterized by *Olivella* shell beads, *Haliotis* ornaments, and a variety of bone tool types. Mortuary practices continue to be dominated by interment, although a few cremations have been discovered at sites dating to this period. Trade networks brought obsidian toolstone to the Central Valley from the North Coast Ranges and the east side of the Sierra Nevada Range.

A pan-central California sequence of directly dated *Olivella* shell bead horizons (Scheme D) is a relative dating sequence used by researchers to divide the Upper Archaic and subsequent Emergent Period into smaller units of time (bead horizons). Scheme D is the fourth radiocarbon-based sequence developed for central California. It is a refinement of the earlier Scheme B1 by Bennyhoff and Hughes (1987) and was developed by Groza (2002) uses radiocarbon dates to anchor the shell bead chronology. The Scheme D shell bead horizons are units of time, with no cultural implications other than the fact that they are defined by widely traded shell bead types (Hughes and Milliken 2007).

Emergent Period/Augustine Pattern (cal A.D. 1100–Historic Contact)

The comprehensive archaeological record for the Emergent or Late Prehistoric Period in the Central Valley shows an increase in the number of archaeological sites associated with the Augustine Pattern in the lower Sacramento Valley/Delta region, as well as an increase in the number and diversity of artifacts (Moratto 1984:211-214; Rosenthal et al. 2007:157-159). The Emergent Period was shaped by a number of cultural innovations, such as the bow and arrow and more elaborate and diverse fishing technology, as well as an elaborate social and ceremonial organization. Dart and atlatl technology was effectively replaced by the introduction of the bow and arrow. Additionally, the cultural patterns typical of the Augustine Pattern as viewed from the archaeological record are reflected in the cultural traditions known from historic period Native American groups (Rosenthal et al. 2007:157).

The faunal and botanical remains recovered at Emergent Period archaeological sites indicate the occupants relied on a diverse assortment of mammals, fish, and plant parts, including acorns and pine nuts. Hopper mortars, shaped mortars and pestles, and bone awls used to produce coiled baskets are among the variety of artifacts recovered from Augustine Pattern sites. The toolkit during this period also included bone fish hooks, harpoons, and gorge hooks for fishing, as well as the bow and arrow for hunting. Small, Gunther barbed series projectile points have been found at sites dating to the early part of the period, while Desert-side notched points appear later in the period (Rosenthal et al. 2007:158). The Stockton serrated arrow point also appears in archaeological assemblages dating to this period and in some parts of the lower Sacramento Valley, Cosumnes Brownware is present. The appearance of ceramics during this period is likely a direct improvement on the prior baked clay industry.

During the Emergent Period, numerous villages, ranging in size from small to large, were established along the valley floor sloughs and river channels and along the foothills sidestreams. House floors or other structural remains have been preserved at some sites dating to this period (e.g., CA-CAL-1180/H, CA-SAC-29, CA-SAC-267) (Rosenthal et al. 2007:158). The increase in sedentism and population growth led to the development of social stratification, with an elaborate social and ceremonial organization. Examples of items associated with rituals and ceremonials include flanged tubular pipes and baked clay effigies representing animals and humans. Mortuary practices changed to include flexed burials, cremation of high-status individuals, and pre-interment burning of offerings in a burial pit (Fredrickson 1973:127-129; Moratto 1984:211). Currency, in the form of clamshell disk beads, also developed during this period together with extensive exchange networks.

ETHNOGRAPHIC OVERVIEW

The project is located in lands historically occupied by the Nisenan (also known as the Southern Maidu) (Kroeber 1925, 1929; Wilson and Towne 1978). Prior to Euro-American contact, Nisenan territory included the southern extent of the Sacramento Valley, east of the Sacramento River between the North Fork Yuba River and Cosumnes Rivers on the north and south, respectively, and extended east into the foothills of the Sierra Nevada Range. Neighboring groups included the Plains Miwok on the south, Southern Patwin to the west across the Sacramento River beyond the Yolo Basin, and Konkow and Maidu to the north. Three Maiduan languages, Konkow, Maiduan, and Nisenan are regarded as a subgroup of Penutian stock. Ethnographers have also distinguished three Nisenan dialects (Northern Hill, Southern Hill, and Valley) (Kroeber 1925:393). The project area lies within Valley Nisenan territory, which included the lower American, Feather, and Sacramento Rivers (Kroeber 1925, 1929; Merriam 1966-1967; Wilson and Towne 1978). According to Maidu legend, the Sutter Buttes, known as *Histum Yani* or Spirit Mountain, are where the spirits of their people rest before journeying to the afterlife (California State Parks 2018).

Ethnographic Nisenan established central villages and smaller satellite villages along the main watercourses in their territories (Kroeber 1925:831; Moratto 1984:172-173; Wilson and Towne 1978:388-389). Valley Nisenan villages were generally on low, natural rises along streams and rivers or on gentle, south-facing slopes and Hill Nisenan villages on ridges and large flats along major streams. The semi-permanent or winter villages, as well as seasonally occupied campsites were used at various times during the seasonal round of subsistence activities associated with hunting, fishing, and gathering plant resources. Nisenan villages near the Project included *Yupu*, which was adjacent to the confluence of the Yuba and Feather rivers, *Mokolum*, *Mimal*, and *Tomchoh* (Wilson and Towne 1978: Figure 1).

Village population varied and is reported as ranging from 15 to over 500 individuals with the number of residences ranging from 40 to 50 in larger villages, and only three to seven in smaller villages (Kroeber 1925:831; Maloney 1944; Wilson and Towne 1978:388). Traditional village structures included semi-subterranean or aboveground conical, circular, or dome-shaped houses, as well as acorn granaries, winter grinding houses, ceremonial or dance houses, and sweathouses. Nisenan mortuary practices included cremation and an annual mourning ceremony in a designated, traditional community area (Kroeber 1925:429; Wilson and Towne 1978:392, 395).

Like the majority of Native Californians, the Nisenan relied on acorns as a staple food, which were collected in the fall and then stored in granaries (Wilson and Towne 1978:389-390). These seasonally mobile hunter-gatherers also relied on a wide range of abundant natural resources that were available in their territories. Large and small mammals, such as pronghorn antelope, deer, tule elk, black bears, cottontails, and jackrabbits, among other species, were hunted by individuals or by communal groups. Game birds, waterfowl, and fish, particularly salmon, were also important components of the Nisenan diet. In addition to acorns, plant resources included pine nuts, buckeye nuts, hazelnuts, fruits, berries, seeds, and underground tubers.

Similar to other California Native American groups, the Nisenan employed a variety of tools, implements, and enclosures for hunting and collecting natural resources (Wilson and Towne 1978:389-392). The bow and arrow, snares, traps, nets, and enclosures or blinds were used for hunting land mammals and birds. For fishing, they made canoes from tule, balsa, or logs, and used harpoons, hooks, nets, and basketry traps. To collect plant resources, the two groups used sharpened digging sticks, long poles for dislodging acorns and pinecones, and a variety of woven tools (seed beaters, burden baskets, and carrying nets).

Foods were processed with a variety of tools, such as bedrock mortars, cobblestone pestles, anvils, and portable stone or wooden mortars that were used to grind or mill acorns and seeds (Wilson and Towne 1978:389-390). Additional tools and implements included knives, anvils, leaching baskets and bowls,

woven parching trays, and woven strainers and winnowers. Prior to processing, the acorns were stored in the village granaries.

The Nisenan and neighboring groups participated in an extensive east-west trade network between the coast and the Great Basin (Wilson and Towne 1978:391). From coastal groups marine shell (*Olivella* and abalone) and steatite moved eastward, while salt and obsidian traveled westward from the Sierras and Great Basin. Basketry, an important trade item, moved in both directions.

The traditional culture and lifeways of the Nisenan who inhabited the fertile plains between Sacramento and the Sierra foothills, were disrupted beginning in the early 1800s. Although Spanish explorers entered Nisenan territory as early as 1808, there is no record of the forced movement of Nisenan to the missions (Wilson and Towne 1978:396). During the Mexican period, native peoples were affected by land grant settlements and decimated by foreign disease epidemics that swept through the densely populated Central Valley. An epidemic that swept the Sacramento Valley in 1833 caused the death of an estimated 75 percent of the Valley Nisenan population, wiping out entire villages (Cook 1955:322).

In the heart of Nisenan territory, the discovery of gold in 1848 at Sutter's Mill on the American River near Coloma had a devastating impact on the remaining Nisenan, as well as other groups of Native Americans in the Central Valley and along the Sierra Nevada foothills (Chartkoff and Chartkoff 1984:296). By 1850, with their lands, resources and way of life being overrun by the steady influx of non-native people during the Gold Rush, surviving Nisenan retreated to the foothills and mountains or labored for the growing ranching, farming, and mining industries (Wilson and Towne 1978:396). Nisenan descendants reside on the Auburn, Berry Creek, Chico, Enterprise, Greenville, Mooretown, Shingle Springs, and Susanville rancherias, as well as on the Round Valley Reservation (BIA 2016; California Indian Assistance Program 2011).

HISTORIC OVERVIEW

Spanish, Mexican, and American Periods

Post-contact history for the State of California generally is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). Although there were brief visits by Spanish, Russian, and British explorers from 1529 to 1769, the beginning of Spanish settlement in California occurred in 1769 at San Diego. Between 1769 and 1823, 21 missions were established by the Spanish and the Franciscan Order along the coast between San Diego and San Francisco. The Spanish expeditions into the Central Valley in 1806 and 1808 led by Lieutenant Gabriel Moraga explored along the main rivers, including the American, Calaveras, Cosumnes, Feather, Merced, Mokelumne, Sacramento, San Joaquin, and Stanislaus. He is said to have named the lower Sacramento River and the valley region "Sacramento" ("the Holy Sacrament") (Hoover et al. 2002:301). The last Spanish expedition into California's interior was led by Luis Arguello in 1817 and traveled up the Sacramento River, past the future site of the City of Sacramento to the mouth of the Feather River, before returning to the coast. Arguello is credited with naming the Feather River, *El Rio de Las Plumas* (Beck and Haase 1974:18, 20; Gunsky 1989:3-4).

After the end of the Mexican Revolution (1810–1821) against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, as well as by exploration by American fur trappers west of the Sierra Nevada Mountains. Most of the land grants to Mexican citizens in California (*Californios*) were in the interior since the Mexican Republic sought to increase the population away from the more settled coastal areas where the Spanish settlements had been concentrated. One of the largest land grants in the Sacramento Valley were awarded to John Sutter. In 1839,

he founded a trading and agricultural empire called New Helvetia that was headquartered at Sutter's Fort near the divergence of the Sacramento and American rivers in today's City of Sacramento (Hoover et al. 2002). Only a small portion of the 48,839-acre New Helvetia land grant was located in Sacramento County; the majority was located in today's Sutter and Yuba counties on the east and west sides of the Feather River (Beck and Haase 1974:26, 28). By 1841, Sutter had established Hock Farm, one of California's first large-scale agricultural ventures, next to the Feather River upon the site of the Nisenan village of *Hok* (Sutter County Historical Society 2007).

The first American trapper to enter California, Jedediah Smith, explored along the Sierra Nevada in 1826 and in 1827, he entered the Sacramento Valley, traveling along the American and Cosumnes rivers. In 1827, Smith also traveled through the San Joaquin Valley. Other trappers soon followed, including employees of the Hudson's Bay Company in 1832 (Hoover et al. 2002:370). Between 1830 and 1833, and again in 1837, diseases introduced by the non-indigenous explorers, trappers, and settlers, as well as relocation to the missions, military raids, and settlement by non-native groups, decimated native Californian populations, communities, and tribes in the Sacramento and San Joaquin valleys (Cook 1955).

The American Period was initiated in 1848 with the signing of the Treaty of Guadalupe Hidalgo, which ended the Mexican–American War (1846–1848), and California became a territory of the United States. Gold was discovered at Sutter's Mill on the American River in Coloma the same year, and by 1849, nearly 90,000 people had journeyed to the gold fields. In 1850, largely as a result of the Gold Rush, California became the thirty-first state. In contrast to the economic boom and population growth that enabled statehood, the loss of land and territory (including traditional hunting and gathering locales), malnutrition, starvation, and violence further contributed to the decline of indigenous Californians in the Central Valley and all along the Sierra Nevada foothills (Chartkoff and Chartkoff 1984:296; Gunsky 1989).

Local History

Sutter County is one of the original 27 counties created when California became a state in 1850. The county was named in honor of the famous Sacramento Valley settler and pioneer, John Augustus Sutter. Yuba City is located within the boundaries of the former New Helvetia rancho, awarded to John Sutter by Mexican Governor Juan Bautista Alvarado in 1841. The western boundary of the rancho is 1.5 miles east of the current Project area. The county seat was initially located in Auburn; however, after Auburn became the seat for Placer County in 1851, the seat was moved to the small town of Vernon (now called Verona). In 1856, the boundaries were fixed to their present locations and Yuba City was designated the county seat, where it remains to this day (Hoover et al. 2002:522-523).

The initial growth of Sutter County was a result of the influx of miners to the region during the Gold Rush. Yuba City was founded during this period. Conceived by Samuel Brannan, Pierson Reading, and Henry Cheever as a distribution center for supplies to the miners, in July 1849 they purchased land from Sutter to establish a town on the west bank of the Feather River. The town was named after and founded upon the site of the Nisenan village of *Yupu*. By 1852, Yuba City was an established steamboat landing, and was chosen as the county seat two years later. The county seat was then moved to Nicolaus, but returned to Yuba City in 1856 (Hoover et al. 2002:522-525).

On the eastern bank of the Feather River, another town was developing to serve the miners. In neighboring Yuba County, Marysville was laid out in 1850, grew more rapidly than Yuba City, and ultimately became the commercial center for the mines of the Northern Mother Lode. As mining efforts moved farther from the river as the easily accessible gold along the sand bars was exhausted, many miners began settling in Sutter County to develop the rich agricultural land. Yuba City began to grow again during this period, with an economy focused on agricultural production, with wheat, grains, and cattle being the dominant products.

Yuba City was incorporated in January 1908 (Dyett & Bhatia 2004:1-3; Hoover et al. 2002:525, 572-573). PBS&J 2010:6.7/3-5).

The late 1800s and early 1900s witnessed the arrival of several rail lines to Yuba City and Marysville, including the Central Pacific Railroad in 1864, the Southern Pacific in 1887, the Northern California Railroad by 1890, the Northern Electric Railway in 1905, and the Western Pacific in 1909 (Sutter County Historical Society 2007). Two lines provided east-west access across the Feather River connecting Yuba City and Marysville, the Northern Electric and the Northern California Railroad (Galvin 2011:11). The railroads provided industrial opportunities with freight service and also provided passenger service.

Canning was an important component of Sutter County's agricultural industry, and companies established processing plants in the commercial center of Yuba City along the railroad tracks and near the Feather River. In 1884, the Sutter Canning and Packing Company was established on B Street near the tracks of the Northern California Railroad (Southern Pacific Railroad by 1899) and was soon processing tons of currants, apricots, peaches, pears, cherries, plums, and tomatoes. The demand for the canned fruits increased yearly, and by 1893, the company was exporting to England. Three years later, the company was processing olive oil and barrels of pickled olives, and in 1899, another company opened a cannery on the opposite of B Street (Rosenberg Brothers). By 1910, the Central California Cannery was operating a more modern facility (Schnabel 1966; Sutter County Historical Society 2007). The Sun-Maid Raisin Growers Association also established a packing plant along the rail lines, where they processed the County's innovative seedless grapes (Galvin 2011:8).

The Northern Electric Railway was established to connect the agricultural towns of the upper Sacramento Valley to the San Francisco Bay Area. From late 1905 to 1918, the 93-mile line connected Sacramento to Yuba City–Marysville and Chico. The company was re-named twice after acquisitions, first in 1914 as the Sacramento Northern Railroad and again in 1922 as the Sacramento Northern Railway (SN Railway) when it became part of the Western Pacific Railroad (Western Pacific). When the Western Pacific acquired the San Francisco-Sacramento Railroad in 1928, the combined, 183-mile, SN Railway achieved the goal of connection with the Bay Area. The railway had a small depot on Second Street in Yuba City and another station in Marysville (Collum 2011; Galvin 2011:12-13; American-Rails 2018; Western Railway Museum 2018).

Heading west from Yuba City, the Northern Electric Railway (later SN Railway) turned north at "Terra Buena" approximately 1.5 miles south of the current Project area, as shown on the historic 1911 Sutter USGS 1:31,680 quadrangle. A 1913 map of Sutter County, published by Edward Denny & Co., shows "Terra Buena" as a gridded settlement around Colusa Junction (present-day Tierra Buena Road and Redding Avenue). From the junction, the Northern Electric/SN Railway headed north while its Colusa Branch headed west. In 1954, the name of the Terra Buena settlement was officially changed by the U.S. Board on Geographic Names to the more correct Spanish Tierra Buena for "good earth" (Gudde 1998:393).

The next stop on the railroad north from "Terra Buena" was Pease. This station was located on the Pease Ranch and south of the current Project area. Mark Pease had journeyed with his parents from New Hampshire to California in 1877, when he was ten years old (*Marysville Star* 15 July 1936). He became a pioneer raisin farmer in the County, well-known for propagating the Thompson Seedless grape. A spur track built by the railroad at Pease Station made it one of the principal grape shipping points in the region (*Sacramento Union* 10 April 1915). A California Historical Landmark (No. 929), the "Site of the Propagation of the Thompson Seedless Grape" is located approximately 6 miles southwest of the Project area at 9001 Colusa Highway (State Route 20).

North from Pease, the Northern Electric/SN Railway crossed on its north/south alignment through the middle of the current Project area. This rail line is shown traversing the Project area on the early 1911 and 1913 historic maps, and on subsequent quadrangles surveyed in the early 1950s (1952 Marysville USGS 15-minute and 1952 Sutter USGS 7.5-minute quadrangles). The 1973 photorevised version of the 1952 Sutter quadrangle continues to show the railroad (see Figure 1). By production of the next topographic map series in this region (2012 Sutter USGS 7.5-minute quadrangle), the rail line is no longer depicted.

In 1940, after the growth of automobile use and then the 1930s Great Depression, passenger service by the SN Railway was discontinued. In the early 1960s, the railway converted its freight service to diesel and eliminated the need for power lines. Shortly after the Western Pacific was acquired by the Union Pacific Railroad in 1983, the SN Railway freight depot in Yuba City was closed, although there was enough business from the Sunsweet plant and Harter Cannery to keep the line operational in Yuba City until 2003. As sections of the line were abandoned, the tracks were removed, although segments of the SN Railway are still used by commuter lines, museums, and freight lines (Collum 2011; Galvin 2011:12-13; American-Rails 2018; Western Railway Museum 2018).

The County continues to rely on agriculture as its primary economic industry. Orchard crops (prunes, apricots, peaches, etc.) are particularly productive in areas near the river. Sunsweet Growers operates the world's largest dried tree fruit processing plant in Yuba City. Pressure for further urban expansion has been greatest in the agricultural areas to the west and south of the City, particularly along the highway corridors where new homeowners can more readily commute to jobs in the greater Sacramento metropolitan area (Dyett & Bhatia 2004:1-3; PBS&J 2010:6.7/3-5; Sunsweet 2018).

Historic Maps, Land Patents, and Aerial Photographs

The 1867 General Land Office (GLO) Plat for Township 15 North, Range 3 East shows a road trending northwest-southeast through Section 5, east of the current Project area, but no buildings in Section 5. Federal land patent records indicate the portion of Section 5 with the Project area was acquired by Balser Sapp in 1872 (Table 2; BLM n.d.). The 1873 Official Map of Sutter County lists the property owner as "B. F. Supp" [sic]. A reference was found in Thompson & West (1879:46) for a "B. F. Sapp" as being a charter member of the Yuba City Lodge, No. 185, of the International Order of Odd Fellows (I.O.O.F.). Census information indicates "Balser F. Sapp" was born in Ohio in 1830, but no records were found that indicate Sapp was a significant figure in history.

The early historic maps (1888 Marysville USGS 1:125,000; 1911 Yuba City USGS 1:31,680) show the more rapid growth of Marysville compared to Yuba City. By production of the 1952 Marysville and 1952 Yuba City USGS 7.5-minute quadrangles, the size of the two cities is comparable.

The 1888 Marysville USGS 1:125,000 shows a north-south trending road adjacent to the Project area. The Northern Electric Railway (later SN Railway) is shown on the 1911 Sutter USGS 1:31,680 quadrangle, heading north from "Terra Buena" in Section 17. The map also shows the approximate location of Pease Station in Section 5 on the north side of present-day Pease Road, southeast of the current Project area. Continuing north, between Pease and the next stop at Neustro, the historic maps show the Northern Electric/SN Railway passing through the middle of the current Project area along the line's north/south orientation.

By production of the 1913 map of Sutter County published by Edward Denny & Co., a second branch of the Northern Electric/SN Railway headed west (Colusa Branch) from Colusa Junction in Section 17. The map also shows the development of housing grids around Colusa Junction and "Terra Buena." The 1952 Marysville USGS 15-minute and 1952 Sutter USGS 7.5-minute quadrangles name Tierra Buena at Colusa

Junction. The two maps also show orchards surrounding the Project area, and name Pease Road. Continuing residential growth in the community is depicted on the 1973 photo-revision of the 1952 Sutter USGS 7.5-minute quadrangle. Except for the rail line, none of the historic maps show any buildings or other structures within the Project area.

The series of available aerial photographs, dating from 1987 onward, show orchards with scattered rural residences/farm buildings in the Project vicinity, with present-day Tierra Buena Road bordering the western edge of the Project area. No tracks of the SN Railway are discernable within or near the Project area on the aerial images, and none of the aerials show any buildings or other structures within the Project area. By 1998, a single-family residence had been built within former railroad grade northeast of the intersection of Tierra Buena and Pease roads, less than 200 feet south of the Project area.

PRE-FIELD RESEARCH

CULTURAL RESOURCES LITERATURE SEARCH METHODS AND RESULTS

Northeast Information Center

A cultural resources literature search was completed on February 26, 2019, by the Northeast Information Center (NEIC) of the California Historical Resources Information System (CHRIS) at California State University, Chico. The search was conducted to determine if prehistoric or historic cultural resources were previously recorded within the Project area, the extent to which the Project area had been previously surveyed, and the number and type of cultural resources within a 0.25-mile radius of the Project area. The record search summary (NEIC File No. D19-20) is attached as Appendix A. The archival search by the NEIC of the archaeological and historical records, national and state databases, and historic maps included:

- National Register of Historic Places: listed properties (2012)
- California Register of Historical Resources: listed resources (2012)
- Historic Property Data File (HPDF) and Archaeological Determinations of Eligibility (ADOE) for Sutter County (2012)
- California Inventory of Historic Resources (1976)
- California Historical Landmarks (2012)
- California Points of Historical Interest (2012)
- Sacramento Union (1915)
- Find A Grave (2018) (article from *Marysville Star* 15 July 1936)
- Article from *Sacramento Union* 10 April 1915
- 1867 General Land Office (GLO) Plat for Township 15 North, Range 3 East
- 1888 Marysville USGS 1:125,000
- 1911 Sutter USGS 1:31,680 quadrangle

The records search by the NEIC indicates three prior studies have been completed within the 0.25-mile search radius, and that the Project area has not been previously surveyed for cultural resources (Table 1). Two of the prior studies were general overviews and did not involve pedestrian surveys (NEIC Nos. 1151 and 5754). The records search by the NEIC further indicates no cultural resources have been previously recorded within the current Project area or within the 0.25-mile search radius.

Table 1. Prior Cultural Studies within 0.25-Mile Radius of the Project Area			
NEIC Report No.	**Report Title**	**Author and Year**	**Within Project Area?**
9954	Cultural Resources Inventory for the Pease-Marysville 60kV Transmission Line Project, Sutter and Yuba Counties	Berg et al. 2008	No
1151	Appendix II: Historical, Cultural and Scenic Sites and Places on Scenic Highways in Yuba City Planning Area	County of Sutter n.d.	No
5754	Yuba City General Plan Historical Resources Overview	A. Huberland 2003	No

Other Cultural Resources Information Sources

In addition to the summary provided by NEIC, Natural Investigations staff reviewed the historic maps and series of aerial photographs, listed below, and the federal land patent records maintained by the Bureau of Land Management (BLM n.d.) (Table 2). The results of our review of historic maps, aerials, and land patents are incorporated in the Local History section.

- 1873 Official Map of Sutter County by J. T. Pennington
- 1911 Yuba City USGS 1:31,680 quadrangle
- 1913 Map of Sutter County, published by Edward Denny & Co.
- 1952 Marysville USGS 15-minute quadrangle
- 1952 (PR 1975) Yuba City USGS 7.5-minute quadrangle
- 1952 Sutter USGS 7.5-minute quadrangle
- Aerial photograph for 1987 from collections at UC Santa Barbara Library
- Aerial photographs for 1998, 2005, 2009, 2010, 2012, and 2014 from NETR

Table 2. Land Patent Records for Township 15 North, Range 3 East, Section 5				
Name	**Date**	**Authority**	**Aliquot**	**Total Acres**
Armstrong, John	8/5/1869	Cash sale	W1/2 SW 1/4	160
Clark, Joseph	12/1/1875	1862 State Grant-Agri College	E1/2 SE 1/4	160
Hobbs, Samuel	12/30/1870	Cash sale	W1/2 NE ¼, lots 1,2,7,8	173.2
Lincoln, Delano	12/1/1868	Cash sale	E1/2, lots 7&8	160
Pinney, Alden	2/10/1873	Homestead	NW1/4, lots 5&6	160
Richardson, Ambrose	4/1/1871	Cash sale	NW1/4, lots 3&4	170.1
Sapp, Balser	6/5/1872	1862 State Grant-Agri College	W1/2 SE1/4, E1/2 SW ¼	160

NATIVE AMERICAN SACRED LANDS FILE

Natural Investigations contacted the Native American Heritage Commission (NAHC), requesting a search of their Sacred Lands File for traditional cultural resources within or near the Project area. The reply from the NAHC, dated February 13, 2019, states that the search did not identify sacred sites in the Project vicinity. The NAHC response letter is provided as Appendix B.

PALEONTOLOGICAL RECORDS SEARCH AND SENSITIVITY

A search of the paleontological records maintained by the University of California Museum of Paleontology (UCMP) was conducted on February 21, 2019. The UCMP database indicates 37 fossil localities have been recorded within Sutter County (UCMP 2019a). Of these, only five localities have yielded vertebrate fossils. One shark from the Marysville Buttes dates to the Eocene, one extinct horse from the Sutter Buttes to the Miocene, and three extinct mammals to the Pleistocene. The Pleistocene specimens are a bison, horse, and proboscidean from three different localities (Marysville Buttes and two localities near the Sutter Bypass southwest of Yuba City). The remaining localities recorded in the UCMP database have produced invertebrate and microfossil marine specimens, mainly from the Eocene Capay shale. There are also five plant localities ranging in age from the Cretaceous to the Holocene, two of which lack specimens, including one from the Modesto Formation at the Sutter Energy Center, which is located approximately 7 miles southwest of Yuba City.

Geologic maps indicate the project is underlain by the Late Pleistocene-age Modesto Formation (Qm), which was deposited between 40,000 and 11,500 years before present (Atwater et al. 1986; Busacca et al. 1989; Saucedo and Wagner 1992). This rock unit was deposited by rivers still existing today and forms alluvial terraces and fans of major rivers along the axis of the Central Valley (Helley and Harwood 1985). Widely distributed along the rivers in the Sacramento and San Joaquin valleys, the type section for this formation is along the south bluff of the Tuolumne River in Modesto County south of the City of Modesto. The upper member is composed primarily of unconsolidated, unweathered coarse sand and sandy silt; the lower member is composed of consolidated, slightly weathered, well-sorted silt and fine sand, silty sand, and sandy silt.

The Modesto Formation has a high sensitivity for paleontological resources, as a diversity of vertebrate fossils have been recovered from sediments referable to this formation at a number of localities in the Central Valley, including Fresno, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Yolo counties, although not from Sutter County (UCMP 2019b). The Tranquility locality in Fresno County, for example, has yielded more than 130 Rancholabrean-age fossils from sediments referable to the Modesto Formation. Rancholabrean (younger Pleistocene and Holocene fauna) vertebrate fossils identified from this formation include mammoth, bison, horse, camel, ground sloth, elephant, antelope, elk, deer, coyote, and a variety of smaller mammals and invertebrates.

While there is no record of fossils and no unique geologic features known to exist within the current Project vicinity, considering the vertebrate fossil sensitivity of the Modesto Formation, the field survey included inspection for geologic outcrops that may contain paleontological resources.

FIELD METHODS

An intensive-level pedestrian survey within the Project area was conducted by Natural Investigations archaeologist and cross-trained paleontologist, Cindy Arrington, on March 18, 2019. Survey transects were spaced at intervals no greater than 15 meters. The entire Project area was covered by the survey and carefully examined for the presence of cultural resources and geologic outcrops that may contain paleontological resources. The survey transects followed a north-south pattern within the 0.43-acre project area.

During the survey, all visible ground surface within the Project area was carefully examined for paleontological resources and for cultural material (e.g., flaked stone tools, tool-making debris, stone milling tools, or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes,

foundations), or historic-era debris (e.g., metal, glass, ceramics). Ground disturbances (e.g., two-tracks, animal burrows, etc.) were visually inspected. A digital camera was used to take photographs of the Project parcel, showing ground surface visibility and items of interest. A handheld BE-3300-global positioning system (GPS) unit with sub-meter accuracy was used to record locational data. Soil color was recorded using a Munsell® color chart.

FINDINGS

SUMMARY

No prehistoric or historic-era archaeological sites, ethnographic sites, or historic-era built environment resources, including no evidence of the former tracks or grade of the Northern Electric/Sacramento Northern Railway, were identified during survey of the Project area. As discussed under the section on Pre-field Research, the records maintained by the NEIC indicate no cultural resources have been previously recorded within the Project area.

No fossils, no unique geologic features, and no alluvial deposits attributable to the Modesto Formation were observed during the survey.

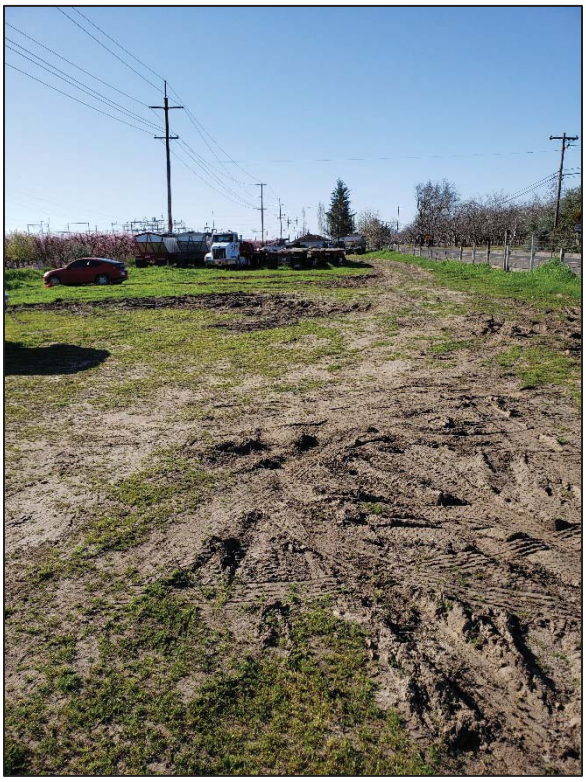
DESCRIPTION OF SURVEYED AREA

The Project area is accessed via and bounded on the west by Tierra Buena Road, a two-lane asphalt road (Photograph 1). A 4-foot-high wire fence with wood fenceposts separates the Project area from the road and also separates the Project area from the property to the north. A 4-foot-high wire fence with three stands of barbed wire atop and metal fenceposts separates the Project area from an almond and peach orchard and the PG&E distribution line to the east. The southern boundary of the Project area is open to the Valdez Trucking Yard.

The relatively unimproved Project area, used as an agricultural truck yard and for storage, presently contains a multitude of box and semi-trucks, hopper and flat-bed trailers, a boat, small travel trailer, car, and a wood chipper (Photographs 1 and 2). There is a rutted two-track along the western edge of the Project area, which is used for moving the trucks and trailers around. The terrain is primarily flat throughout the entire Project area with a very slight slope to the west/southwest toward Tierra Buena Road. The Project parcel is approximately 61 feet above msl on the eastern boundary and slopes to approximately 58 feet above msl along the western boundary.

Vegetation cover within the Project area was relatively sparse, comprised of grasses and low weeds outside the barren areas heavily disturbed by the truck traffic. Ground visibility within the majority of the Project area (~75% of the acreage) was thus fair to good (30-60%) (Photographs 1 and 2). Along the rutted two-track, approximately 20% of the Project area, ground visibility was excellent (90-100%) (Photograph 3). The remaining 5% of the Project area had poor ground visibility (<5%) due to the density of the grass cover (Photograph 4). A moderate amount of modern litter was present: paper, plastic, tires, fencing materials, and two plastic 55-gallon drums along the eastern boundary fence line. Surface soil within the Project area was a light brownish gray (10YR 6/2) sandy loam, consistent with the Conejo-Tisdale series.

There was no evidence within the Project area of the former tracks or grade of the Northern Electric/SN Railway, which passed through the middle of the Project area in a north/south alignment between 1905 and when this section of the line was abandoned and the tracks removed after acquisition of the Western Pacific by the Union Pacific Railroad in 1983. The tracks are not discernable on the earliest available aerial photograph from 1987, a single-family residence had been built by 1998 within former railroad grade northeast of the intersection of Tierra Buena and Pease roads less than 200 feet south of the Project area, and the line is no longer depicted on the 2012 Sutter USGS 7.5-minute quadrangle. There was also no evidence within the Project area of any debris frequently found in association with abandoned rail lines.



Photograph 1. Overview of Project area and trucking impact on surface (view to south)



Photograph 2. View of orchards along eastern boundary (view to southeast)



Photograph 3. Example of excellent ground visibility (plan view)



Photograph 4. Example of poor ground visibility (plan view)

CONCLUSIONS AND RECOMMENDATIONS

CULTURAL RESOURCES

No archaeological or built environment resources were identified during the survey, and no cultural resources were previously recorded within the Project area. Thus, the proposed Project does not have the potential to cause a significant impact on any resource that currently qualifies as a historical resource under CEQA, or that has been recommended eligible for listing in the NRHP or CRHR.

No Construction Monitoring

Based on the results of the records search, review of archival maps and photographs, areal geology and soils, field survey, and assessment of potential direct or indirect Project impacts, no additional cultural resources work is recommended at this time. The potential for the discovery of buried archaeological materials within the Project area is considered to be low. The Project area has been heavily disturbed by construction and removal of the Northern Electric/SN Railway tracks, leveling of the former railroad grade, historic agricultural activities, and use as an agricultural truck yard and storage area. Additionally, the discovery of buried archaeological deposits in the alluvial sediments underlying the Project area is extremely unlikely due to the age of the Modesto Formation. Construction monitoring of ground-disturbing activity is thus not recommended.

Unanticipated Discoveries

In the event that cultural resources are inadvertently discovered during Project activities, work must be halted in that area within 50 feet (15 meters) of the find and a qualified archaeologist (36 CFR Part 61)

must be immediately notified. Work must remain halted to allow the qualified archaeologist to assess the significance of the find. Construction activities could continue in other areas, but not resume in the vicinity of the find until the property owner, VESI 10, County of Sutter, or other relevant regulatory agency provides written permission. If the discovery proves to be significant, additional work, such as data recovery excavation, may be warranted and would be discussed in consultation with the County, property owner, VESI 10, and any other relevant regulatory agency, as appropriate.

Human Remains

Although unlikely, the discovery of human remains is always a possibility. State of California Health and Safety Code Section 7050.5 covers these findings, except on federal and tribal lands. This code section states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendent (MLD). The MLD shall 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.

PALEONTOLOGICAL RESOURCE RECOMMENDATIONS

Based on the results of the field survey and assessment of potential direct or indirect project impacts, no additional work for paleontological resources is recommended at this time. Implementation of the proposed Project is considered to have a low potential to uncover or damage fossils or to cause a significant impact on any resource that currently qualifies as a significant paleontological resource. Although the Modesto Formation is considered to have a high sensitivity for paleontological resources, no evidence of this rock units and no fossils or unique geologic outcrops were observed during the survey. Construction monitoring of ground-disturbing activity for the presence of paleontological resources within the heavily disturbed Project area is thus not recommended.

Although unlikely, should paleontological resources be discovered during ground disturbing activities for the Project, work must be halted in that area within 50 feet of the find and a qualified paleontologist notified immediately to evaluate the find. Construction activities could continue in other areas. If the discovery proves to be significant under SVP criteria, additional work, such as fossil recovery excavation, may be warranted and would be discussed in consultation with the County, property owner, VESI 10, and any other relevant regulatory agency, as appropriate.

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APPENDIX A:
NEIC Record Search Summary (File No. D19-20)

Northeast Center of the
California Historical Resources
Information System

BUTTE
GLENN
LASSEN
MODOC
PLUMAS
SHASTA

SIERRA
SISKIYOU
SUTTER
TEHAMA
TRINITY

123 West 6th Street, Suite 100
Chico CA 95928
Phone (530) 898-6256
neinfocntr@csuchico.edu

February 26, 2019

Natural Investigations Company
3104 O Street, #221
Sacramento, CA 95816
Attn.: Ms. Cindy Arrington

I.C. File # D19-20
Records Search

RE: Tierra Buena Energy Storage, Project # 646
T15N, R3E, Section 5 MDBM
USGS Sutter 7.5' and Marysville (1952) 15' quads
Approximately 0.43 acres, estimated from project map (Sutter County)

Dear Ms. Arrington,

In response to your request, a records search for the project cited above was conducted by examining the official maps and records for archaeological sites and surveys in Sutter County. Please note, the search includes the requested ¼-mile radius surrounding the project area.

RESULTS:

Prehistoric Resources: According to our records, no sites of this type have been recorded in the project area or ¼-mile project vicinity. The project is located in a region utilized by Nisenan populations. Unrecorded prehistoric cultural resources may be located within the project area.

Historic Resources: According to our records, no sites of this type have been recorded in the project area or ¼-mile project vicinity. Unrecorded historic cultural resources may be located in the project area.

The USGS Marysville (1952) 15' quad map indicates that the Sacramento Northern Electric Railroad, a road, and orchard are located within the project area, while Nuestro, the Live Oak Canal, East Interception Canal, orchards, structures, and roads are located in the general project vicinity.

A copy of the GLO plat map (1867) depicting a road, house, and fences in the project vicinity is enclosed. Additionally, a copy of the historic Marysville (1888) quad map depicting a road within the project area is also enclosed. Finally, a copy of the historic Sutter (1911) quad map depicting the Sacramento Northern Electric Railroad, the historical area of Pease (possibly including Pease Station, a principle shipping point of grapes in the region), and a road within the project area is also enclosed.

Pease Station and the Sacramento Northern Electric Railroad were located on the Pease Ranch. Mark Pease, born in New Hampshire, was a pioneer raisin farmer in Sutter County. Pease is credited with the propagation of the Thompson Seedless Grape. The Site of the Propagation of the Thompson Seedless Grape located a few miles from the project area is a California State Landmark. Please see the additional enclosures for more information on Pease and the history of the project area and vicinity.

Previous Archaeological Investigations: According to our records, portions of the ¼-mile project vicinity have been previously surveyed for cultural resources. Survey locations are plotted on the enclosed NEIC-generated map and Report Details are included. Copies of the studies are NOT included, per your request. The studies are listed below.

Berg, John E., Sharon A. Waechter, Kimberly Carpenter, and Cindy Baker (Far Western, PAR Environmental)

2008 *Cultural Resources Inventory for the Pease-Marysville 60kV Transmission Line Project, Sutter and Yuba Counties, California.*
NEIC Report 009954

County of Sutter

Appendix II: Historical, Cultural and Scenic Sites and Places on Scenic Highways in Yuba City Planning Area.
NEIC Report 001151

Huberland, Amy (Northeast Information Center)

2003 *Yuba City General Plan Historical Resources Overview.*
NEIC Report 005754
Resources:
P-51-000005 (CA-SUT-000005/H)
P-51-000010 (CA-SUT-000010)
P-51-000015 (CA-SUT-000015/H)
P-51-000020 (CA-SUT-000020)
P-51-000094

Literature Search: The official records and maps for archaeological sites and surveys in Sutter County were reviewed. Also reviewed: **National Register of Historic Places - Listed properties and Determined Eligible Properties** (2012); **California Register of Historical Resources** (2012); **California Points of Historical Interest** (2012); **California Inventory of Historic Resources** (1976); **California Historical Landmarks** (2012); **Sacramento Union** (1915); **Find A Grave** (2018); **Directory of Properties in the Historic Property Data File for Sutter County** (2012); **Handbook of North American Indians, Vol. 8, California** (1978); and **Historic Spots in California** (2002).

RECOMMENDATIONS:

We recommend that you contact the appropriate local Native American representatives for information regarding traditional cultural properties that may be located within project boundaries for which we have no records.

The charge for this record search is **$326.20** (please refer to the following page for more information). An invoice will follow from the CSUC Research Foundation for billing purposes. Thank you for your concern in preserving California's cultural heritage, and please feel free to contact us if you have any questions or need any further information or assistance.

Sincerely,

Adrienne Springsteen
Research Associate

APPENDIX B:
Sacred Lands File Search

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov

February 13, 2019

Cindy Arrington
Natural Investigations Company

VIA Email to: cindy@naturalinvestigations.com

RE: Tierra Buena Energy (#646) Project, Community of Tierra Buena; Sutter USGS Quadrangle, Sutter County

Dear Ms. Arrington:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF 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.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. 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. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, B.S., M.A., Ph.D.
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Sutter County
2/13/2019

Estom Yumeka Maidu Tribe of the Enterprise Rancheria
Glenda Nelson, Chairperson
2133 Monte Vista Avenue — Maidu
Oroville, CA, 95966
Phone: (530) 532 - 9214
Fax: (530) 532-1768
info@enterpriserancheria.org

Mooretown Rancheria of Maidu Indians
Guy Taylor,
#1 Alverda Drive — KonKow
Oroville, CA, 95966 — Maidu
Phone: (530) 533 - 3625

Mooretown Rancheria of Maidu Indians
Benjamin Clark, Chairperson
#1 Alverda Drive — KonKow
Oroville, CA, 95966 — Maidu
Phone: (530) 533 - 3625
Fax: (530) 533-3680
frontdesk@mooretown.org

Pakan'yani Maidu of Strawberry Valley Rancheria
Tina Goodwin, Chairperson
P.O. Box 984 — Maidu
Marysville, CA, 95901 — Miwok
Phone: (617) 417 - 2166
tinagoodwin@washoetanf.org

Tsi Akim Maidu
Don Ryberg, Chairperson
P.O. Box 510 — Maidu
Browns Valley, CA, 95918
Phone: (530) 559 - 8595
tsi-akim-maidu@att.net

Tsi Akim Maidu
Grayson Coney, Cultural Director
P.O. Box 510 — Maidu
Browns Valley, CA, 95918
Phone: (530) 383 - 7234
tsi-akim-maidu@att.net

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road — Maidu
Auburn, CA, 95603 — Miwok
Phone: (530) 883 - 2390
Fax: (530) 883-2380
bguth@auburnrancheria.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Tierra Buena Energy Project, Sutter County.

Appendix G: CalEEMoD Version 2016.3.2 Emission Data Model Spreadsheet

VESI 10 Tierra Buena BESS Project

Sutter County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.00		0.32	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	61
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Stationary Sources - Emergency Generators and Fire Pumps -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0248	0.2537	0.1951	3.0000e-004	1.1700e-003	0.0156	0.0167	4.8000e-004	0.0143	0.0148	0.0000	26.6832	26.6832	8.2700e-003	0.0000	26.8901
2020	0.0241	0.2440	0.2080	3.2000e-004	5.5000e-004	0.0143	0.0149	1.5000e-004	0.0132	0.0133	0.0000	28.3157	28.3157	8.9500e-003	0.0000	28.5394
Maximum	**0.0248**	**0.2537**	**0.2080**	**3.2000e-004**	**1.1700e-003**	**0.0156**	**0.0167**	**4.8000e-004**	**0.0143**	**0.0148**	**0.0000**	**28.3157**	**28.3157**	**8.9500e-003**	**0.0000**	**28.5394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0248	0.2537	0.1951	3.0000e-004	5.5000e-004	0.0156	0.0161	2.1000e-004	0.0143	0.0145	0.0000	26.6832	26.6832	8.2700e-003	0.0000	26.8900
2020	0.0241	0.2440	0.2080	3.2000e-004	5.5000e-004	0.0143	0.0149	1.5000e-004	0.0132	0.0133	0.0000	28.3157	28.3157	8.9500e-003	0.0000	28.5394
Maximum	**0.0248**	**0.2537**	**0.2080**	**3.2000e-004**	**5.5000e-004**	**0.0156**	**0.0161**	**2.1000e-004**	**0.0143**	**0.0145**	**0.0000**	**28.3157**	**28.3157**	**8.9500e-003**	**0.0000**	**28.5394**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**36.05**	**0.00**	**1.96**	**42.86**	**0.00**	**0.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

VESI 10 Tierra Buena BESS Project - Sutter County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-6-2019	1-5-2020	0.3003	0.3003
2	1-6-2020	4-5-2020	0.2494	0.2494
		Highest	0.3003	0.3003

2.2 Overall Operational

Unmitigated Operational

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

Mitigated Operational

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/19/2019	10/21/2019	5	1	
2	Grading	Grading	10/22/2019	10/23/2019	5	2	
3	Building Construction	Building Construction	10/24/2019	3/11/2020	5	100	
4	Paving	Paving	3/12/2020	3/18/2020	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.25

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

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	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0260	0.0260	0.0000	0.0000	0.0260
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0260**	**0.0260**	**0.0000**	**0.0000**	**0.0260**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-004	0.0000	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**1.0000e-004**	**1.8000e-004**	**2.8000e-004**	**1.0000e-005**	**1.7000e-004**	**1.8000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

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	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0260	0.0260	0.0000	0.0000	0.0260
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0260**	**0.0260**	**0.0000**	**0.0000**	**0.0260**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**7.5000e-004**	**5.4000e-004**	**1.2900e-003**	**4.1000e-004**	**5.1000e-004**	**9.2000e-004**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.6000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1038	0.1038	0.0000	0.0000	0.1039
Total	**6.0000e-005**	**5.0000e-005**	**4.6000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1038**	**0.1038**	**0.0000**	**0.0000**	**0.1039**

3.3 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-004	0.0000	2.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**2.9000e-004**	**5.4000e-004**	**8.3000e-004**	**1.6000e-004**	**5.1000e-004**	**6.7000e-004**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.6000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1038	0.1038	0.0000	0.0000	0.1039
Total	**6.0000e-005**	**5.0000e-005**	**4.6000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1038**	**0.1038**	**0.0000**	**0.0000**	**0.1039**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0235	0.2406	0.1848	2.8000e-004		0.0148	0.0148		0.0137	0.0137	0.0000	25.0636	25.0636	7.9300e-003	0.0000	25.2619
Total	**0.0235**	**0.2406**	**0.1848**	**2.8000e-004**		**0.0148**	**0.0148**		**0.0137**	**0.0137**	**0.0000**	**25.0636**	**25.0636**	**7.9300e-003**	**0.0000**	**25.2619**

Unmitigated Construction Off-Site

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

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0235	0.2406	0.1848	2.8000e-004		0.0148	0.0148		0.0137	0.0137	0.0000	25.0636	25.0636	7.9300e-003	0.0000	25.2618
Total	**0.0235**	**0.2406**	**0.1848**	**2.8000e-004**		**0.0148**	**0.0148**		**0.0137**	**0.0137**	**0.0000**	**25.0636**	**25.0636**	**7.9300e-003**	**0.0000**	**25.2618**

Mitigated Construction Off-Site

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

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0220	0.2257	0.1884	2.9000e-004		0.0133	0.0133		0.0123	0.0123	0.0000	25.5154	25.5154	8.2500e-003	0.0000	25.7217
Total	**0.0220**	**0.2257**	**0.1884**	**2.9000e-004**		**0.0133**	**0.0133**		**0.0123**	**0.0123**	**0.0000**	**25.5154**	**25.5154**	**8.2500e-003**	**0.0000**	**25.7217**

Unmitigated Construction Off-Site

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

3.4 Building Construction - 2020

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	0.0220	0.2257	0.1884	2.9000e-004		0.0133	0.0133		0.0123	0.0123	0.0000	25.5154	25.5154	8.2500e-003	0.0000	25.7217
Total	**0.0220**	**0.2257**	**0.1884**	**2.9000e-004**		**0.0133**	**0.0133**		**0.0123**	**0.0123**	**0.0000**	**25.5154**	**25.5154**	**8.2500e-003**	**0.0000**	**25.7217**

Mitigated Construction Off-Site

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

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9300e-003	0.0181	0.0178	3.0000e-005		9.9000e-004	9.9000e-004		9.2000e-004	9.2000e-004	0.0000	2.3482	2.3482	6.8000e-004	0.0000	2.3653
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.9300e-003**	**0.0181**	**0.0178**	**3.0000e-005**		**9.9000e-004**	**9.9000e-004**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**2.3482**	**2.3482**	**6.8000e-004**	**0.0000**	**2.3653**

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	2.3000e-004	1.9000e-004	1.8100e-003	1.0000e-005	5.5000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4520	0.4520	1.0000e-005	0.0000	0.4524
Total	**2.3000e-004**	**1.9000e-004**	**1.8100e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.6000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4520**	**0.4520**	**1.0000e-005**	**0.0000**	**0.4524**

3.5 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9300e-003	0.0181	0.0178	3.0000e-005		9.9000e-004	9.9000e-004		9.2000e-004	9.2000e-004	0.0000	2.3482	2.3482	6.8000e-004	0.0000	2.3653
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.9300e-003**	**0.0181**	**0.0178**	**3.0000e-005**		**9.9000e-004**	**9.9000e-004**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**2.3482**	**2.3482**	**6.8000e-004**	**0.0000**	**2.3653**

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	2.3000e-004	1.9000e-004	1.8100e-003	1.0000e-005	5.5000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4520	0.4520	1.0000e-005	0.0000	0.4524
Total	**2.3000e-004**	**1.9000e-004**	**1.8100e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.6000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4520**	**0.4520**	**1.0000e-005**	**0.0000**	**0.4524**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Implement Trip Reduction Program

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.495535	0.026985	0.165260	0.124440	0.034095	0.007004	0.028626	0.111220	0.000829	0.000393	0.003636	0.001057	0.000920

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

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

6.2 Area by SubCategory

Unmitigated

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

6.2 Area by SubCategory

Mitigated

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

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

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

8.2 Waste by Land Use

Mitigated

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

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

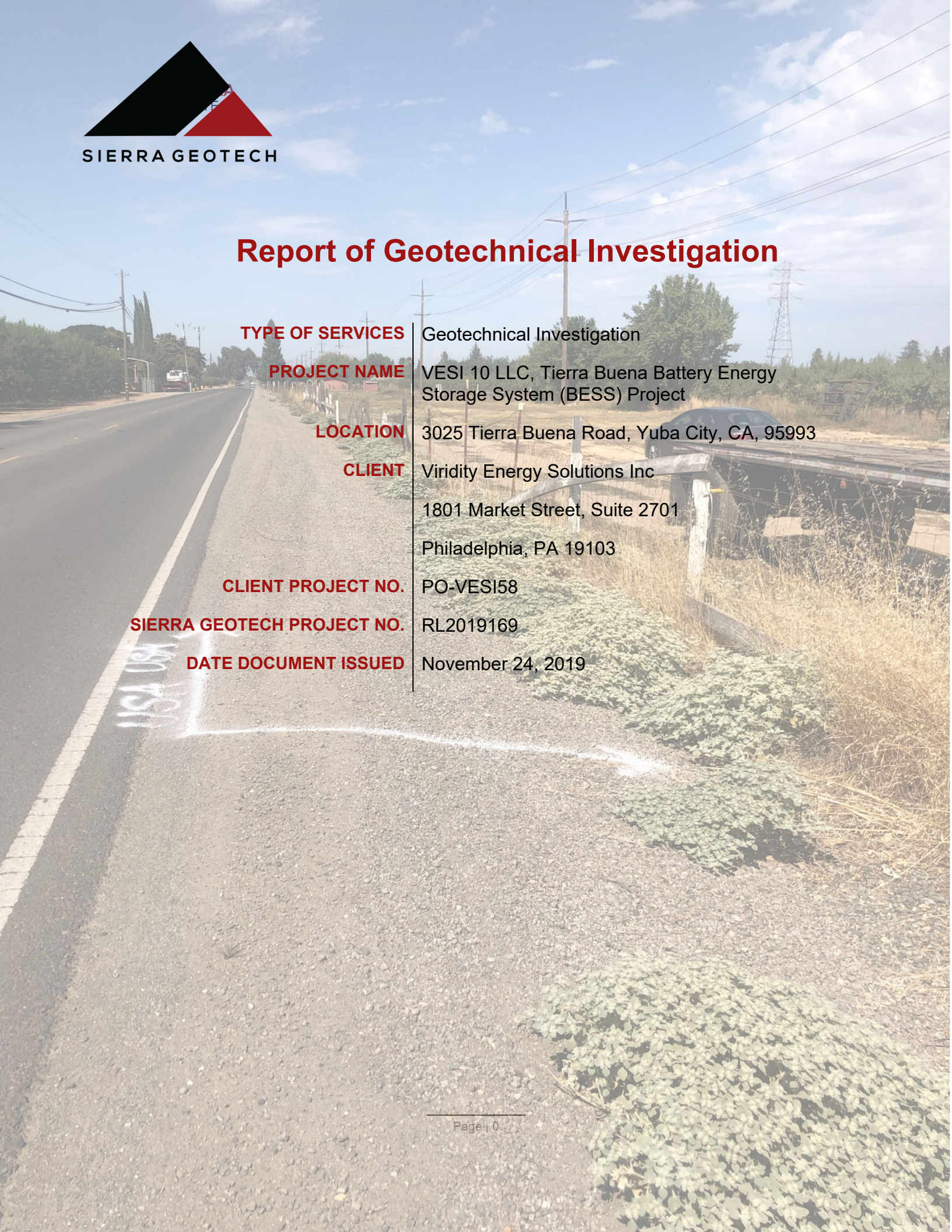
Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix H: Geotechnical Report



SIERRA GEOTECH

Report of Geotechnical Investigation

TYPE OF SERVICES	Geotechnical Investigation
PROJECT NAME	VESI 10 LLC, Tierra Buena Battery Energy Storage System (BESS) Project
LOCATION	3025 Tierra Buena Road, Yuba City, CA, 95993
CLIENT	Viridity Energy Solutions Inc
	1801 Market Street, Suite 2701
	Philadelphia, PA 19103
CLIENT PROJECT NO.	PO-VESI58
SIERRA GEOTECH PROJECT NO.	RL2019169
DATE DOCUMENT ISSUED	November 24, 2019

SIERRA GEOTECH

Report of Geotechnical Investigation

TYPE OF SERVICES	Geotechnical Engineering Report
PROJECT NAME	VESI 10 LLC, Tierra Buena Battery Energy Storage System (BESS) Project
LOCATION	3025 Tierra Buena Road, Yuba City, CA, 95993
CLIENT	Viridity Energy Solutions Inc
CLIENT PROJECT NO.	PO-VESI58
SIERRA GEOTECH PROJECT NO.	RL2019169
DATE DOCUMENT ISSUED	November 24, 2019

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SIERRA GEOTECH

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PROJECT NAME	VESI 10 LLC, Tierra Buena Battery Energy Storage System (BESS) Project
LOCATION	3025 Terra Buena Road, Yuba City, CA, 95993

1. INTRODUCTION

This report presents the results of Sierra Geotech's geotechnical investigation for a proposed battery energy storage system (BESS) facility in Sutter County, California. The project location is shown on Site Vicinity Map, Figure 1. Specifically, the BESS facility is located on an approximately 0.32 acres area approximately 780 feet north of the intersection at Tierra Buena Road and Pease Road in Sutter County. The Assessor Parcel Number is 10-250-060 and the street address is 3025 Tierra Buena Road, Tierra Buena, California.

1.1. PROPOSED DEVELOPMENT

Viridity Energy Solutions, Inc., (VESI) 10 LLC proposes to construct a battery energy storage system facility consisting of a battery electrical storage system (BESS) that would store 5 megawatts (MW) or 20 MW hours of electricity for dispatch into the local Pacific Gas and Electric (PG&E) grid via the existing adjacent PG&E Pease Road power substation. The proposed BESS facility will connect to the adjacent PG&E electric power distribution line which would both provide energy to recharge the battery storage system as well as dispatch energy generated by the battery storage system. We understand the proposed development will include construction of six (6) battery pack units, three (3) transformers, a SCADA unit and a switch gear unit. No habitable structures are proposed. It is our understanding that each battery pack weighs approximately 90,000 pounds with a footprint of approximately 40 feet by 8 feet. If actual loads vary more than 15 percent from these assumed loads, Sierra Geotech should be notified since reevaluation of the recommendations contained in this report may be required.

1.2. PROJECT SETTING

The proposed VESI 10 Tierra Buena BESS project lease area's shape is rectangular (area of 14,000 square feet measuring 175 feet by 80 feet). Adjacent to the subject property, are the following properties and associated land uses: North: Utility Out Buildings and a Single Family Residence; South: Valdez Trucking Yard, Single Family Residence and the PG&E Pease Road power substation; West: Agricultural equipment storage yard, agricultural out buildings, orchards and Single Family Residence; East: Orchards, PG&E electric power distribution line and PG&E high-power transmission line. Along the eastern boundary of the project lease area is a PG&E electric power distribution line, which will be used to connect the BESS facility to the PG&E Pease power substation. Approximately 275 feet east of the project is a high-power transmission line which runs north and south and parallel to the lease area for the proposed VESI 10 Tierra Buena BESS project. Valdez Trucking yard is currently located on the property and will remain on the parcel between the proposed VESI 10 Tierra Buena BESS project and the Valdez Residence which faces Pease Road.

1.3. PURPOSE AND SCOPE OF WORK

1.3.1. Purpose

The purpose of this report is to evaluate the subsurface conditions at the site and provide geotechnical recommendations for design and construction of the proposed project. This report has been prepared in general accordance with accepted geotechnical engineering principles and in general conformance with the approved proposal.

1.3.2. Scope of Work

Our scope of work consisted of the following:

1. Review available subsurface information for the site and nearby locations,
2. Perform a site reconnaissance to evaluate general geotechnical and site conditions,
3. Perform a field subsurface exploration program consisting of drilling six hollow stem auger borings and converting three of the shallow borings into shallow percolation wells,
4. Perform percolation testing,
5. Perform geotechnical laboratory tests on selected samples,
6. Perform geotechnical engineering analyses, and
7. Preparation of this geotechnical investigation report for the proposed project.

2. FIELD INVESTIGATION

2.1. PRE-DRILLING PROCEDURES

Underground Service Alert (USA) was notified before commencing subsurface exploration activities to identify underground utilities that could conflict with the proposed borings. In addition, a private utility locator was retained to clear the boring locations for potential conflicts with underground utilities.

2.2. DRILLING OPERATIONS

Six test borings (SG-101 through SG-106) were drilled using a drill rig equipped with hollow-stem augers on September 13, 2019. The borings were advanced to depths of approximately 3.5 feet to 50.5 feet below the ground surface (bgs), and their approximate locations are shown on the Field Exploration Plan, Figure 2. The borings were logged by a Sierra Geotech field engineer, who also collected samples of the materials encountered for examination and laboratory testing.

2.3. PERCOLATION TESTING

Three of the borings were converted to shallow percolation wells (SG-104 through SG-106) and percolation testing was performed in the wells by a Sierra Geotech field engineer on September 14, 2019.

2.4. SAMPLING

Disturbed samples were obtained using a Standard Penetration Test (SPT) sampler, which is a split tube sampler with a 2-inch outer diameter and 1⅜-inch inner diameter. SPTs were performed in general accordance with ASTM D1586 (Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils), and D6066 (Standard Practice for Determining the Normalized Penetration Resistance of Sands for Evaluation of Liquefaction Potential). Disturbed bulk samples were also obtained from the drill cuttings. The SPT samplers were driven with a 140-pound weight dropping 30 inches. The number of blows per 6-inch increment is noted on the borings logs. The average hammer energy efficiency on the drill rig used at the project was 81%. Samples were classified in the field using the Unified Soil Classification System (USCS), in accordance with ASTM D2488 (Standard Practice for Description and Identification of Soils [Visual-Manual Method]) procedures. The laboratory testing confirmed or modified field classifications as necessary for presentation on the boring logs. Soil samples were removed from the samplers, placed in appropriate containers, and transported in accordance with ASTM D4220 (Standard Practice for Preserving and Transporting Soil Samples). Upon completion, borings were backfilled with cement grout using the tremie method in accordance with applicable regulatory guidelines. The boring logs are included in Appendix A.

3. LABORATORY TESTING

The following laboratory tests were performed in general accordance with ASTM test procedures:

- In-Situ Moisture (ASTM D2216)
- Sieve Analysis (ASTM D422 and ASTM C136)
- Maximum Dry Density and Optimum Moisture Content (ASTM D1557)
- R-Value (ASTM D2844)
- Expansion Index (ASTM D4829)
- Atterberg Limits (ASTM D4318)
- Organic Content (ASTM D2974)
- Chemical Tests for Corrosion Potential (CA DOT test methods)

The laboratory test results are presented in Appendix B.

4. GEOLOGIC SETTING AND SITE CONDITIONS

4.1. REGIONAL GEOLOGY

The site is situated in the east-central portion of Sutter county, California within the southeastern portion of Sacramento Valley. The Sacramento Valley represents the northern portion of the Great Valley geomorphic province of California. The foothills of the Sierra Nevada geomorphic province occur east of the Great Valley and the Coast Ranges geomorphic province occurs to the west. The Great Valley is an asymmetric trough approximately 400 miles long and 40 miles wide forming the broad valley along the axis of California. Erosion of the Coast Ranges to the west, Sierra Nevada mountains to the east and Klamath and Cascade mountains to the north has generated alluvial, overbank, and localized lacustrine sediments up to 50,000 feet thick. Subsequent deformation has folded these sediments into an asymmetrical syncline with its axis off center toward the Western Coast Ranges. These sediments thin toward the boundary of the valley basin where they contact against metamorphic terrain and crystalline basement rock of the Sierra Nevada foothills. Map showing the regional geology is presented in Figure 3.

4.2. SURFACE CONDITIONS

The entire project lease area for the proposed VESI 10 Tierra Buena BESS project is relatively unimproved, with only a barbed-wire fence surrounding the parcel. The terrain is primarily flat throughout the entire property with a very slight slope to the west/southwest toward Tierra Buena Road. The parcel is approximately 61 feet above sea level on the eastern boundary and slopes to approximately 58 feet along the western boundary along Tierra Buena Road. The site is being used as a truck loading area and storage facility for farm equipment.

4.3. SUBSURFACE CONDITIONS

A brief description of the subsurface conditions is provided in this section. Detailed descriptions of the subsurface conditions are provided in the boring logs included in Appendix A.

Alluvial Basin Deposits (Qb) – Quaternary Alluvial Basin deposits were encountered in all the borings and extend to depths of at least 10 to 25 feet bgs. The Alluvial sand deposits encountered at this location primarily consist of sand with variable amounts of silt (SP-SM USCS soil types). The sandy alluvial deposits encountered were loose to medium dense and were generally dry.

Modesto Formation Deposits (Qm) **-** Quaternary Old Alluvial deposits belonging to Modesto formation were encountered below the Alluvial Basin Deposits in boring SG 101 and extend to depths of at least 50 feet bgs. The Old Alluvial deposits encountered at this location primarily consist of silt and sand with silt (ML, SP-SM USCS soil type). The alluvial deposits encountered were loose to medium dense.

Groundwater – Groundwater was not encountered in the borings performed for this project. However, a review of geotracker database (www.geotracker.waterboards.ca.gov) revealed the presence of 18 monitoring wells near 2590 Butte House Rd, Yuba City, CA 95993, which is approximately 1 mile south of the project site. These monitoring wells indicated depth to groundwater varying from 18 feet to 21 feet below ground surface (bgs) in October 2018. Based

on limited information available, it is our opinion that groundwater at the project site may be as high as 10 feet bgs, depending on the time of the year and other factors discussed herein. Prolonged high-water levels in Feather Groundwater elevations and soil moisture conditions within the project area will vary depending on seasonal rainfall, irrigation practices, land use, and/or runoff conditions not apparent at the time of our field investigation. The evaluation of such factors is beyond the scope of this investigation.

5. GEOLOGIC HAZARDS

5.1. FAULTING AND SURFACE FAULT RUPTURE

The site is in a seismically active area. The estimated distance from the site to nearby mapped active faults is approximately 15 miles, located northeast of the project site (Measured from 2008 National Seismic Hazard Maps - USGS (USGS, 2008). No active faults are known to underlie or project toward the site. Therefore, the probability of surface fault rupture at the site from a known active fault is considered low.

5.2. CALIFORNIA BUILDING CODE SEISMIC CRITERIA

A geologic hazard likely to affect the project is ground-shaking because of movement along an active fault zone near the subject site. The seismic parameters in accordance with the 2016 California Building Code (CBC) are presented below. The seismic design parameters presented in Table 1 were determined by the U.S. Seismic Design Maps calculator on the USGS website for the project site coordinates (Latitude, Longitude: 39.1713467, -121.6620642). The calculator adjusts for soil Site Class E, and for occupancy (risk) Category I (for non-habitable structures). The final choice of design parameters, however, remains the purview of the project structural engineer.

Table 1: Seismic Design Parameters

	ASCE 7-10 Table/Figure	2016 CBC Table/Figure	Factor/ Coefficient	Value
Soil Class	Table 20.3-1	Section 1613.3.2	Site Class	E
Design Spectral Acceleration Parameters	Equation 11.4-3	Equation 16-39	S_{DS}	0.599 g
	Equation 11.4-4	Equation 16-40	S_{D1}	0.532 g
Seismic Design Category	Table 11.6-1	Section 1613.3.5(1)	Risk Category I to IV	E
	Table 11.6-2	Section 1613.3.5(2)	Risk Category I to IV	E
Site Coefficients	Table 11.4-1	Table 1613.3.3(1)	Fa	1.509
	Table 11.4-2	Table 1613.3.3(2)	Fv	2.9
1.0-second Period MCE	Figure 22-2	Figure 1613.3.1(2)	S_1	0.275 g
Short-Period MCE at 0.2-seconds	Figure 22-1	Figure 1613.3.1(1)	S_S	0.596 g

	ASCE 7-10 Table/Figure	2016 CBC Table/Figure	Factor/ Coefficient	Value
Adjusted MCE Spectral Response Parameters	Equation 11.4-1	Equation 16-37	S_{MS}	0.899 g
	Equation 11.4-2	Equation 16-38	S_{M1}	0.798 g

5.3. LIQUEFACTION AND DYNAMIC SETTLEMENT

Liquefaction is the transformation of a deposit of soil from a solid state to a liquefied state as a consequence of increased pore pressure and reduced effective stress. Often, this transformation results from the cyclic loading of an earthquake and the soil acquires enough "mobility" to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, saturated (below groundwater), and uniformly graded sands. Most liquefaction hazards are associated with sandy soils and silty soils of low plasticity. Cohesive soils are generally not considered susceptible to soil liquefaction, although they can be subject to cyclic softening if they are soft enough, and if the seismic event is relatively high.

The site is not located in a mapped California Geological Survey Liquefaction Hazard Zone. This zone is defined as areas where historical occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation would be required.

Using the data collected from Boring SG-101, liquefaction analysis was performed using the method proposed by Idriss & Boulanger (2008). An earthquake moment magnitude of 6.5 and a modified peak ground acceleration (PGAM) of 0.22g were used in our liquefaction analyses. The measured driving resistance (blow counts) in the field were corrected for hammer type, sampler size, overburden pressure, rod length, and fines content. We assumed groundwater at a depth of 13 feet below top of boring, which is the highest groundwater level observed in the existing monitoring well approximately 1 mile south of the project site.

Loose to medium dense granular soil is generally present from the ground surface to a depth of at least 50 feet at the site. Based on the density and location of groundwater table, most of this granular soil in the top 50 feet is generally not susceptible to seismically induced settlement. However, some of the unsaturated, loose to medium dense sand in the upper 50 feet may densify as a result of earthquake shaking, causing ground surface settlement.

5.4 LIQUEFACTION INDUCED LATERAL SPREADING

Liquefaction induced lateral spreading can occur in areas of sloping ground, or towards a free face. Since the topography at the site is relatively flat and the closest water body is at least one (1) mile east of the site, the potential for liquefaction induced lateral spreading is considered low.

5.5 EXPANSIVE SOILS

The near-surface soils (upper approximate 5 feet) have low to very low expansion potential. Accordingly, mitigation for expansive soils is not considered necessary at this site. However, we recommend additional testing of soils during construction to confirm expansion potential. Imported soils (if used) should be tested for expansion potential prior to import. Imported soils should be approved by the Geotechnical Engineer before being imported.

6. CONCLUSIONS

Based on our field exploration, laboratory testing and engineering analyses, it is our opinion that the subject property is suitable for the proposed development from a geotechnical engineering and engineering geology viewpoint; however, there are existing geotechnical conditions associated with the site that warrant mitigation and/or consideration during the planning stages. The main geotechnical conclusions for the project are presented in the following paragraphs.

- The site is underlain by Alluvial soils. Our borings did not encounter any Fill.
- California Department of Water Resources Groundwater Information Center GIS database suggests groundwater table can be as high as within 10 feet of existing ground surface during winter months.
- Key seismic hazard for the project is ground shaking caused by regionally active faults during a seismic event. The structures are likely to experience ground shaking during their design life. Geotechnical recommendations presented in this report are intended to reduce the seismic risk to an "acceptable level", which means a level of mitigation that provides reasonable protection of the public safety, though it does not necessarily ensure continued structural integrity and functionality of the project (14 CCR 3721 (a)).
- Near surface soils in their natural state are considered unsuitable for support of proposed foundations due to compressibility. Mitigation recommendations for near-surface soils are provided in this report.
- No active faults are known to underlie or project toward the site. Therefore, the probability of surface fault rupture occurring at the site from a known active fault is considered low.
- A composite sample of soils encountered in the top 5 feet of the borings was tested for corrosivity. Results indicated the tested soil at the project site to be non-corrosive. While the select near-surface composite soil sample was noncorrosive, if corrosivity is of significant concern based on site history, we recommend a detailed corrosion potential analysis by a corrosion engineer. Additional corrosivity testing is also recommended at select utility trenches once site-grading activities are underway.
- The near-surface materials have a low expansion potential. The grading and foundation recommendations presented in this report reflect a low expansion potential.

7. RECOMMENDATIONS

7.1. EARTHWORK

The following recommendations are provided regarding specific aspects of the proposed earthwork construction. These recommendations should be considered subject to revision based on additional geotechnical evaluation of the conditions observed by the Geotechnical Engineer during grading operations.

7.1.1 SITE PREPARATION

Site preparation should begin with the removal of vegetation, highly organic soil, and any other unsuitable materials, debris or objects. Existing underground utilities within the proposed construction areas should be completely removed and/or rerouted. Grading should conform to the guidelines presented in the 2016 California Building Code (CBC, 2016), as well as the pertinent requirements of the Sutter County.

7.1.2. REMEDIAL GRADING

Equipment Foundation Mat Slab:

Remedial grading should be performed to provide a four-foot thick, re-compacted fill layer below the bottom of the stiffened foundations. Removal, replacement, and compaction should extend at least five feet beyond the outside edge of the foundations unless constrained by existing structures.

A biaxial geo-grid should be installed approximately mid-height in the recompacted fill layer to mitigate the risk of differential settlements. The bottom of the remedial grading excavations should be scarified to a depth of 8-inches, moisture conditioned to within 2 percentage points of the optimum moisture content and compacted to 90% relative compaction based on the ASTM D1557 laboratory test procedure. All references to optimum moisture content and relative compaction in this report are based on this test method.

Concrete Pavement and Hardscape:

Remedial grading for pavement and hardscape areas should include removal of the existing soils to a depth of at least 2 feet below the existing ground surface or subgrade elevation, whichever is lower. The soil exposed at the base of the excavation should be scarified to a depth of 8 inches, and moisture conditioned to within 2 percentage points of the optimum moisture content. Hardscape subgrade should be compacted to at least 95% relative compaction. Pavement subgrade should be compacted to at least 95% relative compaction.

Field Observations:

The Geotechnical Engineer should check the bottom of excavations. If soft, loose, or otherwise unsuitable soils are encountered, the depth of removal may need to be extended.

7.1.3. FILL PLACEMENT AND COMPACTION

Excavated materials determined by the Geotechnical Engineer to be satisfactory can be reused as compacted fill. We anticipate that most of the excavated materials can be re-used as compacted fill soils. The Geotechnical Engineer should approve the fill material before placement.

Where large compaction equipment is used, fill should be placed in 6- to 8-inch thick loose, horizontal lifts. Thinner lifts will be required for smaller compaction equipment. The maximum dry density and optimum moisture content for the evaluation of relative compaction should be determined in accordance with ASTM D1557.

7.1.4. YIELDING SUBGRADE CONDITIONS

The soil encountered at the bottom of the remedial grading excavations can exhibit "pumping" or yielding if they become saturated in response to periods of significant precipitation, such as during the winter rainy season. If this occurs, corrective measures should be performed with oversight from the Geotechnical Engineer.

In order to help stabilize the yielding subgrade soils within the bottom of the removal areas, the contractor can consider the placement of stabilization fabric or geo-grid over the yielding areas, depending on the relative severity of the yielding.

Mirafi 600X (or approved equivalent) stabilization fabric may be used for areas with low to moderate yielding conditions. Geo-grid such as Tensar TX-5 may be used for areas with moderate to severe yielding conditions. Uniform sized, ¾- to 2-inch crushed rock should be placed over the stabilization fabric or geo-grid. A 6- to 12-inch thick section of crushed rock will typically be necessary to stabilize yielding ground.

If significant voids are present in the crushed gravel, a filter fabric should be placed over the crushed gravel to prevent migration of fines into the gravel and thus potential settlement of the overlying fill. Fill soils, which should be placed and compacted in accordance with the recommendations presented herein, should then be placed over the fabric or geo-grid until design grades are reached. The crushed gravel and stabilization fabric or geo-grid should extend at least 5 feet laterally beyond the limits of the yielding areas.

7.1.5. DEWATERING

Groundwater was not encountered during our investigation to a maximum depth of 51.5 feet bgs. Accordingly, we do not anticipate that groundwater will be a significant consideration for this project.

7.1.6. EXPANSIVE SOIL

The onsite materials have a low expansion potential. The grading and foundation recommendations presented in this report reflect a low expansion potential.

7.1.7. IMPORTED MATERIAL

Imported materials, if used for fill, should be predominately granular, contain no rocks or lumps greater than 3 inches in maximum dimension, and have an Expansion Index less than 50, and a Plasticity Index less than 15. Imported materials should be reviewed and approved by the Geotechnical Engineer before being brought to the site.

7.1.8. SITE EXCAVATION CHARACTERISTICS

It is anticipated that excavations can be achieved with conventional earthwork equipment in good working order.

7.1.9. TEMPORARY EXCAVATIONS

The existing fill soils can be considered Type C for excavation in accordance with OSHA and Cal-OSHA requirements. Temporary excavations should be shored or excavated with a slope not steeper than 1½:1 (horizontal to vertical) in accordance with OSHA and Cal-OSHA requirements.

The excavations should be inspected daily by the contractor's Competent Person before personnel are allowed to enter the excavation. Any zones of potential instability, sloughing or raveling should be brought to the attention of the Geotechnical Engineer and corrective action implemented before personnel begin working in the excavation. Excavated soils should not be stockpiled behind temporary excavations within a distance equal to the depth of the excavation.

Sierra Geotech should be notified if other surcharge loads are anticipated so that lateral load criteria can be developed for the specific situation. If temporary slopes are to be maintained during the rainy season, berms are recommended near the tops of slopes to prevent runoff water from entering the excavation and eroding the slope faces.

7.1.10. UTILITIES

Typical pipe bedding as specified in the Standard Specifications for Public Works Construction (GREENBOOK) may be used. As a minimum, it is recommended that pipe be supported on at least 4 inches of granular bedding material, such as 3/4-inch rock or clean coarse sand with less than 5 percent fines and a sand equivalent of 40 or more as evaluated by ASTM D2419.

The bedding should extend from the bottom of the trench to at least 1 foot above the top of the pipe. Sand bedding should be mechanically compacted to at least 90 percent relative compaction. Jetting of sand bedding should not be permitted.

Onsite material, imported select material, or 2-sack cement/sand slurry may be used as backfill in trenches above the pipe bedding. The material selected should match the engineering characteristics of the soils adjacent to the trench. Utility trench backfill beneath structures and hardscape should be compacted to at least 90% relative compaction.

The modulus of soil reaction (E') is used to characterize the stiffness of soil backfill placed along the sides of buried flexible pipelines. For the purpose of evaluating deflection due to the load associated with trench backfill over the pipe, a value of 1,500 pounds per square inch (lbs/in2) is recommended for the general site conditions assuming granular bedding material (sand or gravel) is placed around the pipe.

7.1.11. SURFACE DRAINAGE

Final surface grades around structures should be designed to collect and direct surface water away from the structure and toward appropriate drainage facilities. The ground around the structure should be graded so that surface water flows rapidly away from the structure without ponding. In general, we recommend that the ground adjacent to the structure slope away at a gradient of at least 2%. Densely vegetated areas where runoff can be impaired should have a minimum gradient of at least 5% within the first 5 feet from the structure. Drainage patterns established at the time of fine grading should be maintained throughout the life of the proposed structures. Site irrigation should be limited to the minimum necessary to sustain landscape growth. Should excessive irrigation, impaired drainage, or unusually high rainfall occur, saturated zones of perched groundwater can develop. Saturated soil zones may result in increased maintenance and could impact structure stability.

7.1.12. GRADING PLAN REVIEW

Sierra Geotech should review the grading plans and earthwork specifications to ascertain whether the intent of the recommendations contained in this report have been implemented, and that no revised recommendations are needed due to changes in the development scheme.

7.2. FOUNDATIONS

7.2.1. Foundation Type

To mitigate seismically induced settlement, we recommend the BESS equipment be constructed with a stiffened foundation system in combination with a recompacted fill mat. The stiffened foundation system should consist of a rigid mat, post-tensioned slab, or a waffle foundation system tied together with grade beams.

7.2.2. Foundation Parameters

Bearing Capacity: For a rigid mat foundation, the mat slab should extend at least 12 inches below the adjacent ground surface. The mat thickness should be determined by the structural engineer. The mat can be designed assuming an allowable bearing pressure of 1,500 pounds per square foot for dead plus live loads, with a one-third increase for all loads including wind or seismic. This allowable bearing pressure is a net value; therefore, the weight of the mat can be neglected for design purposes.

Modulus of Subgrade Reaction: The mat can be designed using a modulus of subgrade reaction, Kv1, of 75 pounds per cubic inch. The actual modulus of subgrade reaction would need to be adjusted by the Project Structural Engineer for the plan dimensions of the mat.

Settlement: Under static conditions, total settlement is estimated to be less than 1 inch and differential settlement is estimated to be 0.5 inch over 30 feet. Under seismic conditions, total settlement is estimated to be less than 2 inches and differential settlement is estimated to be 1 inch over 30 feet.

Co-efficient of Sliding Friction: An allowable coefficient of sliding friction of 0.30 between the foundation and the supporting subgrade may be used for design. This value includes a safety factor of at least 1.5 and is based on the foundation being embedded into compacted fill.

Equivalent Fluid Weight: For allowable passive resistance, an equivalent fluid weight of 330 pounds per cubic foot (pcf) acting against the footing may be used. This value is based on a safety factor of at least 1.5.

7.2.3 General Foundation Recommendations

The mat should be reinforced with top and bottom steel in both directions to allow the foundation to span local irregularities that may result from potential differential settlement. Passive resistance in the upper 12 inches should be neglected unless the area in front of the footing is protected from disturbance by concrete or pavement.

The friction coefficient and passive resistance may be used concurrently without reduction. Lateral loads on shallow mat foundations are resisted by a combination of friction between the foundation bottoms and the supporting subgrade, and by passive resistance acting against the embedded vertical faces of the foundations.

Settlement response of mat foundation slab is influenced more by the quality of construction than by soil-structure interaction. Therefore, it is essential that the recommendations for foundation construction be strictly followed during the construction phases.

Mat foundation should be analyzed using a soil-structure interaction program to identify areas of high contact stresses, excessive movements and large moments. These settlement estimates assume that the foundation subgrade is properly prepared, and the foundations are designed and constructed in accordance with the recommendations presented in this report.

Underground utilities paralleling the mat slab that are 4 feet or shallower generally should be located no closer than 2 feet outside of the perimeter edges of the slab. Deeper utilities should be located above a 1.5H:1V slope projected downward from the bottom edges of the slab.

Utility plans should be reviewed by Sierra Geotech prior to trenching to evaluate conformance with this requirement. Sierra Geotech should review the foundation plans to ascertain that the intent of the recommendations in this report has been implemented and that revised recommendations are not necessary as a result of changes after this report was completed.

7.3. PAVEMENT

An R-value of 40 has been assumed for preliminary design of pavement sections based on one laboratory test of the on-site material in the upper 5 feet. The actual R-value of the subgrade soils should be determined after grading to provide final pavement design. Flexible pavement sections have been calculated in general conformance with Caltrans guidelines. The project civil engineer and owner should review the pavement designations to determine appropriate pavement thickness. Based on an assumed R-value of 40, the following pavement structural sections have been calculated.

Table 2: Flexible Pavement Sections

Traffic Type	Traffic Index	Asphalt Concrete (inches)	Aggregate Base* (inches)
Automobile Parking	5.0	3	4.5
Automobile Drive Lanes	5.5	3	4.5

*Aggregate Base should conform to Class 2 Aggregate Base in accordance with the Caltrans Standard Specifications or Crushed Miscellaneous Base in accordance with the Standard Specifications for Public Works Construction.

Prior to placing base materials, the upper 12 inches of the subgrade soil should be scarified, moisture conditioned to slightly above the optimum moisture content, and recompacted to a dry density of at least 95% of the laboratory maximum. The base material should also be compacted to slightly above the optimum moisture content and a dry density of at least 95% of the laboratory maximum. Asphalt concrete should be compacted to at least 95% of the laboratory Hveem density in accordance with ASTM D2726.

7.4. PERCOLATION TESTING

Percolation testing was performed in three borings (SG-104, SG-105 and SG-106). Based on the laboratory sieve test results, the natural soils located at the bottom of the percolation well soil borings consist of sand (USCS: SM) with variable amounts of silt. The sands were to brown, moist, and medium dense. The infiltration rates ranged from 0.6 inches per hour to 3.6 inches per hour.

Soil percolation rates from in situ tests can vary significantly from one location to another due to heterogeneous characteristics of subsurface conditions. The test results from these borings should be considered a screening level value and additional testing should be performed if an on-site disposal system is to be constructed for the project. Soil compaction can decrease infiltration rates significantly. Final percolation testing should be performed in as graded conditions so that effects from soil compaction are incorporated in the test results.

8. CLOSURE

This report has been prepared for the sole use of our client, Viridity Energy Solutions, Inc., specifically to support the design of the project in Sutter County, California. The opinions, conclusions and recommendations presented in this report have been formulated in accordance with accepted geotechnical engineering practices that exist in Northern California at the time this report was prepared. No warranty expressed or implied is made or should be inferred. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Sierra Geotech should be notified so that supplemental recommendations can be provided. This report is issued with the understanding that it is the responsibility of the Owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect, structural engineer and geotechnical engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

The findings of this report are valid as of the date of this report. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside Sierra Geotech's control. Therefore, this report is subject to review and should not be relied upon after a period of five years.

Sierra Geotech should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in Sierra Geotech's report. That firm should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

9. REFERENCES

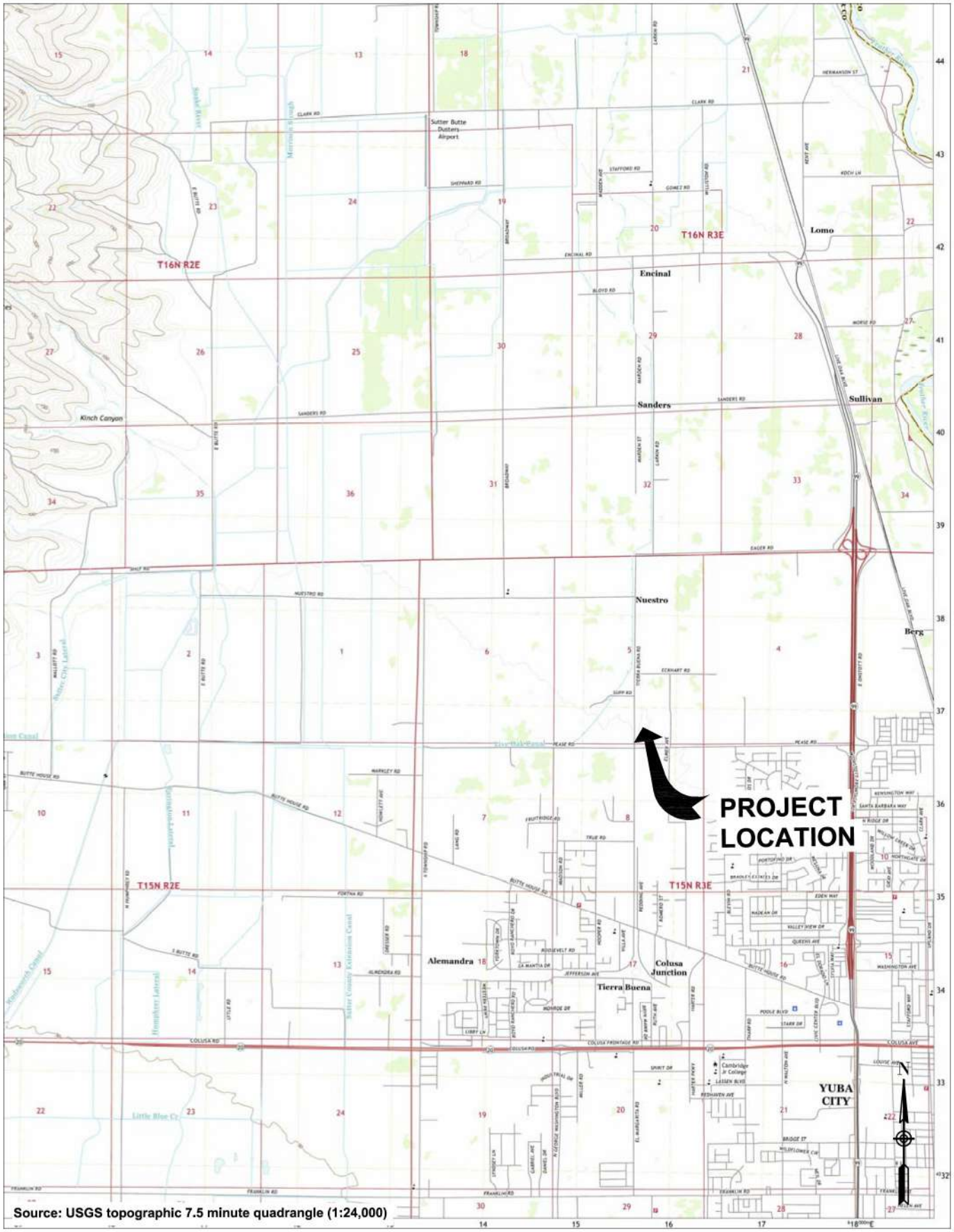
California Building Standard Commission, 2016, California Building Code, California Code of Regulations Title 24.

California Division of Mines and Geology, 2008, Guidelines for Evaluating and Mitigating Seismic Hazards in California: Special Publication 117A.

Idriss, I.M., and Boulanger, R.W., 2008, Soil Liquefaction during Earthquakes, Earthquake Engineering Research Institute, MNO-12.

SIERRA GEOTECH

FIGURES



SIERRA GEOTECH

ORMAT - PEASE SUBSTATION

Yuba City, California

VICINITY MAP

Job No. XXXXX

Figure 1

October 2019



SITE PLAN - 5MW20MWH
1" = 10'-0"

TYPICAL EQUIPMENT
1" = 10'-0"

PROPRIETARY AND CONFIDENTIAL

PLOT DATE: 5/20/2019 11:17 AM VPOVIO

TESLA

3500 DEER CREEK RD.
PALO ALTO, CA 94304
(650) 681-5000

ORIGINAL SIZE 24"X36"
SHEET SIZE ARCH "D"

PRELIMINARY - NOT FOR CONSTRUCTION

ORMAT - PEASE SUBSTATION
TESLA BATTERY ENERGY STORAGE SYSTEM
ORMAT - PEASE SUBSTATION
3000 TIERRA BUENA RD.
YUBA CITY, CA 95993

NO.	REVISION	DATE
1	ISSUE FOR TENDER	4/15/19

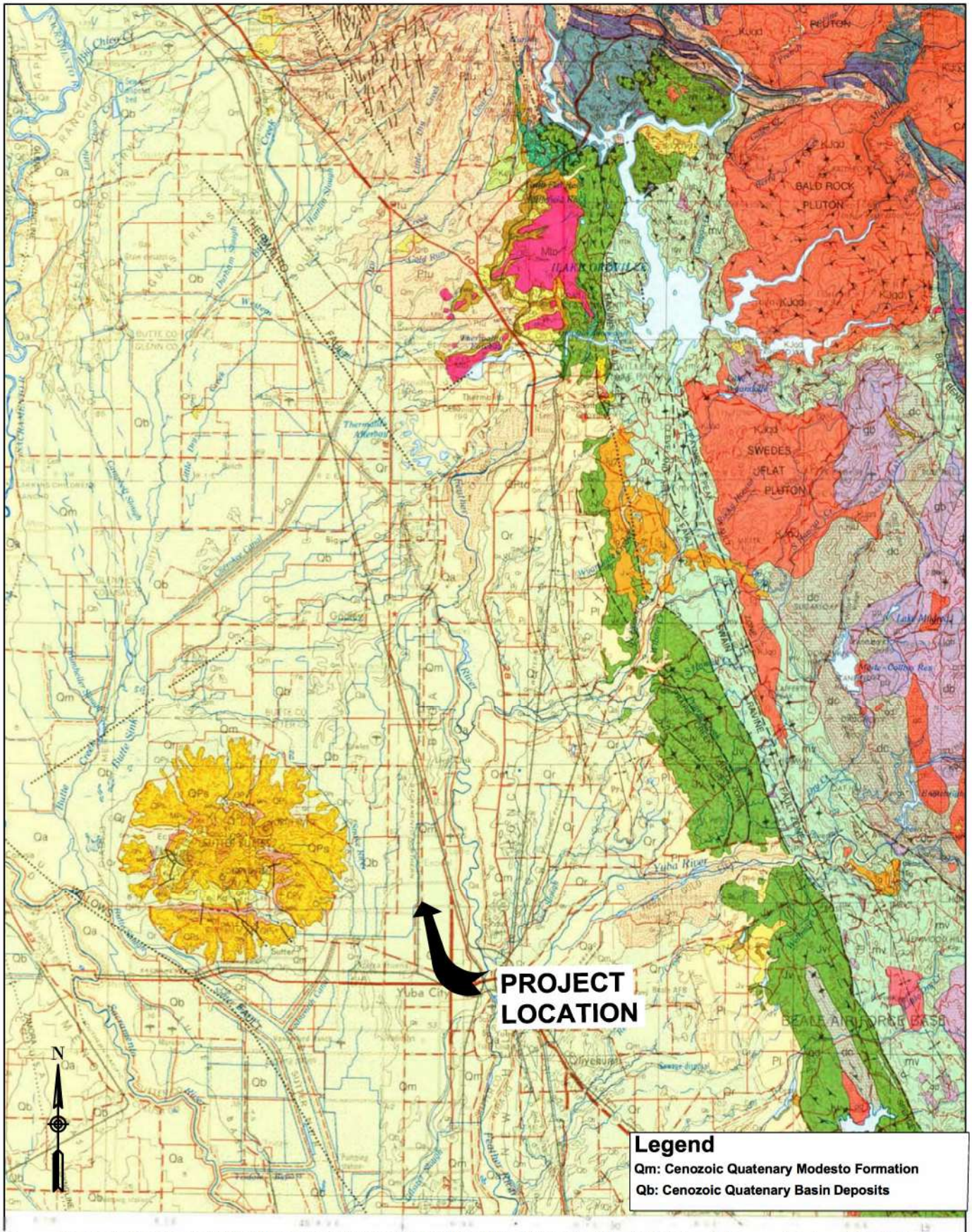
SITE PLAN - 5MW20MWH

E-102

1988272

REV: 0 | SALES

Field Exploration Plan - Figure 2



Source: REGIONAL GEOLOGIC MAP SERIES, SACRAMENTO AND CHICO QUADRANGLES, California Division of Mines and Geology, 1992 (Chico)

SIERRA GEOTECH

ORMAT - PEASE SUBSTATION
Yuba City, California

REGIONAL GEOLOGIC MAP

Job No. XXXXX
Figure 32
October 2019

APPENDIX A: BORING LOGS

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic / Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY elastic ELASTIC SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTS

C	Consolidation (ASTM D 2435-04)
CL	Collapse Potential (ASTM D 5333-03)
CP	Compaction Curve (CTM 216 - 06)
CR	Corrosion, Sulfates, Chlorides (CTM 643 - 99; CTM 417 - 06; CTM 422 - 06)
CU	Consolidated Undrained Triaxial (ASTM D 4767-02)
DS	Direct Shear (ASTM D 3080-04)
EI	Expansion Index (ASTM D 4829-03)
M	Moisture Content (ASTM D 2216-05)
OC	Organic Content (ASTM D 2974-07)
P	Permeability (CTM 220 - 05)
PA	Particle Size Analysis (ASTM D 422-63 [2002])
PI	Liquid Limit, Plastic Limit, Plasticity Index (AASHTO T 89-02, AASHTO T 90-00)
PL	Point Load Index (ASTM D 5731-05)
PM	Pressure Meter
PP	Pocket Penetrometer
R	R-Value (CTM 301 - 00)
SE	Sand Equivalent (CTM 217 - 99)
SG	Specific Gravity (AASHTO T 100-06)
SL	Shrinkage Limit (ASTM D 427-04)
SW	Swell Potential (ASTM D 4546-03)
TV	Pocket Torvane
UC	Unconfined Compression - Soil (ASTM D 2166-06) Unconfined Compression - Rock (ASTM D 2938-95)
UU	Unconsolidated Undrained Triaxial (ASTM D 2850-03)
UW	Unit Weight (ASTM D 4767-04)
VS	Vane Shear (AASHTO T 223-96 [2004])

SAMPLER GRAPHIC SYMBOLS

- Standard Penetration Test (SPT)
- Standard California Sampler
- Modified California Sampler
- Shelby Tube
- Piston Sampler
- NX Rock Core
- HQ Rock Core
- Bulk Sample
- Other (see remarks)

DRILLING METHOD SYMBOLS

- Auger Drilling
- Rotary Drilling
- Dynamic Cone or Hand Driven
- Diamond Core

WATER LEVEL SYMBOLS

- First Water Level Reading (during drilling)
- Static Water Level Reading (short-term)
- Static Water Level Reading (long-term)

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REPORT TITLE: **BORING RECORD LEGEND**

DIST.	COUNTY	ROUTE	POSTMILE	EA
N/A	N/A	N/A		N/A

PROJECT OR BRIDGE NAME: **Ormat-Pease Substation Tesla Battery Energy Storage System**

BRIDGE NUMBER	PREPARED BY	DATE	SHEET
N/A			1 of 2

CONSISTENCY OF COHESIVE SOILS

Descriptor	Unconfined Compressive Strength (tsf)	Pocket Penetrometer (tsf)	Torvane (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 - 0.50	0.25 - 0.50	0.12 - 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 - 1.0	0.50 - 1.0	0.25 - 0.50	Can be penetrated several inches by thumb with moderate effort
Stiff	1.0 - 2.0	1.0 - 2.0	0.50 - 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2.0 - 4.0	2.0 - 4.0	1.0 - 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

APPARENT DENSITY OF COHESIONLESS SOILS

Descriptor	SPT N_{60} - Value (blows / foot)
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Descriptor	Criteria
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

PERCENT OR PROPORTION OF SOILS

Descriptor	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

SOIL PARTICLE SIZE

Descriptor		Size
Boulder		> 12 inches
Cobble		3 to 12 inches
Gravel	Coarse	3/4 inch to 3 inches
	Fine	No. 4 Sieve to 3/4 inch
Sand	Coarse	No. 10 Sieve to No. 4 Sieve
	Medium	No. 40 Sieve to No. 10 Sieve
	Fine	No. 200 Sieve to No. 40 Sieve
Silt and Clay		Passing No. 200 Sieve

PLASTICITY OF FINE-GRAINED SOILS

Descriptor	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll, and not much time is required to reach the plastic limit; it cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	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 can be formed without crumbling when drier than the plastic limit.

CEMENTATION

Descriptor	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

NOTE: This legend sheet provides descriptors and associated criteria for required soil description components only. Refer to Caltrans Soil and Rock Logging, Classification, and Presentation Manual (July 2007), Section 2, for tables of additional soil description and identification.

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REPORT TITLE: **BORING RECORD LEGEND**

DIST.	COUNTY	ROUTE	POSTMILE	EA
N/A	N/A	N/A		N/A

PROJECT OR BRIDGE NAME: **Ormat-Pease Substation Tesla Battery Storage System**

BRIDGE NUMBER	PREPARED BY	DATE	SHEET
N/A			2 of 2

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
S. Vemuri	9-13-19	9-13-19		SG-101
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Sierra Geotech			Top of Existing Stockpile	~59.0 ft
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			CME 75	8 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT (1.4")			140 lbs Auto Hammer with 30" Drop	81%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Neat cement grout and cuttings			Not encountered	50.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM/SM); medium dense; brown; dry to moist; fine to coarse sand, trace gravel, non-plastic fines.		1	4 4 2	6	93		8					
57.00	2				2	4 2 3	5	98		10					
55.00	4				3	1 4 2	6	97		12					
	5				4	3 1 2	3	100		9					
53.00	6				5	4 2 2	4	98		13					
51.00	8		SILT (ML/ML); soft to medium stiff; brown; moist; trace fine SAND; non-plastic to low plasticity fines.		6	3 1 3	4	99		12					
49.00	10				7	4 3 2	5	96		14					
47.00	12														
45.00	14				8	4 1 2	3	93		11					
43.00	16														
41.00	18														
39.00	20				9	1 2 6	8	91		15					
37.00	22														
35.00	24				10	1 2 2	4	92		13					
	25														

(continued)

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REPORT TITLE				HOLE ID
BORING RECORD				SG-101
DIST.	COUNTY	ROUTE	POSTMILE	EA
N/A	N/A	N/A	N/A	N/A
PROJECT OR BRIDGE NAME				
Ormat-Pease Substation Tesla Battery Energy Storage System				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
N/A	MT		10-14-19	1 of 2

5 BR - STANDARD TESLA OMRAT.GPJ TEMPLATE 7-22-11.GDT 10/14/19

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		SILT (ML/ML) *(continued)*.												
33.00	26														
	27		Poorly graded SAND with SILT and GRAVEL (SP-SM/SP-SM); medium dense; dark gray; moist to wet; fine to coarse grained sand.												
31.00	28				11	2 4 4	8	92		16					
	29														
29.00	30														
	31														
27.00	32														
	33				12	1 1 3	4	92		15					
25.00	34														
	35														
23.00	36														
	37				13	2 4 4	8	97		17					
21.00	38														
	39														
19.00	40														
	41														
17.00	42				14	1 3 4	7	91		16					
	43														
15.00	44														
	45														
13.00	46				15	4 4 3	7	92		22					
	47														
11.00	48														
	49				16	4 4 1	5	98		24					
9.00	50														
	51		Bottom of borehole at 50.5 ft bgs												
7.00	52		Groundwater was not encountered.												
	53														
5.00	54														
	55														

5 BR - STANDARD TESLA OMRAT.GPJ TEMPLATE 7-22-11.GDT 10/14/19

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REPORT TITLE				HOLE ID
BORING RECORD				**SG-101**
DIST.	COUNTY	ROUTE	POSTMILE	EA
N/A	**N/A**	**N/A**	**N/A**	**N/A**
PROJECT OR BRIDGE NAME				
Ormat-Pease Substation Tesla Battery Energy Storage System				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
N/A	**MT**		**10-14-19**	**2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
S. Vemuri	9-13-19	9-13-19		SG-102
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Sierra Geotech			Top of Existing Stockpile	~59.0 ft
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			CME 75	8 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT (1.4")			140 lbs Auto Hammer with 30" Drop	81%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Neat cement grout and cuttings			Not encountered	25.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM/SM); medium dense; brown; dry to moist; fine to coarse sand, trace gravel, non-plastic fines.												
	1				1	3 3 3	6	92		7					
57.00	2				2	4 4 1	5	92		12					
	3														
55.00	4				3	4 2 4	6	90		12					
	5				4	2 4 4	8	95		15					
53.00	6														
	7				5	4 3 4	7	90		16					
51.00	8				6	4 3 4	7	100		17					
	9														
49.00	10		SILT (ML/ML); soft to medium stiff; brown; moist; trace fine SAND; non-plastic to low plasticity fines.		7	2 3 3	6	95		18					
	11														
47.00	12														
	13														
45.00	14														
	15				8	3 3 3	6	96		22					
43.00	16														
	17														
41.00	18														
	19				9	4 1 6	7	94		25					
39.00	20														
	21														
37.00	22														
	23														
35.00	24				10	1 3 2	5	97		23					
	25		Bottom of borehole at 25.0 ft bgs												

Groundwater was not encountered

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REPORT TITLE				HOLE ID
BORING RECORD				SG-102
DIST.	COUNTY	ROUTE	POSTMILE	EA
N/A	N/A	N/A	N/A	N/A
PROJECT OR BRIDGE NAME				
Ormat-Pease Substation Tesla Battery Energy Storage System				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
N/A	MT		10-14-19	1 of 1

5 BR - STANDARD TESLA OMRAT.GPJ TEMPLATE 7-22-11.GDT 10/14/19

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
S. Vemuri	9-13-19	9-13-19		SG-103
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Sierra Geotech			Top of Existing Stockpile	~59.0 ft
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			CME 75	8 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT (1.4")			140 lbs Auto Hammer with 30" Drop	81%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Neat cement grout and cuttings			Not encountered	25.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM/SM); medium dense; brown; dry to moist; fine to coarse sand, trace gravel, non-plastic fines.												
	1				1	1 3 3	6	94		6					
57.00	2				2	2 2 4	6	99		12					
	3														
55.00	4				3	2 1 2	3	94		12					
	5				4	2 1 4	5	95		12					
53.00	6														
	7		SILT (ML/ML); soft to medium stiff; brown; moist; trace fine SAND; non-plastic to low plasticity fines.		5	1 2 3	5	100		18					
51.00	8				6	2 2 2	4	97		16					
	9														
49.00	10				7	2 2 4	6	94		22					
	11														
47.00	12														
	13														
45.00	14														
	15				8	1 2 4	6	93		20					
43.00	16														
	17														
41.00	18														
	19				9	2 4 6	10	93		21					
39.00	20														
	21														
37.00	22														
	23														
35.00	24				10	4 3 2	5	96		22					
	25		Bottom of borehole at 25.0 ft bgs												

Groundwater was not encountered.

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REPORT TITLE				HOLE ID
BORING RECORD				SG-103
DIST.	COUNTY	ROUTE	POSTMILE	EA
N/A	N/A	N/A	N/A	N/A
PROJECT OR BRIDGE NAME				
Ormat-Pease Substation Tesla Battery Energy Storage System				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
N/A	MT		10-14-19	1 of 1

5 BR - STANDARD TESLA OMRAT.GPJ TEMPLATE 7-22-11.GDT 10/14/19

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
S. Vemuri	9-13-19	9-13-19		SG-104
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Sierra Geotech			Top of Existing Stockpile	~59.0 ft
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			CME 75	8 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT (1.4")			140 lbs Auto Hammer with 30" Drop	81%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Neat cement grout and cuttings			Not encountered	3.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM/SM); medium dense; brown; dry to moist; fine to coarse sand, trace gravel, non-plastic fines.		1	4 3 4	7	90							
57.00	2				2	3 2 2	4	98							
	3														
55.00	4		Bottom of borehole at 3.5 ft bgs Groundwater was not encountered.												
53.00	6														
51.00	8														
49.00	10														
47.00	12														
45.00	14														
43.00	16														
41.00	18														
39.00	20														
37.00	22														
35.00	24														
	25														

5 BR - STANDARD TESLA OMRAT.GPJ TEMPLATE 7-22-11.GDT 10/14/19

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REPORT TITLE				HOLE ID
BORING RECORD				SG-104
DIST.	COUNTY	ROUTE	POSTMILE	EA
N/A	N/A	N/A	N/A	N/A
PROJECT OR BRIDGE NAME				
Ormat-Pease Substation Tesla Battery Energy Storage System				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
N/A	MT		10-14-19	1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
S. Vemuri	9-13-19	9-13-19		SG-105
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Sierra Geotech			Top of Existing Stockpile	~59.0 ft
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			CME 75	8 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT (1.4")			140 lbs Auto Hammer with 30" Drop	81%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Neat cement grout and cuttings			Not encountered	3.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM/SM); medium dense; brown; dry to moist; fine to coarse sand, trace gravel, non-plastic fines.		1	2 4 3	7	91							
57.00	2				2	4 3 4	7	98							
55.00	4		Bottom of borehole at 3.5 ft bgs Groundwater was not encountered.												
53.00	6														
51.00	8														
49.00	10														
47.00	12														
45.00	14														
43.00	16														
41.00	18														
39.00	20														
37.00	22														
35.00	24														
	25														

5 BR - STANDARD TESLA OMRAT.GPJ TEMPLATE 7-22-11.GDT 10/14/19

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REPORT TITLE				HOLE ID
BORING RECORD				SG-105
DIST.	COUNTY	ROUTE	POSTMILE	EA
N/A	N/A	N/A	N/A	N/A
PROJECT OR BRIDGE NAME				
Ormat-Pease Substation Tesla Battery Energy Storage System				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
N/A	MT		10-14-19	1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
S. Vemuri	9-13-19	9-13-19		SG-106
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Sierra Geotech			Top of Existing Stockpile	~59.0 ft
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			CME 75	8 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT (1.4")			140 lbs Auto Hammer with 30" Drop	81%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Neat cement grout and cuttings			Not encountered	11.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM/SM); medium dense; brown; dry to moist; fine to coarse sand, trace gravel, non-plastic fines.		1	4 4 2	6	97							
57.00	2				2	3 2 4	6	93							
55.00	4				3	1 3 3	6	91							
53.00	6				4	4 3 1	4	96							
	7		SILT (ML/ML); soft to medium stiff; brown; moist; trace fine SAND; non-plastic to low plasticity fines.		5	3 2 1	3	96							
51.00	8				6	4 2 1	3	90							
49.00	10				7	4 3 2	5	93							
47.00	12		Bottom of borehole at 11.5 ft bgs Groundwater was not encountered.												
45.00	14														
43.00	16														
41.00	18														
39.00	20														
37.00	22														
35.00	24														
	25														

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REPORT TITLE				HOLE ID
BORING RECORD				SG-106
DIST.	COUNTY	ROUTE	POSTMILE	EA
N/A	N/A	N/A	N/A	N/A
PROJECT OR BRIDGE NAME				
Ormat-Pease Substation Tesla Battery Energy Storage System				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
N/A	MT		10-14-19	1 of 1

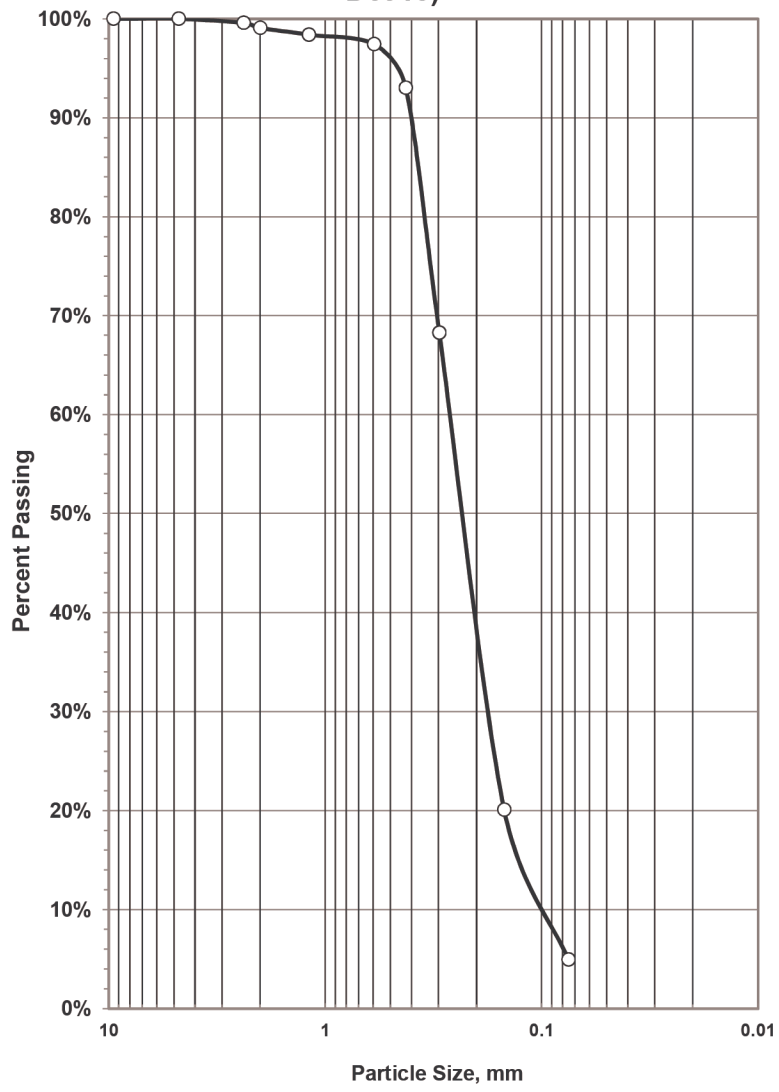
5 BR - STANDARD TESLA OMRAT.GPJ TEMPLATE 7-22-11.GDT 10/14/19

APPENDIX B: LABORATORY TEST RESULTS

Lab Testing Report

Client:	***Project #:***	***Boring No.***
Viridity Energy Solutions, Inc.	RL2019169	SG-101
Project Owner:	***Project Name:***	***Sample ID/Sample #***
Viridity Energy Solutions, Inc.	Ormat - Pease Substation	Composite 1 - Samples 1 through 5
General Contractor:	***Sierra Geotech PM:***	***Sampled By:***
N/A	Shaun Vemuri, PE	Sierra Geotech
Client Project Number:	***Sierra Geotech Lab Location:***	***Sample Type:***
PO-VESI58	Rocklin, CA	SPT
Client Project Name:	***Lab Manager:***	***Depth:***
Ormat - Pease Substation	Shaun Vemuri, PE	0.5 to 8.0
Project Location:	***Lab Technician:***	***Sample Recovery:***
Tierra Buena, CA	JC/CC/FK/HA	Varies. See Boring Log.

GRAIN SIZE DISTRIBUTION REPORT (ASTM D6913)



Soil Properties

Natural Moisture Content:

Assumed Specific Gravity:

Liquid Limit | Plastic Limit

Plasticity Index

Soil Description	% Passing	
Poorly Graded SAND (SP)	0.375	100%
	#4	100%
Gravel Percent	#8	100%
0.0%	#10	99%
Sand Percent	#16	98%
95.0%	#30	97%
Fines Percent	#40	93%
5.0%	#50	68%
	#100	20%
	#200	5%

Co-efficients

Cu:

Cc:

D90:

D85:

D60:

D50:

D30:

D15:

D10:

For Lab Use Only

Test Requested On: 9/16/2019

Report Issued: 9/20/2019

Lab Report ID: SL601

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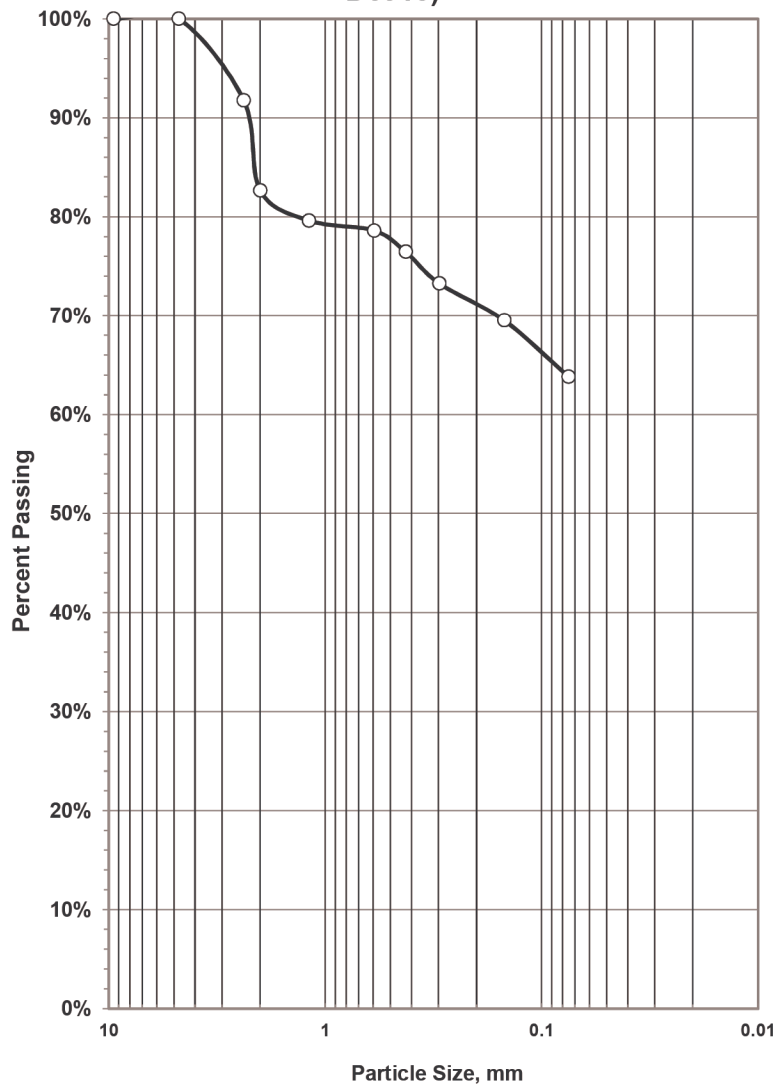
Lab Testing Report

Client:	***Project #:***	***Boring No.***
Viridity Energy Solutions, Inc.	RL2019169	SG-101
Project Owner:	***Project Name:***	***Sample ID/Sample #***
Viridity Energy Solutions, Inc.	Ormat - Pease Substation	Composite 2 - Samples 6 through 10
General Contractor:	***Sierra Geotech PM:***	***Sampled By:***
N/A	Shaun Vemuri, PE	Sierra Geotech
Client Project Number:	***Sierra Geotech Lab Location:***	***Sample Type:***
PO-VESI58	Rocklin, CA	SPT
Client Project Name:	***Lab Manager:***	***Depth:***
Ormat - Pease Substation	Shaun Vemuri, PE	8.0 to 26.0
Project Location:	***Lab Technician:***	***Sample Recovery:***
Tierra Buena, CA	JC/CC/FK/HA	Varies. See Boring Log.

GRAIN SIZE DISTRIBUTION REPORT (ASTM D6913)



Soil Properties

Natural Moisture Content:	
Assumed Specific Gravity:	
Liquid Limit | Plastic Limit	35 | 27
Plasticity Index	8

Soil Description	% Passing	
Sandy SILT (ML)	0.375	100%
	#4	100%
Gravel Percent	#8	92%
0.0%	#10	83%
Sand Percent	#16	80%
36.2%	#30	79%
Fines Percent	#40	76%
63.8%	#50	73%
	#100	70%
	#200	64%

Co-efficients

Cu:	
Cc:	
D90:	
D85:	
D60:	
D50:	
D30:	
D15:	
D10:	

For Lab Use Only

Test Requested On:	9/16/2019
Report Issued:	9/20/2019
Lab Report ID:	SL602

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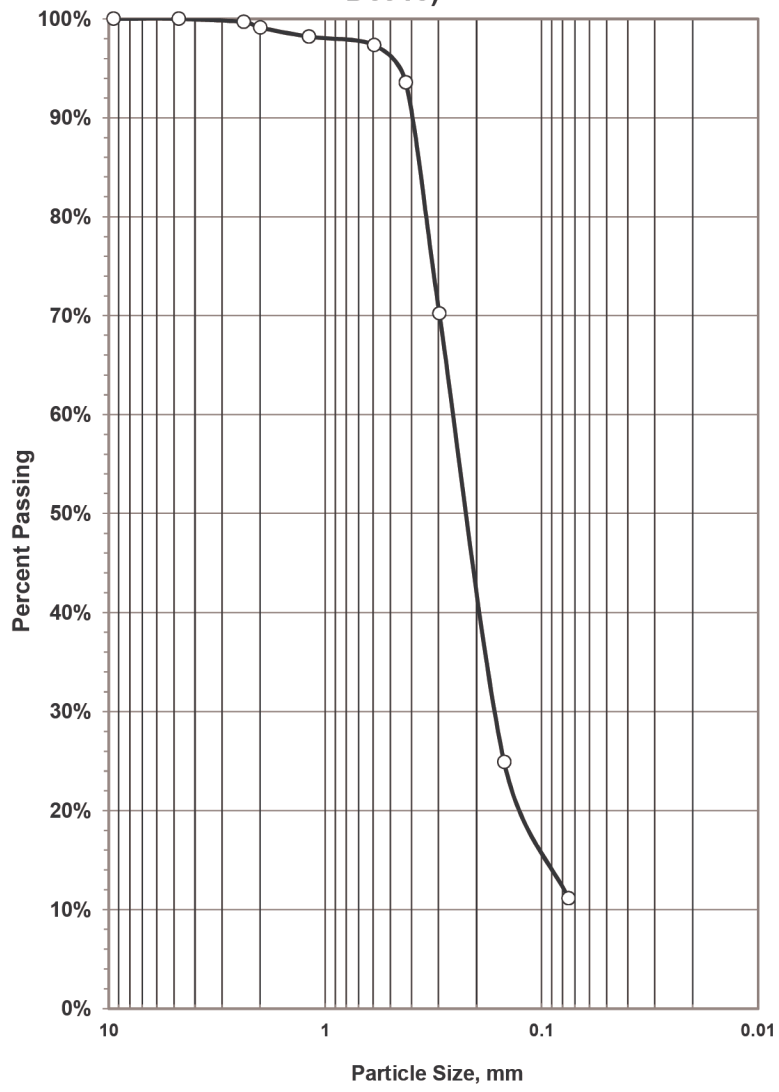
Lab Testing Report

Client:	***Project #:***	***Boring No.***
Viridity Energy Solutions, Inc.	RL2019169	SG-101
Project Owner:	***Project Name:***	***Sample ID/Sample #***
Viridity Energy Solutions, Inc.	Ormat - Pease Substation	Composite 3 - Samples 11 through 16
General Contractor:	***Sierra Geotech PM:***	***Sampled By:***
N/A	Shaun Vemuri, PE	Sierra Geotech
Client Project Number:	***Sierra Geotech Lab Location:***	***Sample Type:***
PO-VESI58	Rocklin, CA	SPT
Client Project Name:	***Lab Manager:***	***Depth:***
Ormat - Pease Substation	Shaun Vemuri, PE	28.0 to 50.0
Project Location:	***Lab Technician:***	***Sample Recovery:***
Tierra Buena, CA	JC/CC/FK/HA	Varies. See Boring Log.

GRAIN SIZE DISTRIBUTION REPORT (ASTM D6913)



Soil Properties

Natural Moisture Content:

Assumed Specific Gravity:

Liquid Limit | Plastic Limit

Plasticity Index

Soil Description	% Passing	
Poorly Graded SAND (SP)	0.375	100%
	#4	100%
Gravel Percent	#8	100%
0.0%	#10	99%
Sand Percent	#16	98%
88.9%	#30	97%
Fines Percent	#40	94%
11.1%	#50	70%
	#100	25%
	#200	11%

Co-efficients

Cu:

Cc:

D90:

D85:

D60:

D50:

D30:

D15:

D10:

For Lab Use Only

Test Requested On: 9/16/2019

Report Issued: 9/20/2019

Lab Report ID: SL603

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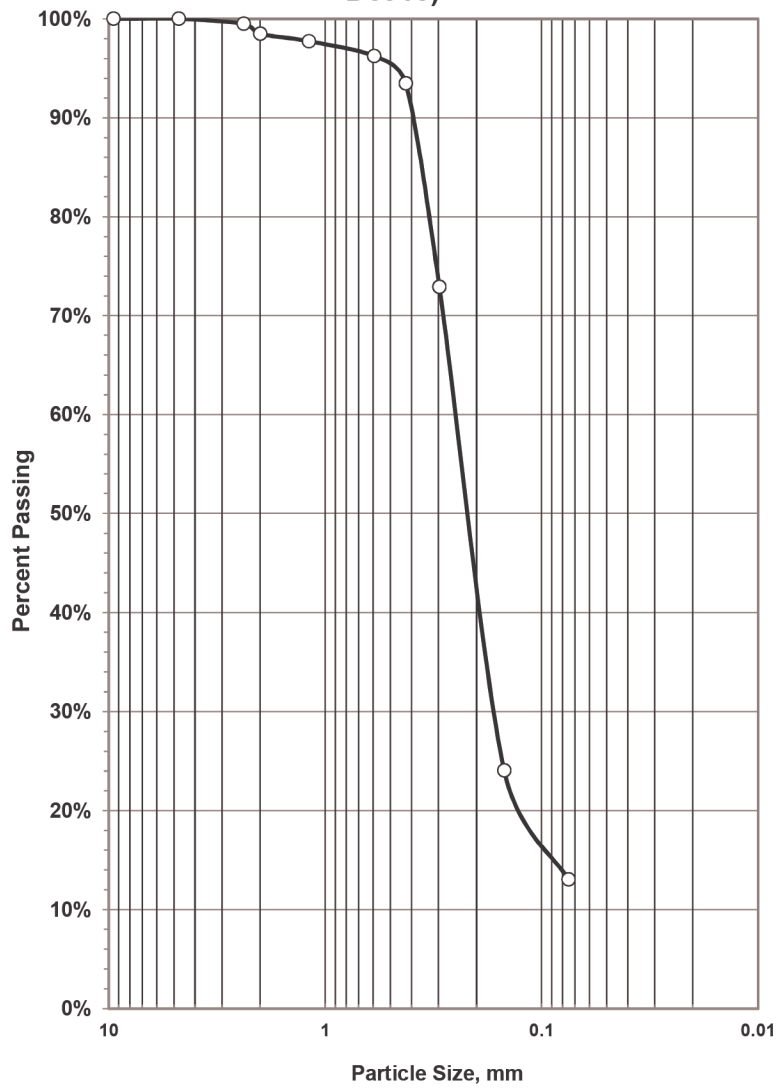
Lab Testing Report

Client:	***Project #:***	***Boring No.***
Viridity Energy Solutions, Inc.	RL2019169	SG-102
Project Owner:	***Project Name:***	***Sample ID/Sample #***
Viridity Energy Solutions, Inc.	Ormat - Pease Substation	Composite 1 - Samples 1 through 5
General Contractor:	***Sierra Geotech PM:***	***Sampled By:***
N/A	Shaun Vemuri, PE	Sierra Geotech
Client Project Number:	***Sierra Geotech Lab Location:***	***Sample Type:***
PO-VESI58	Rocklin, CA	SPT
Client Project Name:	***Lab Manager:***	***Depth:***
Ormat - Pease Substation	Shaun Vemuri, PE	0.5 to 8.0
Project Location:	***Lab Technician:***	***Sample Recovery:***
Tierra Buena, CA	JC/CC/FK/HA	Varies. See Boring Log.

GRAIN SIZE DISTRIBUTION REPORT (ASTM D6913)



Soil Properties

Natural Moisture Content:

Assumed Specific Gravity:

Liquid Limit | Plastic Limit

Plasticity Index

Soil Description	% Passing	
Poorly Graded SAND (SP)	0.375	100%
	#4	100%
Gravel Percent	#8	99%
0.0%	#10	98%
Sand Percent	#16	98%
87.0%	#30	96%
Fines Percent	#40	93%
13.0%	#50	73%
	#100	24%
	#200	13%

Co-efficients

Cu:

Cc:

D90:

D85:

D60:

D50:

D30:

D15:

D10:

For Lab Use Only

Test Requested On: 9/16/2019

Report Issued: 9/20/2019

Lab Report ID: SL604

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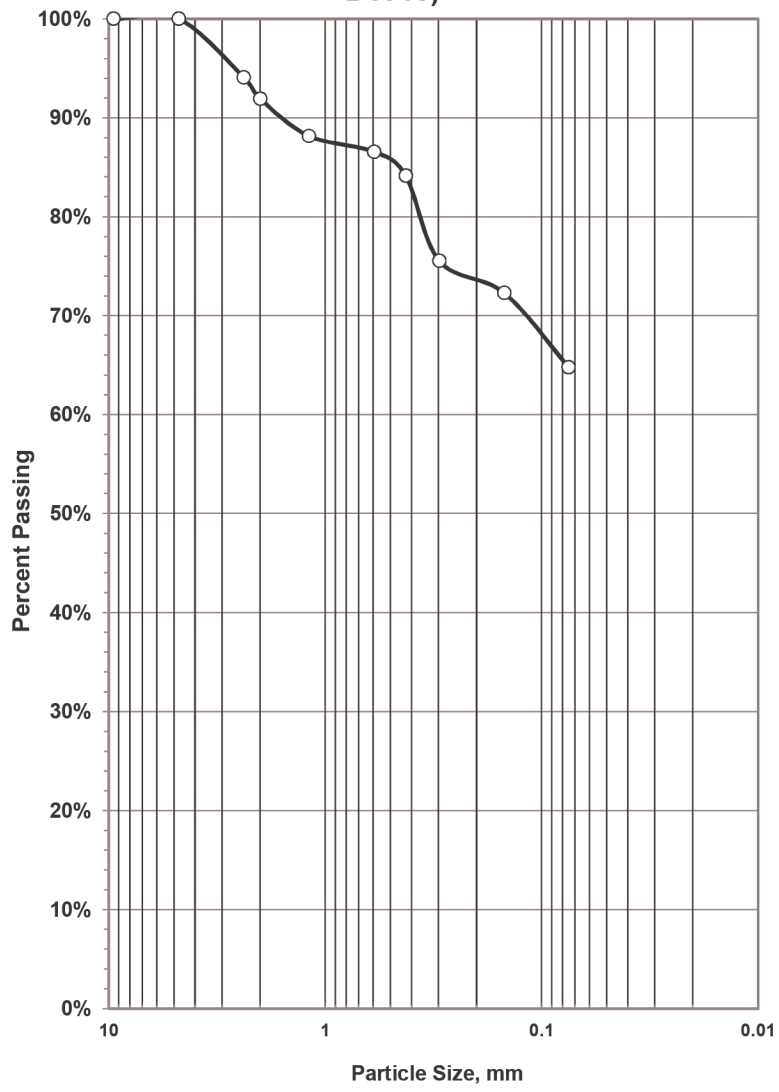
Lab Testing Report

Client:	***Project #:***	***Boring No.***
Viridity Energy Solutions, Inc.	RL2019169	SG-102
Project Owner:	***Project Name:***	***Sample ID/Sample #***
Viridity Energy Solutions, Inc.	Ormat - Pease Substation	Composite 2 - Samples 7 through 10
General Contractor:	***Sierra Geotech PM:***	***Sampled By:***
N/A	Shaun Vemuri, PE	Sierra Geotech
Client Project Number:	***Sierra Geotech Lab Location:***	***Sample Type:***
PO-VESI58	Rocklin, CA	SPT
Client Project Name:	***Lab Manager:***	***Depth:***
Ormat - Pease Substation	Shaun Vemuri, PE	10.0 to 25.0
Project Location:	***Lab Technician:***	***Sample Recovery:***
Tierra Buena, CA	JC/CC/FK/HA	Varies. See Boring Log.

GRAIN SIZE DISTRIBUTION REPORT (ASTM D6913)



Soil Properties

Natural Moisture Content:	
Assumed Specific Gravity:	
Liquid Limit | Plastic Limit	33 | 24
Plasticity Index	9

Soil Description	% Passing	
Sandy SILT (ML)	0.375	100%
	#4	100%
Gravel Percent	#8	94%
0.0%	#10	92%
Sand Percent	#16	88%
35.2%	#30	87%
Fines Percent	#40	84%
64.8%	#50	76%
	#100	72%
	#200	65%

Co-efficients

Cu:	
Cc:	
D90:	
D85:	
D60:	
D50:	
D30:	
D15:	
D10:	

For Lab Use Only

Test Requested On:	9/16/2019
Report Issued:	9/20/2019
Lab Report ID:	SL605

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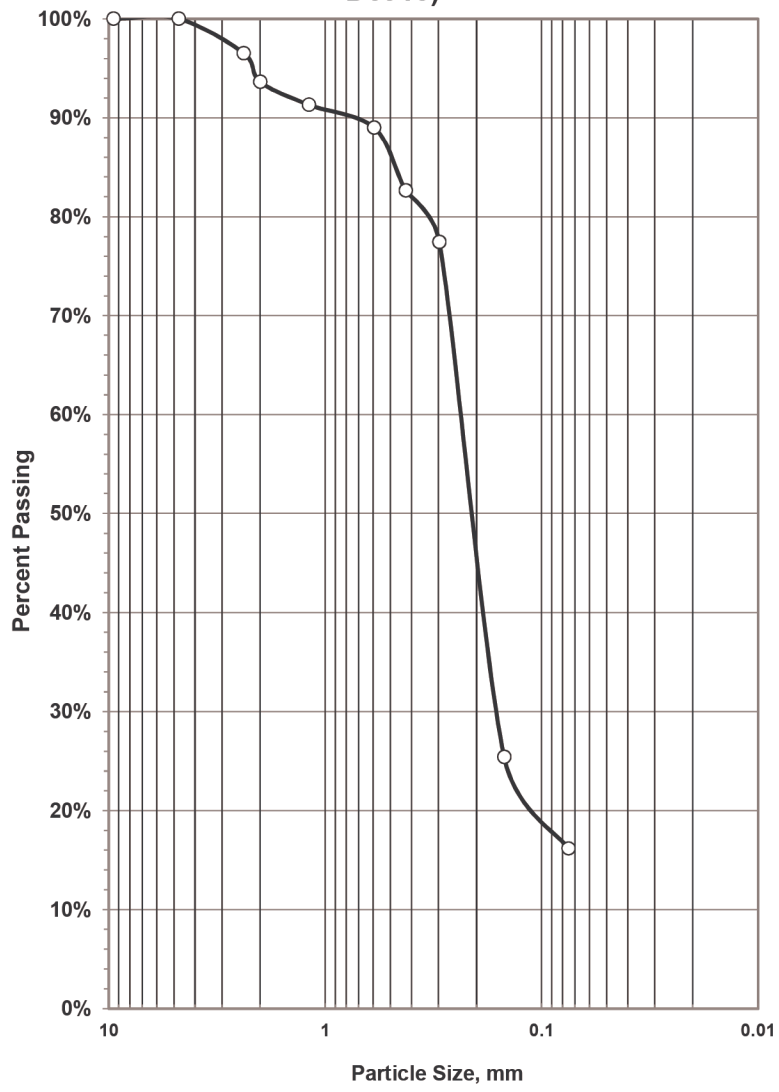
Lab Testing Report

Client:	***Project #:***	***Boring No.***
Viridity Energy Solutions, Inc.	RL2019169	SG-103
Project Owner:	***Project Name:***	***Sample ID/Sample #***
Viridity Energy Solutions, Inc.	Ormat - Pease Substation	Composite 1 - Samples 1 through 4
General Contractor:	***Sierra Geotech PM:***	***Sampled By:***
N/A	Shaun Vemuri, PE	Sierra Geotech
Client Project Number:	***Sierra Geotech Lab Location:***	***Sample Type:***
PO-VESI58	Rocklin, CA	SPT
Client Project Name:	***Lab Manager:***	***Depth:***
Ormat - Pease Substation	Shaun Vemuri, PE	0.5 to 6.5
Project Location:	***Lab Technician:***	***Sample Recovery:***
Tierra Buena, CA	JC/CC/FK/HA	Varies. See Boring Log.

GRAIN SIZE DISTRIBUTION REPORT (ASTM D6913)



Soil Properties

Natural Moisture Content:

Assumed Specific Gravity:

Liquid Limit | Plastic Limit

Plasticity Index

Soil Description	% Passing	
Poorly Graded SAND (SP)	0.375	100%
	#4	100%
Gravel Percent	#8	97%
0.0%	#10	94%
Sand Percent	#16	91%
83.8%	#30	89%
Fines Percent	#40	83%
16.2%	#50	77%
	#100	25%
	#200	16%

Co-efficients

Cu:

Cc:

D90:

D85:

D60:

D50:

D30:

D15:

D10:

For Lab Use Only

Test Requested On: 9/16/2019

Report Issued: 9/20/2019

Lab Report ID: SL606

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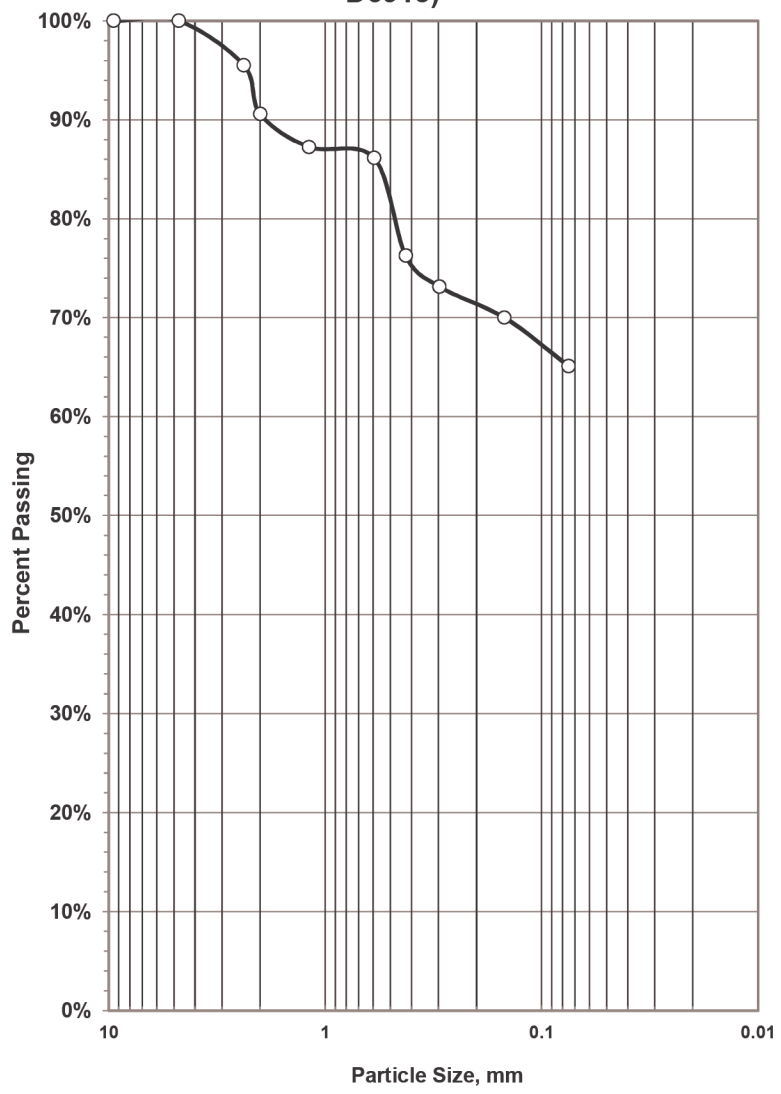
Lab Testing Report

Client:	***Project #:***	***Boring No.***
Viridity Energy Solutions, Inc.	RL2019169	SG-103
Project Owner:	***Project Name:***	***Sample ID/Sample #***
Viridity Energy Solutions, Inc.	Ormat - Pease Substation	Composite 2 - Samples 5 through 10
General Contractor:	***Sierra Geotech PM:***	***Sampled By:***
N/A	Shaun Vemuri, PE	Sierra Geotech
Client Project Number:	***Sierra Geotech Lab Location:***	***Sample Type:***
PO-VESI58	Rocklin, CA	SPT
Client Project Name:	***Lab Manager:***	***Depth:***
Ormat - Pease Substation	Shaun Vemuri, PE	6.5 to 25.0
Project Location:	***Lab Technician:***	***Sample Recovery:***
Tierra Buena, CA	JC/CC/FK/HA	Varies. See Boring Log.

GRAIN SIZE DISTRIBUTION REPORT (ASTM D6913)



Soil Properties

Natural Moisture Content:

Assumed Specific Gravity:

Liquid Limit | Plastic Limit: 32 | 21

Plasticity Index: 11

Soil Description	% Passing	
Sandy SILT (ML)	0.375	100%
	#4	100%
Gravel Percent	#8	96%
0.0%	#10	91%
Sand Percent	#16	87%
34.9%	#30	86%
Fines Percent	#40	76%
65.1%	#50	73%
	#100	70%
	#200	65%

Co-efficients

Cu:

Cc:

D90:

D85:

D60:

D50:

D30:

D15:

D10:

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Test Requested On: 9/16/2019

Report Issued: 9/20/2019

Lab Report ID: SL607

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Lab Testing Report

Client:	***Project #:***	***Boring No.***
Viridity Energy Solutions, Inc.	RL2019169	Varies
Project Owner:	***Project Name:***	***Sample ID/Sample #***
Viridity Energy Solutions, Inc.	Ormat - Pease Substation	Varies
General Contractor:	***Sierra Geotech PM:***	***Sampled By:***
N/A	Shaun Vemuri, PE	Sierra Geotech
Client Project Number:	***Sierra Geotech Lab Location:***	***Sample Type:***
PO-VESI58	Rocklin, CA	SPT
Client Project Name:	***Lab Manager:***	***Depth:***
Ormat - Pease Substation	Shaun Vemuri, PE	Varies
Project Location:	***Lab Technician:***	***Sample Recovery:***
Tierra Buena, CA	JC/CC/FK/HA	Varies.

Boring	Sample	Expansion Index	Organic Content	
SG-101	Comp 1	Very Low	0.1	
SG-101	Comp 2	Low	0.1	
SG-101	Comp 3	Very Low	0.1	
SG-102	Comp 1	Very Low	0.1	
SG-102	Comp 2	Low	0.0	
SG-103	Comp 1	Very Low	0.1	
SG-103	Comp2	Medium	0.0	

TABLE 1 Classification of Potential Expansion of Soils Using *EI*

Expansion Index, *EI*	Potential Expansion
0–20	Very Low
21–50	Low
51–90	Medium
91–130	High
>130	Very High

Reference: ASTM D4829-11

References/Comments/Deviations:

ASTM D4829: Standard Test Methods for Expansion Index of Soils

REGISTERED PROFESSIONAL ENGINEER SHARATH CHANDRA VEMURI C 87196 CIVIL STATE OF CALIFORNIA

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Lab Testing Report

Client:
Viridity Energy Solutions, Inc.

Project Owner:
Viridity Energy Solutions, Inc.

General Contractor:
N/A

Client Project Number:
PO-VESI58

Client Project Name:
Ormat - Pease Substation

Project Location:
Tierra Buena, CA

Project #:
RL2019169

Project Name:
Ormat - Pease Substation

Sierra Geotech PM:
Shaun Vemuri, PE

Sierra Geotech Lab Location:
Rocklin, CA

Lab Manager:
Shaun Vemuri, PE

Lab Technician:
JC/CC/FK/HA

Boring No.
Varies

Sample ID/Sample #
Varies

Sampled By:
Sierra Geotech

Sample Type:
SPT

Depth:
Varies

Sample Recovery:
Varies.

Boring	Sample	Depth	Max Dry Density	Optimum Moisture	R-Value
SG-101	Bag-1	0-5'	132.1 pcf	8.0%	46
SG-102	Bag-1	0-5'	118.5 pcf	11.0%	24
SG-103	Bag-1	0-5'	132.2 pcf	7.2%	33

References/Comments/Deviations:

ASTM D2844: Standard Test Method for Resistance R-Value and Expansion Pressure of Compacted Soils



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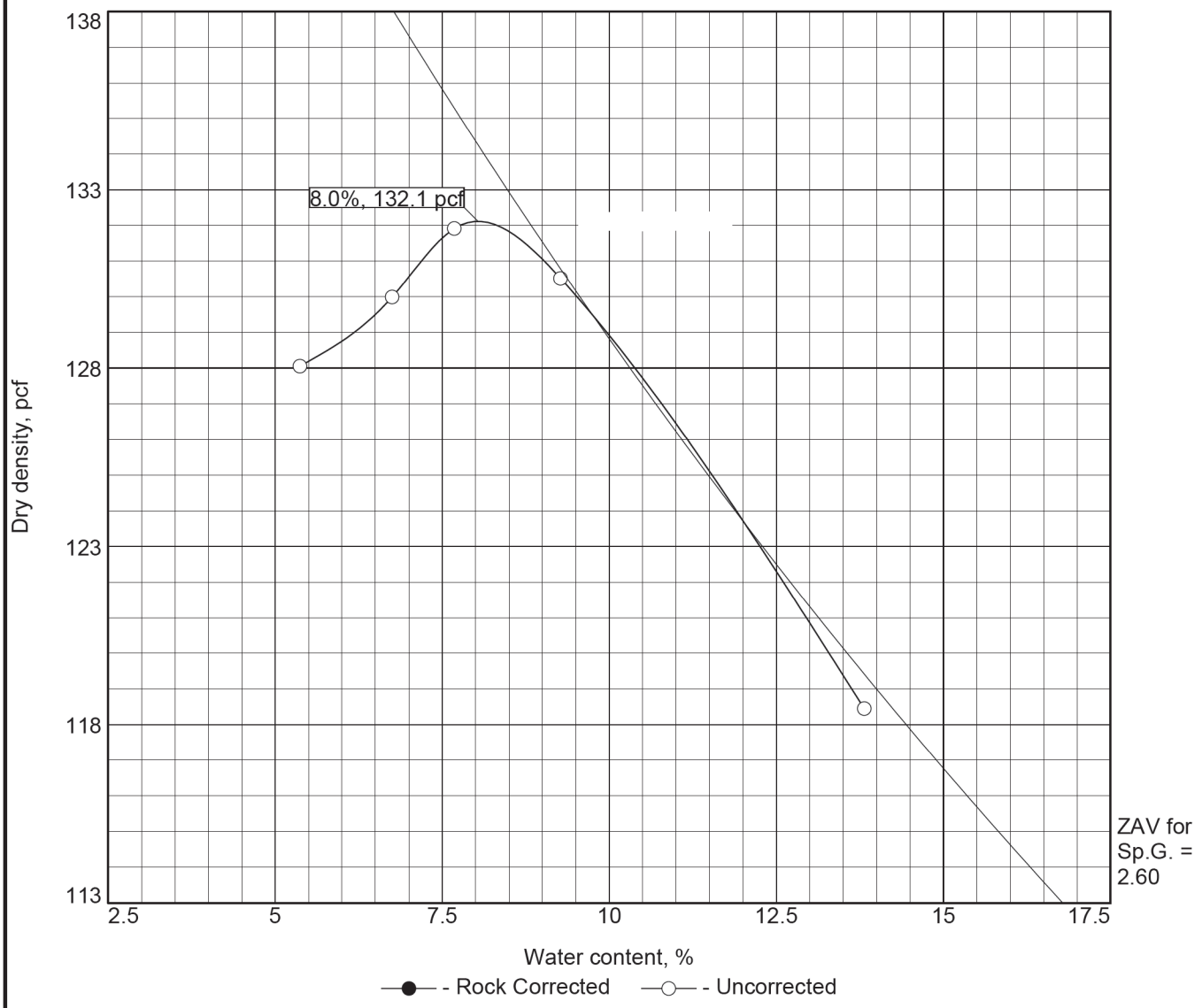
COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method B Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SM							

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density =	132.1 pcf	
Optimum moisture =	8.0 %	

Project No. RL2019169 **Client: Viridity Energy Solutions, Inc.**
Project: Ormat - Pease Substation
Sample #: SG 101 Bag 1 0-5'
○

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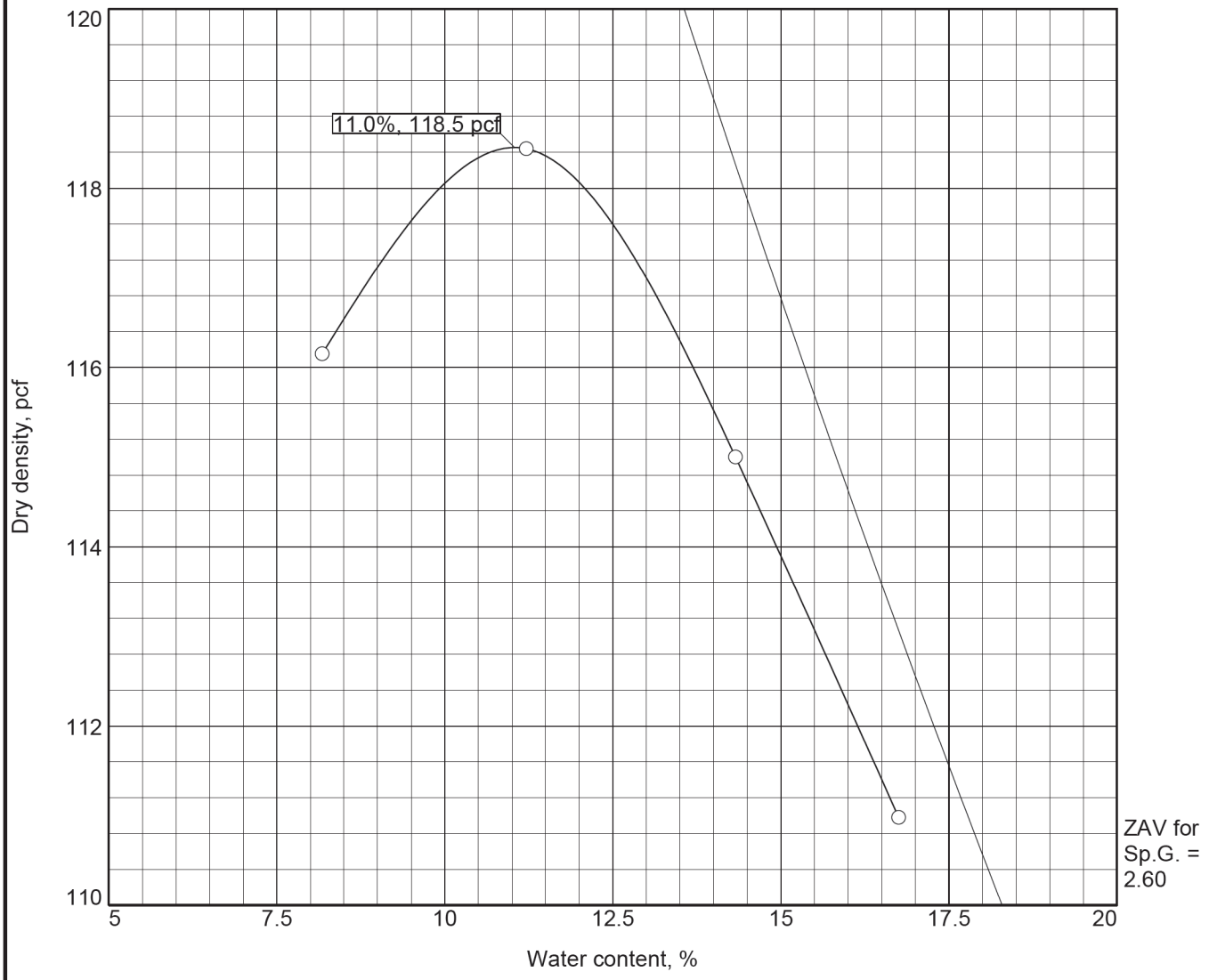
COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	SM							

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 118.5 pcf Optimum moisture = 11.0 %	

Project No. RL2019169 **Client: Viridity Energy Solutions, Inc.**
Project: Ormat - Pease Substation
Sample #: SG 102 Bag 1 0-5'

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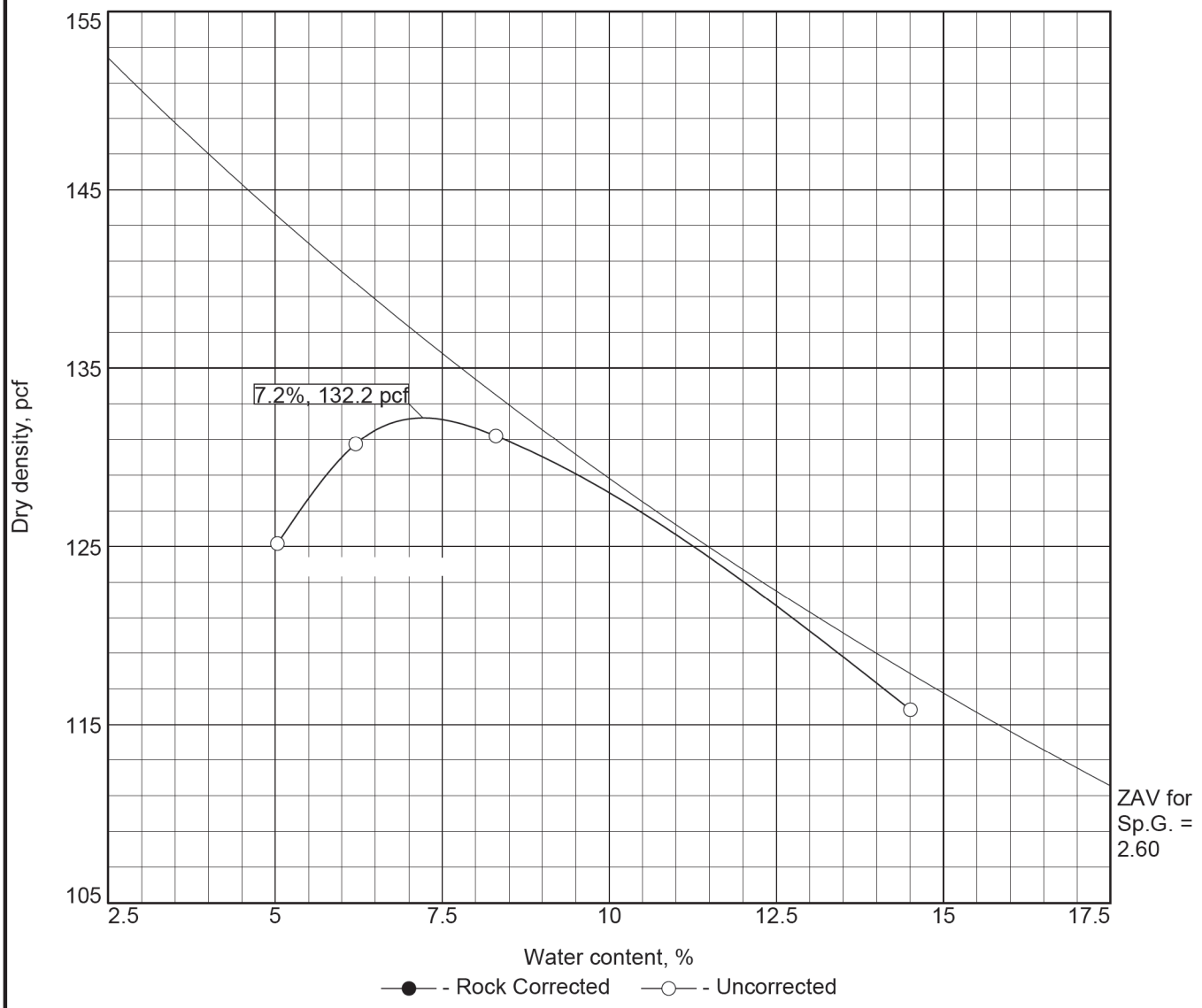
COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method B Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SM							

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density =	132.2 pcf	
Optimum moisture =	7.2 %	

Project No. RL2019169 **Client: Viridity Energy Solutions, Inc.**
Project: Ormat - Pease Substation
Sample #: SG 103 Bag 1 0-5'

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Important Information about This

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.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include 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 personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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Appendix I: Phase 1 Environmental Site Assessment – EDR Report

Phase I Environmental Site Assessment

VESI 10, LLC, Tierra Buena Battery Energy Storage System (BESS), Lease Area
3025 Tierra Buena Road
Yuba City, California



Prepared for:
Viridity Energy Solutions, Inc., 10, LLC
6140 Plumas Street
Reno, Nevada 89519

Prepared by:
Sierra Geotech, Inc.
4470 Yankee Hill Road, #110
Rocklin, California 95677

October 25, 2019

Sign-off Sheet

This document entitled, Phase I Environmental Site Assessment (ESA), was prepared by Sierra Geotech, (Sierra Geotech) for the account of Viridity Energy Solutions, Inc. . The material in it reflects Sierra Geotech's best judgment considering the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Sierra Geotech accepts no responsibility for damages, if any, suffered by any third party because of decisions made or actions based on this report.

All information, conclusions, and recommendations provided by Sierra Geotech in this document regarding the Phase I ESA have been prepared under the supervision of and reviewed by the professionals whose signatures appear below.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property. I have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared by:

Austin Kent Moore
Environmental Planner

Reviewed by:

Shaun Vemuri, PE, MBA
Principal Engineer

Brent L. Moore, CEP
Principal Scientist

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Acronyms & Abbreviations

AAI	All Appropriate Inquiry
ACM	Asbestos containing material
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BER	Business Environmental Risk
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CREC	Controlled Recognized Environmental Conditions
CWA	Clean Water Act
ELUC	Environmental Land Use Control
EP	Environmental Professional
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
ft msl	Feet above mean sea level
HREC	Historical Recognized Environmental Conditions
HWMU	Hazardous Waste Management Unit
LBP	Lead-based Paint
LUST	Leaking Underground Storage Tank
NESHAP	National Emissions Standard for Hazardous Air Pollutants
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
pVEC	Potential Vapor Encroachment Condition
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
SWMU	Solid Waste Management Unit
TSCA	Toxic Substance Control Act
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank
VEC	Vapor Encroachment Condition
VOCs	Volatile Organic Compounds

1.0 SUMMARY

Sierra Geotech has completed a Phase I Environmental Site Assessment (ESA) of a property located in Sutter County, California, Assessor's Parcel Number (APN) 010-250-060, local address 3025 Tierra Buena Road, Yuba City, California (property). This Phase I ESA has been completed on behalf of Viridity Energy Solutions, Inc. 10, LLC ("VESI" or "Client"). The Scope of Services performed was in accordance with the Viridity Energy an Ormat Company Purchase Order PO-VESI58 dated 21 February 2019 and Sierra Geotech's proposal attached to PO-VESI58 dated January 11, 2019. Sierra Geotech understands that Client has requested the Phase I ESA In support of environmental due diligence to assess site conditions; to characterize and review past and present land use practices; and to document existing site operations and conditions to provide information to Sutter County to support VESI 10, LLC's request for a Conditional Use Permit (CUP) to construct and operate a BESS facility at the proposed property. VESI (the "User") has been designated as the User of this report. This Phase I ESA was conducted in conformance with the requirements of ASTM International (ASTM) Practice E1527-13, except as may have been modified by the scope of work, and terms and conditions, requested by the Client. Any exceptions to, or deletions from, the ASTM practice are described in Sections 2.3 and 7.2.

The Property is comprised of approximately 1.75 +/- acres located approximately 325 feet north of the Pease Road and Tierra Buena Road intersection at 3025 Tierra Buena Road, Yuba City, CA 95993 with the lease area for the Project to be comprised of approximately .32 acres at the north end of the property. The project lease area was observed to be a primarily undeveloped portion of the Luis Garcia Valdez property. The project lease area is void of vegetation and is relatively flat compacted soil. The project lease area is zoned by Sutter County Zoning Code, Article 5, Section 1500-05-100 A – Agriculture (AG) zoning classification.

This ESA was accomplished by, and limited to, a reconnaissance of the VESI 10 Tierra Buena BESS project lease area, a perimeter survey of the proposed BESS project lease area vicinity, and review of agency databases and other reasonably ascertainable information regarding past and current land use for indications of the manufacture, generation, use, storage, and/or disposal of hazardous substances at the property following the provisions enumerated by ASTM E1527-13.

Sierra Geotech environmental site assessors performed a reconnaissance of the Property on March 10, 2019focusing on observation of current conditions and observable indications of past uses and conditions that may indicate the presence of a REC. The site visit confirmed the findings of previously administered public record searches, personal interviews, and owner reported data that the Property is currently dedicated to agricultural uses. No indications were found to indicate the likely presence of environmental conditions, historical, controlled, or otherwise that would be considered RECs under the scope of this ESA. Photographs taken during the site reconnaissance visit are provided in Appendix A.

This Phase I Environmental Site Assessment is based on the foregoing and subject to the limitations, qualifications, exceptions and assumptions set forth herein. The preceding summary is intended for informational purposes only. Reading of the full body of this report is recommended.

2.0 INTRODUCTION

The objective of this Phase I ESA was to perform appropriate inquiry into the past ownership and uses of the Property consistent with good commercial or customary practice as outlined by the ASTM in "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process", Practice E1527-13. The purpose of this Phase I ESA was to identify, to the extent feasible, adverse environmental conditions including "RECs" on the Property.

The ASTM E1527-13 standard indicates that the purpose of the Phase I ESA is to identify RECs, including historical recognized environmental conditions ("HRECs"), and controlled recognized environmental conditions ("CRECs") that may exist at a property. The term "recognized environmental conditions" means 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.

ASTM defines a "HREC" as a REC that has occurred in connection with the property but has been addressed to the satisfaction of the applicable regulatory authority and meets unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a HREC, the environmental professional must determine whether the past release is a REC when the current Phase I ESA is conducted (for example, if there has been a change in the regulations). If the Environmental Professional (EP) considers the past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a REC.

ASTM defines a "CREC" as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), but with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

De minimis conditions are not RECs. The term de minimis includes hazardous substances or petroleum products even under conditions in compliance with laws. As indicated, the term REC does not include de minimis conditions, which generally do not present a material risk to human health and would not likely be subject to enforcement action if brought to the attention of governmental agencies.

This ESA was conducted in accordance with Sierra Geotech proposal submitted to VESI/Ormat dated August 14, 2019. The scope of work conducted during this Phase I ESA consisted of a visual reconnaissance of the Property, interviews with key individuals, and review of reasonably ascertainable documents. The scope of work did not include an assessment for environmental

regulatory compliance of any operations at the Property (past or present), or sampling and analyzing of environmental media. Sierra Geotech was not contracted to perform any independent evaluation of the purchase or lease price of the Property and its relationship to current fair market value. The conclusions presented in this ESA Report are professional opinions based on data described herein. The opinions are subject to the limitations described in Section 2.3.

ASTM E1527-13 notes that the availability of record information varies from source to source. The User or EP is not obligated to identify, obtain, or review every possible source that might exist with respect to a property. Instead, ASTM identifies record information that is reasonably ascertainable from standard sources. "Reasonably ascertainable" means:

(1) Information that is publicly available;
(2) Information that is obtainable from its source within reasonable time and cost constraints; and
(3) Information that is practicably reviewable.

2.1 PROPERTY DESCRIPTION

The property is approximately 1.75 +/- acre area, located on the northeast corner of Tierra Buena Road and Pease Road intersection in Sutter County, California. The lease area for the VESI 10 Tierra Buena BESS project consists of 0.32 +/- acres on the northern end of the subject property. The street address of the VESI 10 Tierra Buena BESS project lease area is 3025 Tierra Buena Road, Yuba City, CA 95993; Lease area located approximately 325 feet north of the Pease Road and Tierra Buena Road intersection on the east side of Tierra Buena Road, Sutter County, California. Sutter County Assessor's Parcel Number 010-250-060, Sutter County, California. The project lease area is bounded by Tierra Buena Road to the west, dirt access road for orchard to the east, vacant lot to the north, and Valdez Truck Yard to the south. The project lease area is zoned by Sutter County Zoning Code, Article 5, Section 1500-05-100 A – Agriculture (AG) zoning classification.

The property is located within an area that is primarily developed for agriculture production orchards, agricultural related industry, and residential land uses in Sutter County. In general, prominent adjoining land uses are as follows:

- West: recently constructed agricultural storage building for equipment and ag-commodities with another ag-butler type builder northwest and two residential dwellings beyond the ag-butler type building to the northwest of the property

- North: Vacant land characterized as grass pasture with a small out building at the northern end of the parcel approximately 365-feet north of the property northern boundary line

- East: 20-foot wide dirt road for access to fruit orchards. PG&E electric distribution line runs the length of the eastern boundary of the property

- South: PG&E Pease Road power substation and vacant land used for stormwater detention.

Sierra Geotech did not observe activities that would indicate the potential for surface or subsurface impacts to the property from adjoining properties.

2.2 SPECIAL TERMS, CONDITIONS, & SIGNIFICANT ASSUMPTIONS

It is assumed that the purpose of this Phase I ESA is to qualify the User, in part, for landowner protection from Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability. The possible contaminants of concern considered in this assessment include those hazardous compounds listed under CERCLA and petroleum products. Other than adherence to Client-specific scope of work requirements, there were no other special terms, conditions, or significant assumptions associated with the Phase I ESA.

2.3 EXCEPTIONS & LIMITING CONDITIONS

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided and given the schedule and budget constraints established by the Client. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential and actual liabilities and conditions associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Sierra Geotech at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the Client or third parties in the preparation of this report has been assumed by Sierra Geotech to be correct. Sierra Geotech assumes no responsibility for any deficiency or inaccuracy in information received from others.

If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Sierra Geotech regarding it.

Conclusions made within this report consist of Sierra Geotech's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition.

This report relates solely to the specific project for which Sierra Geotech was retained and the stated purpose for which this report was prepared and shall not be used or relied upon by the Client identified herein for any variation or extension of this project, any other project or any other purpose.

This report has been prepared for the exclusive use of the Client identified herein and any use of or reliance on this report by any third party is prohibited, except as may be consented to in writing by Sierra Geotech or as required by law. The provision of any such consent is at Sierra Geotech's sole and unfettered discretion and will only be authorized pursuant to the conditions of Sierra Geotech's standard form reliance letter. Sierra Geotech assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures must be confirmed by the Client and Sierra Geotech assumes no liability resulting from damage to such utilities and structures.

The conclusions are based on the site conditions encountered by Sierra Geotech at the time the work. Accordingly, additional studies and actions may be required. As the purpose of this report is to identify selected site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment. The findings, observations, and conclusions expressed by Sierra Geotech in this report are not an opinion concerning the compliance of any past or present owner or operator of the site which is the subject of this report with any Federal, state, provincial or local law or regulation.

This report presents professional opinions and findings of a scientific and technical nature. It does not and shall not be construed to offer a legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of Federal, state, provincial or local governmental agencies. Issues raised by the report should be reviewed by Client legal counsel.

Sierra Geotech specifically disclaims any responsibility to update the conclusions in this report if new or different information later becomes available or if the conditions or activities on the property subsequently change.

2.4 PERSONNEL QUALIFICATIONS

This Phase I ESA was conducted by, or under the supervision of, an individual that meets the ASTM definition of an Environmental Professional (EP). The credentials of the EP and other key Sierra Geotech personnel involved in conducting this Phase I ESA are provided in Appendix B.

3.0 USER-PROVIDED INFORMATION

ASTM E1527-13 describes responsibilities of the User to complete certain tasks in connection with the performance of "All Appropriate Inquiries" into the Property. The ASTM standard requires that the EP request information from the User on the results of those tasks because that information can assist in the identification of RECs, CRECs, HRECs, or de minimis conditions in connection with the Property. Towards that end, Sierra Geotech requested that the User provide the following documents and information:

Description of Information	**Provided (Yes / No)**	**Description and/or Key Findings**
Owner Questionnaire (Luis Garcia Valdez)	Yes	Mr. Valdez has lived on the property since July of 2011, when he purchased the property from Aurora Loan Services, LLC. Mr. Valdez stated that he is unaware of any contamination by hazardous substances or petroleum products being found on his property.
Environmental Liens or Activity Use Limitations	No	The Property Owners have no knowledge of environmental liens filed against the Property.
Previous Environmental Permits or Reports Provided by User	No	The Property Owners did not provide previous environmental reports on the Property.
Purpose of the Phase I ESA	Yes	See above

The Owner provided information is included in Appendix C.

4.0 RECORDS REVIEW

The objective of consulting historical sources of information is to develop the history of the Property and surrounding area, to evaluate if past uses may have resulted in RECs. Physical setting records are evaluated to determine if the physical setting may have contributed to adverse environmental conditions in connection with the Property. During the review of historical records, Sierra Geotech attempted to identify uses of the Property from the present to the Property's first developed use. Sierra Geotech's research included the reasonably ascertainable and useful records described in this section.

4.1 PHYSICAL SETTING

A summary of the physical setting of the Property is provided in the table below with additional details in the following subsections.

Topography:	The Property is located on a historical flood plain with ostensibly null topographic relief
Soil/Bedrock Data:	Soils on the property are composed largely of alluvial soils with loam, clay loam, and silt loam comprising the superficial soil profiles with hardpan ranging between roughly 50 and 70 inches.
Estimated Depth to Groundwater/ Estimated Direction of Gradient:	The estimated direction of gradient on the property slants down very gradually toward the southwest. Depth to groundwater is approximately ten (10) feet.
Note: Property-specific groundwater direction and depth can only be determined by conducting site-specific testing, which Sierra Geotech has not conducted.	

4.1.1 Property Topography and Surface Water Flow

The Property is located at an elevation of approximately 60 feet above mean sea level (ft msl) on a historic flood plain with limited topographic relief. Based on the topography, and observation of local topography and the Feather River watershed, local surface water flow is anticipated to flow in a generally southern direction.

4.1.2 Regional and Property Geology

Soil Profile Tests administered on the property on July 26, 2019 by Von Geldern Engineering confirmed soil composition of loam (0-14/20"), clay loam (14/20"-37/43"), and silt loam (37/43"-51/65") with hardpan ranging between roughly 50 and 70 inches. This is consistent with the alluvial soils found throughout the region due to its nature as historic flood plain of the Feather and Sacramento rivers.

4.1.3 Regional and Property Hydrogeology

A search of relevant databases and regulatory authorities failed to reveal reasonably ascertainable, site-specific well data. Based on soil composition and topography of the Property and the Feather River watershed, local groundwater is anticipated to flow generally to the South.

4.2 FEDERAL, STATE AND TRIBAL ENVIRONMENTAL RECORDS

A regulatory agency database search report was obtained from EDR, a third-party environmental database search firm. For the purposes of the environmental database report an area at Latitude (North): 39.172027 39° 10' 19" and Longitude (West): -121.662067 -121° 39' 43"' was considered; cardinally constrained search limits which correspond to the extent of the property and its immediate environs. A complete copy of the database search report, including the date the report was prepared, the date the information was last updated, and the definition of databases searched, is provided in Appendix D.

Sierra Geotech analyzed the data enumerated within the report to evaluate the potential for conditions which would pose potential risks RECs, CRECs, or HRECs for the Property. Observations about the Property and surrounding properties made during the Property reconnaissance are provided in more detail in Section 5.

4.2.1 Listings for the Property

EDR's search of available, reasonably ascertainable, government records revealed no entries or mapped sites pertaining to the target property. There is, therefore, no data from this listing which could potentially represent a REC for the Property.

4.2.2 Listings for Nearby Sites with Potential to Impact Property

The EDR Radius Map Report documented two fuel storage tanks both located at 3222 Tierra Buena Road located approximately 1,000 feet northwest of the project lease area.

- Site Name: HARBHAJAN S. TAKHER; Database Acronyms: SWEEPS UST, CA FID UST
- Site Name: HARBHAJAN S. TAKHER; Database Acronyms: HIST UST

Additionally, records indicate that nearby elementary schools, Bleven Road and Butte Vista, have been the subject of previous environmental assessments.

However, there is no indication in the records to indicate evidence of releases or potential risk of releases at the mapped sites documented. It should be noted that this information is reported as received by Sierra Geotech from EDR, which in turn reports information as provided in various government databases. It is not possible for either Sierra Geotech or EDR to verify the accuracy or completeness of information contained in these databases. However, the use of and reliance on this information is a generally accepted practice in the conduct of environmental due diligence. The

property reconnaissance focused on observation of current conditions and observable indications of past uses and conditions that may indicate the presence of a REC.

4.3 LOCAL/REGIONAL ENVIRONMENTAL RECORDS

Sierra Geotech checked the following sources to obtain information pertaining to the Property use and/or indications of RECs in connection with the Property:

4.3.1 Amador County Tax Assessor Online Records

Agency Name & Resource Information	Findings
Sutter County Assessors Website Date of search: 10/24/2019	Sierra Geotech reviewed online records for the Property. The records identify the Property as agricultural land comprised of 1.75 acres featuring a 3-bedroom, 2-bathroom dwelling unit as shown on the Sutter County Assessor's Parcel Map Book 10, Page 250.

4.4 HISTORICAL RECORDS REVIEW

4.4.1 Land Title Records/Deeds

A public records search of the databases for the Sutter County Recorder and Assessor offices was performed on October 24, 2019 for all deeds vesting title to the subject property. No environmental agency liens or other evidence of RECs were identified.

4.4.2 Aerial Photographs

Sierra Geotech reviewed historical aerial photographs provided by EDR. The general type of activity on a property and land use changes can often be discerned from the type and layout of structures visible in the photographs. However, specific elements of operation usually cannot be discerned from aerial photographs alone. The following table summarizes Sierra Geotech's observations of the reviewed historical aerial photographs.

Year	Scale	Observations, Property and Adjoining Properties
1937	1" = 500'	The property appears to have a railroad on the western edge of the property. Agricultural trailers are being stored on the property and the project lease area appear to be undeveloped land or land used for agricultural purposes. Tierra Buena Road and Pease Road appears to be unimproved dirt roads. Just northwest of the property was a small cluster of buildings. The property was surrounded by orchards in all directions (North/South/East/West).
1952	1" = 500'	The property appears as undeveloped land with conditions surrounding the property unchanged from the 1937-aerial photo except for the electrical substation located on the southside of Pease Road from the property and an orchard on the northeast corner of the property has been removed and cultivated as row crops.
1964	1" = 500'	The property appears as undeveloped land with no improvements. The electrical substation located on the southside of Pease Road from the property has enlarged. The property that was cultivated row crops in the 1952-aerial photo has been restored to orchard agricultural land.
1973	1" = 500'	The property appears as undeveloped land with a strip of vegetation along the western boundary of the property. The orchard to the west of the property has been removed.
1977	1" = 500'	No change from 1973-aerial photo. No significant changes are observed to the property or adjacent properties.
1984	1" = 500'	The property is undeveloped land. The strip of vegetation along the western boundary of the property has been removed. The orchard to the east of the property appears to be newly planted. An electric transmission tower is located in the middle of the orchard to the east of the property. A new residential dwelling is located northwest of the property with a large out-building on the westside of Tierra Buena Road.
1998	1" = 500'	The property now has a residential dwelling, landscaping, and out buildings on the southern portion of the property. Driveway between the dwelling and Pease Road has been placed on the property. New residence is located north of the property with new out-buildings.
2006	1" = 500'	The property is showing several out-buildings north of the existing residential dwelling. On the northern portion of the property appear to be tractor-trailers stored. All surrounding properties are planted in fruit orchards. Several new buildings and residential dwellings have developed across Tierra Buena Road just northwest of the property.
2009	1" = 500'	No significant changes are observed to the property, lease area, adjacent properties or lease area vicinity.

Year	Scale	Observations, Property and Adjoining Properties
2012	1" = 500'	No significant changes are observed to the property, lease area, adjacent properties or lease area vicinity.
2016	1" = 500'	No significant changes are observed to the property, lease area, adjacent properties or lease area vicinity.

Source: The EDR Aerial Photo Decade Package

4.4.3 City Directories

Sierra Geotech reviewed data from a comprehensive historical directory listings report compiled from standard sources such as Cole Information and Dun & Bradstreet. Examination on business directories including city, cross reference and telephone directories reviewed, if available, at approximately five-year intervals for the years in which records were available. The target address was discovered in the directory search. Listings found for the project site and in the general vicinity of the property appear to be predominately private residences. No indications of RECs for the Property were identified in the directories. The complete city directory report is provided in Appendix E.

4.4.4 Historical Fire Insurance Maps

Fire insurance maps were developed for use by insurance companies to depict facilities, properties, and their uses for many locations throughout the United States. These maps provide information on the history of prior land use and are useful in assessing whether there may be potential environmental contamination on or near the Property. These maps, which have been periodically updated since the late 19th century, often provide valuable insight into historical land uses.

Sierra Geotech contracted with EDR to obtain Sanborn Fire Insurance Maps for the property. Based on EDR's search, Sanborn Fire Insurance Maps were not found and EDR certifies that the complete holdings of the Sanborn Library, LLC collection were searched based on supplied target property information by Sierra Geotech, and fire insurance maps covering the target property were not found.

4.4.5 Historical Topographic Maps

Sierra Geotech reviewed historical USGS 7.5-Minute, 15-Minute, and 30-Minute Topographic Maps of the Sutter (7.5-Minute) and the Marysville Quadrangles (15 & 30-Minute) to help identify past Property usage and areas of potential environmental concern.

No RECs were noted during our review of the topographic maps. Copies of the historical maps are provided in Appendix E. The following table summarizes the maps reviewed and our observations.

Year	Observations, Property and Adjoining Properties
1888	The area surrounding the project site is crisscrossed by a network of lines that would appear to be either property lines or roads. There is no other information provided.
1891	No significant changes are observed from the previous map.
1894	No significant changes are observed from the previous map.
1895	No significant changes are observed from the previous map.
1911	This map appears to indicate that some roads have been developed in the region but labels are given. A cross-hatched line appearing to indicate a railroad runs from north to south immediately adjacent to the property. The Live Oak Canal is depicted to the west of the property. There are small dots which appear to indicate buildings (most likely homes) sparsely dotting the general vicinity, no such dots feature on the project site.
1913	The project area is unmapped, an area to the west of the project site is shown but it does not appear to indicate additional development versus previous maps.
1952	Roadways are now clearly labeled. Pease Road intersects a road labeled ¨Sacramento¨ (what appears to be the modern-day Tierra Buena Road). The railway which was depicted on a previous map sis no longer present. Little other variation is observed in the depicted building density in the area.
1973	This map appears to be virtually unchanged from the previous map.
2012	The road once labeled ¨Sacramento¨ is now identified as Tierra Buena Road. Additional residential neighborhoods appear to have been developed in the area south of Pease Road.

Source: The EDR Historical Topographic Map Report

5.0 PROPERTY RECONNAISSANCE

On March 10, 2019, Mr. Brent L. Moore, CEP of Sierra Geotech escorted by Mr. Luis Garcia Valdez, the property owner, conducted a reconnaissance of the property. The reconnaissance consisted of the observation and documentation of existing site conditions and the nature of the neighboring property development within approximately 0.5 mile of the property. Photographs taken during the site reconnaissance are provided in Appendix A.

5.1 PROPERTY RECONNAISSANCE METHODOLOGY

The Property reconnaissance focused on observation of current conditions and observable indications of past uses and conditions that may indicate the presence of a REC. The Property reconnaissance was conducted on foot and Sierra Geotech utilized the following methodology to observe the Property:

- Traverse the outer Property boundary.
- Traverse transects across the Property.
- Observe accessible interior areas.

5.2 GENERAL DESCRIPTION

Property and Area Description:	The Property is located in the Sacramento Valley on the historic flood plain of the Feather River. The property is a largely vacant agricultural parcel with a single-family home located on it southernmost end. Activities on the property and in the surrounding vicinity are mainly of an agricultural nature with residential units dotting the landscape.
Property Operations:	The Property houses the Valdez Agricultural Trucking Yard in addition to residential. The project area is vacant land.
Structures, Roads, Other Improvements:	The property is bordered by Tierra Buena Road to the West and Pease Road to the South
Observed Evidence of Past Property Use(s):	None observed.
Sewage Disposal Method (and age):	Septic tank and leachfields were installed in 2011. Septic tank and leachfields are located just north of residence.
Potable Water Source:	Potable water provided by private well on parcel located just south of the residence.
Electric and Gas Service:	Electric service and natural gas service provided to property by PG&E.

5.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

The following table summarizes Sierra Geotech's observations during the Property reconnaissance.

Observations	Description/Location
Hazardous Substances and Petroleum Products as Defined by CERCLA 42 U.S.C. § 9601(14):	None observed.
Drums (≥ 5 gallons):	None observed.
Strong, Pungent, or Noxious Odors:	None observed.
Pools of Liquid:	None observed.
Unidentified Substance Containers:	None observed.
PCB-Containing Equipment:	None observed
Other Observed Evidence of Hazardous Substances or Petroleum Products:	None observed.

5.4 INTERIOR OBSERVATIONS

The project area contains no structures and is a vacant portion of the parcel. Some out buildings and a single family dwelling are located on the southern end of the parcel, however, they are not part of the VESI lease area.

5.5 EXTERIOR OBSERVATIONS

Sierra Geotech made the following observations during the site reconnaissance of exterior areas of the Property and/or identified the following information during the interview or records review portions of the assessment:

Observations	Description
On-site Pits, Ponds, or Lagoons:	None observed.
Stained Soil or Pavement:	None observed.
Stressed Vegetation:	None observed.
Waste Streams and Waste Collection Areas:	A small area of the property was filled with waste or trash associated with the Valdez Trucking operations. The waste or trash did not appear to be hazardous. No other waste disposal activities were observed on the property during the site reconnaissance.
Solid Waste Disposal:	None observed.
Potential Areas of Fill Placement:	None observed.
Wastewater:	None observed.
Stormwater:	None observed.
Wells:	None observed.

Observations	Description
Septic Systems:	Septic tank and leachfield has been installed under Sutter County Environmental Health Department Regulations and Permit.

5.6 UNDERGROUND STORAGE TANKS/STRUCTURES

Observations	Description/Location
Existing USTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface patches), which would indicate the presence of USTs, was observed during the Property reconnaissance.
Former USTs:	No evidence (fill pipes, vent pipes, dispensers, surface patches), reports, or other evidence of the former presence of USTs was discovered during this Phase I ESA.
Other Underground Structures:	None observed.

5.7 ABOVEGROUND STORAGE TANKS

Observations	Description/Location
Existing ASTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface stains), which would indicate the presence of ASTs, was discovered during the site reconnaissance.
Former ASTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface stains), reports, or other evidence of the former presence of ASTs was discovered during this Phase I ESA.

5.8 ADJOINING PROPERTIES

5.8.1 Current Uses of Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Sierra Geotech made the following observations about use and activities on adjoining properties:

NORTH	Vacant land characterized as grass pasture with a small out building at the northern end of the parcel approximately 365-feet north of the property northern boundary line
SOUTH	PG&E Pease Road power substation and vacant land used for stormwater detention.
EAST	20-foot wide dirt road for access to fruit orchards. PG&E electric distribution line runs the length of the eastern boundary of the property

WEST	recently constructed agricultural storage building for equipment and ag-commodities with another ag-butler type builder northwest and two residential dwellings beyond the ag-butler type building to the northwest of the property

5.8.2 Observed Evidence of Past Uses of Adjoining Properties

Observations of adjoining properties providing indications of past use and activities that may have varied from those currently in place, if any, are described below.

North	None observed
South	None observed
East	None observed
West	None observed

5.8.3 Pits, Ponds or Lagoons on Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Sierra Geotech made the following observations about the presence of pits, ponds and lagoons on adjoining properties:

North	None observed
South	None observed
East	None observed
West	None observed

5.9 OBSERVED PHYSICAL SETTING

Observations	Description/Location
Topography of the Property and Surrounding Area:	The entire area is relatively flat with virtually no topographical relief visible to the naked eye in immediate vicinity of the property.

6.0 INTERVIEWS

Sierra Geotech conducted an interview with Mr. Luis Garcia Valdez the property owner and obtained information regarding historical and current site operations. Mr. Valdez has lived on the property since July of 2011, when he purchased the property from Aurora Loan Services, LLC. Mr. Valdez stated that he is unaware of any contamination by hazardous substances or petroleum products being found on his property. Mr. Valdez stated that he has used most of the property as a storage yard for his business, Valdez Trucking. Brent L. Moore, CEP walked the property with the Mr. Valdez and found the property to be clean with no signs of contamination or spills.

7.0 EVALUATION

This section provides a summary overview of or Findings, Opinions, and Conclusions.

7.1 FINDINGS AND OPINIONS

Information gathered from interviews, reviews of existing data review, and a property inspection was evaluated to determine if RECs are present in connection with the Property.

Finding 1: Historical records from the 19th century indicate that the property was the site of a railroad corridor, and after abandonment of the railroad was vacant land until early 2000's the property was developed with a single-family residential dwelling and was used as an agricultural truck yard. No information was identified that indicates a release or imminent threat of a release at the property.

Opinion 1: No evidence of RECs for the property was identified. Under the scope of this ESA.

7.2 DATA GAPS

The federal AAI rule [40 CFR 312.10(a)] and ASTM E1527-13 identify a "data gap" as the lack or inability to obtain information required by the standards and practices of the rule despite good faith efforts by the EP, Owner or the User. Any data gaps resulting from the Phase I ESA described in this report are listed and discussed below.

Deletions or Exceptions From Scope of Work:	None.
Weather-Related Restrictions To Property Reconnaissance:	None.
Facility Access Restrictions to Property Reconnaissance:	None.
Other Property Reconnaissance Restrictions:	None.
Data Gaps From Environmental Records Review:	None.
Data Gaps From Historical Records Review:	None.
Data Gaps From Interviews:	None. Sierra Geotech obtained sufficient information about the Property from interviews, records searches, other readily available sources, and site reconnaissance to evaluate the potential for RECs.
Other Data Gaps:	None.

7.3 CONCLUSIONS

Sierra Geotech has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of land located on the east side of Tierra Buena Road just north of Pease Road in Sutter County (APN's 010-250-060) as shown on Sutter County Tax Assessor's Parcel Maps). Any exceptions to, or deletions from, this practice are described in Section 2.3 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property.

8.0 REFERENCES

The following documents, maps or other publications may have been utilized specifically in the preparation of this Phase I ESA Report or generally in the development of the report format. References to specific documents are also provided in appropriate sections of the report.

Luis Garcia Valdez, Personal Interview, Property Owner, March 10, 2019 1:15 AM

Environmental Data Resources, Inc., Radius Map with GeoCheck / Site Assessment Reports

Environmental Data Resources, Inc., Tax Map Report

Environmental Data Resources, Inc., Historical Topo Map Report

Environmental Data Resources, Inc., Environmental Lien and AUL Search

Environmental Data Resources, Inc., City Directory Image Report

Environmental Data Resources, Inc., Certified Sanborn Map Report

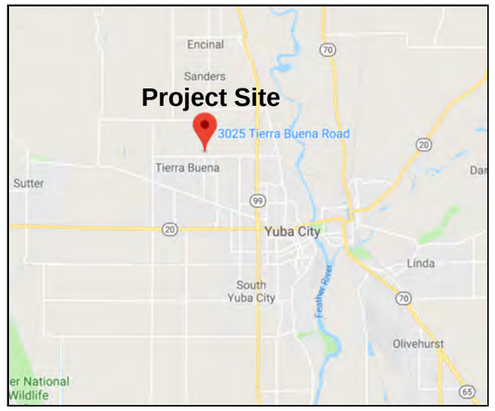
Environmental Data Resources, Inc., Building Permit Report

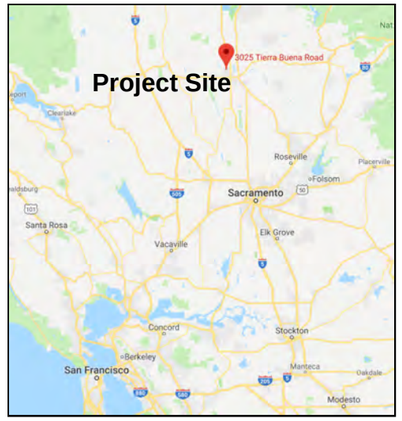
Environmental Data Resources, Inc., Aerial Photo Decade Package

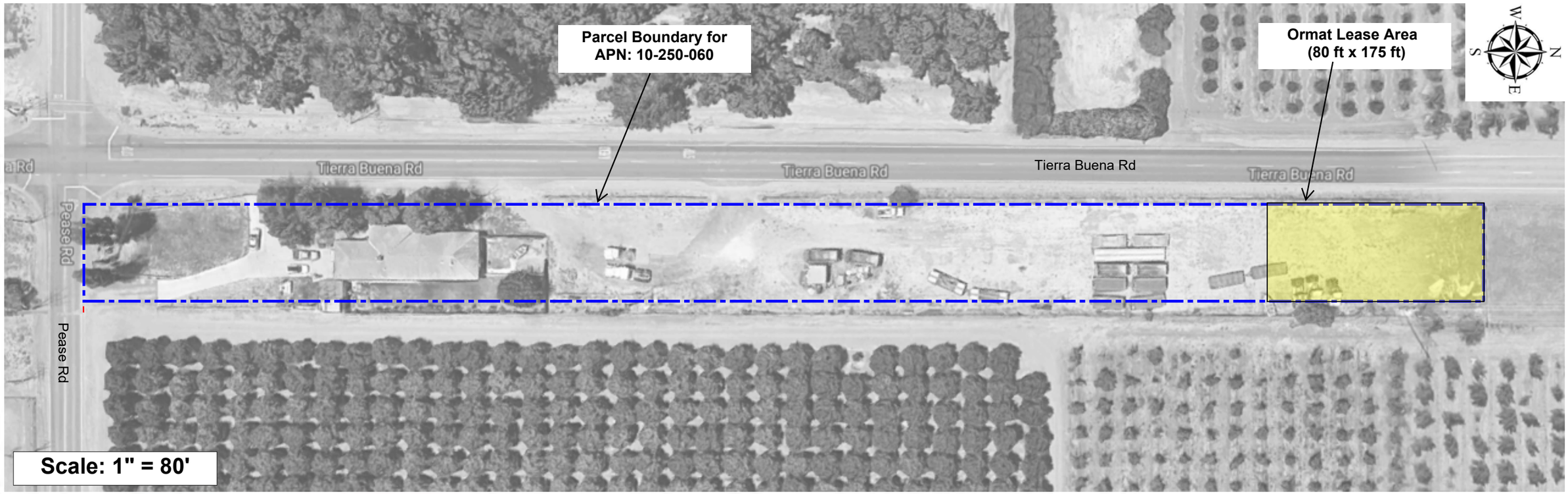
The following web sites have been accessed to obtain information used in the preparation of this Phase I ESA Report.

Bedrock Geology - http://geology.about.com/od/stategeologicmaps/
Geologic Provinces - http://www2.nature.nps.gov/geology/usgsnps/province/province.html
Soils Reference - http://soils.usda.gov/
State and Local Government Records - http://www.statelocalgov.net/index.cfm
State Radon Levels - http://radon.com/radon/radon_map.html
Tax and Property Records - http://www.netronline.com/public_records.htm
Wetlands Maps - http://wetlandsfws.er.usgs.gov/

Figures







PROJECT: VESI 10 TIERRA BUENA BESS FACILITY

3025 Tierra Buena Rd
Yuba City, CA 95993

APN: 10-250-060

REV.	DESCRIPTION	BY	APP.	CHKD
0	Issued as Final	SCV		BLM

FIGURE: Vicinity and Location Map

DATE: 11-17-2019	SCALE: 1" = 80' (11"x17")
BY: SCV	FIGURE: 1.0-1

viridity energy
An ORMAT Company

SIERRA GEOTECH

Appendix A

Photographs of Subject Property

PHOTOGRAPHIC RECORD

Client: VESI 10, LLC	
Subject Name: VESI 10 Tierra Buena BESS Project Lease Area	**Location:** 3025 Tierra Buena Road, Yuba City, CA
Photographer: Brent L. Moore, CEP	**Date:** 10-March-2019

Photograph No. 1



Looking East from the Property at Adjacent Orchard and PG&E Transmission Tower

Photograph No. 2



Looking West Across Tierra Buena Road from Property near the Middle of the Property

PHOTOGRAPHIC RECORD

Client: V E S I 1 0 , L L C	
Subject Name: VESI 10 Tierra Buena BESS Project Lease Area	**Location:** 3025 Tierra Buena Road, Yuba City, CA
Photographer: Brent L. Moore, CEP	**Date:** 10-March-2019

Photograph No. 3



Junk in the Middle of the Property Looking East at Adjacent Orchard

Photograph No. 4



Northern End of Property Where VESI 10, LLC Lease Area is Located Looking North to Adjacent Vacant Field

PHOTOGRAPHIC RECORD

Client: VESI 10, LLC	
Subject Name: VESI 10 Tierra Buena BESS Project Lease Area	**Location:** 3025 Tierra Buena Road, Yuba City, CA
Photographer: Brent L. Moore, CEP	**Date:** 10-March-2019

Photograph No. 5



Middle of Property Looking North at VESI 10, LLC Lease Area

Photograph No. 6



Middle of Property Looking South Along Eastern Boundary Fence Line

PHOTOGRAPHIC RECORD

Client: VESI 10, LLC	
Subject Name: VESI 10 Tierra Buena BESS Project Lease Area	**Location:** 3025 Tierra Buena Road, Yuba City, CA
Photographer: Brent L. Moore, CEP	**Date:** 10-March-2019

Photograph No. 7



Middle of Property Looking North Along Eastern Fence Line

Photograph No. 8



Southern Ingress/Egress to Valdez Truck Yard Looking North on Western Fence Line Adjacent to Tierra Buena Road

PHOTOGRAPHIC RECORD

Client: VESI 10, LLC	
Subject Name: VESI 10 Tierra Buena BESS Project Lease Area	**Location:** 3025 Tierra Buena Road, Yuba City, CA
Photographer: Brent L. Moore, CEP	**Date:** 10-March-2019

Photograph No. 9



Looking Southeast from Property Toward the PG&E Pease Road Power Substation

Photograph No. 10



Looking Northwest from Property Across Tierra Buena Road at Ag-Butler Building

PHOTOGRAPHIC RECORD

Client: VESI 10, LLC	
Subject Name: VESI 10 Tierra Buena BESS Project Lease Area	**Location:** 3025 Tierra Buena Road, Yuba City, CA
Photographer: Brent L. Moore, CEP	**Date:** 10-March-2019

Photograph No. 11



Looking North from Northwest Corner of Property at Adjacent Vacant Land.

Photograph No. 12



Looking East from Southwest corner of Property down Pease Road

PHOTOGRAPHIC RECORD

Client: VESI 10, LLC	
Subject Name: VESI 10 Tierra Buena BESS Project Lease Area	**Location:** 3025 Tierra Buena Road, Yuba City, CA
Photographer: Brent L. Moore, CEP	**Date:** 10-March-2019

Photograph No. 13



Looking Southeast from Southwest Corner of Property at Intersection of Pease Road and Tierra Buena Road

Photograph No. 14



Looking West from VESI 10, LLC Lease Area toward North End of Property across Tierra Buena Road

Appendix B

Sierra Geotech Resumes

Brent L. Moore CEP

Principal Scientist/Project Manager/Property Reconnaissance/Report Review.

Mr. Moore is an expert in Environmental Site Assessment and implementing the Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process issued by the American Society for Testing and Materials (ASTM Standard Practice E1527-13) and the U.S. EPA Final Rule on "All Appropriate Inquiries Standards." Mr. Moore has conducted Phase I ESA's for private sector and government clients at diverse sites throughout the United States. Mr. Moore coordinates scientific support services for CERCLA projects encompassing remedial investigations, feasibility studies, implementation of waste treatment alternatives and on-site remedial actions. He has experience managing and supervising a variety of diverse science tasks in support of EPA, USACE/ TERC, Navy RAC, and commercial contracts. He provides project-specific risk management consulting support to major government and industrial clients. He facilitates the use of innovation and a risk-based approach to environmental cleanup, where appropriate. In addition to supervisory and field duties, develops and evaluates data quality objectives, matrix-specific field sampling techniques, analytical testing protocols, scientific data acquisition, validation and reporting systems, and QA/QC plans. Mr. Moore is also an expert in the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) with thirty years of management and environmental consulting experience.

EDUCATION

BS, Geography- Environmental Science, Urban & Regional Planning, Brigham Young University, Provo, Utah, 1982

BA, Public Administration, Brigham Young University, Provo, Utah, 1982

MS, Geography- Environmental Science/Urban & Regional Planning, Brigham Young University, Provo, Utah, 1987

PROFESSIONAL REGISTRATIONS

Academy of Board-Certified Environmental Professional (CEP) (#07040406)

Austin Kent Moore

Associate Scientist/Phase I ESA Report Preparer

Mr. Moore has ten years of experience in environmental impact assessment; urban and regional land use planning; and environmental due diligence. Throughout his career, Mr. Moore has been involved in the preparation and processing of environmental impact assessment and land use planning documents. As an Associate Scientist with Sierra Geotech, he is responsible for the management and processing of Phase I and II Environmental Site Assessment; CEQA/NEPA environmental reports; and related documents. Mr. Moore is an experienced California Environmental Quality Act (CEQA) practitioner who has experience working with both private and public sector clients to achieve their objectives while adhering to CEQA. As an Environmental Planner, Mr. Moore has been an author of many environmental documents such as Environmental Impact Reports (EIR), Initial Studies (IS), Mitigated Negative Declarations (MND), Notice of Exemptions (NOE), Mitigation Monitoring and Reporting Programs (MMRP), Notices of Preparation (NOP), Notices of Intent (NOI), and Notices of Determination (NOD). He has experience in rural community planning and in the development and writing of federal, state, and foundation grants for cities, counties, and special districts. He has provided technical and environmental planning support for numerous transportation and infrastructure projects, including pipelines, marine oil terminals, high-voltage electrical transmission facilities and substations, power plants, wastewater treatment plants, telecommunications facilities, and land use planning projects.

EDUCATION

BA, Latin American and Iberian Studies - emphasis on Economics and Regional Development. University of California, Santa Barbara. 2009

Graduate coursework in Planning and Sustainability. University of California, Davis. 2014

MS, Cognitive Science – Linguistics, *Universidad de Sevilla*. 2018

Appendix C

User Provided Information Questionnaire

USER PROVIDED INFORMATION QUESTIONNAIRE FOR PHASE I ENVIRONMENTAL SITE ASSESSMENT

This questionnaire outlines those responsibilities discussed in Section 6 of the American Society of Testing & Materials (ASTM) Method E 1527-13 "Standard Practice for Conducting Environmental Site Assessments: Phase I Environmental Site Assessment Process."

Please complete this questionnaire to the best of your ability. Upon completion of the questionnaire, please return the form via email to brent@sierrageotech.com. Should you have questions while completing this questionnaire, please contact Brent Moore at (916) 712-9707. Thank you.

CONTACT INFORMATION

PROPERTY OWNER: Mr. Luis Garcia Valdez

NAME: VESI 10 Tierra Buena BESS Project, Sutter County, California

ADDRESS: 3025 Tierra Buena Road, Yuba City, CA

PROPERTY INFORMATION/QUESTIONS

Do you have any knowledge of environmental liens against the property that are filed or recorded under federal, tribal, state of local law? Yes No **X**

Do you have any knowledge of activity and land use limitations (such as land use restrictions, engineering controls, or institutional controls) that are in place on the site or that have been filed or recorded in a registry under federal, tribal, state of local law? Yes No **X**

Do you have specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? Yes No **X**

Does the purchase price of the property reasonably reflect the fair market value of the property? Yes **X** No

Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence of likely presence of releases at the property?
Yes No **X**

Printed Name of Person Completing Form: Luis Garcia Valdez

Date: March 10, 2019

Appendix D

Environmental Database Report

3025 Tierra Buena Road
3025 Tierra Buena Road
Yuba City, CA 95993

Inquiry Number: 5839901.2s
October 22, 2019

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

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Physical Setting Source Map Findings	A-10
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

3025 TIERRA BUENA ROAD
YUBA CITY, CA 95993

COORDINATES

Latitude (North):	39.1720270 - 39° 10' 19.29''
Longitude (West):	121.6620670 - 121° 39' 43.44''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	615578.0
UTM Y (Meters):	4336511.0
Elevation:	60 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5603360 SUTTER, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140725
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
3025 TIERRA BUENA ROAD
YUBA CITY, CA 95993

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	HARBHAJAN S TAKHER	3222 TIERRA BUENA RD	HIST UST	Higher	453, 0.086, North
A2	HARBHAJAN S. TAKHER	3222 TIERRA BUENA RD	SWEEPS UST, CA FID UST	Higher	453, 0.086, North
3	BLEVIN ROAD ELEMENTA	BLEVIN ROAD/NORTH BU	ENVIROSTOR, SCH	Lower	5162, 0.978, SE
4	BUTTE VISTA ELEMENTA	2195 BLEVIN ROAD	ENVIROSTOR, SCH	Lower	5166, 0.978, SE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE..... State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
UST..... Active UST Facilities
AST..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program Properties
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register

HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
Toxic Pits ---- Toxic Pits Cleanup Act Sites
CERS HAZ WASTE ---- CERS HAZ WASTE
US CDL ---- National Clandestine Laboratory Register
PFAS ---- PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

CERS TANKS ---- California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---- Indian Reservations

FUSRAP ---- Formerly Utilized Sites Remedial Action Program
UMTRA ---- Uranium Mill Tailings Sites
LEAD SMELTERS ---- Lead Smelter Sites
US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
US MINES ---- Mines Master Index File
ABANDONED MINES ---- Abandoned Mines
FINDS ---- Facility Index System/Facility Registry System
DOCKET HWC ---- Hazardous Waste Compliance Docket Listing
UXO ---- Unexploded Ordnance Sites
ECHO ---- Enforcement & Compliance History Information
FUELS PROGRAM ---- EPA Fuels Program Registered Listing
CA BOND EXP. PLAN ---- Bond Expenditure Plan
Cortese ---- "Cortese" Hazardous Waste & Substances Sites List
CUPA Listings ---- CUPA Resources List
DRYCLEANERS ---- Cleaner Facilities
EMI ---- Emissions Inventory Data
ENF ---- Enforcement Action Listing
Financial Assurance ---- Financial Assurance Information Listing
HAZNET ---- Facility and Manifest Data
ICE ---- ICE
HIST CORTESE ---- Hazardous Waste & Substance Site List
HWP ---- EnviroStor Permitted Facilities Listing
HWT ---- Registered Hazardous Waste Transporter Database
MINES ---- Mines Site Location Listing
MWMP ---- Medical Waste Management Program Listing
NPDES ---- NPDES Permits Listing
PEST LIC ---- Pesticide Regulation Licenses Listing
PROC ---- Certified Processors Database
Notify 65 ---- Proposition 65 Records
UIC ---- UIC Listing
UIC GEO ---- UIC GEO (GEOTRACKER)
WASTEWATER PITS ---- Oil Wastewater Pits Listing
WDS ---- Waste Discharge System
WIP ---- Well Investigation Program Case List
MILITARY PRIV SITES ---- MILITARY PRIV SITES (GEOTRACKER)
PROJECT ---- PROJECT (GEOTRACKER)
WDR ---- Waste Discharge Requirements Listing
CIWQS ---- California Integrated Water Quality System
CERS ---- CERS
NON-CASE INFO ---- NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS ---- OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS ---- PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT ---- SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ ---- Well Stimulation Project (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto ---- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner ---- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF ---- Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 07/29/2019 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BLEVIN ROAD ELEMENTA Status: No Further Action Facility Id: 51010002	***BLEVIN ROAD/NORTH BU***	***SE 1/2 - 1 (0.978 mi.)***	***3***	***9***
BUTTE VISTA ELEMENTA Status: No Action Required Facility Id: 58820001	***2195 BLEVIN ROAD***	***SE 1/2 - 1 (0.978 mi.)***	***4***	***12***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

SWEEPS UST: 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.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HARBHAJAN S. TAKHER	***3222 TIERRA BUENA RD***	***N 0 - 1/8 (0.086 mi.)***	***A2***	***8***
Status: A Tank Status: A Comp Number: 42280				

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HARBHAJAN S TAKHER Facility Id: 00000042280	3222 TIERRA BUENA RD	N 0 - 1/8 (0.086 mi.)	A1	8

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there is 1 CA FID UST site within approximately 0.25 miles of the target property.

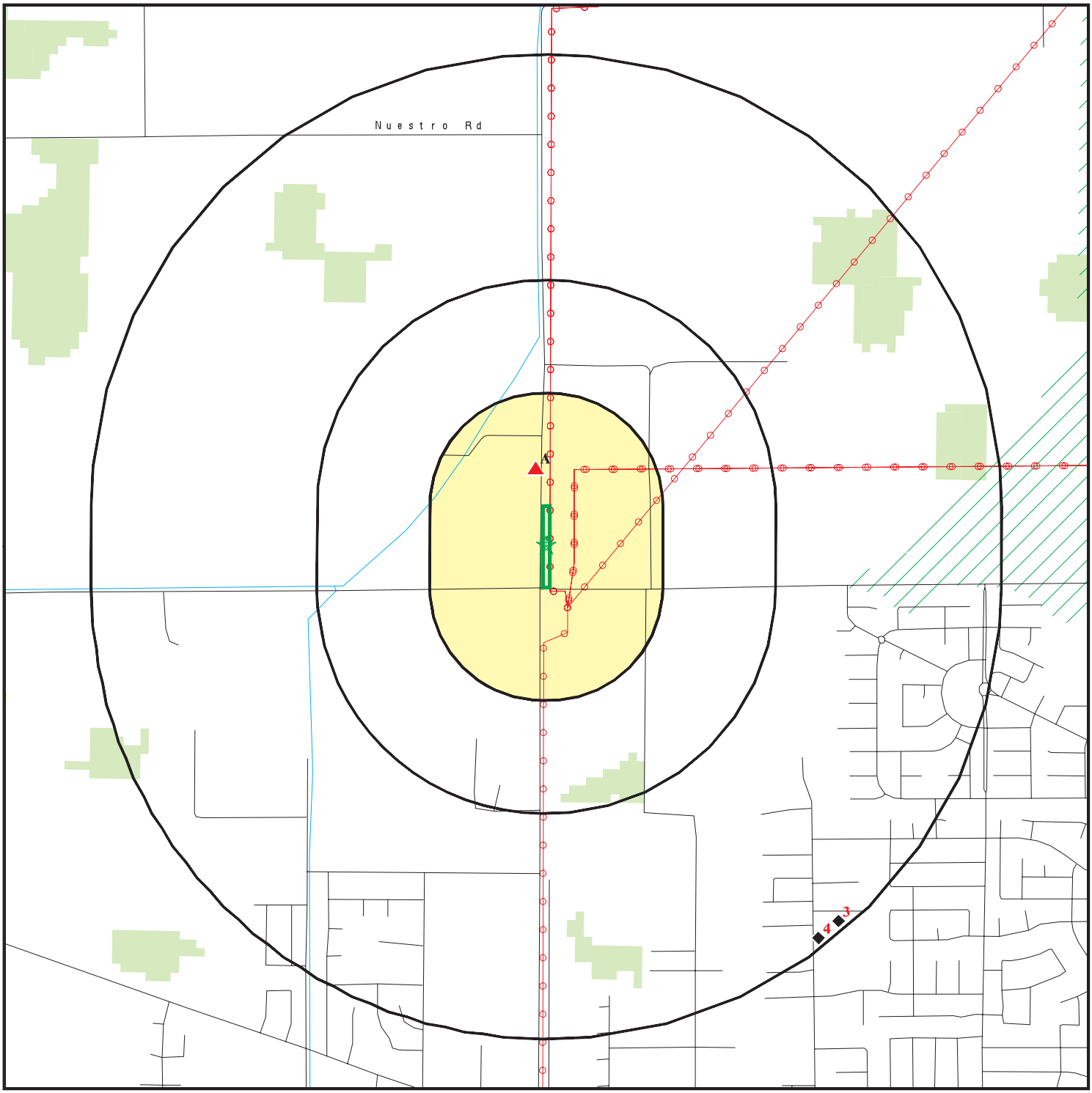
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HARBHAJAN S. TAKHER	***3222 TIERRA BUENA RD***	***N 0 - 1/8 (0.086 mi.)***	***A2***	***8***
Facility Id: 51000666 Status: A				

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
	CDL

OVERVIEW MAP - 5839901.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 3025 Tierra Buena Road	CLIENT: Sierra Geotech, DVBE, Inc.
ADDRESS: 3025 Tierra Buena Road Yuba City CA 95993	CONTACT: Austin Kent Moore
LAT/LONG: 39.172027 / 121.662067	INQUIRY #: 5839901.2s DATE: October 22, 2019 5:54 pm

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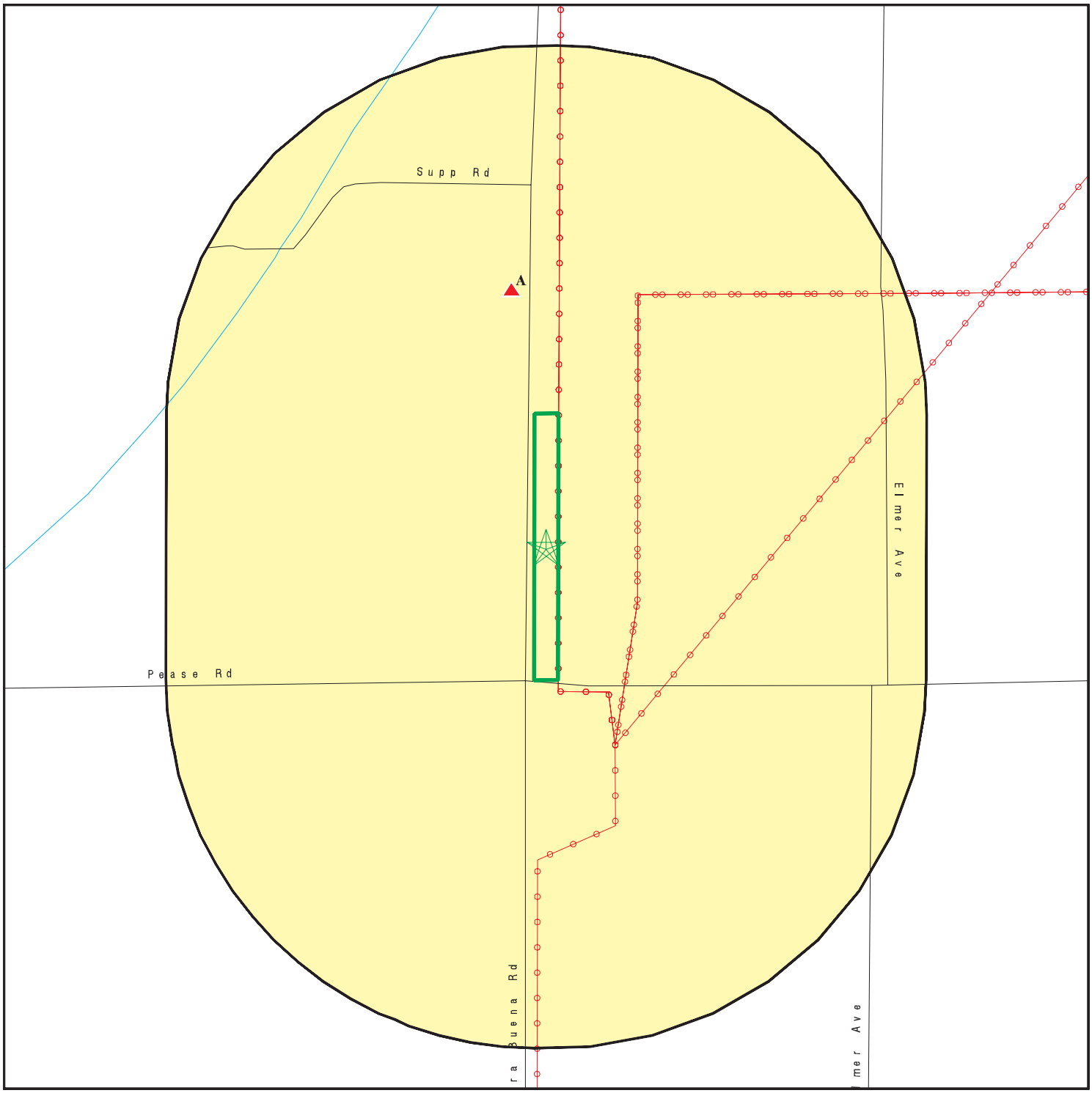
DETAIL MAP - 5839901.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 3025 Tierra Buena Road	CLIENT: Sierra Geotech, DVBE, Inc.
ADDRESS: 3025 Tierra Buena Road Yuba City CA 95993	CONTACT: Austin Kent Moore
LAT/LONG: 39.172027 / 121.662067	INQUIRY #: 5839901.2s DATE: October 22, 2019 5:55 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	2	NR	2
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		1	0	NR	NR	NR	1
HIST UST	0.250		1	0	NR	NR	NR	1
CERS TANKS	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		1	0	NR	NR	NR	1
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	3	0	0	2	0	5

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **HARBHAJAN S TAKHER** **HIST UST** **U003730722**
North **3222 TIERRA BUENA RD** **N/A**
< 1/8 **YUBA CITY, CA 95991**
0.086 mi.
453 ft. **Site 1 of 2 in cluster A**

Relative: HIST UST:
Higher

Actual: Name: HARBHAJAN S TAKHER
60 ft. Address: 3222 TIERRA BUENA RD
City,State,Zip: YUBA CITY, CA 95991
File Number: 00022DDE
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00022DDE.pdf
Region: STATE
Facility ID: 00000042280
Facility Type: Other
Other Type: Not reported
Contact Name: Not reported
Telephone: 9166743369
Owner Name: HARBHAJAN S. TAKHER
Owner Address: 3222 TIERRA BUENA RD
Owner City,St,Zip: YUBA CITY, CA 95991
Total Tanks: 0001

Tank Num: 001
Container Num: 01
Year Installed: 1982
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: 10
Leak Detection: Stock Inventor

Click here for Geo Tracker PDF:

A2 **HARBHAJAN S. TAKHER** **SWEEPS UST** **S101629087**
North **3222 TIERRA BUENA RD** **CA FID UST** **N/A**
< 1/8 **YUBA CITY, CA 95991**
0.086 mi.
453 ft. **Site 2 of 2 in cluster A**

Relative: SWEEPS UST:
Higher

Actual: Name: HARBHAJAN S. TAKHER
60 ft. Address: 3222 TIERRA BUENA RD
City: YUBA CITY
Status: Active
Comp Number: 42280
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 51-000-042280-000001
Tank Status: A
Capacity: 1000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: 1

HARBHAJAN S. TAKHER (Continued) **S101629087**

CA FID UST:
Facility ID: 51000666
Regulated By: UTNKA
Regulated ID: 00042280
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 9166743369
Mail To: Not reported
Mailing Address: 3222 TIERRA BUENA RD
Mailing Address 2: Not reported
Mailing City,St,Zip: YUBA CITY 95991
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

---

3 **BLEVIN ROAD ELEMENTARY SCHOOL** **ENVIROSTOR** **S109548282**
SE **BLEVIN ROAD/NORTH BUTTE** **SCH** **N/A**
1/2-1 **YUBA, CA 95993**
0.978 mi.
5162 ft.

Relative:
Lower

Actual:
59 ft.

ENVIROSTOR:
Name: BLEVIN ROAD ELEMENTARY SCHOOL
Address: BLEVIN ROAD/NORTH BUTTE
City,State,Zip: YUBA, CA 95993
Facility ID: 51010002
Status: No Further Action
Status Date: 05/04/2001
Site Code: 104079
Site Type: School Investigation
Site Type Detailed: School
Acres: 18
NPL: NO
Regulatory Agencies: HWMP
Lead Agency: HWMP
Program Manager: Not reported
Supervisor: Mark Malinowski
Division Branch: Northern California Schools & Santa Susana
Assembly: 03
Senate: 04
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 39.16
Longitude: -121.65
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: Arsenic DDD DDE DDT
Confirmed COC: NONE SPECIFIED
Potential Description: SOIL
Alias Name: NEW ELEMENTARY SCHOOL SITE - PROPOSED
Alias Type: Alternate Name

BLEVIN ROAD ELEMENTARY SCHOOL (Continued) **S109548282**

Alias Name: YUBA CITY USD-BLEVIN RD/CDE
Alias Type: Alternate Name
Alias Name: YUBA CITY USD-BLEVIN RD/VCA
Alias Type: Alternate Name
Alias Name: 104050
Alias Type: Project Code (Site Code)
Alias Name: 104079
Alias Type: Project Code (Site Code)
Alias Name: 51010002
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 03/28/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 03/08/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 03/31/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 02/04/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/29/2000
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Name: BLEVIN ROAD ELEMENTARY SCHOOL
Address: BLEVIN ROAD/NORTH BUTTE
City,State,Zip: YUBA, CA 95993

BLEVIN ROAD ELEMENTARY SCHOOL (Continued) **S109548282**

Facility ID:	51010002
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	18
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP
Lead Agency:	HWMP
Lead Agency Description:	DTSC - Hazardous Waste Management Program
Project Manager:	Not reported
Supervisor:	Mark Malinowski
Division Branch:	Northern California Schools & Santa Susana
Site Code:	104079
Assembly:	03
Senate:	04
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	05/04/2001
Restricted Use:	NO
Funding:	School District
Latitude:	39.16
Longitude:	-121.65
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Arsenic, DDD, DDE, DDT
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL
Alias Name:	NEW ELEMENTARY SCHOOL SITE - PROPOSED
Alias Type:	Alternate Name
Alias Name:	YUBA CITY USD-BLEVIN RD/CDE
Alias Type:	Alternate Name
Alias Name:	YUBA CITY USD-BLEVIN RD/VCA
Alias Type:	Alternate Name
Alias Name:	104050
Alias Type:	Project Code (Site Code)
Alias Name:	104079
Alias Type:	Project Code (Site Code)
Alias Name:	51010002
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	03/28/2000
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	03/08/2000
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	03/31/2000
Comments:	Not reported

BLEVIN ROAD ELEMENTARY SCHOOL (Continued) **S109548282**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	02/04/2000
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	06/29/2000
Comments:	Not reported

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

---

4 **BUTTE VISTA ELEMENTARY SCHOOL** **ENVIROSTOR** **S118757042**
SE **2195 BLEVIN ROAD** **SCH** **N/A**
1/2-1 **YUBA, CA 95993**
0.978 mi.
5166 ft.

Relative: **Lower**

Actual: **58 ft.**

ENVIROSTOR:

Name:	BUTTE VISTA ELEMENTARY SCHOOL
Address:	2195 BLEVIN ROAD
City,State,Zip:	YUBA, CA 95993
Facility ID:	58820001
Status:	No Action Required
Status Date:	08/07/2003
Site Code:	104323
Site Type:	School Investigation
Site Type Detailed:	School
Acres:	12
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Juan Koponen
Division Branch:	Northern California Schools & Santa Susana
Assembly:	03
Senate:	04
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	39.1592
Longitude:	-121.6514
APN:	NONE SPECIFIED
Past Use:	* EDUCATIONAL SERVICES
Potential COC:	NONE SPECIFIED No Contaminants found
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA

BUTTE VISTA ELEMENTARY SCHOOL (Continued) **S118757042**

Alias Name: YUBA CITY USD-BUTTE VISTA ELEM SCHOOL
Alias Type: Alternate Name
Alias Name: 104323
Alias Type: Project Code (Site Code)
Alias Name: 58820001
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 03/22/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 02/19/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 07/15/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 02/15/2003
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Name: BUTTE VISTA ELEMENTARY SCHOOL
Address: 2195 BLEVIN ROAD
City,State,Zip: YUBA, CA 95993
Facility ID: 58820001
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 12
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Not reported

BUTTE VISTA ELEMENTARY SCHOOL (Continued) **S118757042**

Supervisor:	Juan Koponen
Division Branch:	Northern California Schools & Santa Susana
Site Code:	104323
Assembly:	03
Senate:	04
Special Program Status:	Not reported
Status:	No Action Required
Status Date:	08/07/2003
Restricted Use:	NO
Funding:	School District
Latitude:	39.1592
Longitude:	-121.6514
APN:	NONE SPECIFIED
Past Use:	* EDUCATIONAL SERVICES
Potential COC:	NONE SPECIFIED, No Contaminants found
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA
Alias Name:	YUBA CITY USD-BUTTE VISTA ELEM SCHOOL
Alias Type:	Alternate Name
Alias Name:	104323
Alias Type:	Project Code (Site Code)
Alias Name:	58820001
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	03/22/2005
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	02/19/2003
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	07/15/2003
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	02/15/2003
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 1 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
YUBA CITY	S107540102		ON TIERRA BUENA RD @ EAGER RD	95993	CDL

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: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/04/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/26/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 113

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/26/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 113

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/26/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 113

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/26/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 113

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/26/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 113

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/13/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 08/26/2019
Number of Days to Update: 6

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/19/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 08/26/2019
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/09/2019
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: 08/19/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 08/26/2019
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/09/2019
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: 09/09/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 14

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 07/29/2019
Date Data Arrived at EDR: 07/31/2019
Date Made Active in Reports: 10/08/2019
Number of Days to Update: 69

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
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: 07/29/2019
Date Data Arrived at EDR: 07/31/2019
Date Made Active in Reports: 10/08/2019
Number of Days to Update: 69

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
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: 08/12/2019
Date Data Arrived at EDR: 08/13/2019
Date Made Active in Reports: 10/09/2019
Number of Days to Update: 57

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/13/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 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 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 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 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 55

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
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: 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

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
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: 04/12/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/23/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/08/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 79
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
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: 04/08/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/16/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/16/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 55
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/11/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 42
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Semi-Annually

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 41

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/12/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/08/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/08/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/05/2019
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: 04/12/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/23/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 79

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/02/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/16/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 79

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 07/29/2019
Date Data Arrived at EDR: 07/31/2019
Date Made Active in Reports: 10/08/2019
Number of Days to Update: 69

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/19/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 57

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/24/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/26/2019
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/19/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 64

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 34

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
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: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
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

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 08/02/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/13/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 07/29/2019
Date Data Arrived at EDR: 07/31/2019
Date Made Active in Reports: 10/08/2019
Number of Days to Update: 69

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/16/2019
Date Made Active in Reports: 09/24/2019
Number of Days to Update: 70

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 09/24/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/14/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 7

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/13/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 06/28/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 26

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/04/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 08/01/2019
Date Data Arrived at EDR: 08/02/2019
Date Made Active in Reports: 10/11/2019
Number of Days to Update: 70

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/14/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 7

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 06/05/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/09/2019
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 07/30/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 65

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/26/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 89

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/24/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 05/15/2019
Date Data Arrived at EDR: 06/24/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 58

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/26/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 55

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/26/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 113

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 05/15/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 79

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/23/2019
Next Scheduled EDR Contact: 12/02/2019
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: 10/11/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 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: 10/07/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/16/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/26/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/24/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/09/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/19/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/23/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 09/30/2018
Date Data Arrived at EDR: 04/24/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 106

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/26/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/25/2019
Date Data Arrived at EDR: 05/02/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/21/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 08/20/2019
Date Data Arrived at EDR: 09/05/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 18

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 11/18/2019
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: 03/20/2019
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 34

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/11/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 10/07/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/20/2019
Date Data Arrived at EDR: 06/20/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 49

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/06/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/03/2019
Next Scheduled EDR Contact: 12/16/2019
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: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/09/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/15/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 04/01/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 100

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2019
Date Data Arrived at EDR: 07/16/2019
Date Made Active in Reports: 10/02/2019
Number of Days to Update: 78

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/06/2019
Next Scheduled EDR Contact: 01/19/2020
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/30/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

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: 05/03/2019
Date Data Arrived at EDR: 05/29/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 71

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/27/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/30/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/30/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/10/2019
Date Data Arrived at EDR: 09/10/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 37

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/10/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 05/03/2019
Date Data Arrived at EDR: 06/05/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 90

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 74

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/10/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 07/06/2019
Date Data Arrived at EDR: 07/09/2019
Date Made Active in Reports: 10/02/2019
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 10/08/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 79
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 57
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/24/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 08/15/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

Date of Government Version: 08/01/2019
Date Data Arrived at EDR: 08/02/2019
Date Made Active in Reports: 10/09/2019
Number of Days to Update: 68
Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/19/2019
Date Data Arrived at EDR: 03/22/2019
Date Made Active in Reports: 04/09/2019
Number of Days to Update: 18

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 65

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 55

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
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: 12/31/2017
Date Data Arrived at EDR: 06/24/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 59

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/18/2019
Next Scheduled EDR Contact: 12/30/2019
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: 07/19/2019
Date Data Arrived at EDR: 07/22/2019
Date Made Active in Reports: 09/26/2019
Number of Days to Update: 66

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/23/2019
Date Made Active in Reports: 09/30/2019
Number of Days to Update: 69

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/16/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 05/29/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 54

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/11/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/19/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/19/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/08/2019
Date Data Arrived at EDR: 07/09/2019
Date Made Active in Reports: 09/20/2019
Number of Days to Update: 73

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/08/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 65
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/17/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/09/2019
Number of Days to Update: 66
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 08/12/2019
Date Data Arrived at EDR: 08/13/2019
Date Made Active in Reports: 10/16/2019
Number of Days to Update: 64
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/13/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/09/2019
Number of Days to Update: 66
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 64
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 06/17/2019
Date Data Arrived at EDR: 06/18/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 65
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 10/11/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/19/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 64

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 65

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/14/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 7

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
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 Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/10/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 06/20/2019
Number of Days to Update: 70

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 06/27/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 26

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 08/05/2019
Date Data Arrived at EDR: 08/07/2019
Date Made Active in Reports: 10/09/2019
Number of Days to Update: 63

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/23/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/22/2019
Date Data Arrived at EDR: 05/23/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 56

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 07/26/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 07/30/2019
Date Data Arrived at EDR: 08/02/2019
Date Made Active in Reports: 10/09/2019
Number of Days to Update: 68

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 06/05/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 47

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/11/2019
Date Data Arrived at EDR: 07/11/2019
Date Made Active in Reports: 09/20/2019
Number of Days to Update: 71

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/09/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/08/2019
Date Data Arrived at EDR: 07/10/2019
Date Made Active in Reports: 09/20/2019
Number of Days to Update: 72

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/19/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/23/2019
Date Made Active in Reports: 09/26/2019
Number of Days to Update: 65

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/01/2019
Date Data Arrived at EDR: 08/06/2019
Date Made Active in Reports: 10/08/2019
Number of Days to Update: 63

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 08/16/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/15/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/22/2019
Date Data Arrived at EDR: 07/23/2019
Date Made Active in Reports: 09/26/2019
Number of Days to Update: 65

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 09/12/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/09/2019
Date Data Arrived at EDR: 07/11/2019
Date Made Active in Reports: 09/20/2019
Number of Days to Update: 71

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/15/2019
Date Data Arrived at EDR: 07/17/2019
Date Made Active in Reports: 09/26/2019
Number of Days to Update: 71

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/16/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/09/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/27/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/30/2012
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 42

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 10/18/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/27/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/15/2019
Date Data Arrived at EDR: 07/17/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 19

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/18/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/09/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/27/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/02/2019
Number of Days to Update: 64

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/28/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 67

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 09/25/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/29/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 53

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 05/23/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 53

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 07/25/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/30/2019
Number of Days to Update: 62

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 09/30/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 02/21/2019
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/23/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/02/2019
Number of Days to Update: 64

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 07/10/2019
Date Data Arrived at EDR: 08/07/2019
Date Made Active in Reports: 10/09/2019
Number of Days to Update: 63

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/10/2019
Date Data Arrived at EDR: 08/09/2019
Date Made Active in Reports: 10/09/2019
Number of Days to Update: 61

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 07/10/2019
Date Data Arrived at EDR: 08/06/2019
Date Made Active in Reports: 10/09/2019
Number of Days to Update: 64

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/12/2019
Number of Days to Update: 69

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 07/10/2019
Date Data Arrived at EDR: 07/11/2019
Date Made Active in Reports: 09/20/2019
Number of Days to Update: 71

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 07/10/2019
Date Data Arrived at EDR: 07/11/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 74

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/06/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 55

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/01/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/06/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 09/13/2019
Number of Days to Update: 77

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/01/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 07/16/2019
Date Data Arrived at EDR: 07/16/2019
Date Made Active in Reports: 09/24/2019
Number of Days to Update: 70

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 07/16/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 05/31/2019
Date Data Arrived at EDR: 05/31/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 52

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 65

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/16/2019
Date Data Arrived at EDR: 07/23/2019
Date Made Active in Reports: 09/30/2019
Number of Days to Update: 69
Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 08/01/2019
Date Data Arrived at EDR: 08/02/2019
Date Made Active in Reports: 10/08/2019
Number of Days to Update: 67
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/11/2019
Next Scheduled EDR Contact: 12/29/2019
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 08/06/2019
Date Data Arrived at EDR: 08/14/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 1

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 07/30/2019
Date Data Arrived at EDR: 08/02/2019
Date Made Active in Reports: 10/08/2019
Number of Days to Update: 67
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90
Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51
Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 47
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 06/18/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 29

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/02/2019
Date Data Arrived at EDR: 07/02/2019
Date Made Active in Reports: 09/20/2019
Number of Days to Update: 80

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/19/2019
Next Scheduled EDR Contact: 01/06/2020
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 07/18/2019
Date Data Arrived at EDR: 07/18/2019
Date Made Active in Reports: 09/26/2019
Number of Days to Update: 70

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 10/15/2019
Next Scheduled EDR Contact: 01/27/2020
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 49

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/23/2019
Date Made Active in Reports: 09/26/2019
Number of Days to Update: 65

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 08/12/2019
Date Data Arrived at EDR: 08/14/2019
Date Made Active in Reports: 10/17/2019
Number of Days to Update: 64

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/17/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 05/29/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 09/30/2019
Number of Days to Update: 63

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/21/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/25/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 05/29/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 09/30/2019
Number of Days to Update: 63
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/21/2019
Next Scheduled EDR Contact: 02/03/2020
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 42
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/26/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 07/31/2019
Number of Days to Update: 33
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/25/2019
Next Scheduled EDR Contact: 01/13/2020
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 07/26/2019
Date Data Arrived at EDR: 07/31/2019
Date Made Active in Reports: 10/08/2019
Number of Days to Update: 69
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
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: 05/14/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 83
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/02/2019
Next Scheduled EDR Contact: 01/20/2020
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 05/01/2019
Date Made Active in Reports: 06/21/2019
Number of Days to Update: 51

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/09/2019
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/16/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/06/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

3025 TIERRA BUENA ROAD
3025 TIERRA BUENA ROAD
YUBA CITY, CA 95993

TARGET PROPERTY COORDINATES

Latitude (North):	39.172027 - 39° 10' 19.30''
Longitude (West):	121.662067 - 121° 39' 43.44''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	615578.0
UTM Y (Meters):	4336511.0
Elevation:	60 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5603360 SUTTER, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

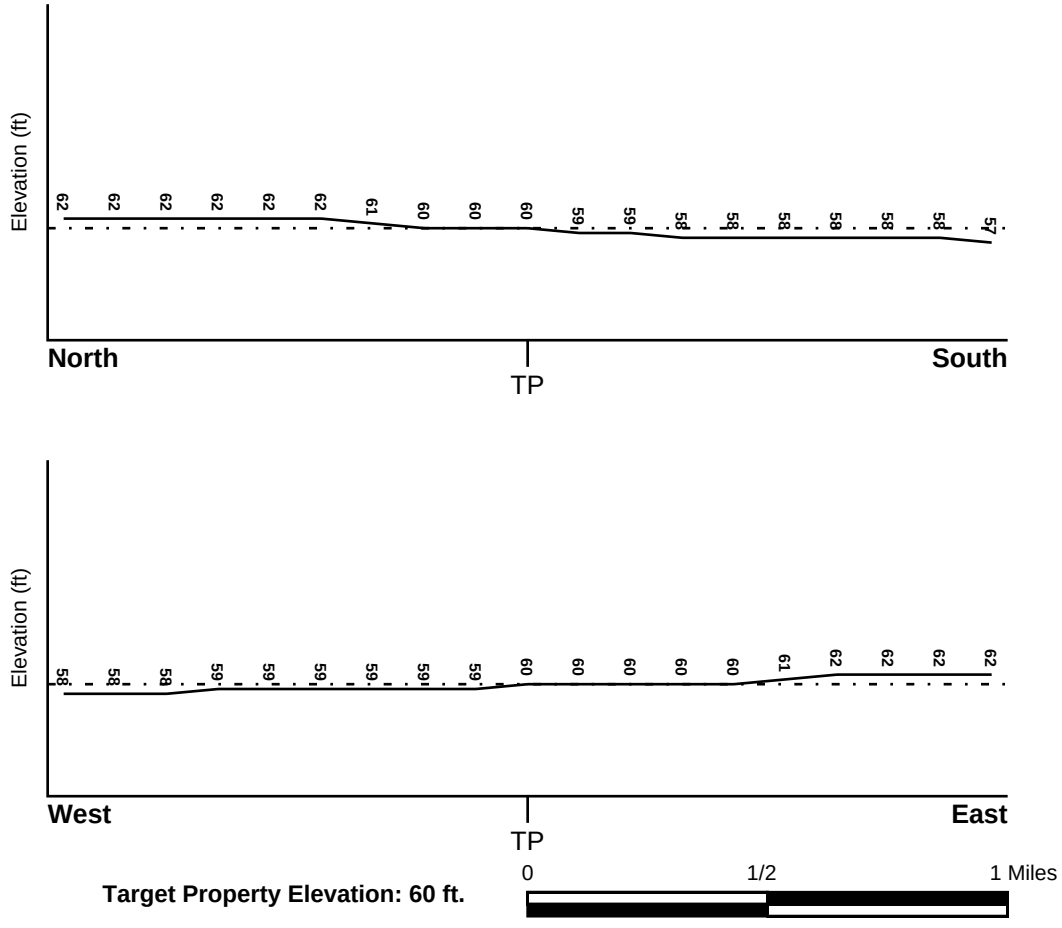
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 60 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
0603940085B	FEMA Q3 Flood data

Additional Panels in search area:	FEMA Source Type
0603940080B	FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SUTTER	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

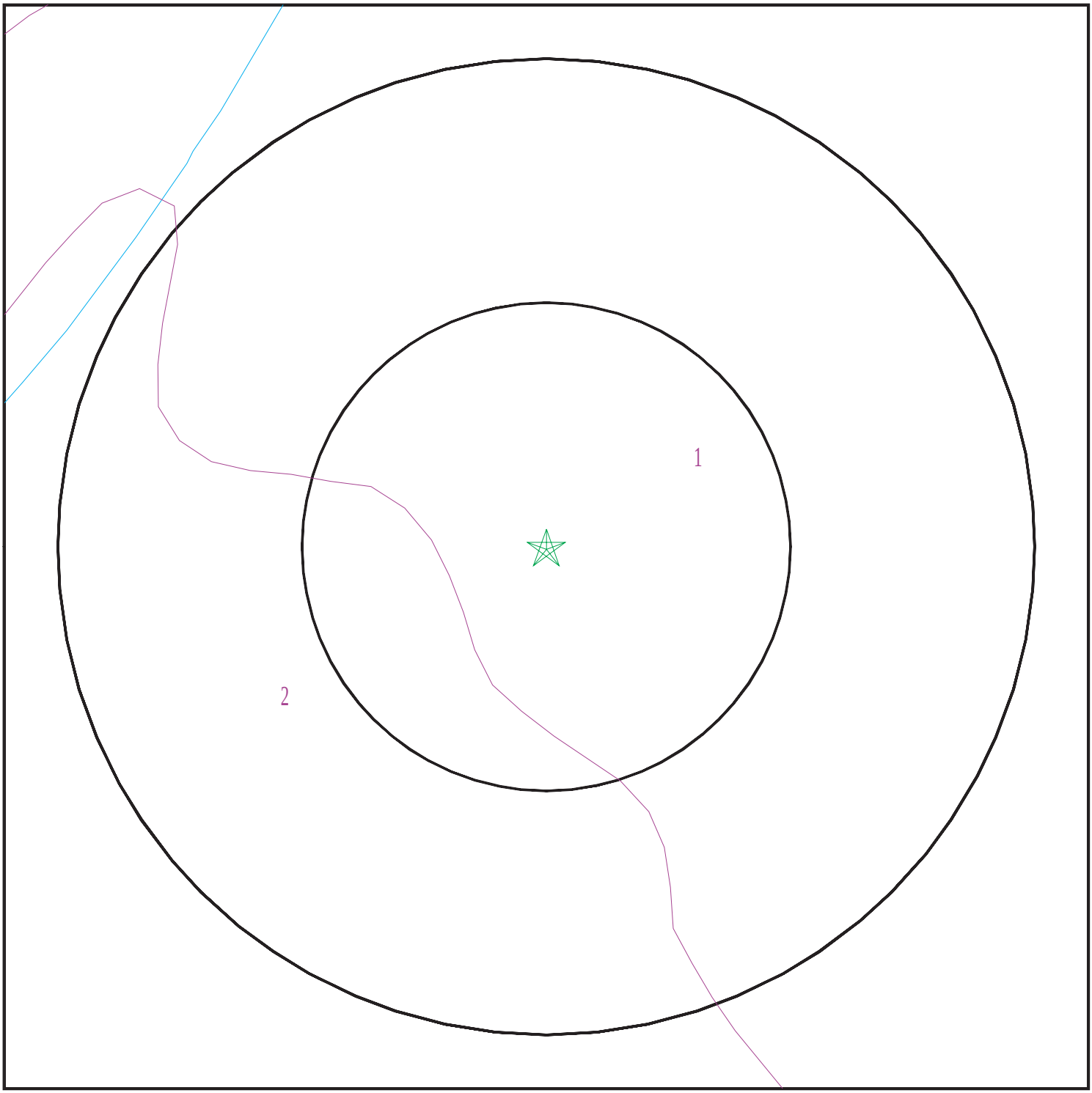
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 5839901.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	3025 Tierra Buena Road	CLIENT:	Sierra Geotech, DVBE, Inc.
ADDRESS:	3025 Tierra Buena Road Yuba City CA 95993	CONTACT:	Austin Kent Moore
LAT/LONG:	39.172027 / 121.662067	INQUIRY #:	5839901.2s
		DATE:	October 22, 2019 5:55 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Conejo

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	11 inches	42 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
3	42 inches	46 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 2

Soil Component Name: Marcum

Soil Surface Texture: clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:
2	16 inches	27 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:
3	27 inches	40 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:
4	40 inches	42 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:
5	40 inches	79 inches	bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000192210	1/4 - 1/2 Mile South
A2	USGS40000192199	1/4 - 1/2 Mile South
A3	USGS40000192200	1/4 - 1/2 Mile South
A4	USGS40000192193	1/2 - 1 Mile South
5	USGS40000192170	1/2 - 1 Mile SSE
B7	USGS40000192187	1/2 - 1 Mile SE
B8	USGS40000192188	1/2 - 1 Mile SE
B9	USGS40000192183	1/2 - 1 Mile SE
C10	USGS40000192307	1/2 - 1 Mile NNW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
6	12548	1/2 - 1 Mile SSW
C11	CADWR8000040242	1/2 - 1 Mile NNW

PHYSICAL SETTING SOURCE MAP - 5839901.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	3025 Tierra Buena Road	CLIENT:	Sierra Geotech, DVBE, Inc.
ADDRESS:	3025 Tierra Buena Road Yuba City CA 95993	CONTACT:	Austin Kent Moore
		INQUIRY #:	5839901.2s
LAT/LONG:	39.172027 / 121.662067	DATE:	October 22, 2019 5:55 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
1 **South** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000192210**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	015N003E08G003M	Type:	Well
Description:	Not Reported	HUC:	18020106
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19710908	Well Depth:	95
Well Depth Units:	ft	Well Hole Depth:	95
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1971-09-08
Feet below surface:	35.00	Feet to sea level:	Not Reported
Note:	Not Reported		

	Database	EDR ID Number
A2 **South** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000192199**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	015N003E08F001M	Type:	Well
Description:	Not Reported	HUC:	18020106
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19670624	Well Depth:	105
Well Depth Units:	ft	Well Hole Depth:	105
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1967-06-24
Feet below surface:	32.00	Feet to sea level:	Not Reported
Note:	Not Reported		

	Database	EDR ID Number
A3 **South** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000192200**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	015N003E08F002M	Type:	Well
Description:	NAWQA DATA ENTRY COM VER 9.30.99 DAWSON BJ		
HUC:	18020106	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Central Valley aquifer system
Formation Type:	Sacramento Valley Aquifer	Aquifer Type:	Unconfined single aquifer
Construction Date:	19851029	Well Depth:	115

Well Depth Units:	ft	Well Hole Depth:	115
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	4	Level reading date:	1996-06-13
Feet below surface:	22.16	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1996-03-29	Feet below surface:	10.22
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1996-03-27	Feet below surface:	10.22
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1985-10-29	Feet below surface:	28
Feet to sea level:	Not Reported	Note:	Not Reported

A4
South **FED USGS** **USGS40000192193**
1/2 - 1 Mile
Lower

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	015N003E08G002M	Type:	Well
Description:	Not Reported	HUC:	18020106
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19730405	Well Depth:	85
Well Depth Units:	ft	Well Hole Depth:	85
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1973-04-05
Feet below surface:	15.00	Feet to sea level:	Not Reported
Note:	Not Reported		

5
SSE **FED USGS** **USGS40000192170**
1/2 - 1 Mile
Lower

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	015N003E08J005M	Type:	Well
Description:	Not Reported	HUC:	18020106
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19710407	Well Depth:	85
Well Depth Units:	ft	Well Hole Depth:	90
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1971-04-07
Feet below surface:	32.00	Feet to sea level:	Not Reported
Note:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

6
SSW
1/2 - 1 Mile
Lower

CA WELLS **12548**

Seq:	12548	Prim sta c:	15N/03E-08M03 M
Frds no:	5110005002	County:	51
District:	02	User id:	BUG
System no:	5110005	Water type:	G
Source nam:	WELL 23	Station ty:	WELL/AMBNT
Latitude:	390939.0	Longitude:	1213959.0
Precision:	3	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	5110005	System nam:	Hillcrest Water Co. Region 5
Hqname:	Not Reported	Address:	707 N. George Washington Blvd.
City:	Yuba City	State:	CA
Zip:	95993	Zip ext:	Not Reported
Pop serv:	2400	Connection:	788
Area serve:	AREA WEST OF YUBA CITY		

B7
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000192187**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	015N003E09M004M	Type:	Well
Description:	Not Reported	HUC:	18020106
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19750112	Well Depth:	150
Well Depth Units:	ft	Well Hole Depth:	150
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1975-01-12
Feet below surface:	25.00	Feet to sea level:	Not Reported
Note:	Not Reported		

B8
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000192188**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	015N003E09M005M	Type:	Well
Description:	Not Reported	HUC:	18020106
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		

Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19740618	Well Depth:	235
Well Depth Units:	ft	Well Hole Depth:	235
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1974-06-18
Feet below surface:	33.00	Feet to sea level:	Not Reported
Note:	Not Reported		

B9
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000192183**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	015N003E09M003M	Type:	Well
Description:	Not Reported	HUC:	18020106
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19750115	Well Depth:	120
Well Depth Units:	ft	Well Hole Depth:	120
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1975-01-15
Feet below surface:	26.00	Feet to sea level:	Not Reported
Note:	Not Reported		

C10
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS40000192307**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	015N003E05D002M	Type:	Well
Description:	COMPUTER GENERATED LAT/LONG		
HUC:	Not Reported	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Central Valley aquifer system
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	136
Well Depth Units:	ft	Well Hole Depth:	200
Well Hole Depth Units:	ft		

C11
NNW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000040242**

State Well #:	15N03E05D002M	Station ID:	14321
Well Name:	Not Reported	Well Use:	Irrigation
Well Type:	Unknown	Well Depth:	200
Basin Name:	Sutter	Well Completion Rpt #:	323

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
95993	12	3

Federal EPA Radon Zone for SUTTER County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 95993

Number of sites tested: 4

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.300 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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3025 Tierra Buena Road
3025 Tierra Buena Rd
Yuba City, CA 95993

Inquiry Number: 5839901.5
October 24, 2019

The EDR-City Directory Image Report

Environmental Data Resources Inc
6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Executive Summary

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City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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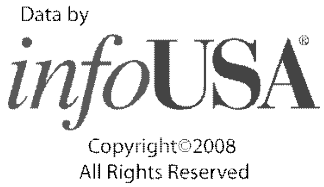

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive
1988	☐	☐	Polk's City Directory
1984	☐	☐	Polk's City Directory
1979	☐	☐	Polk's City Directory
1974	☐	☐	Polk's City Directory
1969	☐	☐	Polk's City Directory
1964	☐	☐	Polk's City Directory
1960	☐	☐	Polk's City Directory

FINDINGS

TARGET PROPERTY STREET

3025 Tierra Buena Rd
Yuba City, CA 95993

Year	*CD Image*	*Source*	
TIERRA BUENA RD			
2014	pg A1	EDR Digital Archive	
2010	pg A2	EDR Digital Archive	
2005	pg A3	EDR Digital Archive	
2000	pg A4	EDR Digital Archive	
1995	pg A5	EDR Digital Archive	
1992	pg A6	EDR Digital Archive	
1988	-	Polk's City Directory	Street not listed in Source
1984	-	Polk's City Directory	Street not listed in Source
1979	-	Polk's City Directory	Street not listed in Source
1974	-	Polk's City Directory	Street not listed in Source
1969	-	Polk's City Directory	Street not listed in Source
1964	-	Polk's City Directory	Street not listed in Source
1960	-	Polk's City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TIERRA BUENA RD 2014

2522	ROMA, ALFONSO
	RUSSELL, PHILIP J
	STRACHAN APIARIES INC
2604	COATE, JORDAN R
2642	BRANUM, LARRY M
2670	SCHOMMER, ELVIRA M
2688	MAPLES, LARRY D
2700	KUNDE, ROBERT V
2716	PATANE, JOSEPH J
2730	JONES, PAUL T
2858	BRADFIELD, TODD R
	PANORAMA
3025	MAGANA, MARIA G
3142	OCCUPANT UNKNOWN,
	TAKHER MUKHTIAR S
3222	TAKHER HARBAHAJAN S & SONS
	TAKHER, HARBHAJAN S
3319	YOUNG, KEN W
3600	SAEED, KHALID J
3636	ISLAMIC CENTER

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TIERRA BUENA RD 2010

2522	STRACHAN APIARIES INC
2604	COATE, ROBERT D
2642	BRANUM CONSTRUCTION CO
	BRANUM, LARRY M
2670	SCHOMMER, ELVIRA M
2688	MAPLES, LARRY D
2700	BREUER, GLENDA A
2716	PATANE, JOSEPH J
2730	JONES, PAUL T
2858	OCCUPANT UNKNOWN,
	PANORAMA
3025	JONES, HAZEL I
3142	OCCUPANT UNKNOWN,
	TAKHER MUKHTIAR S
3222	OCCUPANT UNKNOWN,
	TAKHER HARBAHAJAN S & SONS
3319	OCCUPANT UNKNOWN,
3600	SAEED, KHALID J
3636	ISLAMIC CENTER

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TIERRA BUENA RD 2005

2522 STRACHAN APIARIES INC
2604 COATE, ROBERT D
2642 BRANUM, LARRY M
2670 GONZALEZ, HENA L
SCHOMMER, THOMAS G
2688 MAPLES, LARRY D
2700 KUNDE, ROBERT V
2716 PATANE, JOSEPH J
2730 OCCUPANT UNKNOWN,
2858 CASTANEDA, LUIS D
PANORAMA
3025 JONES, KENNETH L
3142 TAKHER MUKHTIAR S
TAKHER, MUKHTIAR S
3222 TAKHER HARBAHAJAN S & SONS
TAKHER, HARBHAJAN S
3319 OCCUPANT UNKNOWN,
3357 FILBY, ROBERT
3600 SAEED, WAEED P
3636 ISLAMIC CENTER

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TIERRA BUENA RD 2000

2522	STRACHAN APIARIES INC
	STRACHAN, DON J
2604	MCCABE, B T
2642	BRANUM, LARRY M
2670	SCHOMMER, THOMAS
2688	MAPLES, LARRY B
2716	OCCUPANT UNKNOWN,
2730	JONES, PAUL
3222	TAKHER HARBAHAJAN S & SONS
	TAKHER, H S
3600	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TIERRA BUENA RD 1995

2522 RUSSELL, JASON
STRACHAN APIARIES INC
STRACHAN, DON J
2604 COATE, ROBERT
2642 BRANUM, LARRY M
2670 GONZALEZ, HENA
SCHOMMER, THOMAS
2678 OCCUPANT UNKNOWNN
2688 TAKHAR, KARNAIL
2700 KUNDE, ROBERT V
2716 OCCUPANT UNKNOWNN
2730 JONES, PAUL
3025 JONES, PAUL I
3142 TAKHER, M
3222 TAKHER, H S
3600 SAEED, KHALID
3636 ISLAMIC CENTER
SAEED, KHALID

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TIERRA BUENA RD 1992

2522	STRACHAN APIARIES INC
	STRACHAN, DON J
	SUTTER VCR GAMES
2604	COATE, ROBERT
	HEAPE, BOB
2642	BRANUM, LARRY M
2670	GONZALEZ, HENA
	SCHOMMER, THOMAS
2678	FRAZIER, PAUL
2688	TAKHAR, KARNAIL
2700	KUNDE, ROBERT V
2716	PATANE, JOE JR
2730	GRAHAM, ALVIN
3142	TAKHER, M
3222	TAKHER, H S
3510	KHALID SAEED
	SAEED, KHALID

3025 Tierra Buena Road

3025 Tierra Buena Road

Yuba City, CA 95993

Inquiry Number: 5839901.3

October 22, 2019

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/22/19

Site Name:

3025 Tierra Buena Road
3025 Tierra Buena Road
Yuba City, CA 95993
EDR Inquiry # 5839901.3

Client Name:

Sierra Geotech, DVBE, Inc.
4470 Yankee Hill Suite 110
Rocklin, CA 95677
Contact: Austin Kent Moore

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Sierra Geotech, DVBE, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # C3A9-41B9-BF11

PO # NA

Project Phase 1 - Tierra Buena BESS

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: C3A9-41B9-BF11

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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3025 Tierra Buena Road

3025 Tierra Buena Road

Yuba City, CA 95993

Inquiry Number: 5839901.4

October 22, 2019

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

10/22/19

Site Name:

3025 Tierra Buena Road
3025 Tierra Buena Road
Yuba City, CA 95993
EDR Inquiry # 5839901.4

Client Name:

Sierra Geotech, DVBE, Inc.
4470 Yankee Hill Suite 110
Rocklin, CA 95677
Contact: Austin Kent Moore

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Sierra Geotech, DVBE, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA

Project: Phase 1 - Tierra Buena BESS

Coordinates:

Latitude:	39.172027 39° 10' 19" North
Longitude:	-121.662067 -121° 39' 43" West
UTM Zone:	Zone 10 North
UTM X Meters:	615575.05
UTM Y Meters:	4336719.33
Elevation:	60.00' above sea level

Maps Provided:

2012	1888
1973	
1952	
1913	
1911	
1895	
1894	
1891	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Sutter
2012
7.5-minute, 24000

1973 Source Sheets



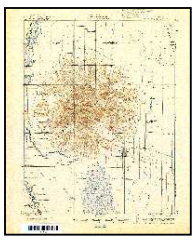
Sutter
1973
7.5-minute, 24000
Aerial Photo Revised 1973

1952 Source Sheets



Sutter
1952
7.5-minute, 24000
Aerial Photo Revised 1949

1913 Source Sheets



MARYSVILLE BUTTES VICINITY
1913
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1911 Source Sheets



Sutter
1911
7.5-minute, 31680

1895 Source Sheets



Marysville
1895
30-minute, 125000

1894 Source Sheets



Marysville
1894
30-minute, 125000

1891 Source Sheets



Marysville
1891
30-minute, 125000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

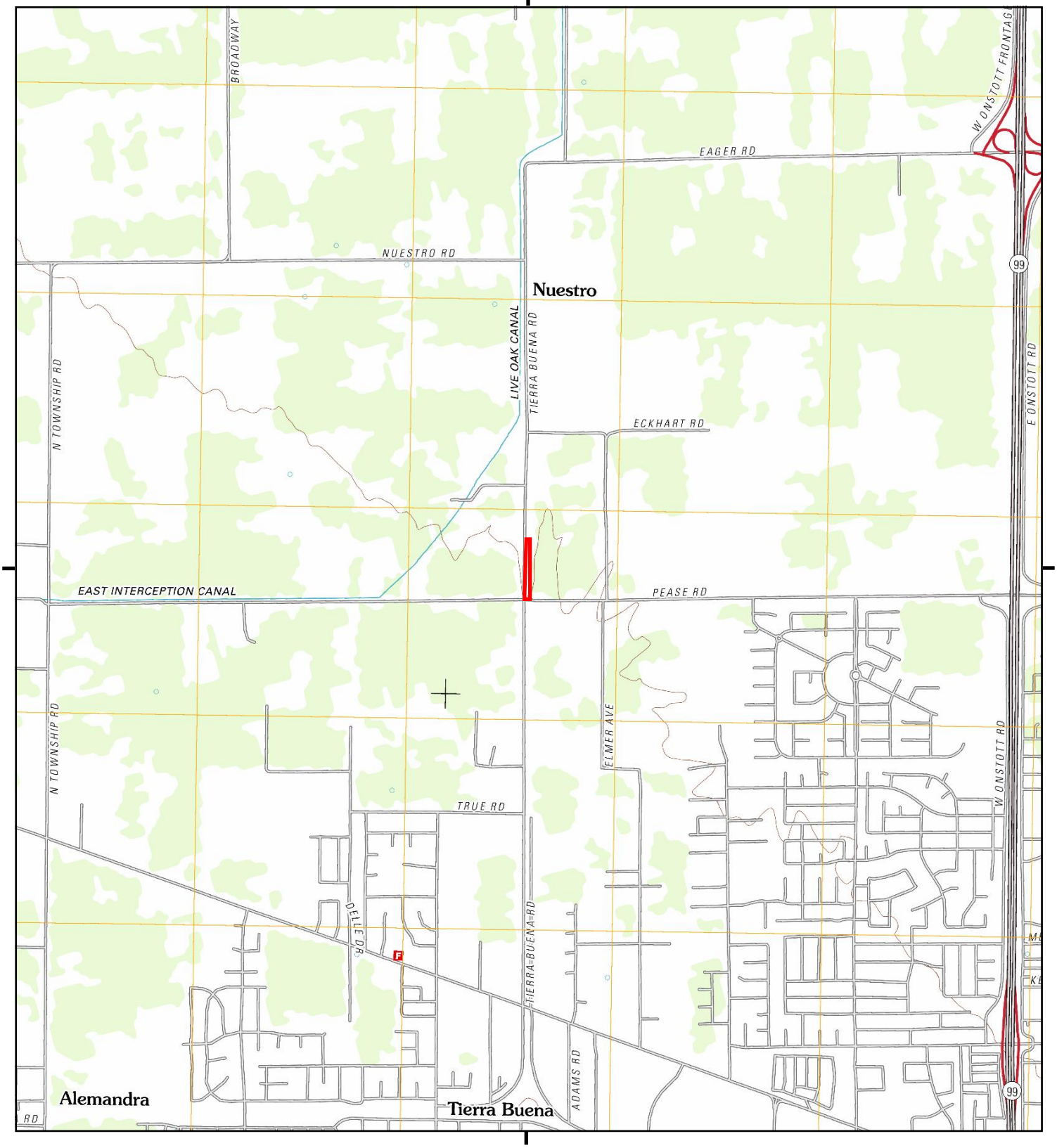
1888 Source Sheets



Marysville
1888
30-minute, 125000

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

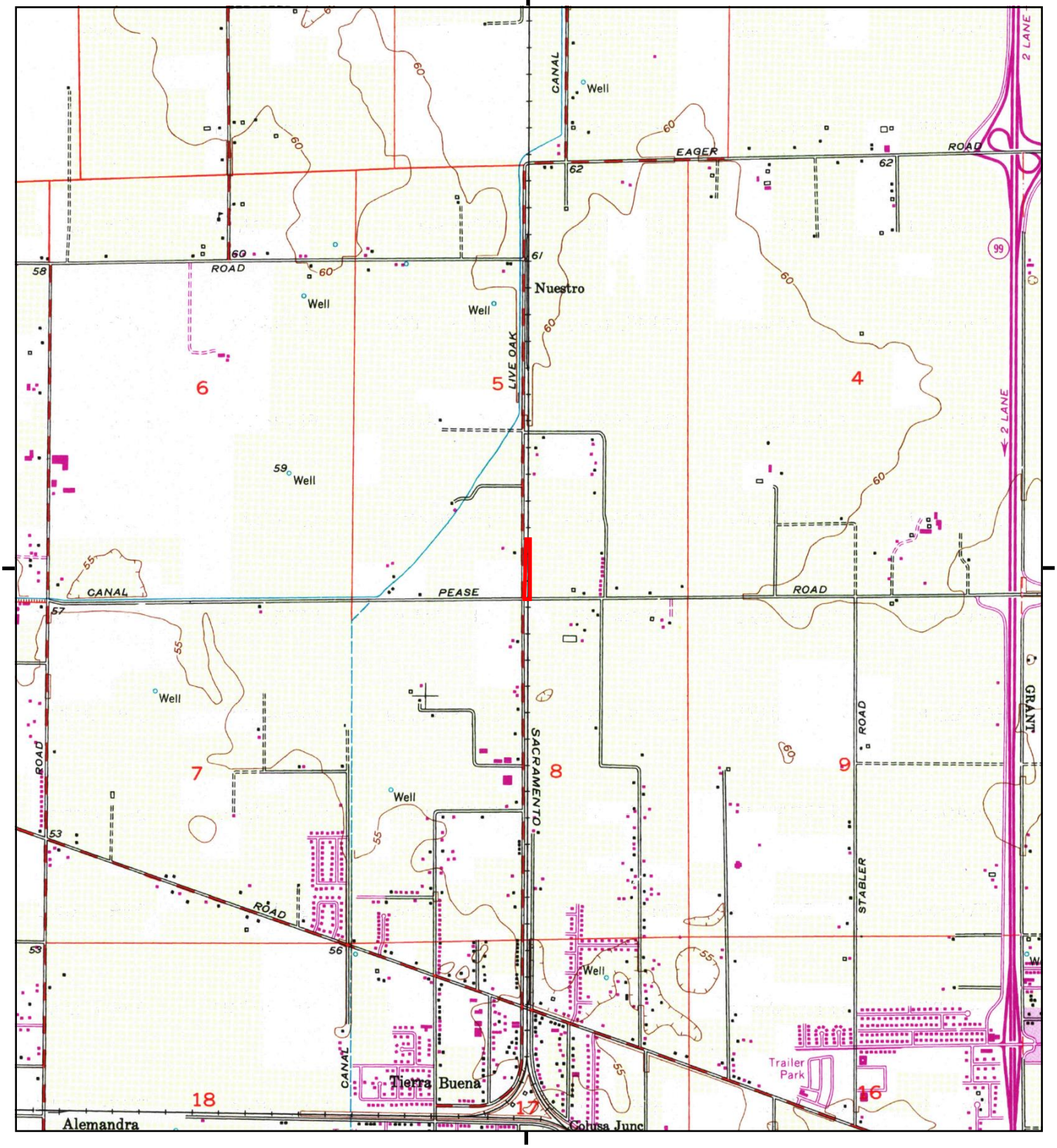
TP, Sutter, 2012, 7.5-minute

SITE NAME: 3025 Tierra Buena Road
ADDRESS: 3025 Tierra Buena Road
Yuba City, CA 95993
CLIENT: Sierra Geotech, DVBE, Inc.

N

Historical Topo Map

1973



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

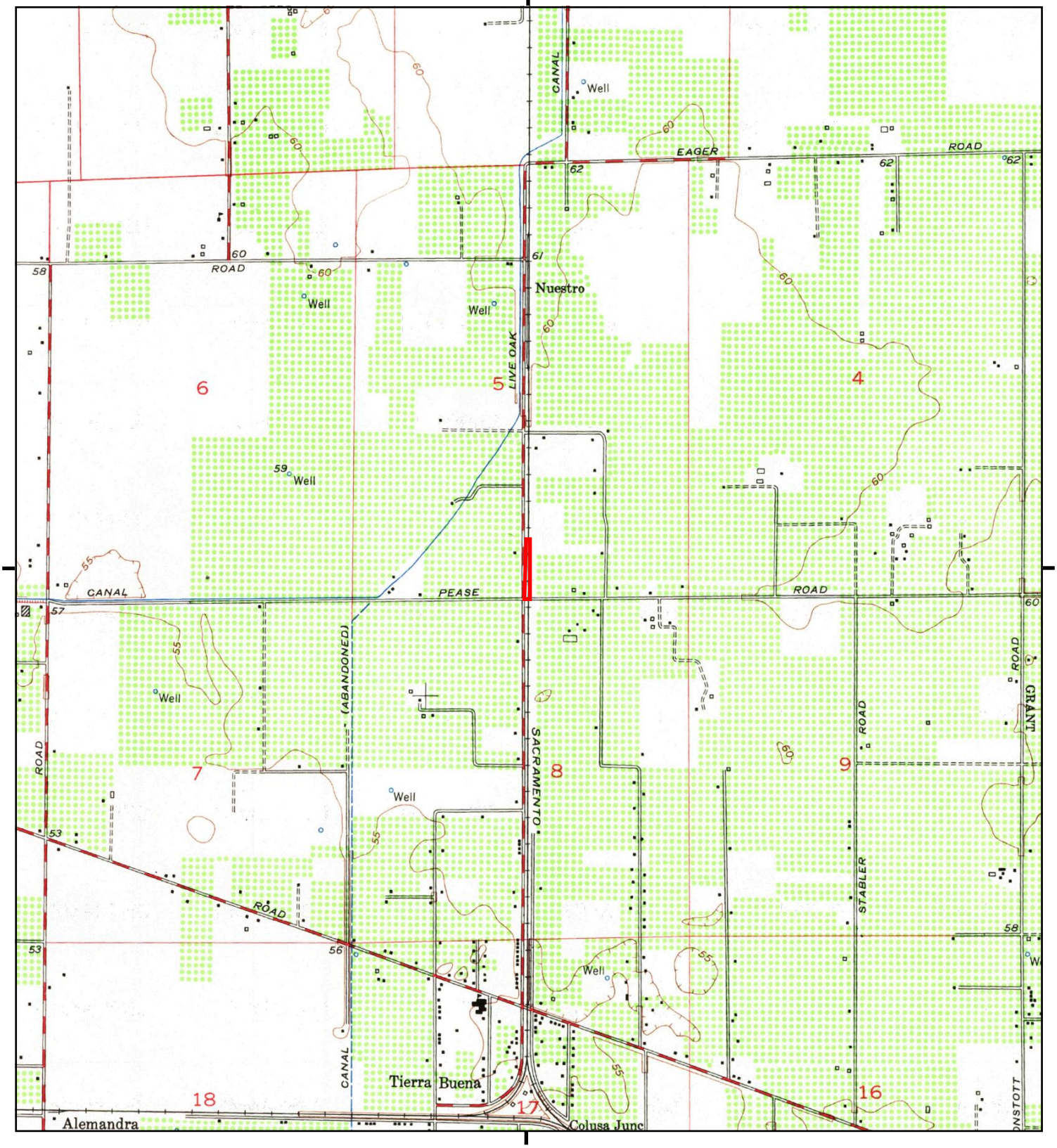
TP, Sutter, 1973, 7.5-minute

SITE NAME: 3025 Tierra Buena Road
ADDRESS: 3025 Tierra Buena Road
Yuba City, CA 95993
CLIENT: Sierra Geotech, DVBE, Inc.

N

Historical Topo Map

1952



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Sutter, 1952, 7.5-minute

SITE NAME: 3025 Tierra Buena Road
ADDRESS: 3025 Tierra Buena Road
Yuba City, CA 95993
CLIENT: Sierra Geotech, DVBE, Inc.

N



This report includes information from the following map sheet(s).

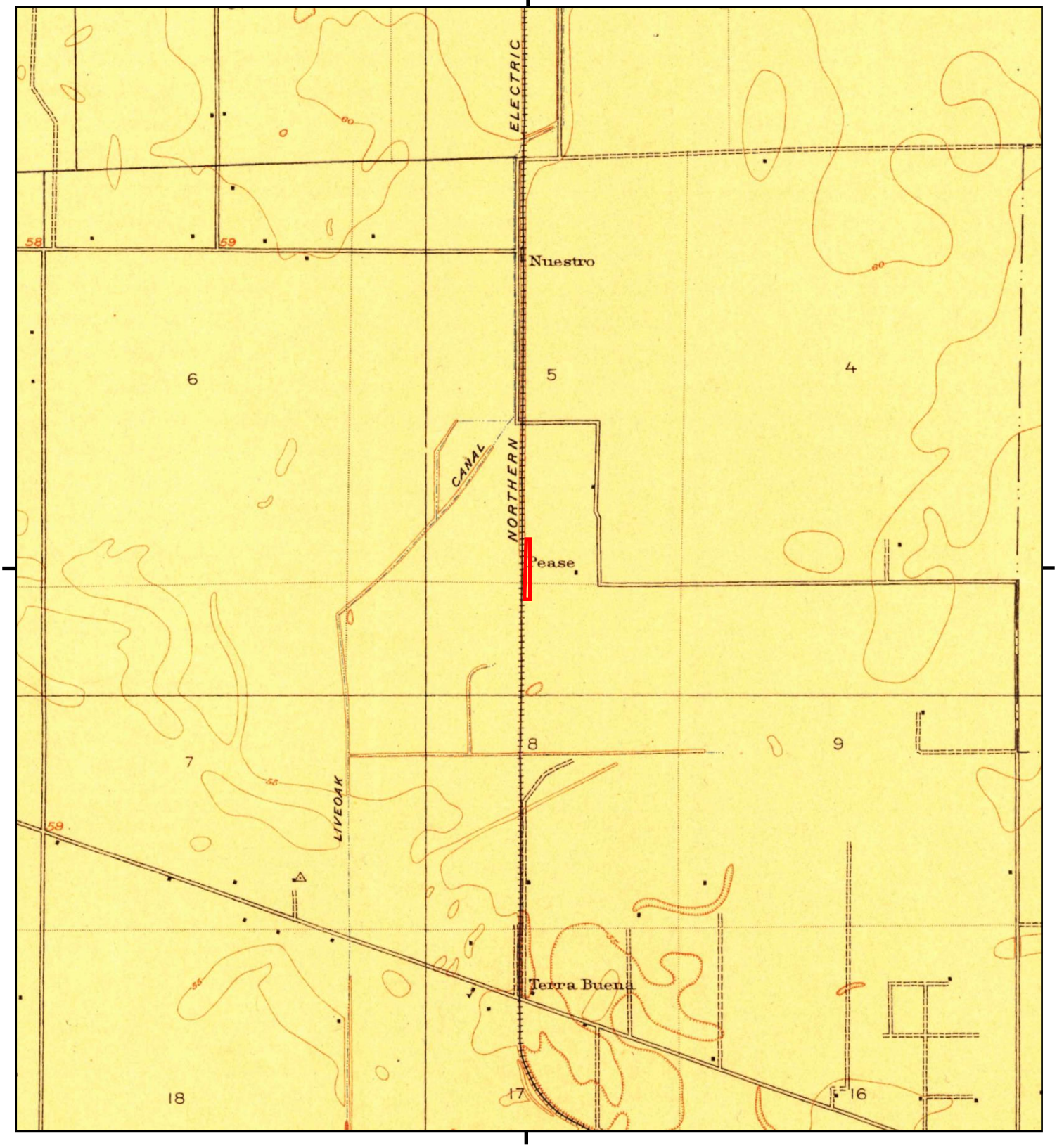
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

W, MARYSVILLE BUTTES VICINITY, 1913, 15-minute

SITE NAME: 3025 Tierra Buena Road
ADDRESS: 3025 Tierra Buena Road
Yuba City, CA 95993
CLIENT: Sierra Geotech, DVBE, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

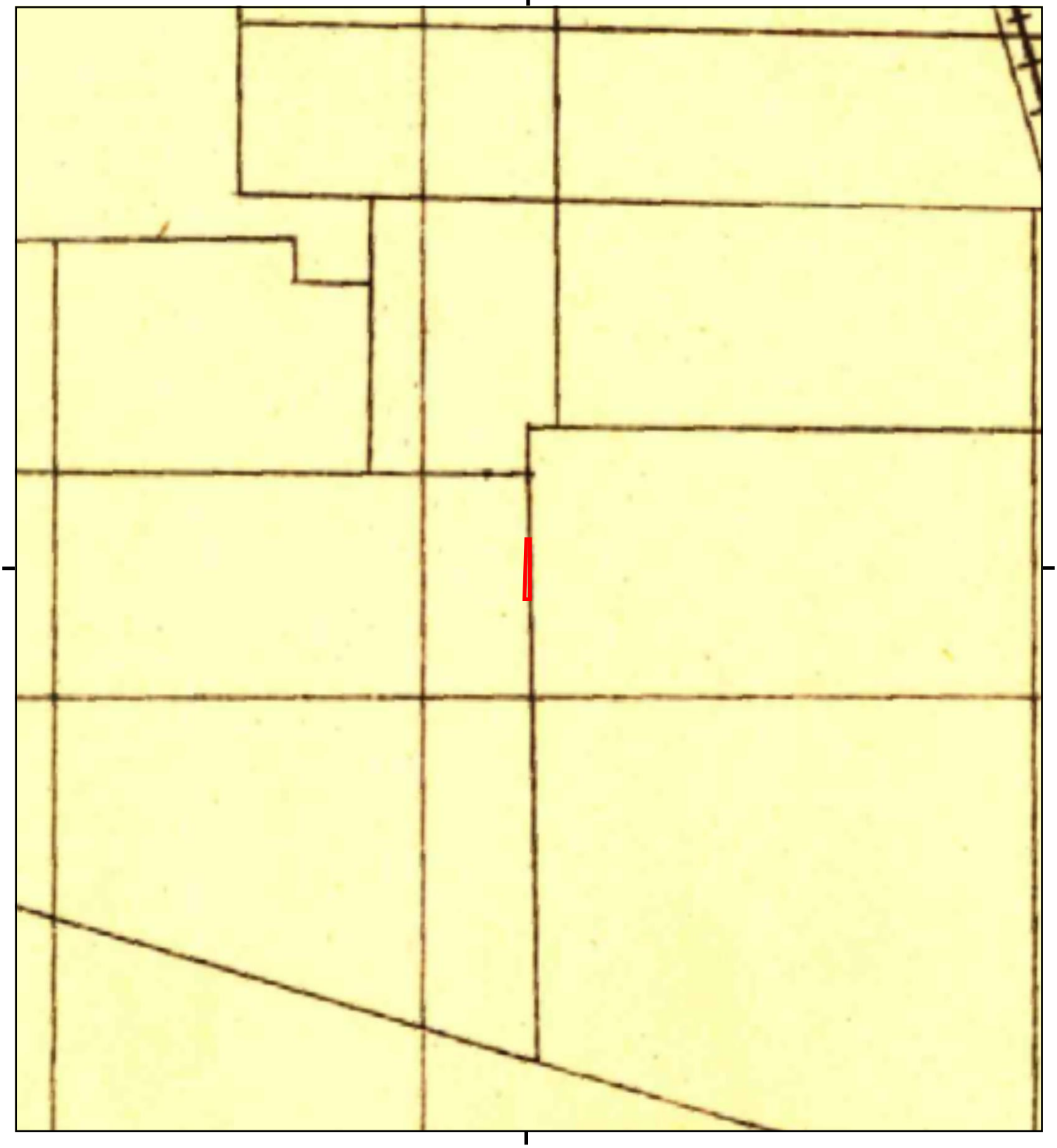
TP, Sutter, 1911, 7.5-minute

SITE NAME: 3025 Tierra Buena Road
ADDRESS: 3025 Tierra Buena Road
Yuba City, CA 95993
CLIENT: Sierra Geotech, DVBE, Inc.

N

Historical Topo Map

1895



This report includes information from the following map sheet(s).

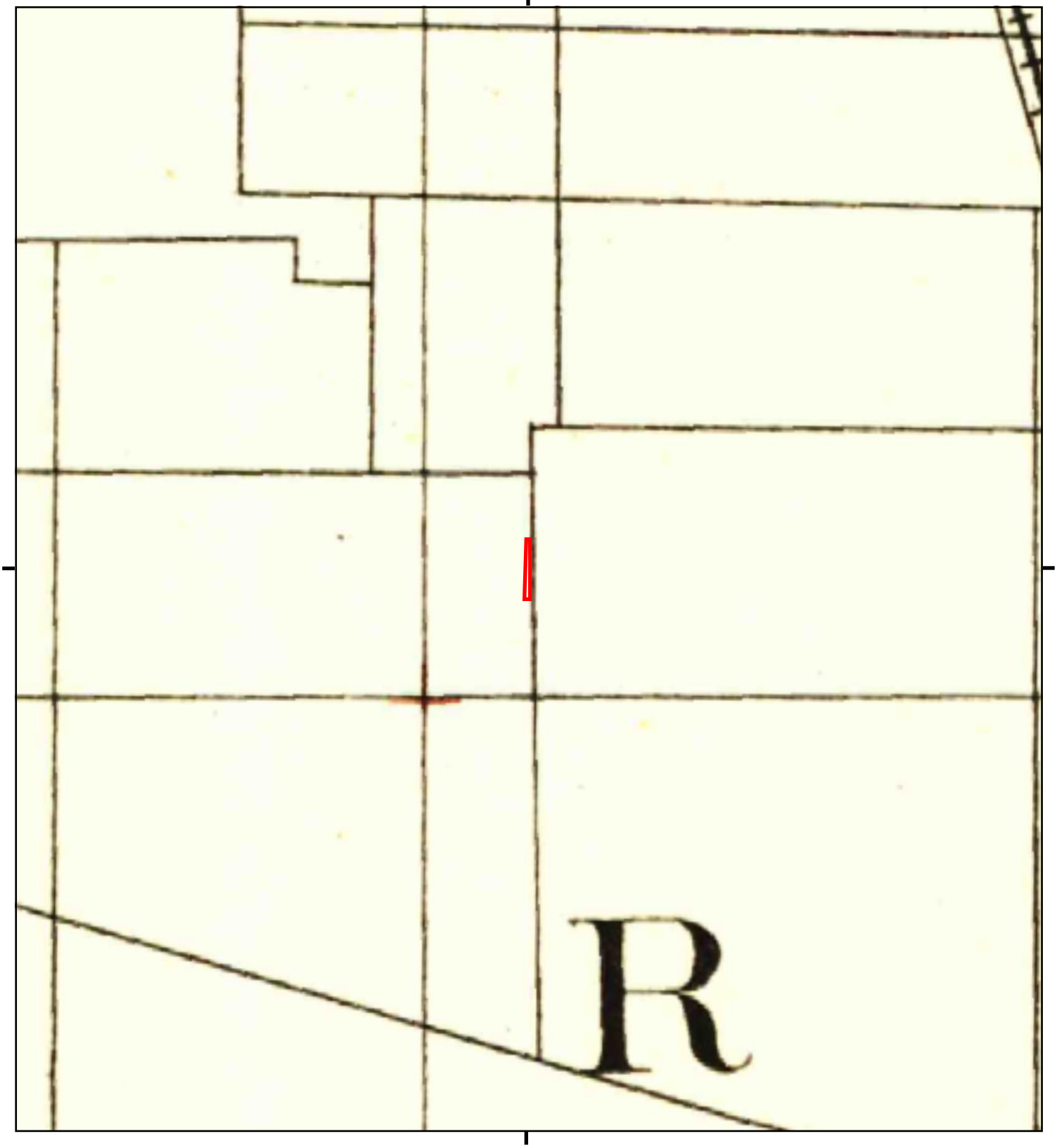
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Marysville, 1895, 30-minute

SITE NAME: 3025 Tierra Buena Road
ADDRESS: 3025 Tierra Buena Road
Yuba City, CA 95993
CLIENT: Sierra Geotech, DVBE, Inc.

N



This report includes information from the following map sheet(s).

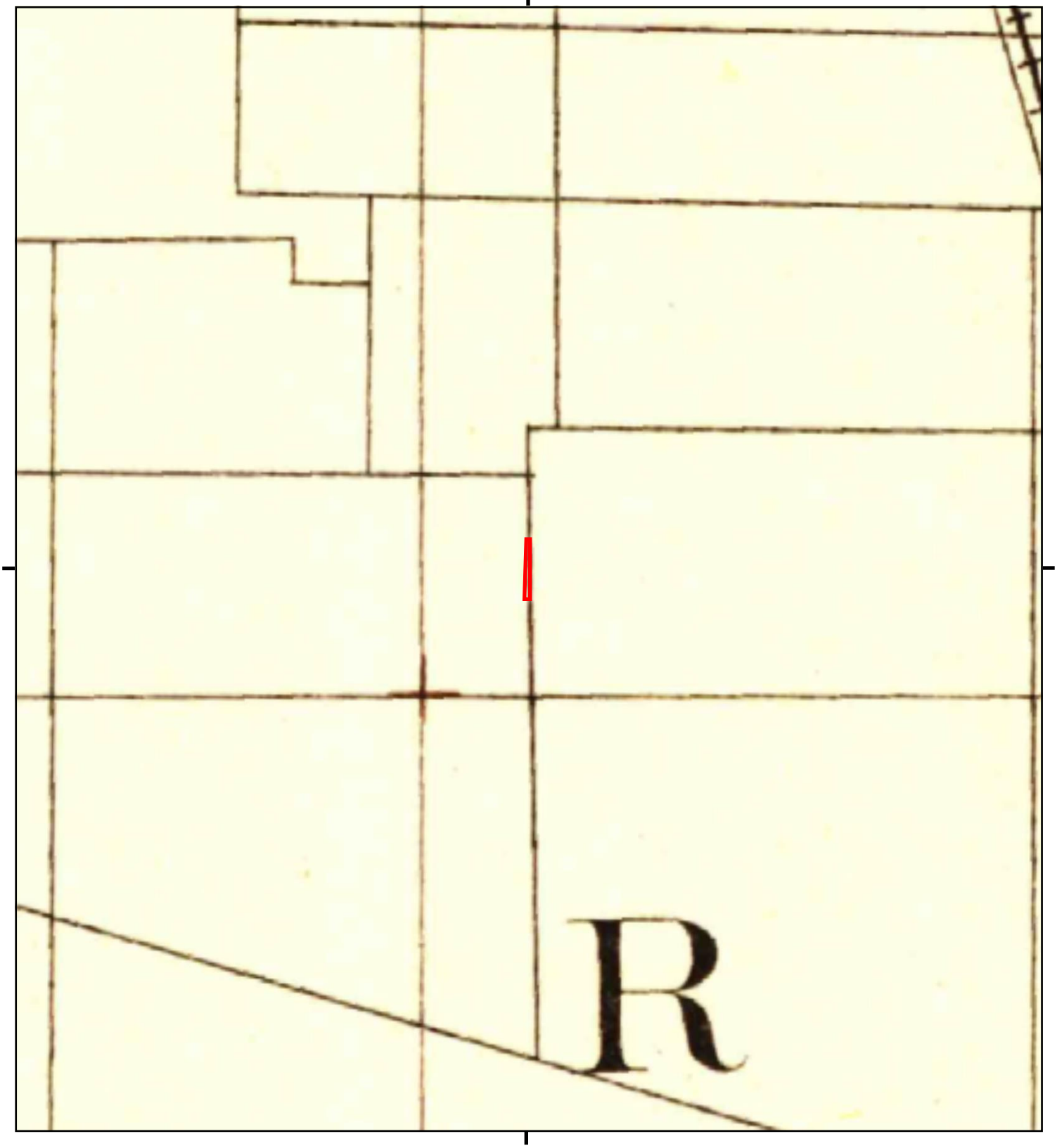
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Marysville, 1894, 30-minute

SITE NAME: 3025 Tierra Buena Road
ADDRESS: 3025 Tierra Buena Road
Yuba City, CA 95993
CLIENT: Sierra Geotech, DVBE, Inc.

N



This report includes information from the following map sheet(s).

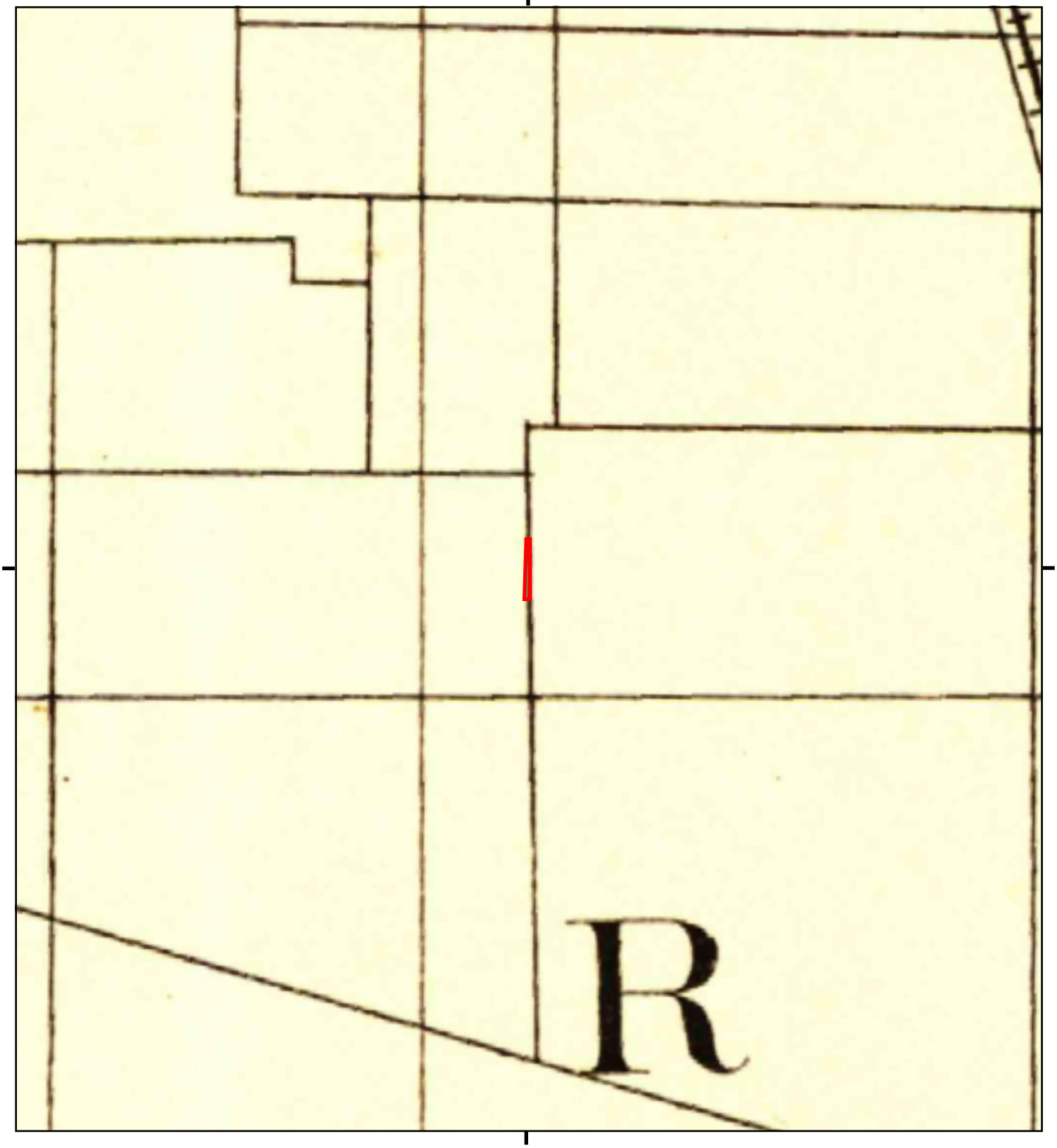
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Marysville, 1891, 30-minute

SITE NAME: 3025 Tierra Buena Road
ADDRESS: 3025 Tierra Buena Road
Yuba City, CA 95993
CLIENT: Sierra Geotech, DVBE, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Marysville, 1888, 30-minute

SITE NAME: 3025 Tierra Buena Road
ADDRESS: 3025 Tierra Buena Road
Yuba City, CA 95993
CLIENT: Sierra Geotech, DVBE, Inc.

N

3025 Tierra Buena Road

3025 Tierra Buena Road

Yuba City, CA 95993

Inquiry Number: 5839901.8

October 23, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/23/19

Site Name:

3025 Tierra Buena Road
3025 Tierra Buena Road
Yuba City, CA 95993
EDR Inquiry # 5839901.8

Client Name:

Sierra Geotech, DVBE, Inc.
4470 Yankee Hill Suite 110
Rocklin, CA 95677
Contact: Austin Kent Moore

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1998	1"=500'	Acquisition Date: September 12, 1998	USGS/DOQQ
1987	1"=500'	Flight Date: January 01, 1987	USGS
1984	1"=500'	Flight Date: June 29, 1984	USDA
1977	1"=500'	Flight Date: June 23, 1977	USGS
1973	1"=500'	Flight Date: July 01, 1973	USGS
1966	1"=500'	Flight Date: January 01, 1966	USGS
1952	1"=500'	Flight Date: June 26, 1952	USDA
1937	1"=500'	Flight Date: September 01, 1937	USDA

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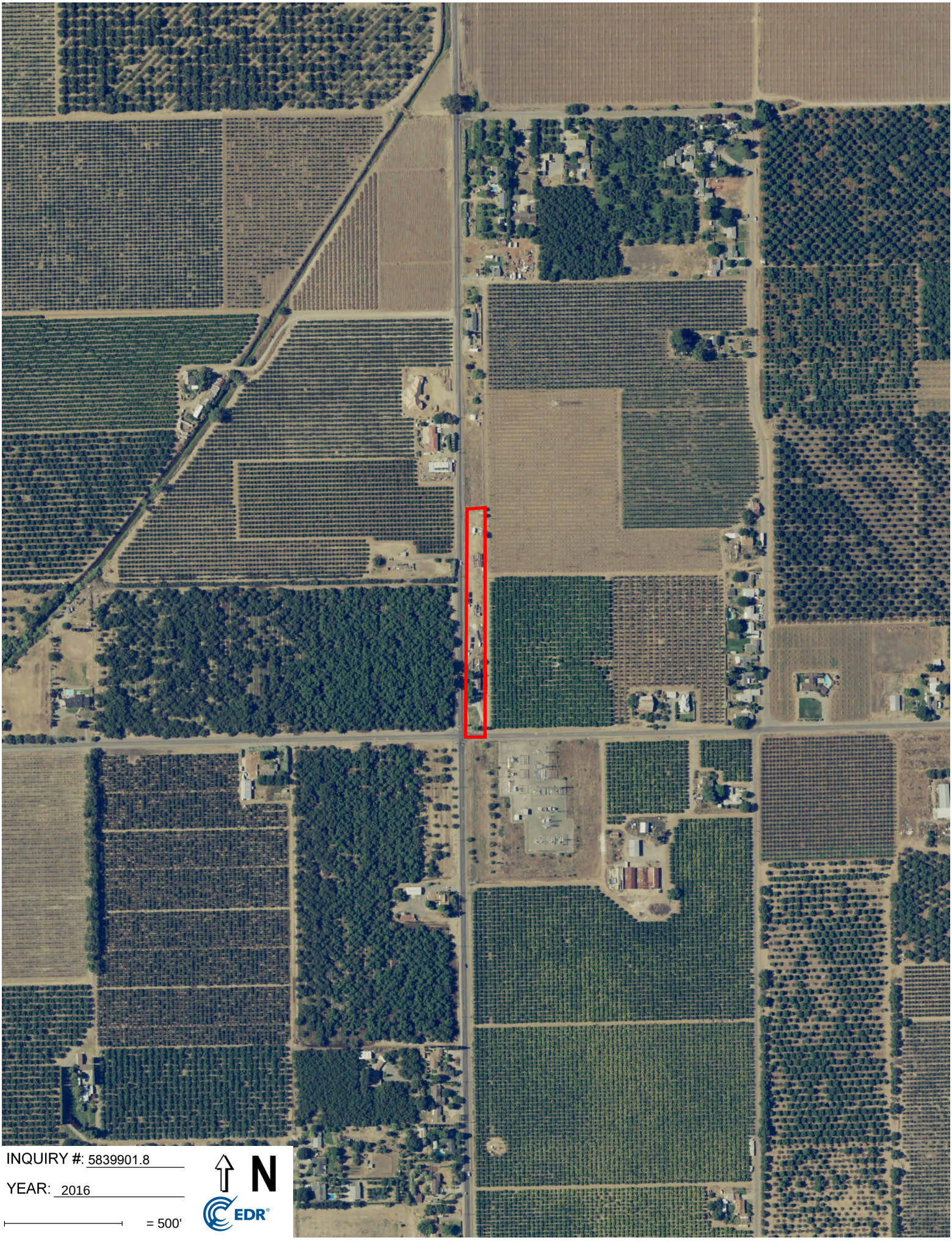
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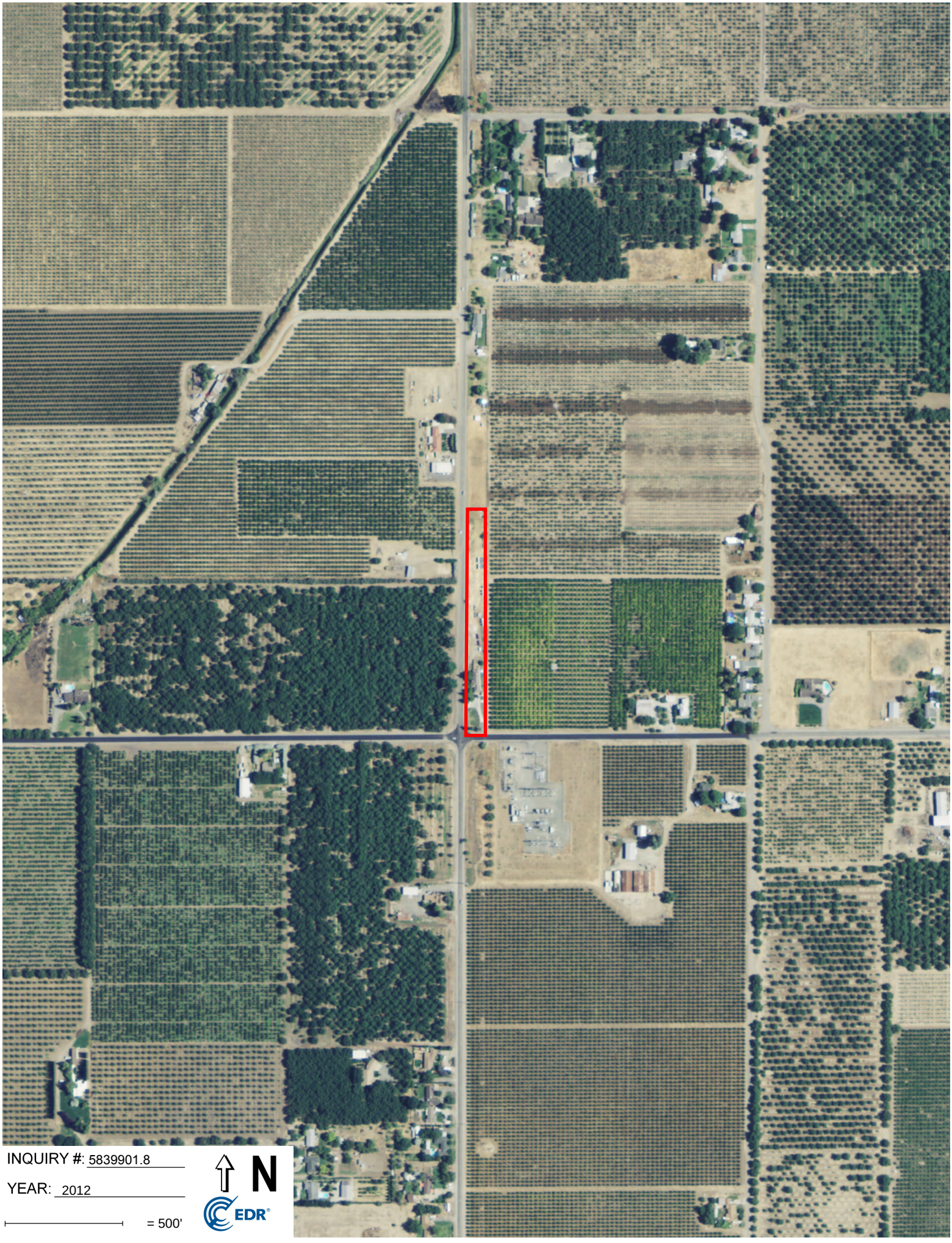
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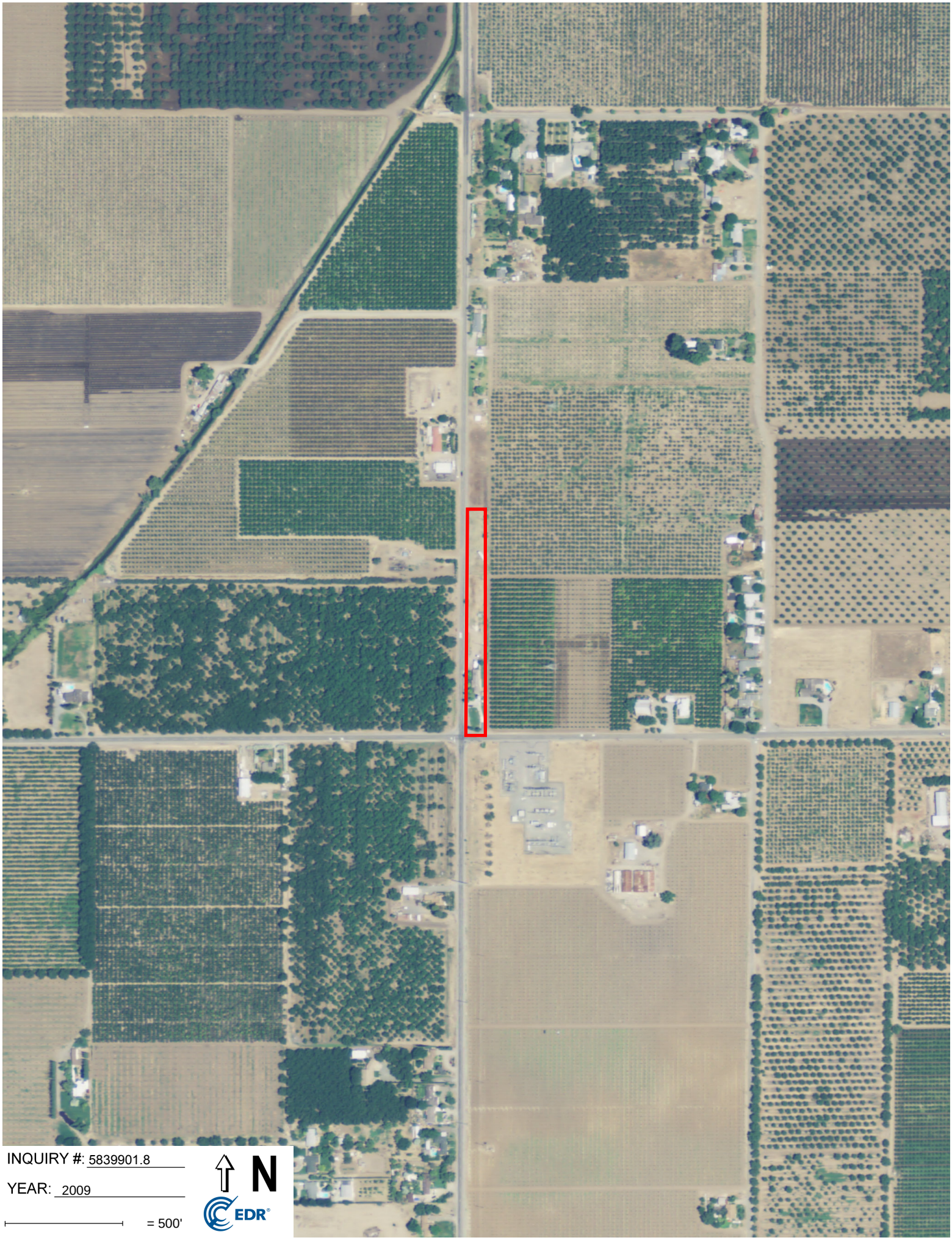
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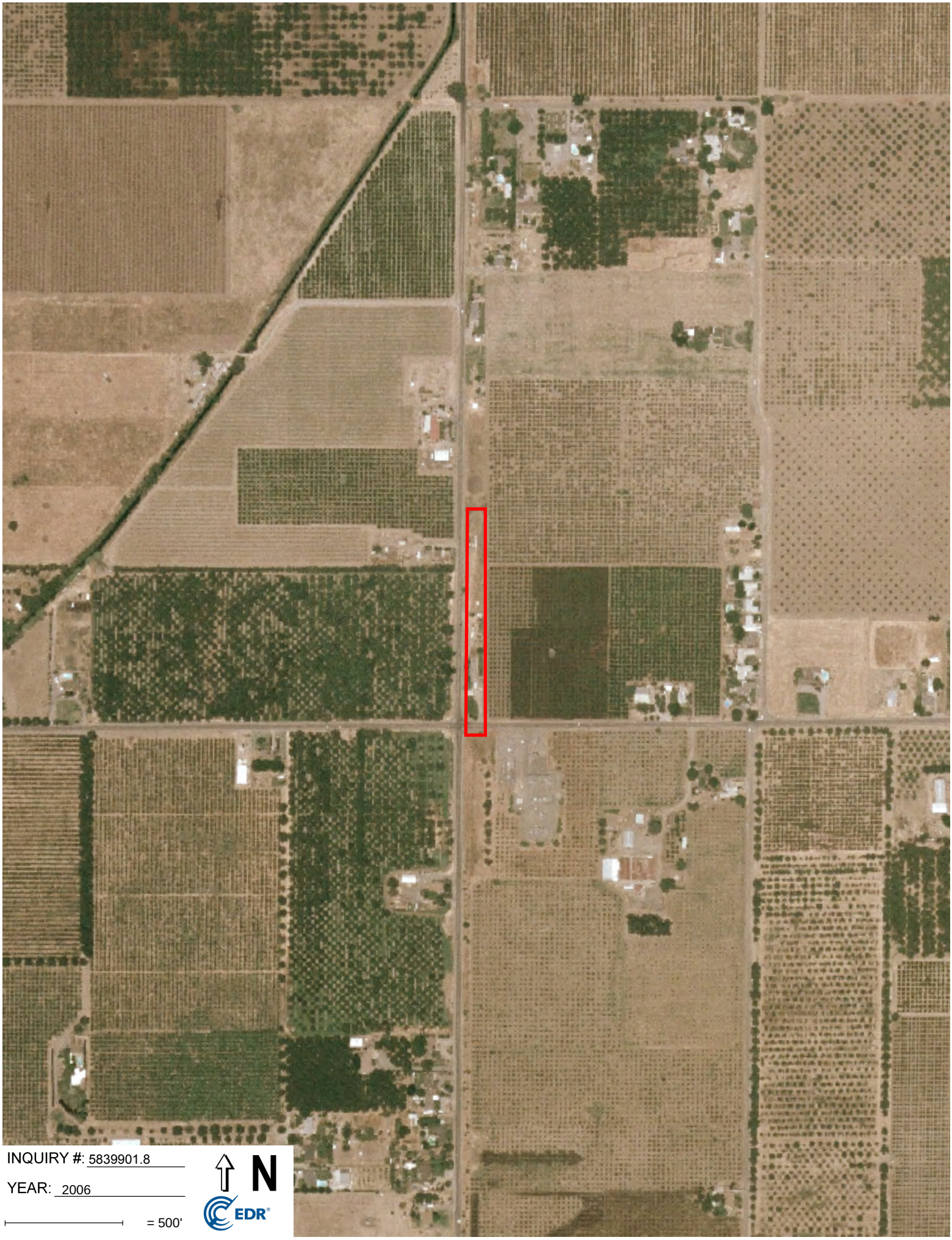

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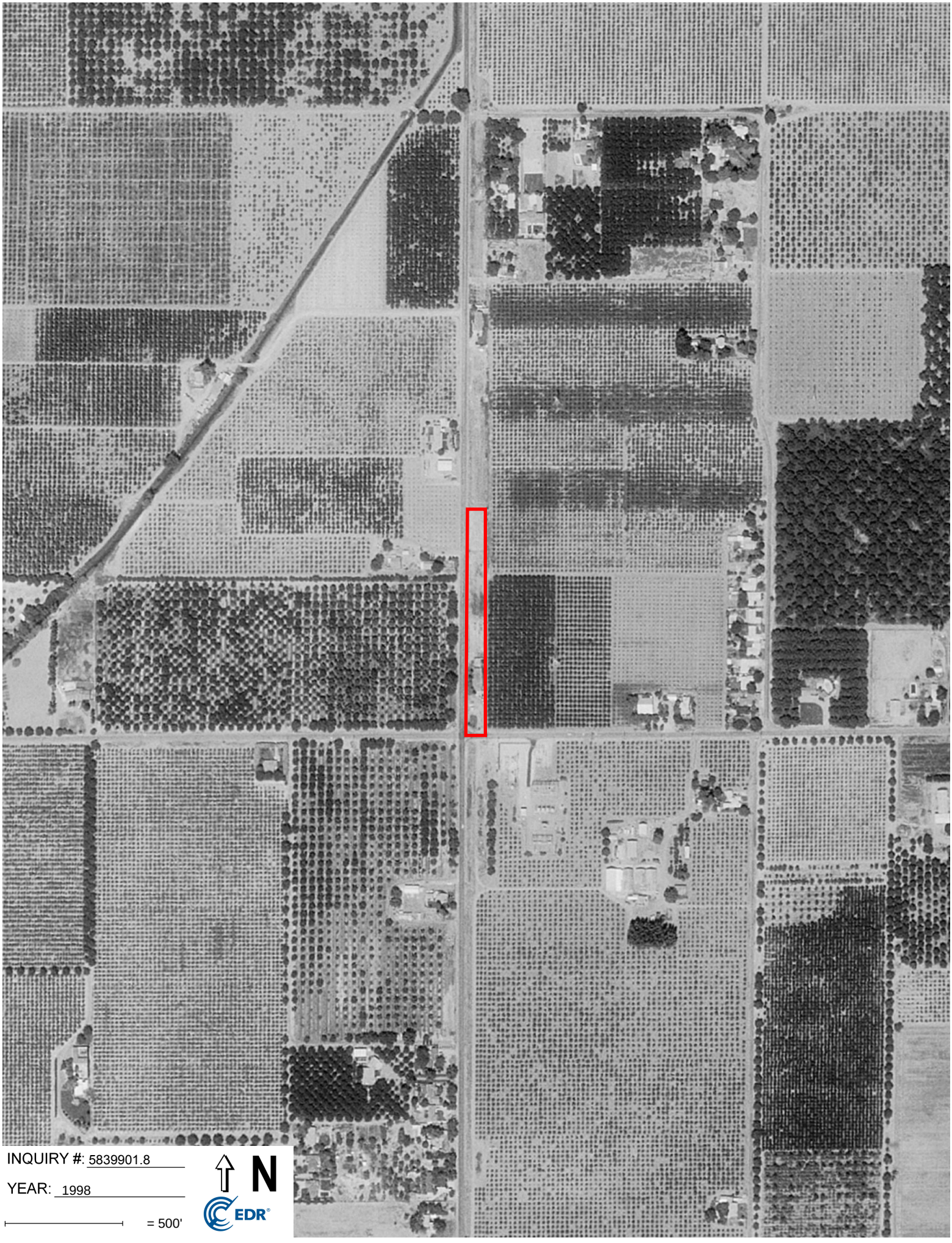
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YEAR: 1987

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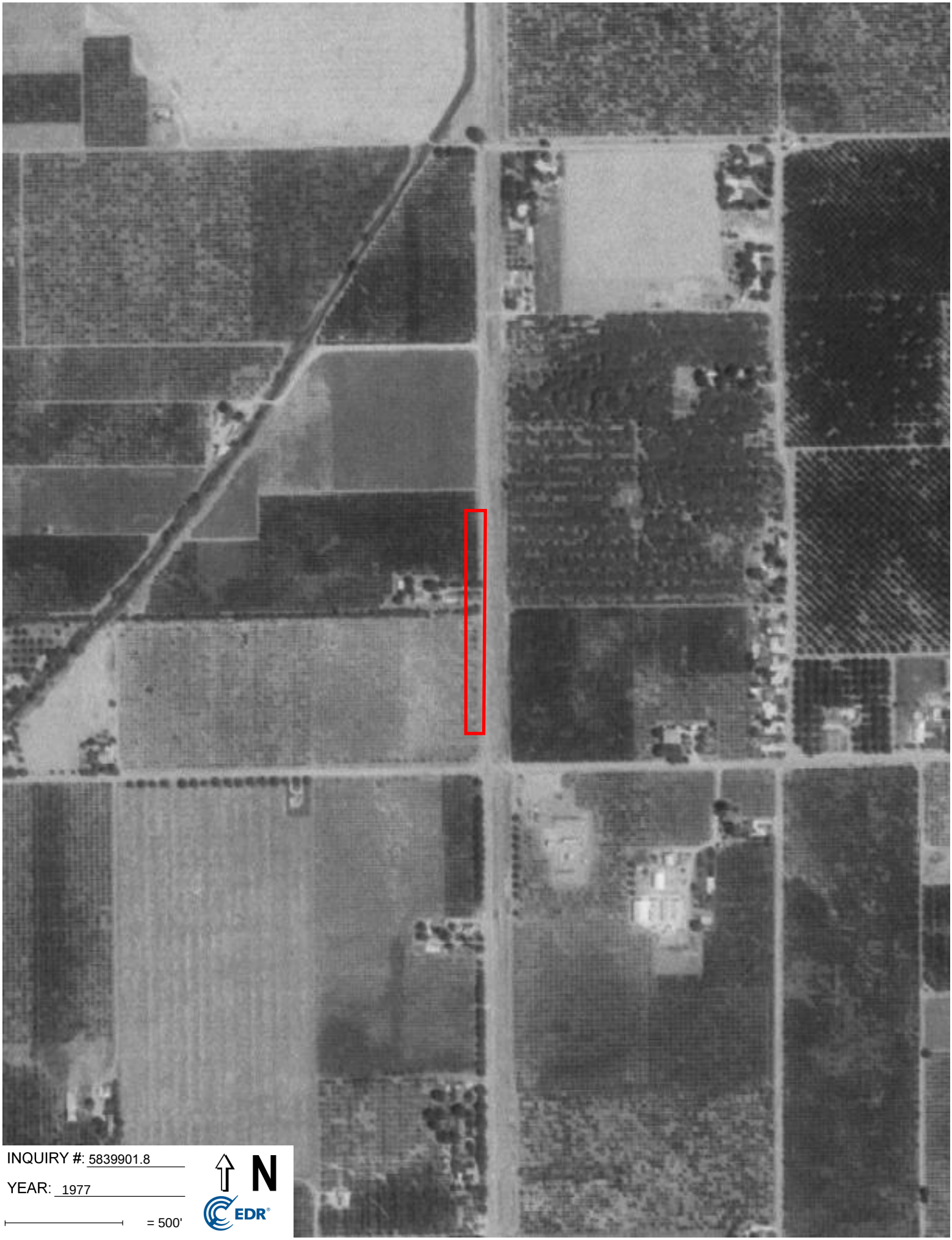
EDR



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YEAR: 1977

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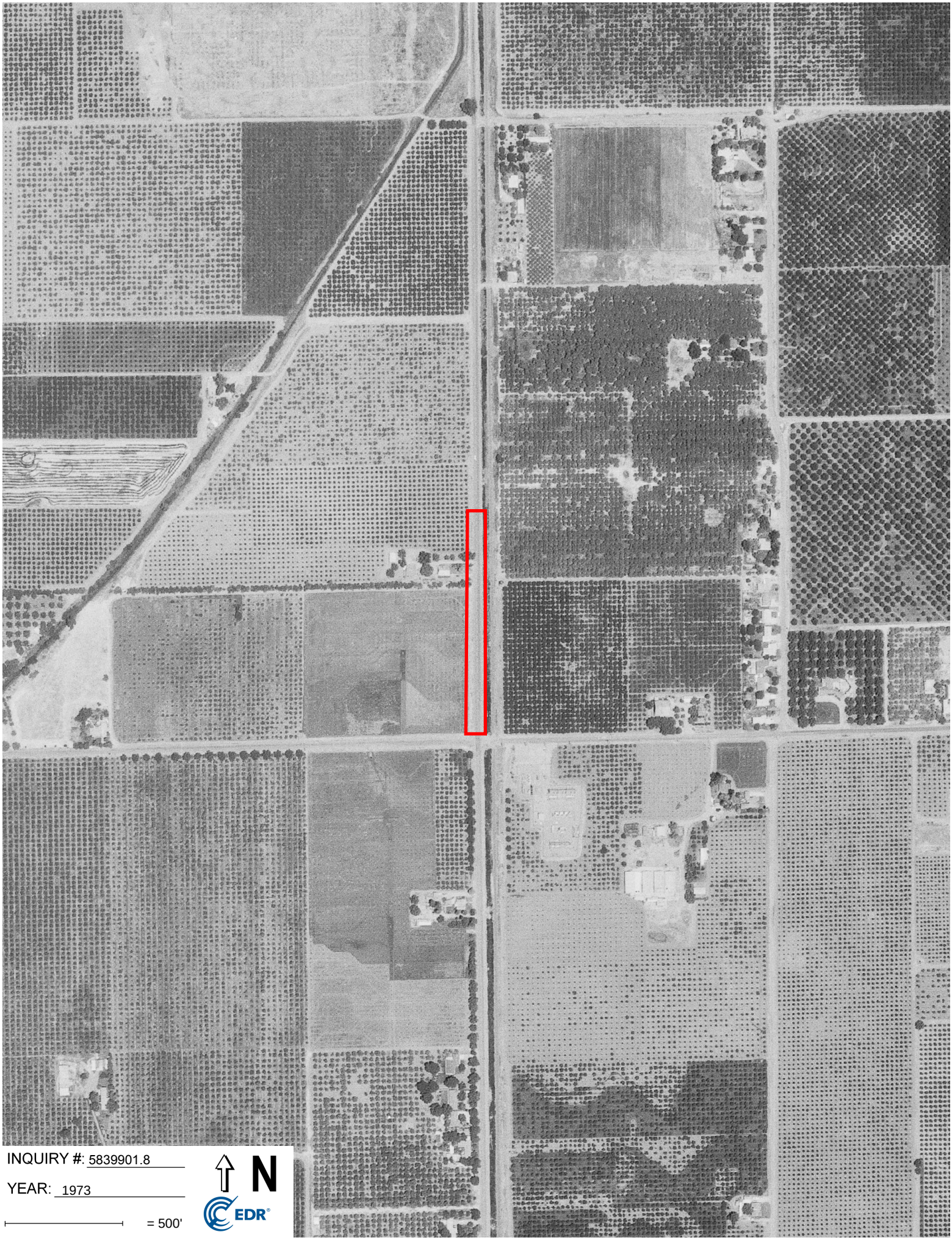
EDR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YEAR: 1966

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N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.



INQUIRY #: 5839901.8

YEAR: 1952

= 500'

N

EDR



INQUIRY #: 5839901.8

YEAR: 1937

= 500'

N

EDR

Appendix E

Reconnaissance Checklist

SIERRA GEOTECH

PHASE I ENVIRONMENTAL SITE ASSESSMENT
EXTERIOR OBSERVATIONS CHECKLIST

PROPERTY NAME: VESI 10 Tierra Buena BESS Project INSPECTOR: Brent L. Moore, CEP

DATE: March 10, 2019 TIME: 10:00 AM

				COMMENTS
1)	Vegetation	**Yes**	No	Sparsely vegetated
2)	Wooded Area	Yes	**No**	
3)	Stressed, Discolored or Stained Vegetation	Yes	**No**	
4)	Discolored or Disturbed Soils	Yes	**No**	
5)	Depressions/Pits	Yes	**No**	
6)	Mounding/Piles of Soils	Yes	**No**	
7)	Landfills	Yes	**No**	
8)	Scattered Debris	Yes	**No**	
9)	Indications of Filling	Yes	**No**	
10)	Solid Waste Hauler	Yes	**No**	
11)	Trails/Dead End Roads	Yes	**No**	
12)	Railroad Track	Yes	**No**	
13)	Railroad Spurs	Yes	**No**	
14)	Building/Structures	**Yes**	No	House on southern end of prop.
	Discharge Outlets	Yes	**No**	
	Air	Yes	**No**	
	Water	Yes	**No**	
15)	Dust/Smoke	Yes	**No**	
16)	Unusual/Noxious Odors	Yes	**No**	
17)	Surface Water	Yes	**No**	
	Creeks	Yes	**No**	
	Streams	Yes	**No**	
	Rivers	Yes	**No**	
	Ponds	Yes	**No**	
	Wetlands	Yes	**No**	
	Lakes	Yes	**No**	
	Surface Impoundments	Yes	**No**	
	Swales	Yes	**No**	
	Drainage Ditches	Yes	**No**	
18)	Discolored/Unusual Smelling Water	Yes	**No**	
19)	Sanitary Sewer	Yes	**No**	
20)	Storm Sewer	Yes	**No**	
21)	Septic System	Yes	**No**	
22)	Underground Utilities	Yes	**No**	
23)	Pipelines	Yes	**No**	

24)	Water Wells	Yes	**No**	
25)	Monitoring Wells	Yes	**No**	
26)	Soil Borings	Yes	**No**	
27)	Underground Storage Tanks (vent pipes?)	Yes	**No**	
28)	Aboveground Storage Tanks	Yes	**No**	
29)	Hazardous substance containers and unidentified substance containers (Drums present)	Yes	**No**	
30)	Transformers	Yes	**No**	
31)	Indications of PCBs, PCB-containing equipment	Yes	**No**	
32)	Hazardous substances in connection with identified uses (if yes, is migration of substance a concern)	Yes	**No**	
33)	Patched asphalt or concrete	Yes	**No**	
34)	Backup Electric Generator	Yes	**No**	
35)	Paint Booth, Spray Rig	Yes	**No**	
36)	Storage of Pesticides/Herbicides	Yes	**No**	
37)	Farm Waste, Feed Lot Spoils, or Manure Stockpile	Yes	**No**	
38)	Any evidence of discharges of leachate, migration or run-off of potential contaminants to the site from an off-site source?	Yes	**No**	

39) Site Condition The southern end of the property features a single family home, the project are to the north is largely undeveloped

40) Building condition N/A

41) Describe Adjacent Land Use – include addresses

North Vacant land, pasture

South PG&E Pease Road power substation and vacant land

East Dirt access road

West Agricultural storage building and residential buildings

42) Photograph Log (site photos, adjacent prop photos, potential environmental concerns)

a) See Photo Log in Phase I ESA report

b)

c)

d)

e)

f)

g).

h)

i)

j)

k)

l)

43) Other Comments or Concerns None

Appendix J: El Centro BESS Noise Study

EILAR ASSOCIATES, INC.

Acoustical and Environmental Consulting

210 South Juniper Street, Suite 100, Escondido, CA 92025
Phone: 760-738-5570 or 800-439-8205 • Fax: 760-738-5227
www.eilarassociates.com • info@eilarassociates.com

September 15, 2016

Job #B60902N1

Tri-Technic, Inc.
Attention: Dennis Ledbetter
185 South Fairview Lane
Sonora, California 95370

Subject: Post-Installation Noise Measurements for IID El Centro BESS Project

Eilar Associates has conducted post-installation noise measurements of the noise-generating equipment at the recently constructed Imperial Irrigation District (IID) Battery Energy Storage System (BESS) in El Centro. Post-installation noise measurements aim to determine compliance with project noise requirements as well as noise requirements contained within the City of El Centro Municipal Code.

Project Description & Noise Sources

The subject property is located at 485 East Villa Avenue in the City of El Centro, California. Please refer to Figures 1 through 3 for a Vicinity Map, Satellite Aerial Photograph, and Topographic Map of the site, respectively. The project site is zoned LU (Limited Use). The property to the west is zoned ML (Light Manufacturing), and the property to the South is zoned MG (General Manufacturing). Properties to the north and east are located within the County of Imperial, and are zoned A2U (General Agricultural).

The project included the construction of a new building to house an array of batteries, with a total capacity of 30 MW. A total of 32 transformers and 30 inverters associated with the battery system were also installed on post-tensioned concrete slabs at the exterior of the building, as well as air conditioning equipment serving the building. For additional project details and equipment positioning, please refer to the project plans, provided in Appendix A.

Noise and Sound Level Descriptors

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting, abbreviated "dBA," to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol "L_{EQ}." Unless a different time period is specified, "L_{EQ}" is implied to mean a period of one hour.

Methodology

Decibel Addition

To determine the combined logarithmic noise level of two known noise source levels, the values are converted to the base values, added together, and then converted back to the final logarithmic value, using the following formula:

$$L_C = 10\log(10^{L1/10} + 10^{L2/10} + 10^{LN/10})$$

where L_C = the combined noise level (dB), and
L_N = the individual noise sources (dB).

Cadna Noise Modeling Software

Modeling of the outdoor noise environment is accomplished using Cadna Version 4.6, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. Cadna (Computer Aided Noise Abatement) assists in the calculation, presentation, assessment, and alleviation of noise exposure. It allows for the input of project information such as noise source data, barriers, structures, and topography to create a detailed model and uses the most up-to-date calculation standards to predict outdoor noise impacts.

Applicable Noise Standards

According to the engineering, procurement, and construction requirements document for this project, the maximum sound level generated by the BESS systems and associated equipment should not exceed a noise level of 60 dBA at a distance of 50 feet from the substation fence or building exterior, or as required by local ordinances. As there are no sensitive receivers located within 50 feet of the building exterior, the noise limits have been evaluated at the closest fence lines to the facility, at the north and west property lines of the project site. The noise regulations applicable to this project are contained within the City of El Centro and County of Imperial Municipal Codes which specify noise limits based on the zoning of the property in question.

According to Section 17.1.4 of the City of El Centro Municipal Code, the noise limit for properties zoned LU is an hourly average of 60 dBA L_{EQ} between the hours of 7 a.m. and 10 p.m., and 55 dBA L_{EQ} between the hours of 10 p.m. and 7 a.m. The noise limit for properties zoned for manufacturing is an hourly average of 75 dBA L_{EQ} between the hours of 7 a.m. and 10 p.m., and 70 dBA L_{EQ} between the hours of 10 p.m. and 7 a.m. Additionally, according to the municipal code, the noise limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts. As the BESS facility may operate during any hour on any given day, the more restrictive nighttime noise limits would apply. Therefore, the nighttime noise limit of 62.5 dBA L_{EQ} would apply at the west and south property lines.

According to Title 9, Division 7, Chapter 2 (Sound Level Limits) of the County of Imperial Municipal Code, the noise limit for properties zoned for agricultural use is an hourly average of 70 dBA L_{EQ} at any time.

Measurement Equipment

The following equipment was used at the site to measure noise levels:

- Larson Davis Model LxT Type 1 Integrating Sound Level Meter, Serial #4084
- Larson Davis Model CA250 Type 1 Calibrator, Serial #2625
- Tripods, microphones with windscreens
- Distance measurement wheel and tape measure

The sound level meter was field-calibrated immediately prior to all noise level measurements and checked afterwards, to ensure accuracy. All sound level measurements conducted and presented in this report were made with sound level meters that conform to the American National Standards Institute specifications for sound level meters (ANSI S1.4). All instruments are maintained with National Bureau of Standards traceable calibration, per the manufacturers' standards.

On-Site Noise Level Measurements

A site visit was conducted on the morning of Monday, September 12, 2016 to perform noise level measurements with and without the BESS facility in operation, and to determine ambient noise levels in the vicinity of the project. During all noise measurements, the microphone position was placed approximately five feet above grade.

Noise from BESS Air Conditioning Equipment and Gas Turbine Facility Equipment

Upon arrival to the site, the BESS equipment was not in operation; however, the air conditioning equipment serving the BESS facility was in operation. In addition to noise from the operational air conditioning equipment serving the BESS facility, noise from the adjacent gas turbine facility was audible at the site and was the primary source of ambient noise. In order to determine the ambient noise environment without the influence of equipment operation at the BESS facility, measurements were conducted at several locations around the BESS facility. Close-range noise measurements were then conducted of the air conditioning equipment to incorporate into a Cadna noise model for verification of results, and to estimate the noise contribution of the adjacent gas turbine facility. Using the methodology described above, the modeled/calculated noise level was subtracted from the measured noise level at each receiver location to estimate the ambient noise level at each receiver.

Please refer to Table 1 for results of these measurements and calculations. For a graphical representation of the noise measurement locations and equipment noise contours, please refer to Figure 4.

Table 1. Noise Measurements and Estimated Ambient Noise Levels				
Location	**Dominant Noise Source(s)**	**Noise Level (dBA)**		
		Measured Noise Level (Ambient + HVAC)	**Calculated Noise Level (HVAC Only)**	**Calculated Ambient Noise Level**
Cal 1	HVAC	79.8	79.8	< 60
Cal 2	HVAC	78.8	78.7	< 60
Cal 3	HVAC, Gas Turbine Equipment	63.8	59.7	61.7
Cal 4	Gas Turbine Equipment, HVAC	59.5	53.5	58.2
Cal 5	Gas Turbine Equipment	59.5	49.5	59.5
Cal 6	Gas Turbine Equipment, HVAC	54.9	47.4	54.0
Cal 7	HVAC, Gas Turbine Equipment	61.1	57.4	58.7
Cal 8	Gas Turbine Equipment, HVAC	59.8	55.1	58.0
Cal 9	HVAC	N/A	70.8	< 60

Noise from BESS Air Conditioning Equipment and Gas Turbine Facility Equipment

After establishing the HVAC and ambient noise levels surrounding the facility, noise level measurements were then conducted with the BESS facility equipment in operation at full discharge. In order to determine the noise impacts from equipment associated with the BESS facility, the calculated ambient noise levels were subtracted from the measured noise levels. Please refer to Table 2 for results of these measurements and calculations.

Table 2. Noise Measurements and Estimated BESS Noise Levels				
Location	**Dominant Noise Source(s)**	**Noise Level (dBA)**		
		Measured Noise Level (Ambient + BESS)	**Calculated Ambient Noise Level**	**Adjusted Measured Noise Level (BESS Only)**
Cal 3	BESS Equipment, Gas Turbine Equipment	67.9	61.7	66.7
Cal 4	BESS Equipment , Gas Turbine Equipment	62.0	58.2	59.7
Cal 5	Gas Turbine Equipment	N/A	59.5	N/A
Cal 6	Gas Turbine Equipment, BESS Equipment	55.8	54.0	51.1
Cal 7	BESS Equipment, Gas Turbine Equipment	68.7	58.7	68.2

Table 2. Noise Measurements and Estimated BESS Noise Levels				
Location	**Dominant Noise Source(s)**	**Noise Level (dBA)**		
		Measured Noise Level (Ambient + BESS)	**Calculated Ambient Noise Level**	**Adjusted Measured Noise Level (BESS Only)**
Cal 8	Gas Turbine Equipment, BESS Equipment	60.7	58.0	57.4
Cal 9	BESS Equipment	78.1	< 60	78.1

In order to determine the accuracy of the noise model, the adjusted measured noise levels were compared to the calculated noise levels at the same receiver locations. Typically, a noise model is considered to be calibrated if the results of the noise model fall within three decibels of measurement results at the same locations. Please refer to Table 3 for a comparison of calculated and measured noise levels of equipment associated with the BESS facility. For a graphical representation of BESS equipment noise contours, and receiver locations, please refer to Figure 5.

Table 3. Calculated BESS Noise Levels and Model Verification				
Location	**Dominant Noise Source(s)**	**Noise Level (dBA)**		
		Adjusted Measured Noise Level (BESS Only)	**Calculated Noise Level (BESS Only)**	**Difference**
Cal 1	HVAC	N/A	80.8	N/A
Cal 2	HVAC	N/A	79.2	N/A
Cal 3	BESS Equipment, Gas Turbine Equipment	66.7	67.9	1.2
Cal 4	BESS Equipment, Gas Turbine Equipment	59.7	61.3	1.6
Cal 5	Gas Turbine Equipment	N/A	57.1	N/A
Cal 6	Gas Turbine Equipment, BESS Equipment	51.1	55.3	4.2
Cal 7	BESS Equipment, Gas Turbine Equipment	68.2	68.2	0.0
Cal 8	Gas Turbine Equipment, BESS Equipment	57.4	58.3	0.9
Cal 9	BESS Equipment	78.1	76.9	1.2
North Fence	N/A	N/A	54.3	N/A
West Fence	N/A	N/A	48.0	N/A

With the exception of the Cal 6 receiver, all calculated results were found to be within two decibels of the measured noise levels of the BESS facility, once the measured results were adjusted to account for the noise produced by the adjacent gas turbine facility. It should be noted that, as the calculated result at the CAL 6 receiver exceeded the adjusted measurement result at the same

receiver, the model can be considered to be a worst-case representation of anticipated noise levels from the facility. As the measured and calculated results differ by less than three decibels for the majority of the receiver locations, results of the Cadna noise model can be considered to be representative of the anticipated noise impacts from the BESS facility.

As shown above in Table 3, according to the Cadna noise model, anticipated noise levels at the north and west fence lines are expected to be 54.3 dBA and 48.0 dBA, respectively. As these noise levels are below the project criteria of 60 dBA and are also below the applicable nighttime noise limits for the City of El Centro and County of Imperial, the project can be considered to be in compliance as currently constructed. Based on the noise measurements and calculations documented herein, no mitigation is deemed necessary for attenuating exterior noise levels from the BESS facility

Conclusion

As installed, noise levels generated by the BESS facility were determined to be in compliance with project requirements as well as the applicable City of El Centro and County of Imperial noise limits. Based on the noise measurements and calculations documented herein, no mitigation is deemed necessary for attenuating exterior noise levels from the BESS facility.

This report is based on project information received and measured noise levels, and represents a true and factual analysis of the acoustical impact issues associated with the IID BESS facility in the City of El Centro, California. This report was prepared by Jonathan Brothers, Dan Gershun, and Amy Hool.

EILAR ASSOCIATES, INC.

Jonathan Brothers, Principal Acoustical Consultant

Daniel Gershun, Acoustical Consultant

Figures

1. Vicinity Map
2. Satellite Aerial Photograph
3. Topographic Map
4. Satellite Aerial Photograph Showing HVAC Noise Contours and Receiver Locations
5. Satellite Aerial Photograph Showing BESS Equipment Noise Contours and Receiver Locations

Appendix

A. Project Plans

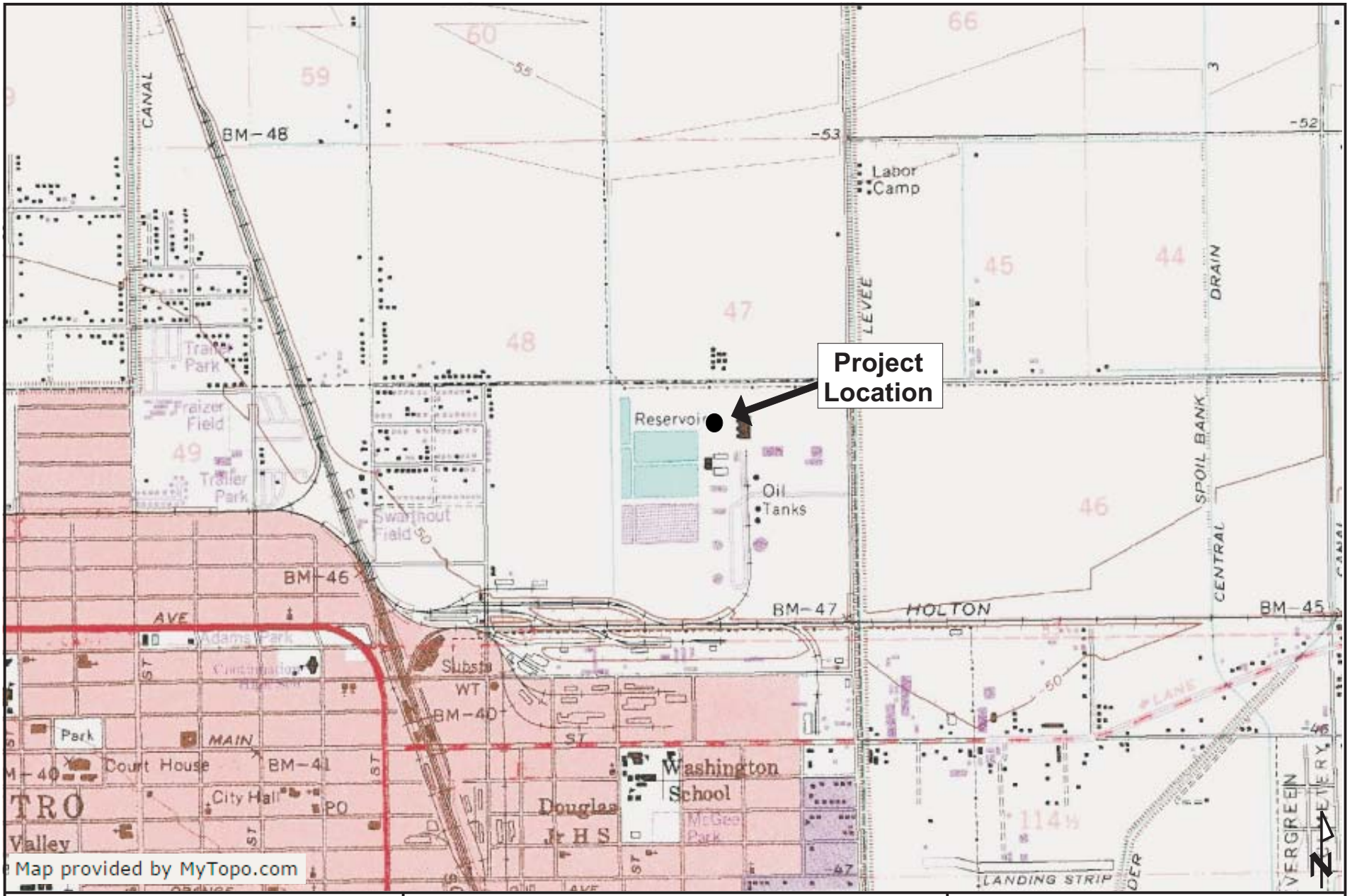
FIGURES



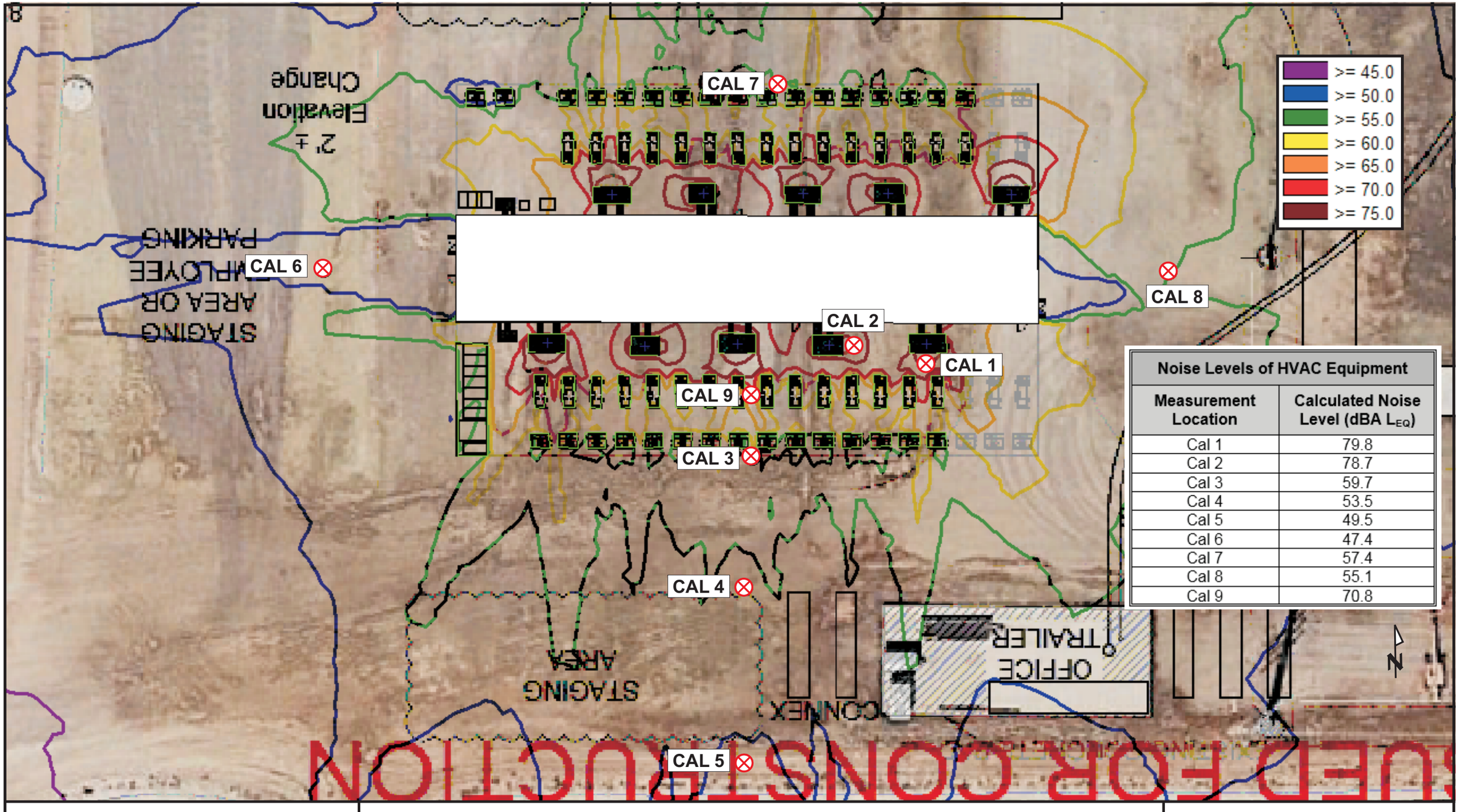
Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Vicinity Map** **Job #B60902N1**	**Figure 1**



Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Satellite Aerial Photograph** **Job # B60902N1**	**Figure 2**



Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Topographic Map** **Job # B60902N1**	**Figure 3**

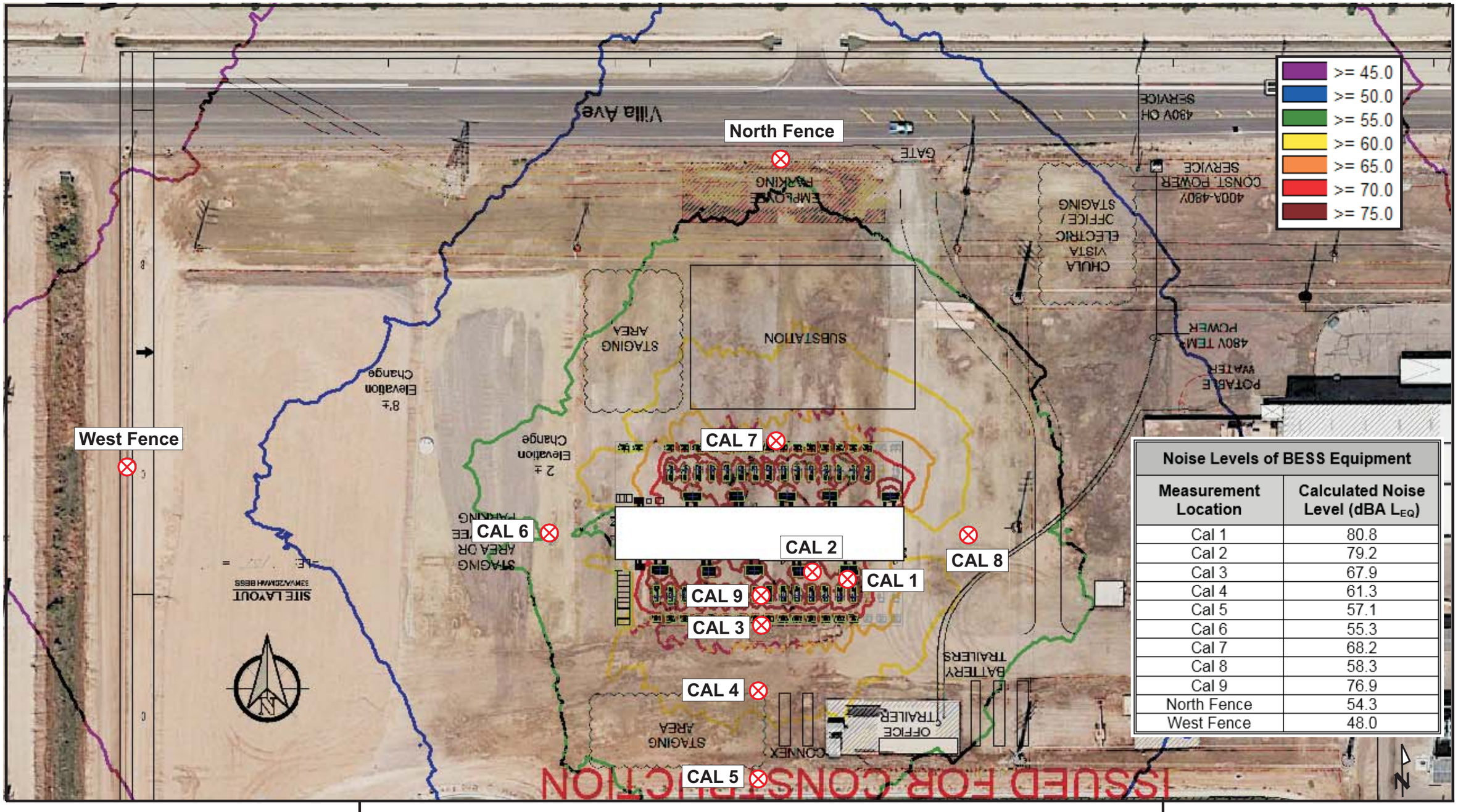


Noise Levels of HVAC Equipment	
Measurement Location	Calculated Noise Level (dBA L_{EQ})
Cal 1	79.8
Cal 2	78.7
Cal 3	59.7
Cal 4	53.5
Cal 5	49.5
Cal 6	47.4
Cal 7	57.4
Cal 8	55.1
Cal 9	70.8

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025
760-738-5570

Satellite Aerial Photograph Showing HVAC Noise Contours and Receiver Locations
Job # B60902N1

Figure 4



Noise Levels of BESS Equipment	
Measurement Location	Calculated Noise Level (dBA L_{EQ})
Cal 1	80.8
Cal 2	79.2
Cal 3	67.9
Cal 4	61.3
Cal 5	57.1
Cal 6	55.3
Cal 7	68.2
Cal 8	58.3
Cal 9	76.9
North Fence	54.3
West Fence	48.0

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025
760-738-5570

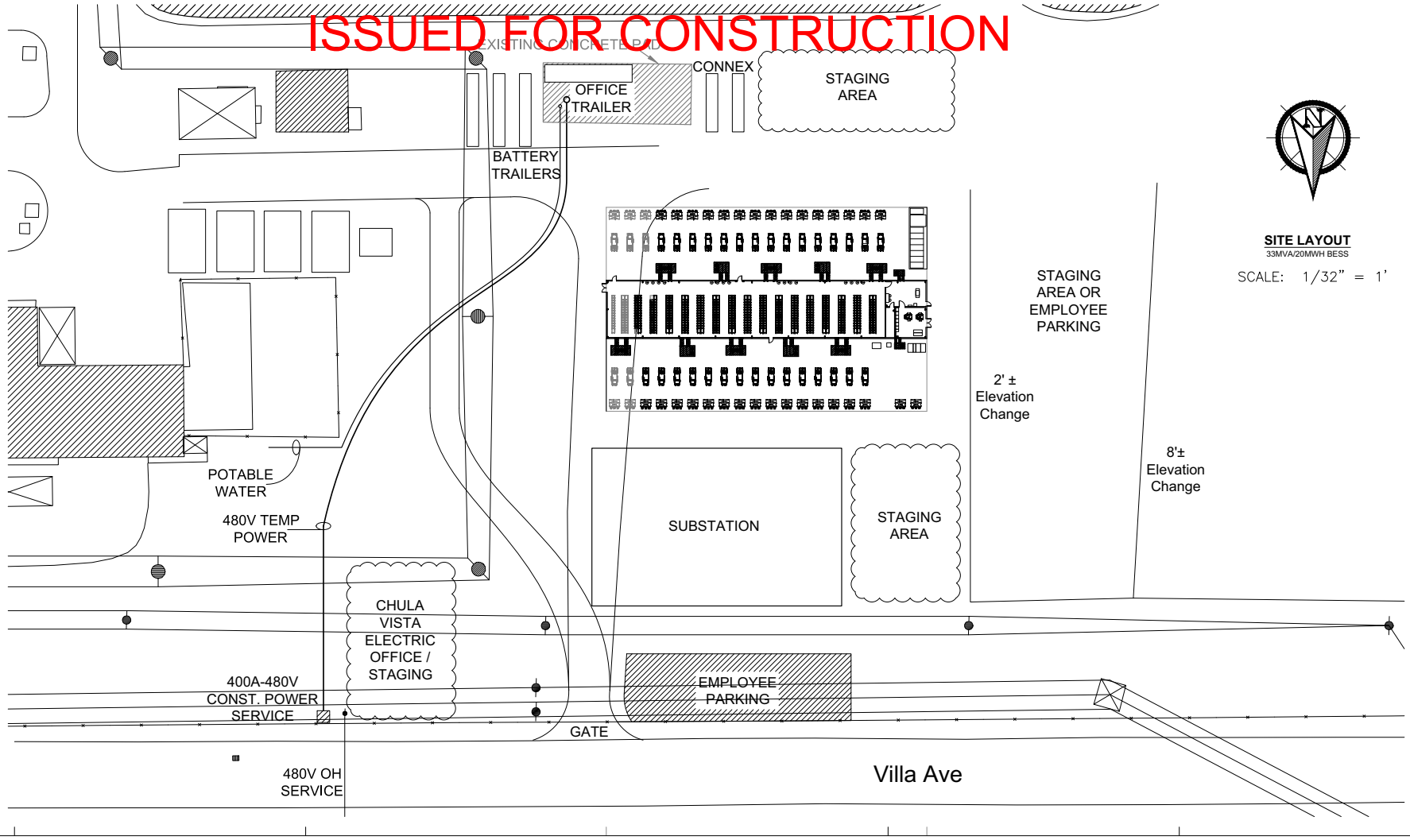
Satellite Aerial Photograph Showing BESS Equipment Noise Contours and Receiver Locations
Job # B60902N1

Figure 5

APPENDIX A

Project Plans

ISSUED FOR CONSTRUCTION



SITE LAYOUT
33MVA/20MWH BESS

SCALE: 1/32" = 1'

Tri-Technic, Inc.
Corporate Office: 185 S. Fairview Ln, Sonora, CA 95370
Construction Office: 441 Doak Blvd., Ripon, Ca. 95366
209-599-6000 www.tri-technic.com
TRI-TECHNIC
CONSTRUCTORS - ENGINEERS - CONSULTANTS

GE ENERGY STORAGE

ENGINEER'S STAMP 08/25/15

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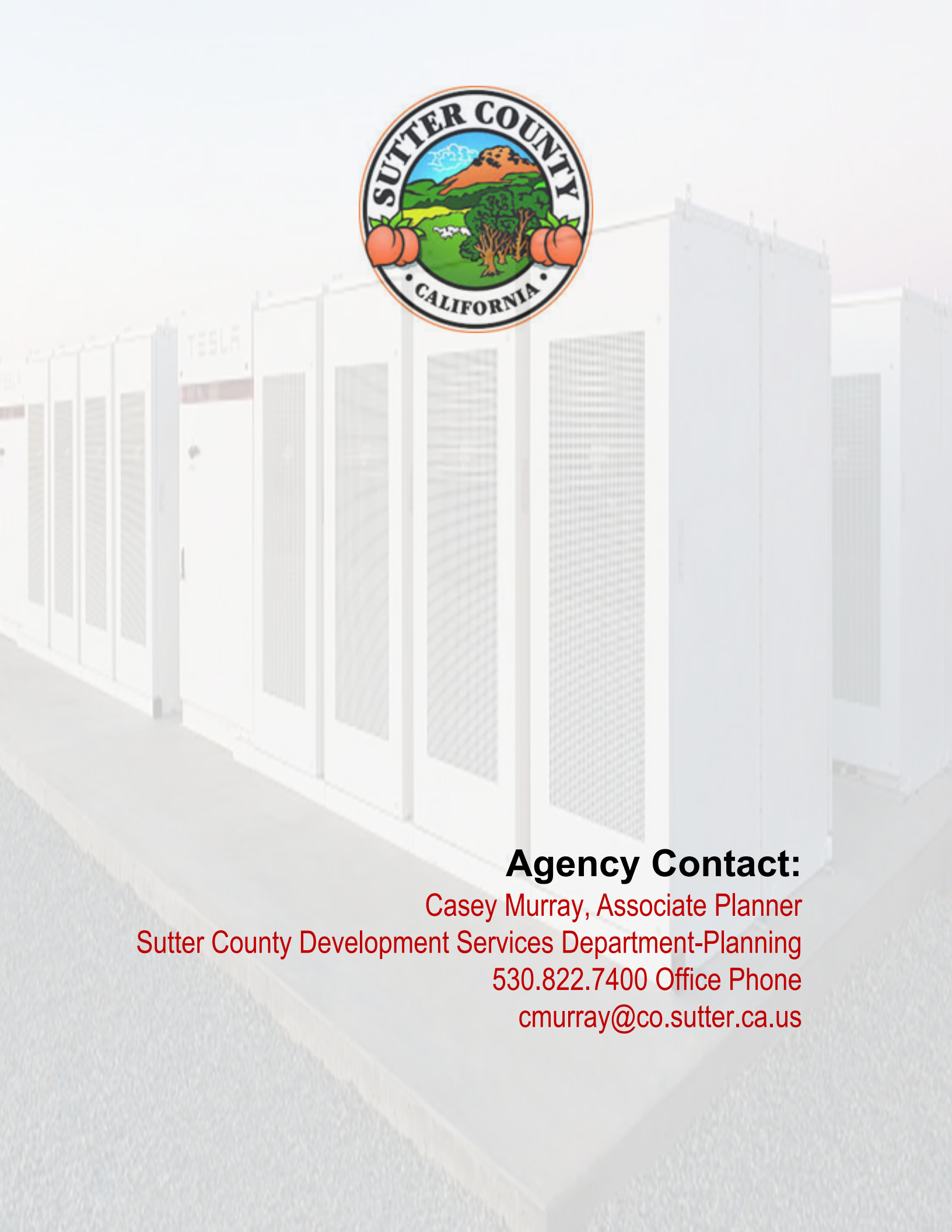
No.	DATE	DRAWN	DESIGN	APV'D	RVS'D	REVISION
0	4/15/15	...	...			ISSUED FOR CONSTRUCTION
REV-A	05/13/15	...	...			ROTATION _ UPDATED EQUIPMENT _ POSITION
REV-01	05/20/15	...	...			TITTLE _ DOC _ EQUIPMENT
REV-00	05/06/15	...	...			INITIAL ISSUE

COACHELLA ENERGY STORAGE PARTNERS

I. I. D. ENERGY
A Division of
IMPERIAL IRRIGATION DISTRICT

SITE LAYOUT
33MVA/20MWH_BESS

DRAWN BY: V.L.(TTI)	APPROVED BY: D.P.(GE)		SEC
DESIGNED BY: D.L.(TTI)	REVISED BY:		
SCALE: 1"=1'	DWG. No.	BESS-102	REVB



Agency Contact:

Casey Murray, Associate Planner
Sutter County Development Services Department-Planning
530.822.7400 Office Phone
cmurray@co.sutter.ca.us