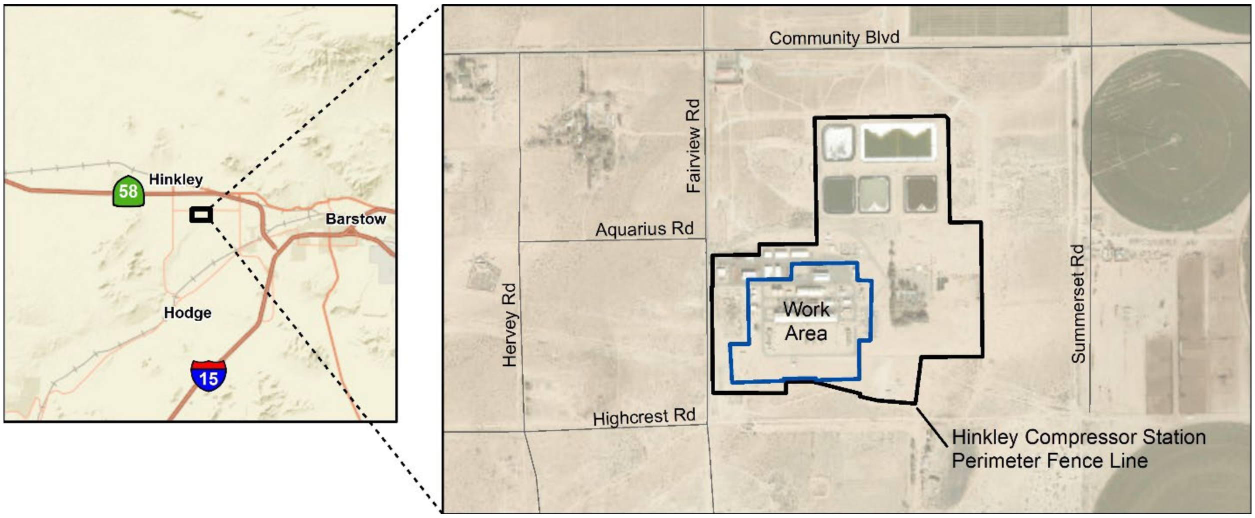
PACIFIC GAS AND ELECTRIC COMPANY

EXHIBIT B

Proponent’s Environmental Assessment

[PUBLIC VERSION]



Proponent's Environmental Assessment for Pacific Gas and Electric Company's S-238 Hinkley Compressor Station Electrical Upgrades Project

April 9, 2025

Pacific Gas and Electric Company's S-238 Hinkley Compressor Station Electrical Upgrades Project will upgrade and replace the station's electrical distribution equipment, which has reached the end of its useful life or requires changes for safety, reliability, or maintainability. As part of the proposed project, the station's existing electrical distribution switchgear, motor control centers (MCCs), and a load center will be replaced or modified and connecting conduit and cable will be installed between the switchgear and MCC locations.

Hinkley Compressor Station is located at 35863 Fairview Road in the community of Hinkley, California, in San Bernardino County.

Application A.25-04-___ to the California Public Utilities Commission

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Acronyms and Abbreviations

°F	degrees Fahrenheit
$\mu g/m^3$	microgram(s) per cubic meter
A	ampere(s)
AADT	annual average daily traffic
AB	Assembly Bill
ACEC	Areas of Critical Environmental Concern
ACI	American Concrete Institute
afy	acre-feet per year
APM	Applicant-proposed measure
AT&SF	Atchison, Topeka, and Santa Fe Railway
ATCM	airborne toxic control measure
Barstow WWTP	Barstow Wastewater Treatment Plant
BCE	before current era
BFPD	Barstow Fire Protection District
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BIG	Barstow International Gateway
BLM	U.S. Bureau of Land Management
BMP	best management practice
BUSD	Barstow Unified School District
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
cal	calibrated year(s)
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalOSHA	California Division of Occupational Safety and Health
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CCRD	PG&E’s Confidential Cultural Resources Database
CDFW	California Department of Fish and Wildlife

CE	current era
CEC	California Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CH_4	methane
CNDDB	California Natural Diversity Database
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CRS	cultural resources specialist
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A weighted decibel
DOC	California Department of Conservation
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
DWMA	Desert Wildlife Management Area
DWR	California Department of Water Resources
e-waste	electronic waste
ESJ	Environmental and Social Justice
EISA	Energy Independence and Security Act
EMFAC2021	motor vehicle emissions model
EOP	Emergency Operation Plan
EPA	U.S. Environmental Protection Agency
ESCP	erosion and sedimentation control plan
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act

FHSZ	fire hazard severity zone
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FP	fully protected (species)
FRA	Federal Responsibility Area
FTA	Federal Transit Administration
GC	Government Code
GHG	greenhouse gas
GLO	General Land Office
GO	General Order
GSWC	Golden State Water Company
GWP	global warming potential
HAP	hazardous air pollutant
HCP	habitat conservation plan
hp	horsepower
HMBP	Hazardous Materials Business Plan
HSAA	Hazardous Substance Account Act
HWCL	Hazardous Waste Control Law
I	Interstate
ICE	internal combustion engine
IPaC	Information for Planning and Consultation
kWh	kilowatt-hours
lbs	pound(s)
Ldn	day-night sound level
Leq	equivalent noise level
LOS	level of service
LRA	Local Responsibility Area
LRWQCB	Lahontan Regional Water Quality Control Board
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MCC	motor control center
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
mgd	million gallon(s) per day
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MLD	most likely descendant

MMscf	million standard cubic feet
MMT	million metric ton(s)
mph	miles per hour
MRDS	Mineral Resources Data System
MRZ	mineral resource zone
MT	metric ton(s)
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCP	National Contingency Plan
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NETR	National Environmental Title Research
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NO_2	nitrogen dioxide
NOx	nitrogen oxides
NOA	naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWCG	National Wildfire Coordinating Group
O_3	ozone
O&M	operation and maintenance
OSHA	Occupational Safety and Health Administration
PEA	Proponent's Environmental Assessment
PERP	Portable Engine Registration Program
PFYC	potential fossil yield classification
PG&E	Pacific Gas and Electric Company
$PM_{2.5}$	particulate matter less than 2.5 micrometers in aerodynamic diameter
PM_{10}	particulate matter less than 10 micrometers in aerodynamic diameter
Ppb	parts(s) per billion
ppm	part(s) per million
PRC	California Public Resources Code
project	Hinkley Compressor Station Electrical Upgrades Project
RACT	reasonably available control technology

RCRA	Resource Conservation and Recovery Act
ROG	reactive organic gas
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBCOG	San Bernardino Council of Governments
SBCFPD	San Bernardino County Fire Protection District
SBCRPD	San Bernardino County Regional Parks District
SBSD	San Bernardino County Sheriff's Department
SCADA	supervisory control and data acquisition
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SDS	Safety Data Sheet
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SHMA	Seismic Hazards Mapping Act
SIP	State Implementation Plan
SLF	Sacred Lands File
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SRA	State Responsibility Area
SSC	species of special concern
station	Hinkley Compressor Station
SWIS	CalRecycle's Solid Waste Information System
SWMD	San Bernardino County Solid Waste Management Division
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
UBC	Uniform Building Code
UFC	Uniform Fire Code
US	U.S. Highway
USA	Underground Service Alert
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation

USFWS	U.S. Fish and Wildlife Services
USGS	U.S. Geological Survey
V	volt(s)
VVTA	Victor Valley Transit Authority
WEAP	worker environmental awareness program
Williamson Act	California Land Conservation Act of 1965
WMP	wildfire management plan
WUI	wildland-urban interface
yd^3	cubic yard(s)

1. Executive Summary

In accordance with the California Public Utilities Commission (CPUC) General Order (GO) 177, this Proponent's Environmental Assessment (PEA) has been prepared by Pacific Gas and Electric Company (PG&E) to support the application for a Certificate of Public Convenience and Necessity (CPCN) for the S-238 Hinkley Compressor Station Electrical Upgrades Project (project).

1.1 Proposed Project Summary

The project will replace the electrical distribution system within PG&E's Hinkley Compressor Station to increase reliability, maintainability, and operational safety. Because of its age, the electrical distribution system is at increased risk of failure, which will impact operation of the station and movement of gas along one of PG&E's major gas transmission systems. Much of the electrical distribution equipment is obsolete, requiring specialized training, procedures, and personal protective equipment to maintain safe and reliable operation. Inspection and maintenance on an aging system is also complex and inefficient. The project upgrades will enable standard safety procedures and operation, inspection and maintenance efficiency, and cost savings.

1.2 Land Ownership and Right-of-Way Requirements

The project will occur on a parcel owned in fee by PG&E (refer to Figure 3.1-1). The project does not need any new or modified rights-of-way or easements.

A list of parcels within 300 feet of the project, including the Assessor's Parcel Number, mailing address, and the parcel's physical address, will be provided when the PEA is filed with the CPCN Application. Refer to Appendix 1.

1.3 Areas of Controversy

There are no known areas of controversy and no major issues that must be resolved related to the project.

1.4 Summary of Impacts

Project impacts are primarily construction related and the project has been planned and engineered to avoid or minimize the largely temporary environmental impacts. Based on the analysis presented in Chapter 5, Environmental Analysis, the project is not expected to result in significant and unavoidable impacts. Applicant-proposed measures (APMs) will be implemented to further minimize or avoid impacts on environmental resources, ensuring that any remaining impacts will be less than significant. These APMs are identified in the respective resource sections within Chapter 5 and are summarized in Chapter 3, Project Description, Table 3-8.

1.5 Summary of Alternatives

In CPUC GO 177, Section V.4 requires the CPCN application for gas infrastructure projects to include an analysis of alternatives, including non-pipeline alternatives, and a demonstration that no reasonable alternatives to the proposed project exist. GO 177 further states that the CPCN application will include reasons for adoption of the route or location selected, including comparison with alternative routes or locations, the advantages and disadvantages of each, the comparative availability of alternate routes or locations, and justification for the proposed route or location. If the proposed project is located within an

Environmental and Social Justice (ESJ) Community as defined in the most recent version of the CPUC's ESJ Action Plan, the discussion of alternatives will examine whether it is possible to relocate the project and, if so, steps taken to locate the project outside such areas.

Additional requirements for alternatives in GO 177 include the following:

- A listing of the governmental agencies with which proposed route reviews have been undertaken, including a written agency response to the applicant's written request for a brief position statement by each agency. In the absence of a written agency position statement, the utility may submit a statement of its understanding of the position of such agencies.
- The discussion of alternatives will include a cost analysis comparing the proposed project with any feasible alternatives, including non-pipeline alternatives, calculated over the lifetime of the project.,
- The discussion of alternatives will consider pollution burden in the project location and will discuss steps taken to minimize gas infrastructure density and ensure substantial economic benefits to residents.

Because the proposed project is maintenance of an existing compressor station and does not include new pipelines or changes to existing pipelines, non-pipeline alternatives and alternative pipeline routing are not applicable and were not considered. The compressor station is located in an ESJ Community; thus, ESJ concerns were considered in developing alternatives.

PG&E screened the potential alternatives based on three criteria: (1) does the alternative meet most basic project objectives, (2) is the alternative feasible, and (3) does the alternative avoid or substantially lessen any significant environmental effects of the proposed project (including consideration of whether the alternative itself could create significant environmental effects potentially greater than those of the proposed project). PG&E considered the No Project Alternative and three more alternatives. These alternatives are presented in Chapter 4 and reflect a different location, a different power source to the compressor station, and an alternative that does not require power (retire the compressor station). PG&E compared the alternatives with the project purpose, project objectives, feasibility criteria (consideration of schedule, economic, environmental, legal, social, and technological factors), and environmental criterion (reduction of potentially significant environmental impacts).

1.6 Pre-filing Consultation and Public Outreach Summary

Pre-filing consultation and public outreach has occurred with CPUC, public agencies with jurisdiction over the project area, and Native American tribes affiliated with the project area.

1.7 Conclusions

This PEA describes the project and its alternatives and evaluates potential environmental impacts that could result from construction or operation and maintenance of the project. APMs will be implemented to further minimize or avoid potential less-than-significant impacts on environmental resources.

1.8 Remaining Issues

There are no known major issues that remain to be resolved related to the project.

2. Introduction

2.1 Project Background

2.1.1 Purpose and Need

The purpose of the proposed project is to replace the electrical distribution system within PG&E's Hinkley Compressor Station (station) to increase reliability, maintainability, and operational safety. Because of its age, the electrical distribution system is at increased risk of failure, which will impact operation of the station and movement of gas along one of PG&E's major gas transmission systems. Much of the electrical distribution equipment is obsolete, requiring specialized training, procedures, and personal protective equipment to maintain safe and reliable operation. Inspection and maintenance on an aging system is also complex and inefficient. Additionally, the project upgrades will enable standard safety procedures and operation, inspection and maintenance efficiency, and cost savings.

2.1.1.1 Existing Station Operation and Its Operational Risks

Hinkley Compressor Station operates almost continuously to control the flow of natural gas through the station and into the gas transmission system in California. The station is one of eight PG&E gas compressor stations crucial to gas system operation to meet customer service demands. These stations use compression to increase the gas pressure causing gas to flow downstream through the pipelines to areas of lower pressure. As the pressurized gas flows through a pipeline, its flow rate also slows as it loses compression from friction within the pipeline, elevation changes, and as gas is delivered through interconnections with other utilities and local PG&E transmission lines.

Continuous operation of Hinkley Compressor Station is necessary to transport an adequate amount of gas to meet customer demand. The station receives natural gas from Topock Compressor Station, approximately 152 miles east and compresses the gas so it can move through the Tehachapi Mountains to Kettleman Compression Station approximately 200 miles northwest. Without Hinkley Compressor Station operation, gas must move approximately 352 miles from Topock Compressor Station to Kettleman Compressor Station without additional compression. It is not possible to transport the required amounts of gas given pressure limitations of the gas transmission pipeline.

The station is fueled by a portion of the natural gas flowing into the station. Natural gas is converted to electricity by generators to power the station. The electrical distribution switchgear is connected to the station's motor control centers (MCCs) and load center by electrical cable in conduits. The MCCs and load center manage electrical power to the station's equipment.

Operating the existing station with an aging electrical distribution system (switchgear, MCCs, load center, conduit, and cables) heightens the risk of station failure or station equipment failure. The probability of equipment failure increases as more time goes by without project implementation. With an aging system, replacement parts are often unavailable or have a long lead time. The station is increasingly likely to experience an extended outage that impacts service to PG&E's customers. At some unknown point in time, a component of the aging electrical distribution equipment system may fail and cause an extended outage that would impact PG&E's delivery of gas to its approximately 4.7 million customers. The upgrades to the compressor station are critical to maintain proper gas pressure to move gas through the station.

2.1.1.2 Project Need

This project is needed to upgrade the station's electrical distribution system, which will improve station reliability, upgrade to current safety standards, and modify existing or install replacement equipment to meet modern standards, thereby increasing reliability and worker safety. Station reliability is crucial to avoid unplanned station shutdowns and meet gas customer expectations. Based on existing conditions, the station currently must operate using specialized safety procedures and upgraded personal protective equipment to avoid potential harm to workers. The project will allow the station to use standard safety procedures and equipment, easing the burden on staff while saving money. Modifications to equipment planned for the project also will ensure that the station aligns with current PG&E and industry standards.

Modern equipment is also needed to enable variable and increased control of station operation. The existing motor controllers are direct online starters, including two-speed starters for cooling fans. The upgrades will modernize operation to allow greater operator control to adjust to operational needs and will reduce equipment wear.

The project will allow inspection and maintenance following routine procedures that can isolate equipment sections and not impact station operation. Typical inspection testing is not possible with existing equipment. The existing system does not have a means to connect a temporary power source to test individual pieces of equipment when disconnected from the permanent power source. The project will install redundant cables in the conduits to the MCCs to increase operational flexibility. Project upgrades will make typical inspection testing possible and improve inspection testing efficiency. The existing MCCs and load center are fixed in place and cannot be isolated and deenergized. Thus, when performing maintenance, workers must wear specialized personal protective equipment required when working on energized systems, deenergize the entire electric component or, in some cases, shut down the entire station. The project will upgrade the system to allow controls to avoid an unplanned cascading power loss from the switchgear through the downstream MCCs and load center.

In addition to safety and inspection considerations, several MCCs have reached the end of their useful life and have parts that are obsolete or difficult to replace. The electrical distribution switchgear also has reached the end of its useful life, and it has exposed bussing, structural issues, and increased arc flash hazards. The project will replace the switchgear with modern equipment that can be serviced with preventative maintenance and that does not have the existing safety issues and hazards.

2.1.1.3 Localities Served and the Local and Regional Utility System

Hinkley Compressor Station does not serve users directly; rather, the station is a component of PG&E's backbone gas transmission system (refer to Figure 3.2-1 and Figure 3.2-2). PG&E's gas transmission system is connected to gas distribution facilities that, in turn, serve PG&E customers. Additionally, PG&E's gas transmission system interconnects with other entities' systems that serve non-PG&E customers.

The PG&E service area stretches from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada Range in the east. PG&E provides natural gas and electric service to approximately 15 million people throughout a 70,000-square-mile service area in northern and central California. PG&E works every day to safely transport natural gas under pressure through approximately 6,400 miles of transmission pipelines, more than 44,000 miles of gas distribution pipelines, approximately 4.7 million customer meters, more than 4,400 transmission and distribution regulator stations and regulator sets, nine compressor stations, and three gas storage facilities. PG&E provides approximately 970 billion cubic feet of gas annually, or approximately 2.6 billion cubic feet per day.

The project is located entirely within Hinkley Compressor Station and will only modify the existing electrical distribution system that distributes and controls power within the station.

The station's operation does not include gas storage, nor will the project modify the gas storage capacity elsewhere on PG&E's gas system. In addition, the project will not modify existing gas transmission pipelines connected to the station. No changes in pipe, operating pressure, or other related gas system operational aspects are included in the project.

2.1.2 Project Objectives

The objectives of the project are as follows:

- Modernize the station's electrical distribution system to replace obsolete equipment and to align with current PG&E and industry standards.
- Enable the use of efficient, standardized training and operational and safety procedures.
- Reduce risk of unplanned station failure or shutdown by 2028 or as soon as feasible.
- Maintain station operations during construction.

By upgrading the station's electrical equipment with modern equipment, current operational reliability issues and safety issues will be alleviated. After being upgraded, the new infrastructure will be far less vulnerable to failures resulting in unplanned maintenance events and potential impacts to station operation and downstream gas users. The potential for station shutdown caused by equipment maintenance will be alleviated with modern equipment sections that can be readily controlled and isolated for inspection or maintenance without impacting equipment or station operation. It is necessary to have reliable station operation to meet the expectations of PG&E gas customers.

Existing maintenance practices will be reduced to focus on preventative maintenance based on routine inspections. Routine inspections and scheduled maintenance are preferable to the existing focus on maintenance that is reactive to operational issues, often complex, inefficient, and can require equipment or station shutdown to safely perform maintenance and repairs.

The existing safety issues will be resolved by installing or modifying equipment that allows workers to manually control or to isolate equipment components from energized components to perform maintenance safely. Modern design enhances safety and allows workers to follow standard procedures and use standard personal protective equipment.

2.1.3 Project Applicant

PG&E is the applicant for the proposed project. Refer to Section 2.1.1.3 for a discussion of PG&E's utility services and its service territory.

2.2 Pre-filing Consultation and Public Outreach

This section describes pre-filing consultation and public outreach that have occurred for this project. Pre-filing consultation and public outreach have occurred with the California Public Utilities Commission (CPUC), public agencies with jurisdiction over the project area, and Native American tribes affiliated with the project area.

2.2.1 Public Agencies and Other Entities with Jurisdiction over Project Areas or Resources that May Occur in the Project Area

PG&E coordinated or will coordinate with public agencies or other entities with jurisdiction over project areas or resources that may occur in the project area during the development of the project application.

Coordination discussions included a project overview, purpose and need, the typical permitting steps and timeline, and a request for early input on the project.

2.2.1.1 California Department of Fish and Wildlife

PG&E briefed California Department of Fish and Wildlife (CDFW) staff members in March 2024 on the project and discussed modified protocol surveys. In April 2024, PG&E requested approval of modified protocol-level surveys for desert tortoise, Mohave ground squirrel, and burrowing owl from CDFW staff. PG&E provided notification of its intent to have permitted biologists conduct the surveys. CDFW staff agreed with the approach for the project in April 2024. PG&E communicated the findings to CDFW after surveys were conducted in spring and summer of 2024.

2.2.1.2 California Public Utilities Commission

PG&E included the project in its quarterly presentations to the CPUC as part of its effort to present projects that were expected to be licensed under General Order (GO) 177. PG&E's annual report of gas investments to CPUC dated June 27, 2023, described the project in Attachment A to the report. In January 2024, PG&E provided an overview of the project during an online meeting with the CPUC project manager and an initial project filing schedule was discussed. In June 2024, during an online meeting, PG&E provided an updated project schedule and discussed pre-filing coordination with a new CPUC project manager.

2.2.1.3 Mojave Desert Air Quality Management District

PG&E communicated with the Mojave Desert Air Quality Management District (MDAQMD) regarding the planned use of portable temporary generators to replace the electrical output of the station's permanent generators during portions of the project. Based on the projected use of the portable temporary generators registered under the California Air Resources Board (CARB) Portable Engine Registration Program (PERP), MDAQMD concluded that these generators are exempt from MDAQMD stationary source permitting. On August 19, 2024, MDAQMD approved the use of the portable temporary generators under Section 2453(m)(4)(E)(2) of the CARB PERP regulation and confirmed that MDAQMD permits are not required (MDAQMD 2024b).

2.2.1.4 San Bernardino County

PG&E briefed San Bernardino County staff members in the Community Development Department in September 2024 on the project and requested information on project compatibility with existing and planned land uses, zoning, and projects. The discussion focused on project components and coordination with the County as the project progresses. No conflicts or concerns were communicated to PG&E regarding the proposed project.

2.2.1.5 United States Fish and Wildlife Service

PG&E briefed United States Fish and Wildlife Service (USFWS) staff members in March 2024 on the project and discussed modified protocol surveys. In April 2024, PG&E requested approval of modified protocol-level surveys for desert tortoise from USFWS staff. PG&E provided notification of its intent to have permitted biologists conduct the surveys. USFWS staff agreed with the approach for the project in April 2024. PG&E communicated the findings to USFWS after surveys were conducted in summer of 2024.

2.2.2 Native American Tribes Affiliated with the Project Area

The Native American Heritage Commission (NAHC) was contacted requesting a Sacred Lands File (SLF) search of the project area. The NAHC's response, dated May 13, 2024, stated that no Native American cultural sites are documented within the area of potential impact. The NAHC also provided a list of 14 individual Native American contacts who may have knowledge about archaeological and tribal cultural resources in the area. Initial outreach letters were sent to the contacts listed by the NAHC on August 6, 2024. This letter included information about the proposed project, cultural resource findings to date, and a map showing the project location. The letter also invited comments or questions relating to the project. Hard copies were sent to the addresses provided by the NAHC, along with electronic copies sent via email.

On September 2, 2024, the Twenty-Nine Palms Band of Mission Indians replied to PG&E's outreach letter. The Tribe stated that, based on the presence of a small surface scatter, there was a possibility of cultural resources being discovered below ground and requested a copy of the cultural resources report and the Phase II investigation. The Tribe additionally requested that PG&E reach out to other tribes with cultural affiliation with the project area. On September 3, 2024, PG&E replied that there is no precontact surface scatter previously recorded within the project area and requested clarification from the Tribe to determine if the Tribe has knowledge of a cultural resource not previously recorded within the project area. No response was received and on October 1, 2024, PG&E sent another email to the Twenty-Nine Palms Band to request information about the artifact scatter. PG&E also sent an email to additional contacts within the Twenty-Nine Palms Band on October 2, 2024. To date, no additional response has been received from the Twenty-Nine Palms Band. On October 3, 2024, the Fort Yuma Quechan Indian Tribe sent an email stating that they do not wish to comment on the project. To date, no other responses have been received from the tribal outreach letters sent on August 6, 2024.

The correspondence timeline is summarized in Table 5.18-1. Consultation under Assembly Bill (AB) 52 will be conducted, with CPUC serving as the lead state agency.

2.2.3 Private Landowners

Private landowners within 300 feet of the station's parcel will be notified of the filing of the Certificate of Public Convenience and Necessity (CPCN) application as required by GO 177. A copy of the addresses to be notified is provided as Appendix 1 (when this Proponent's Environmental Assessment [PEA] is filed with the CPCN application).

2.2.4 Other Utility Owners and Operators

PG&E will contact local communications utility providers with existing utilities within the station who may be impacted by construction. The contact will include the timing of construction and the work near the existing communications utility facilities within the PG&E station.

2.2.5 Federal, State, and Local Fire Management Agencies

PG&E has not communicated with federal, state, or local fire management agencies regarding the project. Communication with fire management agencies is not needed given that the project will occur entirely within a developed station that is not within or near a high fire risk area. The station is surrounded by agricultural fields, areas of sparse desert vegetation, and very low housing density. Additionally, PG&E will follow its Utility Standard for *Preventing and Mitigating Fires While Performing PG&E Work* that provides construction fire prevention and response procedures in compliance with California Public Resources Code (PRC) Sections 4427, 4428, and 4431.

2.2.6 Significant Outcomes

No areas of controversy or major issues related to the project have been communicated to PG&E by representatives from CDFW, MDAQMD, San Bernardino County, USFWS, or others contacted as described in Section 2.2. No significant outcomes of consultation were identified to be incorporated into the project. Alternatives described in Chapter 4 reflect the project alternatives as originally described in Attachment A in PG&E's annual report of gas investments to CPUC dated June 27, 2023 (PG&E 2023).

2.2.7 Development that Could Coincide or Conflict with Project Activities

PG&E is not aware of any developments that could coincide or conflict with project activities. No outreach to developers of large housing or commercial projects occurred as no proposed or ongoing developments of this type were identified within, adjacent to, or near the project site.

2.2.8 Records of Consultation and Public Outreach

Project contact information and project information will be posted on the PG&E Hinkley Compressor Station webpage after PG&E files its application for a CPCN with the CPUC: https://www.pge.com/en/about/corporate-responsibility-and-sustainability/taking-responsibility/compressor-stations.html#tabs-8051d7f7b0-item-4bd0fdc326-tab.

2.3 Environmental Review Process

The project will be subject to environmental review under the California Environmental Quality Act (CEQA).

2.3.1 Environmental Review Process

The CPUC will conduct its environmental evaluation in accordance with CEQA. The state environmental review process schedule is anticipated to begin in 2025 after the project application is filed by PG&E.

2.3.2 CEQA Review

CEQA requires state and local government agencies to inform decision makers and the public about the potential environmental impacts of proposed projects and to reduce those environmental impacts to the greatest extent feasible. The laws and rules governing the CEQA process are contained in the CEQA statute (PRC Section 21000 et seq.), the CEQA Guidelines (California Code of Regulations [CCR], Title 14, Section 15000 et seq.), and published court decisions interpreting CEQA.

2.3.2.1 CPUC as CEQA Lead Agency

Pursuant to GO 177, PG&E is applying to the CPUC for a CPCN authorizing PG&E to construct the project. Also pursuant to GO 177, to issue a CPCN, the CPUC must find that the project complies with CEQA. The CPUC will be the lead agency under CEQA for the project because it has the greatest responsibility for supervising or approving the whole project (14 CCR 15051(b)).

2.3.2.2 Other State and Federal Agencies that May Have Discretionary Permitting Authority

No other state or federal agencies are known to have discretionary permitting authority over aspects of the project.

2.3.2.3 Federal, State, and Local Agencies Not Expected to Have Discretionary Permitting Authority

No ministerial permitting authority over the project is expected.

2.3.2.4 Results of Preliminary Outreach with Agencies

PG&E has not been made aware of any unexpected issues that would affect the CEQA process resulting from the preliminary outreach with agencies described in Section 2.2.1 or in review of posted ministerial permitting processes on agency websites.

2.3.3 NEPA Review (not applicable)

No portions of the project are on federal lands and the project is not known to potentially result in impacts to federal jurisdictional waters or wetlands or federally listed threatened or endangered species that would require discretionary approvals subject to review under the National Environmental Policy Act (NEPA).

2.3.4 Pre-filing CEQA and NEPA Coordination

Pre-filing coordination with the CEQA review agency, the CPUC, is described in Section 2.2.

2.4 Document Organization

2.4.1 PEA Organization

This PG&E PEA document contains the following chapters as set forth in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*, dated November 2019, Revision 1.0.

2.4.1.1 Chapter 1, Executive Summary

This chapter includes a summary of the project, a discussion of the land ownership and right-of-way (ROW) requirements, a presentation of the areas of controversy identified to date, a summary of potential impacts, a summary of alternatives to the project, a summary of the pre-filing consultation and public outreach performed to date, a summary of the major PEA conclusions, and a listing of remaining major issues that remain to be resolved.

2.4.1.2 Chapter 2, Introduction

This chapter includes a presentation of the purpose and need for, and objectives of, the project. It identifies the applicant and the participating utility, details the pre-filing consultation and public outreach activities conducted to date, outlines the environmental review process, and establishes the organization of the PEA document.

2.4.1.3 Chapter 3, Project Description

This chapter includes an overview of the project; a description of the existing and proposed system; a presentation of the project components; information related to land ownership, ROW, and easements; a description of the construction methodologies to be employed; data regarding the construction workforce, equipment, traffic, and schedule; information on postconstruction activities; a discussion of operation and maintenance-related work; decommissioning-related information; a listing of anticipated permits and approvals; and a table presenting applicant-proposed measures (APMs).

2.4.1.4 Chapter 4, Description of Alternatives

This chapter identifies and describes alternatives to the project, including a discussion of the No Project Alternative. It also lists alternatives identified and considered but rejected.

2.4.1.5 Chapter 5, Environmental Analysis

This chapter includes a description of the environmental setting, regulatory setting, and impact analysis for each resource area. The resource areas addressed include each environmental factor (resource area) identified in the most recent adopted version of the CEQA Guidelines Appendix G checklist and any additional relevant resource areas and impact questions that are defined in the CPUC's PEA checklist.

2.4.1.6 Chapter 6, Comparison of Alternatives

This chapter compares each alternative described in Chapter 4 to be carried forward for PEA evaluation against the project in terms of each alternative's ability to avoid or reduce a potentially significant impact. It also provides a detailed table that summarizes the applicant's comparison results and ranks the alternatives in order of environmental superiority.

2.4.1.7 Chapter 7, Cumulative Impacts and Other CEQA Considerations

This chapter provides a detailed table listing past, present, and reasonably foreseeable future projects within and surrounding the project (within an approximately 2-mile buffer); presents a cumulative impact analysis; and provides an evaluation of potential growth-inducing impacts.

2.4.1.8 Chapter 8, List of Preparers

This chapter lists the major authors and preparers of this PEA.

2.4.1.9 Chapter 9, References

This chapter includes a list of references cited in this PEA.

2.4.1.10 Required PEA Appendices and Supporting Materials

PG&E is submitting with this PEA the "Required PEA Appendices and Supporting Materials" listed in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*, dated November 2019, Revision 1.0, that are applicable and necessary to support the environmental impact analyses contained in Chapters 5 and 6. An index to CPUC PEA Guidelines Requirements is provided in Appendix 2 (when the PEA is filed with the CPCN application).

3. Proposed Project Description

3.1 Project Overview

PG&E’s S-238 Hinkley Compressor Station Electrical Upgrades Project (project) will upgrade and replace the station’s electrical distribution equipment, which has reached the end of its useful life or requires change for safety, reliability, or maintainability. As part of the proposed project, the station’s existing electrical power switchgear, MCCs, and a load center will be replaced or modified and connecting conduit and new or replacement cable will be installed between the switchgear and MCC locations. PG&E’s existing gas transmission system, including pipe, valves, or other gas measurement assets, will not be modified beyond upgrading the station’s electrical distribution equipment.

Temporary generators, fueled by natural gas at the station, will be brought to the project work area to power the station during construction when electric equipment connecting with the permanent generators is deenergized during specific construction activities. After the upgrade is complete, all temporary generator equipment will be removed.

Hinkley Compressor Station is a staffed facility located at 35863 Fairview Road in the community of Hinkley, California, in San Bernardino County. The main station entrance on Fairview Road is approximately 1 mile south of State Route (SR) 58 (refer to Figure 3.1-1). The station is approximately 1 mile west of the city limits for the City of Barstow. The fenced station occupies approximately 64 acres on an approximately 160-acre parcel adjacent to Community Boulevard at Fairview Road.

3.2 Existing and Proposed System

PG&E’s existing gas transmission system will not be modified other than the electrical distribution equipment upgrade within Hinkley Compressor Station.

3.2.1 Existing System

Hinkley Compressor Station is a major compressor station on PG&E’s “backbone” gas transmission system, which transports natural gas to millions of customers in California with interconnections to other utilities (refer to Figure 3.2-1). The station has operated since 1951. Hinkley Compressor Station receives natural gas from Topock Compressor Station, approximately 152 miles east at the state border between California and Arizona. The station compresses gas from Topock Compressor Station to transport it through the Tehachapi Mountains to Kettleman Compression Station approximately 200 miles northwest. Gas flow through the station is controlled by starting and stopping compressor units as required to maintain a given suction or discharge pressure or to achieve a specified flow rate. The station operates 24 hours per day, and station status information is received at PG&E’s gas control via a supervisory control and data acquisition (SCADA) system. The compressor station is part of the compression and processing asset family of PG&E’s natural gas transmission system (refer to Figure 3.2-2). Within the compressor station, electrical power is generated by four natural gas generators to operate electrical distribution switchgear, load centers, and MCCs that monitor and control station equipment such as motors, pumps, and fans.

The project will upgrade the existing electrical distribution system (existing system) connecting and controlling the flow of electrical power between the station’s equipment. The existing system is operated by switchgear that will be replaced as part of the project. Switchgear has switching devices that turn the power on or off to protect, control, maintain, and isolate the system’s electrical equipment, including the switchgear itself. For example, switchgear is used to deenergize equipment downstream of the switchgear to allow work to be performed or to clear electrical faults downstream.

Electrical switchgear includes circuit breakers, fuses, and other devices to provide circuit protection. Circuit protection is designed to protect the electrical system, equipment attached to the electrical system, and people if an electrical fault, overload, or surge occurs. Electrical circuits have a maximum voltage or amperage. If that maximum amount is exceeded, the electrical cable can overheat and the cable insulation can melt and catch fire. A fault is when the electrical current does not stay within the cable. A fault may occur when the cable insulation fails or the cable is otherwise physically impacted, and the electrical current flows to the ground instead of continuing in the cable to its intended destination. Circuit breakers limit damage to an electrical system and the environment by interrupting power flow during an electrical fault. A circuit breaker will automatically disconnect the flow of electrical current in a circuit where there is a fault. A circuit breaker's function is to sense the anomaly of an electrical fault and "trip" to interrupt the power flow and minimize damage. A circuit breaker can be reset when the issue is resolved. A fuse minimizes damage by interrupting the flow of the electrical current by intentionally breaking itself. A fuse has a thin metal filament that melts and breaks at a certain voltage or amperage, thus stopping the flow of the electrical current and protecting the downstream system.

The electrical switchgear is connected to MCCs or load centers in the station by electrical cable within conduit. Electrical conduit typically is a metal or plastic tube that protects and routes electrical cable. The conduit may: (1) be aboveground attached to a building or suspended on a bridge structure, (2) placed in a concrete trench (similar to a gutter) at ground level, or (3) installed underground by excavating a trench and then backfilling around the conduit. Cable within electrical conduit connects the station's electrical switchgear with eight MCCs or load center equipment that are part of the project's existing system.

The MCCs connect and control the flow of electricity to station equipment such as fans, pumps, and auxiliary loads associated with cooling towers, water softener, jacket water cooler, and other equipment operating within the station. An MCC is a physical grouping of protection and control equipment for downstream electrical motors. A typical MCC includes motor controllers, circuit breakers, panelboards, and transformers. A motor controller regulates the operation of the downstream electrical motors. Some existing motor controllers are programmable to start, stop, or adjust motor operation in variable conditions. Some MCCs include additional communication controls between the MCC and downstream equipment to manage and adjust the equipment operation and power flow. An electrical panelboard distributes the power, and a transformer steps down the 480 volts (V) from the electric distribution switchgear to 120 V or 240 V at the MCC or load center for local loads such as receptacles or electronics.

The load center (Auxiliary Load Center No. 1) is a combination of grouped and individually enclosed motor controllers, circuit breakers, and transformers connected to a common bus. The load center's bus receives its power from the station's electrical switchgear and distributes it to a collection of station equipment. Auxiliary Load Center No. 1 provides power to lube oil pumps and compressor building cranes.

3.2.2 Proposed Project System

PG&E's existing gas transmission system will not be modified other than the station's electrical distribution equipment upgrade. The station's aging electrical equipment (switchgear, MCCs, and load center) will be removed and replacement equipment (switchgear and MCCs) will be installed. Some MCCs will be modified instead of being replaced. New and replacement equipment will either be connected to existing conduit or cable, or new conduit and cable will be installed as part of the project. Existing electrical distribution equipment, conduit, and cable between the switchgear, MCCs, and load center is expected to be removed, disconnected, or retired in place.

No other gas system features will be added, modified, removed, disconnected, or retired in place. The project will not change existing gas transmission capacities or modify station operation function other than increasing safety and reliability associated with the electrical distribution system. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served (refer to Figure 3.2-1 and Figure 3.2-2).

3.2.3 System Reliability

There will be no gas pipeline second system tie or loop for reliability. The electrical distribution equipment upgrades within the station will address aging infrastructure, safety issues, system reliability, and maintainability. The proposed project will improve the station's reliability, eliminate existing safety issues, and update the equipment while complying with relevant standards. The station's upgraded reliability will improve gas transmission system reliability by avoiding unplanned station shutdowns that may be caused by the aging electrical distribution equipment.

3.2.4 Planning Area

Hinkley Compressor Station does not serve users directly; rather, the station is a component of PG&E's backbone gas transmission system within the system area where PG&E and other entities operate in California (refer to Figure 3.2-1 and Figure 3.2-2). PG&E's gas transmission system is connected to other entities and gas distribution facilities that, in turn, serve customers. PG&E's gas service territory serves approximately 4.5 million customer accounts within more than 70,000 square miles stretching from approximately Bakersfield, California, in the south to Eureka, California, in the north and from the Pacific Ocean in the west to the Sierra Nevada mountains in the east. Additionally, PG&E has gas transmission system interconnections with other entities' systems that serve non-PG&E customers.

3.3 Project Components

3.3.1 Preliminary Design and Engineering

The design includes replacement of electric switchgear, modification or replacement of MCCs and a load center, installation of new conduit, and installation of new cable (refer to Figure 3.3-1). No project work will occur on any gas transmission or distribution equipment or components connected to the station's facilities. The temporary generators used during construction will be fueled by natural gas available to the station.

3.3.2 Segments, Components, and Phases

The project consists of the station electrical upgrade components and has a single project development phase.

3.3.3 Existing Facilities

The project will upgrade existing station electrical equipment. Except for one load center being replaced with an MCC, all other equipment upgrades are expected to be in kind with a similar size, footprint, and appearance. No structural work will occur to the station buildings. The project's concrete design is consistent with the 2019 California Building Code (CBC) and American Concrete Institute (ACI) standards for reinforced concrete, hot weather concrete, and cold weather concrete and follows the site-specific soil and seismic design recommendations from a geotechnical report developed for a previous station project. No lighting upgrades are planned as part of the project. Proposed facilities upgrades are shown on Figure 3.3-1.

The switchgear will be replaced in the station's Auxiliary Building. The replacement switchgear will be installed in a new climate-controlled room within the building. The room will be constructed with dry wall applied to steel framing and include an interior door and windows. The existing switchgear metal cabinets and its duct work located at the top of the existing switchgear cabinets will be completely removed to make room for its replacement and the new switchgear room. Existing electric cable between the Auxiliary Building and the Old Auxiliary Building will be pulled from an existing aboveground cable run (the top electrical run on Figure 3.3-1) and new cable will be pulled into place. The new cable is expected to be 480-V, 600-ampere (A), 3-phase, 65 kilo-ampere interrupting capacity stranded copper with a minimum conductor size of 12 American Wire Gauge. Within the Old Auxiliary Building, existing conduit and electrical equipment made redundant by the replacement switchgear in the Auxiliary Building will be completely removed because it will no longer have a functional purpose. Replacement conduit and cable will be installed between connections with the Old Auxiliary Building, MCC-4, and the Water Jacket MCC Building (with MCC-7 and MCC-8). Replacement conduit connecting through Old Auxiliary Building walls may use existing or new wall penetrations. Existing conduit and cable will be removed or retired in place. The existing metal cabinet within MCC-4 will be replaced in kind within the Old Auxiliary Building. MCC-5, MCC-7, and MCC-8 are in existing buildings and will be modified within their respective buildings. Refer to Figure 3.3-2 for a view of the existing switchgear in the Auxiliary Building and views of two existing outdoor MCCs in the station yard.

MCC-2, MCC-3, and MCC-6 are outdoors in metal cabinets that are approximately 8 to 8.5 feet tall. The metal cabinet and associated concrete foundation will be removed before being replaced with a new concrete foundation and replacement MCC. The replacement outdoor MCCs are custom designed to fit the existing footprint of each outdoor MCC being replaced and will be approximately 10.5 feet tall. The replacement unit will be within a temperature-controlled enclosure with an off-white exterior finish. Refer to Figure 3.3-3 for a typical view of outdoor replacement MCCs. The replacement foundations will be set in place and replacement MCC cabinets will be placed on the new foundations. MCC-9 will be a new MCC that will replace the Auxiliary Load Center No. 1 equipment. MCC-9 installation will include a foundation and an outdoor metal cabinet with a similar size and appearance to the other MCCs replaced outdoors. Auxiliary Load Center No. 1 will no longer serve a purpose after it is replaced and may be retired in place or removed completely. For the impact analysis, this PEA assumes that Auxiliary Load Center No. 1 is removed completely.

The north, west, and east electrical runs are existing aboveground conduit bridges, at grade concrete conduit channel, or underground conduits. In the existing facility, multiple conduits typically are in the same channel, trench, or on the same bridge. These runs of existing conduit between the Auxiliary Building, the Old Auxiliary Building, MCC-2, MCC-3, MCC-4, and MCC-5 will be used for most of the replacement cable installed as part of the project. In approximately four locations, replacement conduit will be installed underground by trenching up to approximately 5 feet deep. The length of ground disturbance for the replacement underground conduit is estimated to be approximately 200 feet. One or more cable lengths will be installed in the replacement underground conduits between the existing west electrical run to MCC-5 and to MCC-6, between the western end of the Old Auxiliary Building and MCC-7 and MCC-8, and between the existing north electrical run and MCC-9. Underground conduit is expected to be polyvinyl chloride-coated rigid galvanized steel. Where new underground conduit is installed, the existing conduits to MCC-5, MCC-6, MCC-7, MCC-8, and Auxiliary Load Center No. 1 are expected to be retired in place because they will serve no functional purpose.

The replacement cable will be pulled into place between equipment using pull boxes or other access points associated with the existing conduit or replacement underground conduit. Four lengths of cable will be installed in each reused and replacement conduit. The length of cable installed in a conduit generally is longer than the conduit length. Cable lengths are not pulled taut in a conduit. Conduit lengths mapped on Figure 3.3-1 are conduit banks where several single-conduit runs are colocated in a conduit bank. Conduit banks included in the project have dozens of runs colocated in each conduit bank. The total length of replacement cable is estimated conservatively to be approximately 400,000 feet. Existing cable will have no functional purpose after being replaced with new cable and will be retired in place or removed where feasible, such as being pulled out at pull boxes.

Table 3-1 lists the existing station equipment that is expected to be upgraded during the proposed project. Refer to Figure 3.3-1 for an aerial view of the electrical equipment location and whether it will be located underground.

Table 3-1. Existing Station Equipment Expected to be Modified, Replaced, or Installed

Equipment	Location	Project Activity
Switchgear	Auxiliary Building	Replace existing switchgear in new climate-controlled switchgear room in existing building.
Top Run Electrical	Between Auxiliary Building and Old Auxiliary Building	Pull new cable through existing conduit.
North Run Electrical	Northern station area	Pull new cable through existing conduit.
Old Auxiliary Electrical	Old Auxiliary Building	Remove existing conduit and obsolete electrical system equipment. Install new cable and conduit within building and through existing or new wall penetrations.
East Run Electrical	Eastern station area	Pull new cable through existing conduit.
MCC-2	Cooling Tower A	Replace existing MCC and its foundation.
MCC-2 Cable	Existing Conduit	Pull replacement cable through existing conduit.
West Run Electrical	Western station area	Pull new cable through existing conduit.
MCC-3	Cooling Tower B	Replace existing MCC and its foundation.
MCC-3 Cable	Existing Conduit	Pull replacement cable through existing conduit.
MCC-4	Old Auxiliary Building	Replace existing MCC.
MCC-4 Conduit and Cable	Old Auxiliary Building	Replace existing conduit and cable in building.
MCC-5	Air Compressor/Pump Building	Modify existing MCC.
MCC-5 Conduit and Cable	Connecting Air Compressor/Pump Building with MCC-5	Install new underground conduit. Pull new cable through new conduit.
MCC-6	Cooling Tower D	Replace existing MCC and its foundation.
MCC-6 Conduit and Cable	Connecting to MCC-6	Install new underground conduit. Pull new cable through new conduit.
MCC-7	Water Jacket MCC Building	Modify existing MCC.
MCC-8	Water Jacket MCC Building	Modify existing MCC.
MCC-7 and MCC-8 Conduit and Cable	Connecting Water Jacket MCC with MCC-7 and MCC-8	Install new underground conduit. Pull new cable through new conduit.
MCC-9	North of Auxiliary Load Center No. 1	Install new MCC with foundation.
MCC-9 Conduit and Cable	Connecting to MCC-9	Install new underground conduit. Pull new cable through new conduit.

Equipment	Location	Project Activity
Auxiliary Load Center No.1	Auxiliary Load Center No. 1	Retire in place or remove.

3.3.4 Proposed Facilities

There are no new facilities as part of the proposed project. Refer to Section 3.3.3 for proposed project modifications to the existing facility.

3.3.5 Other Potentially Required Facilities

No other facilities will be required to complete the project. Temporary or permanent relocation, modification, or replacement of unconnected utilities or other infrastructure are not needed. The project will not require aviation lighting or marking. Additional civil engineering requirements to address site conditions or slope stabilization issues, such as pads and retaining walls, are not needed.

3.3.6 Future Expansions and Equipment Lifespans

There are no reasonably foreseeable plans to expand or future phase development of the compressor station. The electrical equipment being upgraded typically has a 10-year lifespan. The proposed project does not add pipeline capacity or create future ability to increase gas compressor station capacity.

3.4 Land Ownership, Rights-of-Way, and Easements

3.4.1 Land Ownership

The existing compressor station is located on a portion of an approximately 160-acre property (Assessor Parcel Number 048811252) owned in fee by PG&E. No additional property will be acquired for the project.

3.4.2 Existing Rights-of-Way or Easements

The project will occur on a parcel owned in fee by PG&E. The project is not located in an existing ROW or easement.

3.4.3 New or Modified Rights-of-Way or Easements

The project does not need any new or modified ROW or easements.

3.4.4 Temporary Rights-of-Way or Easements

The project does not need any temporary ROW or easements.

3.5 Construction

Descriptions of the project's construction activities concerning access, staging area, work area, site preparation, work activities, project equipment, management of materials and waste, and related construction methods is provided in the following sections.

3.5.1 Construction Access

Access to the station will be from existing paved public roads.

3.5.1.1 Existing Access Roads

The station access is from Fairview Road, which is paved and is approximately 20 feet wide. Damage to roadwork from construction vehicle use is not expected. If road damage is caused by project construction, the road will be repaired in coordination with San Bernardino County. Construction access within the station will use a paved existing access road to travel to the main work area and staging area within the station (refer to Figure 3.5-1).

3.5.1.2 New Access Roads

No new access roads will be developed for this project.

3.5.1.3 Overland Access Routes

No overland access outside of the fenced area of the compressor station is required for this project. Overland access within the station will occur within the identified work area and staging area (refer to Figure 3.5-1). No vegetation removal, blading, grading, or gravel placement is expected for access.

3.5.1.4 Watercourse Crossings

There are no watercourse crossings associated with the proposed project and no watercourse crossings will be affected by construction activities.

3.5.1.5 Helicopter Access

Helicopters will not be used for the proposed project.

3.5.2 Staging Areas

One staging area within the station will be used for project construction; refer to Figure 3.5-1.

3.5.2.1 Staging Area Location

The project will use a staging area of approximately 9.7 acres within the station. The staging area currently is used regularly for station staging and laydown activities. The staging area will include berms or other methods to contain excess water from concrete wash water. The project's staging area will be maintained in a clean and orderly manner. The soil will be compacted and no native vegetation will be present. Landscaping trees present within the project staging area will be avoided by project staging activities. Staging will occur in the open areas and will not use the existing structure or areas under the landscaping trees. No removal of trees or other landscaping or structures within the area will be required. Staging may occur within the work area as well. No staging areas outside of the station will be required.

3.5.2.2 Staging Area Preparation

No site preparation, grading, or slope stabilization will be required. The staging area will be used for equipment and materials storage and parking for workers. An office trailer, portable toilets, and wash stations will be brought to the staging area for use during construction. The office trailer will be powered by a portable generator or a power line will be connected from a nearby station power line. Being located within the station, the staging area will be within the existing fence and existing station power or lighting facilities will be used as needed.

3.5.3 Construction Work Areas

3.5.3.1 Work Area

Work areas within buildings or at outdoor equipment locations will include activities associated with replacing switching gear equipment, replacing or modifying MCCs, and removing an outdoor load control or retiring it in place.

Ground disturbance will occur by trenching for replacement conduit work areas and excavation for MCC replacement foundations work areas (refer to Figure 3.5-2). New cable will be installed in new conduit or in existing conduit work areas. Activities for new cable work areas will include placing new cable in a conduit bridge or concrete trench or pulling cable through underground conduits using pull box access or access at equipment connections.

Construction vehicles and equipment will operate within the work area in the station to replace the electrical equipment. The project's work area will be maintained in a clean and orderly manner. Vehicles and equipment will be parked in the work area or staging area. Operation of temporary generators will occur in the temporary generator bank areas (refer to Figure 3.5-2).

3.5.3.2 Work Area Disturbance

Work will occur within the station in an area of approximately 15.8 acres, or approximately 800 feet by 900 feet. Approximately half of the work area is paved or has buildings or enclosures. Temporary disturbance is expected to be approximately 0.06 acre in total and be limited to the excavation for replacement or new MCC foundations (up to approximately 11 feet wide by approximately 29 feet long, or 319 square feet each) and trenching for underground conduit (up to approximately 4 feet wide by a total of approximately 200 feet long). No permanent disturbance will occur within the work area. Table 3-2 presents the temporary disturbance areas within the project work area.

Table 3-2. Expected Temporary Disturbance in Project Work Area

Equipment	Temporary Disturbance Activity	Approximate Area
MCC-2	Excavate existing equipment foundation and replace.	319 square feet
MCC-3	Excavate existing equipment foundation and replace.	319 square feet
MCC-6	Excavate existing equipment foundation and replace.	319 square feet
MCC-9	Excavate for new equipment foundation.	319 square feet
Auxiliary Load Center No.1	Remove equipment foundation, if not retired in place.	319 square feet
MCC-5 Conduit	Trench for conduit installation.	48 square feet
MCC-6 Conduit	Trench for conduit installation.	252 square feet
MCC-7 and MCC-8 Conduit	Trench for conduit installation.	168 square feet
MCC-9 Conduit	Trench for conduit installation.	332 square feet

3.5.3.3 Temporary Power

Temporary power for construction will be provided by two small and two large diesel generators, all not more than 50 horsepower (hp), that will be placed at the staging area or at construction activities being supported in the work area.

During project construction when the station's permanent generators are deenergized, temporary station power will be provided by temporary generators connecting to existing fuel lines tapped into natural gas pipe within the station. A HiPower HRNG 230 T6 unit, with a 302 hp engine, is assumed to be a representative generator that will be used during construction. Each temporary generator is on a wheeled trailer and will not create ground disturbance. The wheeled trailer is approximately 6.5 feet wide, including wheels, and 19 feet long, including the trailer tongue. Approximately five generator bank locations within the project work area will have approximately four to five generators each (refer to Figure 3.5-2).

Up to a total of approximately 22 generators will be operated 24 hours per day, 7 days per week for approximately 6 to 8 months when the permanent station generators are deenergized during project construction. The temporary generators will be operated during the switchgear replacement portion of the electrical equipment replacement and modification construction activity. The temporary generators are positioned in the project work area to provide flexibility at specific locations to continue operation of station equipment during construction. Up to 22 generators may be required to provide power at certain locations to operate the combination of electrical distribution switchgear, load centers, MCCs or connected station equipment such as motors, pumps, and fans are required for station operation on a given day. However, the continuous operation of 22 generators for 8 months presents a worst–case scenario for environmental assessment. The actual duration and number of generators operating on a given day will likely be less than the worst–case scenario. The MCC modifications and replacements are expected to occur using permanent station power being operated through the replaced switchgear.

3.5.4 Site Preparation

3.5.4.1 Surveying and Staking

Surveying will locate and identify new underground conduit locations and the MCC-9 location using paint on the ground or installing horizonal and vertical stakes. Typical surveying and staking techniques and hand equipment will be used.

3.5.4.2 Utilities

Prior to beginning any ground-disturbing work, PG&E will contact Underground Service Alert (USA) at 8-1-1 to notify utility companies to mark and locate existing underground structures within the staked area. Existing telecommunication service to and within the station is not expected to be impacted; however, telecommunication utilities and other utilities may be notified by USA in addition to PG&E.

PG&E expects to use hand-powered equipment or a vacuum truck for trenching and excavation for equipment foundations. If PG&E uses power equipment during ground disturbance, PG&E will probe for and expose existing utilities in accordance with state law. A determination on the need to relocate utilities will be made during final engineering. PG&E also will review its current utility records for any changes to its utilities identified during the preliminary project design and will address those changes and other utilities during final design. Relocation of underground utilities is not anticipated currently. In the event of a known conflict, PG&E will move the underground conduit to avoid the conflict by realigning the areas of subsurface excavation. PG&E will connect the upgraded equipment to the existing station grounding grid.

When the switchgear is being replaced during the project, the existing permanent station generators will be offline and will not be powering the station. The temporary generator banks will be the only electrical power supply for the station during the switchgear replacement. The generators used for station power will be driven to a generator bank location on a trailer pulled by a delivery truck. The trailer with the generator unit will be parked and detached from the truck. The generator will be connected to the existing gas fuel lines. A switchboard on a skid or a rack will be positioned on the ground at each generator bank. The generator bank switchboard will be connected to the adjacent MCC using a temporary fitting on the MCC. The connection will be a power cable that is placed on the ground between the generator bank and adjacent MCC. After the generator bank is no longer needed during construction, the temporary fitting will be removed, the power cable will be lifted off the ground, the generator bank switchboard will be removed, and the generators will be disconnected for removal from the work area.

Existing gas fuel lines will be in place from a separate project establishing emergency station power. The existing fuel lines will be available for use during the proposed project's construction to connect to and to fuel the temporary generators when the station's permanent generators are deenergized to replace electrical equipment. The fuel lines (which are laid on the ground or suspended on a temporary support that is not ground disturbing), regulator, meter, and filter for each generator bank will be removed after the project is complete and temporary generation is no longer required.

3.5.4.3 Vegetation Clearing

No vegetation clearing is needed for the proposed project.

3.5.4.4 Tree Trimming Removal

No tree removal or tree trimming is needed for the proposed project.

3.5.4.5 Work Area Stabilization

No stabilization of temporary work areas and access roads is needed for the proposed project.

3.5.4.6 Grading

No earth-moving activities or grading is required.

3.5.5 Substation, Switching Stations, Gas Compressor Stations

The gas compressor station modification is limited to the replacement of existing electrical components. Transformers, gas components, buildings, driveways, fence, gates, and communication systems (for example, SCADA) are not part of the project. PG&E will maintain the existing grounding scheme for the power system. The upgraded electrical equipment will be connected to the existing station grounding system.

3.5.5.1 Installation or Facility Modification

As needed, the permanent station generators will be deenergized and the temporary generators will be energized, replacing the station power during certain project activities. Loads that were previously connected to the switchgear will operate with power from the temporary generators until they can be transferred to the replacement switchgear and MCCs as applicable.

Transitioning station power between the permanent and temporary station generators and disconnecting equipment from power sourced before deenergizing will be completed with handheld equipment.

Activities to replace electrical equipment will include planning electrical station outages or switching to temporary station power. Deenergizing of equipment, following lockout/tagout procedures and receiving a clearance from station operations, will occur prior to beginning replacement activities.

Equipment to be replaced will be disconnected and removed from service, foundations replaced as needed, and replacement equipment will be installed, connected, tested, and reenergized by reversing the outage steps in coordination with station operations. Equipment to be modified will be removed from service during a planned electrical outage before being modified.

Replacing the switchgear and MCCs will include use of forklifts to move the existing and replacement metal cabinets, including lifting off and on delivery or transport trucks. Removed equipment, cable, and concrete equipment foundation pieces may be moved to the staging area by a forklift, loader, or truck for sorting before being hauled offsite.

An MCC foundation replacement typically will include using a concrete saw or jackhammer powered by an air compressor to remove the existing foundation. Diesel generators will be used to power air compressors. A skid steer, loader, or backhoe will be used to lift concrete pieces into a dump truck or other transport vehicle. As needed, a water truck will be used to settle dust originating during concrete foundation removal, excavation, or trenching. Excavation and trenching are expected to use hand tools. A loader or other equipment with a bucket will be used to scoop soil off the ground and place it in a dump truck.

Table 3-3 presents the approximate volume of excavation within the project work area. Each excavation is estimated to be up to approximately 59 cubic yards (yd^3), for an approximate total of 295 yd^3. Shoring plates or other typical bracing equipment will be used to keep an excavation or trench open depending on soil type or for safety purposes. Such temporary equipment will not be ground disturbing beyond the excavation or trench itself. Concrete and soil will be removed and disposed of offsite unless the soil is acceptable for reuse as backfill. Backfill will be compacted as appropriate and the ground surface restored to preconstruction condition contours.

Table 3-3. Expected Excavation in Project Work Area

Equipment Foundation	Foundation Construction Activity	Approximate Excavation Area
MCC-2	Remove existing and install replacement.	5 feet deep, 11 feet wide, 29 feet long
MCC-3	Remove existing and install replacement.	5 feet deep, 11 feet wide, 29 feet long
MCC-6	Remove existing and install replacement.	5 feet deep, 11 feet wide, 29 feet long
MCC-9	Install new.	5 feet deep, 11 feet wide, 29 feet long
Auxiliary Load Center No.1	Remove existing.	5 feet deep, 11 feet wide, 29 feet long

To install the replacement foundations, an excavation will be made to the replacement foundation size using hand tools such as a shovel and a vacuum truck to remove excess dirt. A plate compactor will be used to level the foundation area before a form is installed. A concrete truck will pour concrete into the form. The concrete will be leveled and allowed to harden. After the form is removed, the replacement equipment will be installed. The new foundation for MCC-9 will be constructed in a similar manner other than not needing to remove an existing MCC foundation.

Table 3-4 presents the approximate volume of soil expected to be removed for conduit trenching. Underground conduit trenching will be up to approximately 5 feet deep by approximately 4 feet wide by a total length of approximately 200 feet, or approximately 148 yd^3. Soil will be removed and disposed of offsite unless the soil is acceptable for reuse as backfill. Backfill will be compacted as appropriate and the ground surface restored to preconstruction condition contours.

Table 3-4. Expected Trenching in Project Work Area

Equipment	Trenching Construction Activity	Approximate Trenching Area
MCC-5 Conduit	Trench for conduit installation.	5 feet deep, 4 feet wide, 12 feet long
MCC-6 Conduit	Trench for conduit installation.	5 feet deep, 4 feet wide, 63 feet long
MCC-7 and MCC-8 Conduit	Trench for conduit installation.	5 feet deep, 4 feet wide, 42 feet long
MCC-9 Conduit	Trench for conduit installation.	5 feet deep, 4 feet wide, 83 feet long

Replacement conduit and cable will be installed in new or existing locations and does not require the removal of existing conduit or cable. Activities for new cable work areas will include placing new cable in a conduit bridge or concrete trench or pulling the cable through underground conduits using pull box access or access at equipment connections. If additional penetrations through building walls are needed, a concrete or industrial saw may be used to create the opening in the wall. After the replacement conduit and cable are installed, the connecting equipment will be deenergized, if not already, as described previously. The equipment will be connected to the cable and tested before reenergizing in coordination with station operations.

Existing conduits from the switchgear to the MCCs are expected to be retired in place. Existing cables from the switchgear to the MCCs are expected to be removed by pulling the cable out of the conduit by hand through pull boxes or from where the cable terminates at equipment. Removed cable will be collected and may be moved in a truck or construction vehicle to the staging area for sorting.

3.5.5.2 Civil Works

No civil work such as installation or modification to slope, drainage, retention basins, or spill containment is required for the project.

3.5.6 Gas Pipelines

Gas pipelines work will not occur as part of compressor station upgrade activities.

Existing temporary gas fuel lines, regulators, meters, and filters connected to the station gas pipe will be removed at the end of construction. After the temporary generators are no longer needed to power the station during the project, they will be disconnected from the temporary fuel lines. The temporary fuel lines, which are placed on the ground, will be lifted off the ground with equipment such as a forklift and placed into a truck. The connection regulators, meters, and filters will be removed from their connection point to the station's gas pipe. The gas fuel pipe equipment will be removed to the staging area or to a storage location within the station for reuse.

3.5.7 Public Safety and Traffic Control

3.5.7.1 Public Safety

The project work area and staging area are within the fenced station site, which does not have public access.

3.5.7.2 Traffic Control

No special traffic control procedures are expected to be implemented. Public access to sidewalks, lanes, roads, trails, paths, or driveways will not be impacted and temporary detour routes are not needed.

3.5.7.3 Security

The project construction site is located within a secured PG&E facility with fencing, lighting, alarms, and 24-hour operation. No new temporary or permanent security measures are required.

3.5.7.4 Livestock

The project work area and staging area are within the fenced station site, which excludes livestock access.

3.5.8 Dust, Erosion, and Runoff Controls

Construction ground-disturbing activities, including trenching and excavation, have the potential to contribute to construction-related dust, erosion, and runoff. The project will not result in more than 1 acre of soil disturbance. PG&E will develop an erosion and sedimentation control plan that identifies best management practices (BMPs) to control erosion, sedimentation, and runoff.

3.5.8.1 Dust

Appropriate measures will be taken to minimize fugitive dust generated during construction. Migration of fugitive dust from the construction site will be limited by control measures set forth by the APMs outlined in Section 5.3, Air Quality. Water will be applied to unpaved work areas or the staging area; stockpiled materials will be covered or otherwise stabilized as needed to control fugitive dust. Water applied for dust control will be used to dampen the soil; overapplication that could create runoff will be avoided.

3.5.8.2 Erosion

A small, temporary stockpile of excavated soil to be used for backfill may be located near a conduit trench or equipment foundation excavation. In areas where soil is to be temporarily stockpiled, soil will be placed in a controlled area and will be managed using industry-standard stockpile management techniques. Any surplus soil will be transported from the site and disposed of in accordance with federal, state, and local regulations.

Sediment and erosion control BMPs will be implemented to control erosion and minimize offsite sediment discharge. BMPs will be installed following manufacturer's specifications and according to standard industry practice. BMPs will be implemented specifically for the hydrologic setting of the project (surface topography, and other factors). Implementation of the BMPs will help stabilize construction areas and reduce erosion and sedimentation. BMPs may include the following:

- Straw wattle or gravel bag berms
- Stockpile management
- Effective dust control measures
- Good housekeeping measures
- Stabilization measures, which may include soil compaction

BMPs will be installed prior to construction activities that will create erosion, sedimentation, or runoff. BMPs will be inspected by the PG&E Environmental Field Specialist or designee and improved as intended to minimize erosion and sediment transport from temporarily disturbed areas. BMPs such as wattles will remain in place until disturbed areas are backfilled as needed, compacted as appropriate, and restored to preconstruction condition contours.

3.5.8.3 Runoff

During construction activities, BMPs will be implemented to avoid or minimize construction impacts on surface water quality, as well as reduce the potential for stormwater runoff to impact adjacent properties. The staging area will include berms or other methods to contain excess water from concrete wash water. Refer to Section 3.5.8.2, for BMPs to implement during construction to help stabilize disturbed areas and reduce potential stormwater runoff, sedimentation, and pollutant transport.

3.5.9 Water Use and Dewatering

3.5.9.1 Water Use

A water truck, typically with a capacity of up to approximately 3,000 gallons, will support project construction activities, including dust suppression and potential construction fire suppression. However, the total volume available within the truck onsite is not expected to be used daily.

Water required for construction is expected to come from two sources: nearby offsite wells or hydrants within the station. The water sources have adequate capacity to serve the project either independently or in combination.

3.5.9.2 Dewatering

Ground-disturbing work up to approximately 5 feet below ground surface (bgs) is not expected to encounter groundwater, which is estimated at approximately 80 feet bgs at the station. No dewatering will be required.

3.5.10 Hazardous Materials and Management

The project is not expected to use or store large quantities of hazardous materials, but fuel, grease, and fluids needed for construction equipment operation will be onsite periodically and handled in keeping with the project APMs and BMPs that address the proper use, storage, and cleanup, if warranted.

3.5.10.1 Hazardous Materials

Hazardous materials – such as fuels, lubricants, and cleaning solvents – will be primarily used for vehicles, to lubricate construction machinery and hardware, and for cleaning purposes. Natural gas from within the station will be used to fuel the temporary PERP generators[1]. Herbicide or pesticide use is not expected during construction. All hazardous materials will be stored, handled, and used in accordance with applicable regulations. Safety Data Sheets for all hazardous materials will be made available to the construction team and station workers. Refer to Table 3-5 for estimated types, uses, and volumes of hazardous materials expected to be used by the project equipment and vehicles for the duration of construction activities. Existing facility operations will continue following project construction, and no change in use of hazardous materials during facility operation will occur as a result of the project.

[1] Mojave Desert Air Quality Management District (MDAQMD). 2024. Letter: Approval of the Temporary Use of PERP Registered NG ICE for Electrical Upgrade. Sent by Pacific Gas and Electric Company, August 14, 2024, for S238 Hinkley Compressor Station Electrical Upgrades Project. Approved August 19.

Table 3-5. Types, Uses, and Approximate Volumes of Hazardous Materials

Utility	Hazardous Material[a]	Use	Approximate Volume[b]
PG&E	Diesel	Engine fuel	89,914 gallons
PG&E	Gasoline	Engine fuel	5.964 gallons
PG&E	Natural Gas	Temporary PERP Generator fuel	179 MMscf
PG&E	Hydraulic Fluids/Lubricants	Engine and equipment lubrication and powering of hydraulic equipment	4,794 gallons
PG&E	Other Construction Fluids (Solvents)	Cleaning, lubricating hardware, and other uses	240 gallons

[a] Hazardous materials identified will not be stored onsite. All fueling and storage will occur offsite.

[b] Diesel, gasoline and natural gas fuel volumes are from Section 5.6. MMscf = million standard cubic feet. Hydraulic fluids and lubricants volumes are anticipated to be 5 percent of total diesel and gasoline fuel volumes. Other construction fluid volumes are anticipated to be 5 percent of hydraulic fluids and lubricants volumes.

If preexisting hazardous waste is encountered during construction, it will be removed, managed, and disposed of in accordance with applicable regulations. Hazardous materials are discussed in further detail in Section 5.9, Hazards, Hazardous Waste, and Public Safety.

3.5.10.2 Hazardous Materials Management

During construction, petroleum-based products such as gasoline, diesel fuel, oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and cleaning solvents will be used to fuel, lubricate, and clean vehicles and equipment and will be transported in specialty trucks or in other approved containers. When not in use, hazardous materials will be properly stored to prevent drainage or accidental spills.

In addition, appropriate BMPs will be implemented to minimize the effects of an accidental spill such as the presence of spill kits in active work areas to prevent materials from draining onto the ground or into drainage areas. PG&E procedures concerning hazardous material use, transport, storage, management, and disposal protocols will be implemented during construction activities. Hazardous materials are discussed in further detail in Section 5.9, Hazards, Hazardous Waste, and Public Safety.

3.5.11 Waste Generation and Management

3.5.11.1 Solid Waste

Solid waste generation is estimated to be approximately 35 tons with approximately 75 percent being metal. Waste materials generated during construction will be reused, recycled, or salvaged when reasonably feasible. Removed electrical equipment will be managed as electronic waste (e-waste), with metal components sorted for recycling or disposal. Before concrete (MCC or load center foundations) is removed, an asbestos notification to MDAQMD with an asbestos survey will occur. MDAQMD will be notified at least 10 working days prior to work (demolition) commencing. While not expected given the approximate age of the concrete foundations; if the concrete contains asbestos, after removal it will be gathered and disposed of at a licensed waste facility per applicable regulations. Otherwise, concrete debris from the MCCs and load center foundation removal will be gathered for recycling.

Construction debris will be picked up regularly from the work area and stored in approved onsite containers. At the construction staging area, crews will gather and sort recyclable and salvageable materials into bins for recycling, e-waste, or disposal. Debris will be hauled away for recycling or disposal periodically during construction. Salvageable items (such as wire or metal that can be reused) will be taken to recycling facilities or sold through available markets. Some examples of items that may be recycled include copper wire or metal equipment housing, cable reels, pallets, and broken hardware. Construction debris, including recyclables (metal or concrete), and clean soil will be taken to a licensed recycle facility such as Emery Materials (9689 C Avenue, Hesperia, CA 92345), Vulcan Materials Company (2400 West Highland Avenue, San Bernardino, CA 92407) or SA Recycling (10651 E Avenue, Hesperia, CA 92345).

The project also will generate minimal solid waste from the food, glass, paper, plastic, and packing materials consumed by up to approximately 18 construction workers who will be onsite at peak construction periods.

3.5.11.2 Liquid Waste

The dust control methods outlined previously will result in minor amounts of water waste that will remain onsite, likely evaporating if not absorbed into the soil. The staging area will include berms or other methods to contain excess water from concrete wash water and similar liquid construction wastes. Water applied for dust control will be used to dampen the soil; overapplication that could create runoff will be avoided. Portable restroom facilities will generate minor amounts of liquid waste that will remain contained in the facilities until their removal during regular cleanings by vendors. A concrete washout station will be established within the staging area to contain the minimal amount of washout expected using a berm or other method to contain the liquid. When the liquid evaporates, the hardened concrete will be managed as a solid waste as previously described. If liquid waste is generated other than described, it is expected to be taken to the Kettleman Hills Industrial Waste Codisposal Facility (35251 Old Skyline Road, Kettleman City, CA 93239) or Clean Harbors Buttonwillow LLC facility (2500 Lokern Road, Buttonwillow, CA 93206).

3.5.11.3 Hazardous Waste

There are no large volumes of known hazardous waste generated by or resulting from project construction. Minor volumes of hazardous waste will be disposed of using the methods described previously.

If precharacterization has not occurred, the soil will be stockpiled separately onsite to be tested, managed, and transported for disposal as appropriate. If suspected hazardous substances or waste are unexpectedly encountered during trenching activities (using indicators such as sheen, odor, and soil discoloration), the ground-disturbing work will be stopped until the material is properly characterized and appropriate measures are taken to protect human health and the environment. Appropriate personal protective equipment will be used, and waste management will be performed in accordance with applicable regulations. If excavation of hazardous materials is required, the materials will be disposed of in accordance with applicable regulations.

Some equipment may have lead-based paint. If equipment is found with lead-based paint, it will be removed and disposed of at a licensed waste facility per applicable regulations. As discussed in Section 3.5.13, project construction will require the limited use of hazardous materials such as fuels, lubricants, cleaning solvents, and chemicals. Only small volumes of hazardous waste will be generated, generally from empty fuel, lubricant, and solvent containers. Additional potentially hazardous waste sources during construction include incidental spill waste and concrete washout. Waste generated or encountered will be handled, contained, and disposed of according to local, state, and federal regulations.

Contaminated soil or hazardous materials are expected to be taken to the Kettleman Hills Industrial Waste Codisposal Facility (35251 Old Skyline Road, Kettleman City, CA 93239) or Clean Harbors Buttonwillow LLC facility (2500 Lokern Road, Buttonwillow, CA 93206).

3.5.12 Fire Prevention and Response

Fire prevention and response procedures during construction are expected to follow standard utility practices.

3.5.12.1 Fire Prevention and Response Procedures

PG&E will follow its Utility Standard for *Preventing and Mitigating Fires While Performing PG&E Work* that provides construction fire prevention and response procedures in compliance with California PRC Sections 4427, 4428 and 4431. The standard provides procedures and job aids for PG&E employees and contract partners to follow when traveling to, performing work, or operating outdoors which may result in a spark, fire, or flame on or near any forest-, brush-, or grass-covered lands. The standard includes responsibilities and duties, fire prevention and suppression methods training requirements, procedures and requirements for fire prevention, response and reporting, and quality review procedures to verify adherence to the requirements of the standard and its attachments. Onsite project workers will have completed PG&E's annual Fire Danger Precautions training before beginning project work.

The standard includes procedures to identify and assess work location-specific environmental conditions and preparation before the start of work daily. The work supervisor is responsible for completing the assessment, including identifying and complying with the local, state, and federal fire authority permits and restrictions in the area where the work is to be performed. The assessment is reviewed with workers at the daily tailgate event and communicates roles and responsibilities, work location, environmental conditions including the fire potential and red flag conditions, fire risk mitigations and fire suppression tools (extinguishers, water, and hand tools), and procedures and contact information for emergency responders. Fire risk mitigations and fire suppression tools required for the work will be adjusted depending on the type of work, work location and environmental conditions. When fire suppression tools and extinguishers are required, they will be immediately available in the area from which a spark, fire, or flame may originate. Procedures addressing minimizing potential ignition will consider the environmental conditions and work being performed.

Fire risk mitigation for the project will include appropriate measures such as parking requirements/restrictions, idling restrictions, locating a fire extinguisher or water delivery system within an appropriate distance, smoking restrictions, proper use of gas-powered equipment, use of spark arrestors, hot work restrictions, and assigning personnel to conduct a "fire watch" or "fire patrol" to ensure that risk mitigation and fire preparedness measures are implemented, to report a fire immediately, and to coordinate with emergency response personnel in the event of a fire. The identified person-in-charge is responsible for following locally changing meteorological conditions including the possibility of increased fire danger during the time work is in progress. As appropriate, the initial daily assessment will be revisited, updated, and communicated to the workers onsite.

3.5.12.2 Fire Breaks

No fire breaks are expected to be needed and the project work area and staging area are devoid of vegetation. The project is not located in or near State Responsibility Areas (SRAs) and is not on land classified as a very high fire hazard severity zone. The project work area is paved or unvegetated. The staging area will not use the areas under the landscaping trees.

3.6 Construction Workforce, Equipment, Traffic, and Schedule

3.6.1 Construction Workforce

The workforce will vary depending on the activities in progress and the specific phase of construction. Over the course of construction, the peak number of workers on the site at any given time will be up to approximately 18 workers.

3.6.2 Construction Equipment

Table 3-6 provides a list of potential construction equipment to be used by activity type and the estimated duration of the activity and estimated number of workers per activity type.

Table 3-6. Approximate Estimated or Potential Construction Equipment and Workforce

Construction Activities[a]	Fuel Type[b]	Horsepower[c]	Quantity (daily)	Daily Use (hours)	Miles/ Day (each)	Total Days[d]
Site Mobilization/Site Preparation October 2026 to November 2026, 40 Work Days, 18 Workers						
Skid Steer Loaders	Diesel	71	1	10	NA	37
Tractors/Loaders/Backhoes	Diesel	84	1	10	NA	37
Generator Large	Diesel	50	2	10	NA	37
Generator Small	Diesel	7	2	5	NA	18
Rough Terrain Forklifts	Diesel	96	1	10	NA	37
Water Truck	Diesel	NA	1	NA	2	37
Air Compressors	Diesel	37	2	10	NA	37
Dump Truck	Diesel	NA	1	NA	2	9
Worker Commutes (light-duty autos, trucks)	Gasoline	NA	18	NA	20	37
Vendor/Delivery Trucks	Diesel	NA	1	NA	20	12
Ground-Disturbing Activities November 2026 to December 2026, 60 Work Days, 18 Workers						
Skid Steer Loaders	Diesel	71	1	10	NA	56
Tractors/Loaders/Backhoes	Diesel	84	1	10	NA	56
Generator Large	Diesel	50	2	10	NA	56
Generator Small	Diesel	7	2	5	NA	28
Rough Terrain Forklifts	Diesel	96	1	10	NA	56
Water Truck	Diesel	NA	1	NA	2	56
Air Compressors	Diesel	37	2	10	NA	56
Vacuum Truck Onsite[e]	Diesel	NA	1	4	2	56
Dump Truck	Diesel	NA	1	NA	2	13
Concrete/Industrial Saws	Diesel	33	1	5	NA	2
Worker Commutes (light-duty autos, trucks)	Gasoline	NA	18	NA	20	56

Table 3-6. Approximate Estimated or Potential Construction Equipment and Workforce

Construction Activities[a]	Fuel Type[b]	Horsepower[c]	Quantity (daily)	Daily Use (hours)	Miles/ Day (each)	Total Days[d]
Vendor/Delivery Trucks	Diesel	NA	1	NA	20	19
Electrical Equipment Replacement and Modification January 2027 to June 2028, 360 Work Days, 18 Workers						
Temporary Generator[f]	Natural Gas	302	22	24	NA	160
Skid Steer Loaders	Diesel	71	1	10	NA	333
Tractors/Loaders/Backhoes	Diesel	84	1	10	NA	333
Generator Large	Diesel	50	2	10	NA	333
Generator Small	Diesel	7	2	5	NA	166
Aerial Lifts	Diesel	46	1	5	NA	52
Welders	Diesel	46	2	10	NA	69
Rough Terrain Forklifts	Diesel	96	1	10	NA	333
1/2-Ton Boom Truck	Diesel	NA	1	NA	1	171
Water Truck	Diesel	NA	1	NA	2	333
Air Compressors	Diesel	37	2	10	NA	333
Vacuum Truck Offsite[e]	Diesel	NA	1	NA	20	24
Vacuum Truck Onsite[e]	Diesel	NA	2	NA	2	24
Dump Truck	Diesel	NA	1	NA	2	80
Concrete Pump Truck[e]	Diesel	NA	1	NA	20	12
Concrete Truck	Diesel	NA	1	NA	20	12
Plate Compactors	Diesel	8	1	5	NA	151
Concrete/Industrial Saws	Diesel	33	1	5	NA	14
Other General Industrial Equipment	Diesel	35	1	5	NA	16
Plate Compactors	Diesel	8	1	5	NA	151
Worker Commutes (light-duty autos, trucks)	Gasoline	NA	18	NA	20	333
Vendor/Delivery Trucks	Diesel	NA	2	NA	20	112
Demobilization July 2028 to August 2028, 40 Work Days, 18 Workers						
Skid Steer Loaders	Diesel	71	1	10	NA	37
Tractors/Loaders/Backhoes	Diesel	84	1	10	NA	37
Generator Large	Diesel	50	2	10	NA	37
Generator Small	Diesel	7	2	5	NA	18
Rough Terrain Forklifts	Diesel	96	1	10	NA	37
Water Truck	Diesel	NA	1	NA	2	37
Air Compressors	Diesel	37	2	10	NA	37
Dump Truck	Diesel	NA	1	NA	2	9

Table 3-6. Approximate Estimated or Potential Construction Equipment and Workforce

Construction Activities[a]	Fuel Type[b]	Horsepower[c]	Quantity (daily)	Daily Use (hours)	Miles/ Day (each)	Total Days[d]
Worker Commutes (light-duty autos, trucks)	Gasoline	NA	18	NA	20	37
Vendor/Delivery Trucks	Diesel	NA	1	NA	20	12

[a] Unless otherwise noted, equipment/vehicle list and daily use provided by PG&E.

[b] Workers are conservatively assumed to travel in gasoline-fueled passenger vehicles or light-duty trucks, even though some of these vehicle trips may occur in diesel, electric, or plug-in hybrid vehicles. Onsite construction vehicles and offsite material and equipment transport vehicles are conservatively assumed to be diesel-fueled heavy/heavy-duty trucks, even though some of these vehicle trips may occur in gasoline-fueled, electric, or natural gas-fueled vehicles.

[c] Unless otherwise indicated, default equipment power ratings and load factors were used, as taken from Table G-12 of Appendix G of the CalEEMod User's Guide (ICF 2022). The small generator was assumed to be 7 hp and the large generator was assumed to be 50 hp, as PG&E indicated that two different generator sizes would be used.

[d] A number of vehicles and equipment will be used for only a portion of the total duration for each phase.

[e] Vacuum or concrete trucks are powered by a single driving engine; no separate engine is attached to the truck.

[f] Mojave Desert Air Quality Management District (MDAQMD). 2024. Letter: Approval of the Temporary Use of PERP Registered NG ICE for Electrical Upgrade. Sent by Pacific Gas and Electric Company, August 14, 2024, for S238 Hinkley Compressor Station Electrical Upgrades Project. Approved August 19.

NA = Parameter not required for computing fuel consumption.

3.6.3 Construction Traffic

A qualitative discussion is provided in alignment with a project where qualitative analysis can be used as described in CEQA Guidelines Section 15064.3, subdivision (b)(3).The vehicles miles traveled (VMT) for the proposed project construction-related vehicle trips will depend on several factors, including the origin of construction worker commute trips (for example, distance from their homes or temporary lodging to the construction site), origin of materials and equipment deliveries to the construction site, and distance to landfills or other disposal sites from the construction site. Construction crews (worker commutes) will be traveling to and from the project site via light-duty autos and trucks. Worker daily commute trips and vendor or delivery truck trips are estimated at approximately 20 miles roundtrip. Equipment will be staged onsite in a work area within the station or brought to the work area daily on work trucks or trucks with trailers.

3.6.4 Construction Schedule

The preliminary summary proposed schedule is presented in Table 3-7. However, delays to the start date are possible from conditions outside PG&E's control, including procurement or station operation dependencies that are not compatible with deenergizing electrical equipment. Construction is targeted to start in approximately October 2026 with the upgrade complete in approximately July 2028. Demobilization is expected to take approximately 2 months and will be complete at the end of August 2028. This schedule considers expected weather, including heat considerations.

Preconstruction bird nesting surveys will occur during the typical bird nesting season, as described in Table 3-8. Buffers for active nests will be incorporated into the 2-week look-ahead schedule, which will be maintained during construction and adjusted as needed. Refer to Appendix B2 for a summary of the PG&E Nesting Bird Management Plan for species-specific buffers.

While the electrical equipment replacement and modification activity will require approximately 18 months of the approximately 23 months of construction activities, there will likely be gaps between work days resulting from equipment delivery logistics, power load considerations, and other unplanned factors.

Table 3-7. Anticipated Duration of Construction Phases

Activity	Start	End	Approximate Duration
Site Mobilization/Site Preparation	October 2026	November 2026	40 work days, 2 months
Ground Disturbing Activities	November 2026	January 2027	60 work days, 3 months
Electrical Equipment Replacement and Modification	January 2027	June 2028	360 work days, 18 months
Demobilization	July 2028	August 2028	40 work days, 2 months

3.6.5 Work Schedule

Construction activities generally will be scheduled to occur during daylight hours for 10 hours per day, 5 days per week, Monday through Friday, with an occasional weekend day. Night work is not anticipated but may be necessary on occasion to avoid or reduce schedule delays, complete construction activities, or accommodate system outages.

3.7 Post-Construction

3.7.1 Configuring and Testing

Following completion of the station upgrade, all existing and new equipment will be tested to ensure compatibility and stability in the new system. Deenergizing and reenergizing the electrical equipment and lines may occur during periods when gas demand is low. The configuration and testing crew will consist of up to approximately 18 workers. Equipment is handheld.

3.7.2 Landscaping

No landscaping at the compressor station will be impacted by construction. No landscaping will be installed as part of the station upgrade.

3.7.3 Demobilization and Site Restoration

3.7.3.1 Demobilization

Demobilization activities include the removal of all mobile equipment, all construction-related materials, and all construction-related temporary BMPs. PG&E will conduct a final review to confirm that cleanup activities have been successfully completed.

3.7.3.2 Site Restoration

Project activities will not alter existing natural drainage patterns, soil contours, vegetation, station erosion control measures, landscaping, or public areas. Construction workers will maintain clean work areas during project construction, removing construction debris to the staging area or collection bins within the work area. During demobilization, workers will remove remaining construction debris from the work area as well as from the staging area after sorting waste and arranging for appropriate disposal.

3.8 Operation and Maintenance

3.8.1 Regulations and Standards

PG&E is a public utility, and the operation of the station is regulated by the CPUC. The project will be maintained in a manner consistent with CPUC GO 112-F and GO 177. GO 112-F contains ruling standards for design, construction, testing, operation, inspections, and maintenance of gas gathering, transmission, and distribution piping systems; GO 177 contains standards for planning and construction permitting for certain gas system infrastructure.

A project Wildfire Management Plan will not be required because the project is not within an area with wildfire hazard. The upgrades to the station will be within the existing facility with no impact to trees or vegetation cover.

3.8.2 System Controls and Operation Staff

PG&E operates the station onsite in coordination with its gas system control center located in San Ramon, California, consistent with current procedures. Existing PG&E gas pipeline operations and maintenance staff will continue normal compression operations and routine maintenance activities during compressor station upgrades. No new full-time staff will be required for operation and maintenance.

3.8.3 Inspection Programs

Regular inspection of equipment, support systems, and instrumentation and controls is critical for the safe, efficient, and economical operation of the project; existing practices will not be changed. With the upgraded equipment, the frequency of inspections is expected to be reduced overall, which aligns with the inspection frequency typical of new equipment. No new full-time staff will be required for inspections.

3.8.4 Maintenance Programs

The existing maintenance program for the compressor station will continue for the upgraded station on a schedule that avoids service interruptions and outages. In addition to regular maintenance, facilities sometimes are damaged by storms, vandalism, or accidents; these situations require immediate repair. Emergency repair operations will involve the prompt deployment of PG&E crews and necessary equipment to repair and replace damaged facilities.

Maintenance of the station consists of general inspection and cleaning of mechanisms, assessing equipment condition, testing and calibration, and checking oil and fluid levels. Infrared scanning is used to identify potential electrical equipment problem areas such as faulty connections, poor contacts, and phase imbalances or overload conditions. Maintenance activities following project construction are expected to be the same as existing maintenance activities with added efficiency using upgraded equipment and improved safety, allowing compartmentalized deenergizing within the upgraded design.

Routine maintenance will be performed by PG&E to correct conditions identified during inspections or other situations requiring immediate repair. If the facilities are in operation beyond the estimated 10-year life span, PG&E will comply with applicable utility procedures, standards, and regulatory requirements at that time. After the expected life span, equipment is expected to be modified or replaced depending on likely advances in equipment design and technology.

3.8.5 Vegetation Management Programs

The project work area is devoid of vegetation. No landscaping or plants within the staging area will be impacted by the project.

3.9 Decommissioning

Decommissioning of Hinkley Compressor Station is not planned in the foreseeable future. Maintenance of the facility is described in Section 3.8.4.

3.10 Anticipated Permits and Approvals

3.10.1 Anticipated Permits and Approvals

The CPUC is the lead agency for project review under the California Environmental Quality Act because a CPCN is required in accordance with the CPUC's GO 177. GO 177 contains the CPUC's permitting requirements for gas infrastructure in California. Other than the CPCN, the project does not require permits from federal, state, or local agencies.

3.10.2 Rights-of-Way or Easement Applications

No additional ROW or easement will be acquired for this upgrade project. All upgrades will be within the compressor station footprint and on existing PG&E property.

3.11 Applicant-Proposed Measures

PG&E is proposing the following applicant-proposed measures (Table 3-8).

Table 3-8. Summary Table of Applicant-Proposed Measures

Applicant-Proposed Measures
Section 5.1 Aesthetics
The project will have no impact on aesthetics or visual resources, so no APMs are included.
Section 5.2 Agriculture and Forestry Resources
The project will have no impact on agriculture and forestry resources, so no APMs are included.

Table 3-8. Summary Table of Applicant-Proposed Measures

Applicant-Proposed Measures
Section 5.3 Air Quality (AIR)
APM AIR-1: Dust Control During Construction PG&E will control fugitive dust by using BMPs, as follows: ▪ Water or cover with coarse rock all exposed surfaces with the potential to generate dust to reduce the potential for airborne dust from leaving the site. ▪ Limit the simultaneous occurrence of more than two ground-disturbing construction phases on the same area at any one time. Phase activities to reduce the amount of disturbed surfaces at any one time. ▪ Cover all haul trucks entering/leaving the site and trim their loads, as necessary. ▪ Use wet power vacuum street sweepers to sweep all paved access roads, parking areas, staging areas, and public roads adjacent to the project site daily (at minimum) during construction. Do not use dry power sweeping ▪ Wash off all trucks and equipment, including their tires, prior to leaving the project site. ▪ Apply gravel or non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at the project site. ▪ Water and/or cover soil stockpiles daily. ▪ Plant vegetative ground cover in disturbed areas as soon as possible and water it appropriately until vegetation is established. ▪ Limit all vehicle speeds to 15 miles per hour (mph) or less on unpaved areas. ▪ Implement dust monitoring in compliance with the standards of MDAQMD. ▪ Halt construction during any periods when wind speeds exceed 50 mph.
APM AIR-2: Minimize Construction Equipment Exhaust In accordance with APM GHG-1, PG&E will minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible and by minimizing idling time. In particular, cranes, off-highway trucks, and tractors/loaders/backhoes used during project construction will comply with Tier 4 emissions standards.
Section 5.4 Biological Resources (BIO)
APM BIO-1: Protect nesting birds If construction is to occur during the avian nesting season (March 1 through August 15), a preconstruction migratory bird and raptor nesting survey will be performed by a qualified biologist who is familiar with local avian species and nesting birds. Surveys will occur only in publicly accessible areas and areas where PG&E has existing access; private property will not be accessed and will instead be observed from adjacent accessible areas. Preconstruction nesting bird surveys will be performed in accordance with PG&E's Nesting Bird Management Plan. The preconstruction survey will cover a radius of 200 feet for nonlisted raptors and 100 feet for nonlisted passerines from project locations that will be actively worked at in the near term. The survey will cover all affected areas where ground disturbance is required. If any active nests containing eggs or young are found, an appropriate nest exclusion zone will be established by the PG&E biologist in accordance with PG&E's Nesting Bird Management Plan. No heavy equipment will be operated in this exclusion zone until the biologist has determined that the nest is no longer active, and the young have fledged. If it is not practicable to avoid work in an exclusion zone around an active nest, work activities will be modified to minimize disturbance of nesting birds but may proceed in these zones at the discretion of the biologist. As appropriate, the biologist will monitor work activities in these zones daily or periodically when construction is occurring and assess their effect on the nesting birds. If the biologist determines that particular activities pose a high risk of disturbing an active nest, the biologist will recommend additional, feasible measures to minimize the risk of nest disturbance. If work cannot proceed without disturbing the nesting birds, or signs of disturbance are observed by the monitor, work may need to be halted or redirected to other areas until the nesting and fledging is completed or the nest has otherwise failed for reasons not related to construction.

Table 3-8. Summary Table of Applicant-Proposed Measures

Applicant-Proposed Measures
APM BIO-2: **Protect wildlife trapped in trenches or steep-walled holes** Field crews will fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife is not trapped. If any wildlife is found, work will stop, and the PG&E biologist will be contacted to move the animal out of harm's way.
APM BIO-3: Preconstruction surveys Preconstruction biological clearance surveys will be completed by a qualified biologist prior to construction activities beginning and will occur throughout the project site to minimize impacts on wildlife.
APM BIO-4. Worker Environmental Awareness Program – Biological Resources Portion A worker environmental awareness program (WEAP) will be prepared for the project to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project. A PG&E biologist or designee familiar with resources in the area will deliver the WEAP biological resources portion. Training will include a discussion of the potential for nesting birds and possible buffers, along with the requirement to protect wildlife from becoming trapped in trenches or steep-walled holes. Training will include information about federal laws protecting nesting birds. A copy of the training sign-in sheets documenting participation in the training will be provided to the CPUC.
Section 5.5 Cultural Resources (CUL)
APM CUL-1: Worker Environmental Awareness Training Program – Cultural Resources Portion A worker environmental awareness training program (WEAP) will be prepared to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project performing excavation or trenching activities. This training will be administered by a qualified cultural resource professional either as a standalone training or as part of the overall environmental awareness training required by the project and may be recorded for use in subsequent training sessions. The WEAP program will be provided separately to CPUC staff prior to construction. The WEAP will address, among other topics, at a minimum: ▪ A review of archaeology, history, precontact, and Native American cultures associated with historical resources near the project ▪ A review of applicable local, state, and federal ordinances, laws, and regulations pertaining to historic preservation ▪ A discussion of procedures to be followed if unanticipated cultural resources are discovered during implementation of the project ▪ A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies ▪ A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, PG&E policies, and other applicable laws and regulations

Table 3-8. Summary Table of Applicant-Proposed Measures

Applicant-Proposed Measures
APM CUL-2: Inadvertent Cultural Resource Discoveries If unanticipated cultural resources are identified during construction, the following procedures will be initiated: ▪ All ground-disturbing construction activities within 100 feet of the discovery will halt immediately. ▪ The construction crew will protect the discovery from further disturbance until a qualified archaeologist has assessed it. ▪ The construction supervisor will immediately contact the project environmental inspector and the PG&E cultural resource specialist. ▪ The PG&E cultural resources specialist will coordinate with the CPUC and NAHC, as appropriate. If the discovery can be avoided or protected and no further impacts will occur, then the resource will be documented on DPR 523 forms, and no further effort will be required. If the resource cannot be avoided and may be subjected to further impacts, qualified personnel will evaluate the significance of the discovery in accordance with the state laws outlined previously; personnel will implement data recovery or other appropriate treatment measures, if warranted. A qualified historical archaeologist will complete an evaluation of historic period resources, while evaluation of precontact resources will be completed by a qualified archaeologist specializing in California prehistoric archaeology. Evaluations may include archival research, oral interviews, and/or field excavations to determine the full depth, extent, nature, and integrity of the deposit.
APM CUL-3: Unanticipated Discovery of Human Remains If human remains or suspected human remains are discovered during PG&E construction, work within 100 feet of the find will stop immediately and the construction supervisor will contact the PG&E cultural resources specialist who meets the Secretary of Interior's Standards for archaeology. Upon discovery, the Specialized Investigations Division of the San Bernardino County Sheriff's Department will be contacted for identification of human remains. The Coroner has 2 working days to examine the remains after being notified. If the remains are Native American, the Coroner must notify the NAHC about the discovery within 24 hours. The NAHC then will identify and contact a Most Likely Descendant (MLD). The MLD may make recommendations to the landowner or representative for the treatment or disposition, with proper dignity, of the remains and grave goods. When proper consultation has occurred, a procedure that may include the preservation, excavation, analysis, and curation of artifacts and/or reburial of those remains and associated artifacts will be formulated and implemented. If the remains are not Native American, the Coroner will consult with the archaeological research team and the lead agency to develop a procedure for the proper study, documentation, and ultimate disposition of the remains. If a determination can be made as to the likely identity – either as an individual or as a member of a group – of the remains, an attempt should be made to identify and contact any living descendants or representatives of the descendant community. As interested parties, these descendants may make recommendations to the owner or representative for the treatment or disposition, with proper dignity, of the remains and grave goods. Final disposition of any human remains or associated funerary objects will be determined in consultation between the landowner and the Most Likely Descendant (MLD).
Section 5.6 Energy
The project will have less-than-significant impacts on energy. Implementation of APM GHG-1 will further minimize potential impacts. APM GHG-1 (refer to Section 5.8.4.2) will simultaneously reduce GHG emissions and contribute to reducing energy use during construction.
Section 5.7 Geology, Soils, and Paleontological Resources (PAL)
APM PAL-1: Retain a Qualified Paleontological Principal Investigator A Paleontological Principal Investigator who meets the standards set forth by the Society of Vertebrate Paleontology will be retained to ensure that all APMs related to paleontological resources are properly implemented during construction. The Paleontological Principal Investigator will have a master's degree or Ph.D. in geology or paleontology, have knowledge of the local paleontology, and be familiar with paleontological procedures and techniques.

Table 3-8. Summary Table of Applicant-Proposed Measures

Applicant-Proposed Measures
APM PAL-2: Worker Environmental Awareness Training Program– Paleontological Portion A WEAP will be prepared to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project performing excavation or trenching activities. The WEAP will address, among other topics, paleontological resources protection. Training may be provided by PG&E as a stand-alone training, or it may be included as part of the overall environmental awareness training as required by the project. The WEAP program will be provided separately to CPUC staff prior to construction. The paleontological training portion will include the following: ▪ The types of fossils that could occur at the project site ▪ The types of lithologies in which the fossils could be preserved ▪ The procedures that should be taken in the event of a fossil discovery ▪ Penalties for disturbing paleontological resources
APM PAL-3: Paleontological Resource Monitoring for Project Excavation or Trenching Activities A paleontological monitor will be present to monitor for paleontological resources where excavation or trenching occurs. Monitoring is not required if this work occurs in soil or sediment that is imported or previously disturbed. The paleontological monitor will be able to: (1) recognize fossils and paleontological deposits and deposits that may be paleontologically sensitive; (2) take accurate and detailed field notes, photographs, and locality coordinates; and (3) document project-related ground-disturbing activities, their locations, and other relevant information, including a photographic record. The qualified paleontologist will be responsible for a weekly reassessment of paleontological sensitivity after reviewing monitoring reports, which may result in reducing or increasing the amount of monitoring required.
APM PAL-4: Unanticipated Paleontological Discovery If significant paleontological resources are discovered during PG&E's excavation and trenching activities, the following procedures will be followed: ▪ Stop work immediately within 100 feet of the fossil find. ▪ Contact the designated project inspector and PG&E Cultural Resource Specialist (CRS) immediately. ▪ Protect the site from further impacts, including looting, erosion, or other human or natural damage. ▪ Arrange for a qualified paleontologist to evaluate the discovery. If the discovery is determined to be significant, PG&E will implement measures to protect and document the paleontological resource. Work may not resume within 100 feet of the find until approved by the paleontologist and CRS. ▪ Collect and curate fossils only when it is safe for the qualified paleontological to be in the project work area. Collect fossils only when the collection activity will not damage the resource further than not collecting it as determined by the qualified paleontologist. Curate all fossils discovered in an appropriate repository.

Table 3-8. Summary Table of Applicant-Proposed Measures

Applicant-Proposed Measures
Section 5.8 Greenhouse Gas Emissions (GHG)
APM GHG-1: PG&E Minimize GHG Emissions PG&E will implement the following measures to minimize GHG emissions consistent with the recommendations provided in the CPUC's Draft Environmental Measures: ▪ Encourage construction workers to carpool to the job site if suitable park-and-ride facilities are available in the project vicinity. ▪ Develop a carpool program to the job site. ▪ Maintain on-road and off-road vehicle tire pressures to manufacturer specifications. Check and reinflate tires at regular intervals. ▪ Recycle demolition debris for reuse to the greatest extent feasible. ▪ Maintain construction equipment per manufacturer's specifications. ▪ Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following startup that limit their availability for use following startup. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction supervisors will include briefings to crews on vehicle use as part of preconstruction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. ▪ Register portable diesel-fueled construction equipment with engines 50 horsepower or larger and manufactured in 2000 or later under the CARB Statewide PERP.
Section 5.9 Hazards, Hazardous Materials, and Public Safety (HAZ)
APM HAZ-1: Development and Implementation of Hazardous Material and Emergency Response Procedures PG&E will implement construction controls, training, and communication to minimize the potential exposure of the public and site workers to potential hazardous materials during all phases of project construction. Construction procedures that will be implemented include worker training appropriate to the worker's role, and PG&E containment and spill control practices.
APM HAZ-2: Emergency Spill Supplies and Equipment Materials will be available on the project site during construction to contain, collect, and dispose of any minor spill. Oil-absorbent material, tarps, and storage drums will be available on the project site during construction and will be used to contain and control any minor releases of oil. If excess water and liquid concrete escape during pouring, they will be directed to lined and bermed areas within the staging area, where the concrete will dry and then be transported for disposal per applicable regulations.
APM HAZ-3: Shock Hazard Safety Measures All authorized personnel working onsite during either construction or O&M will be trained according to PG&E shock hazard safety standards.
APM HAZ-4: Worker Environmental Awareness Training Program – Hazards Portion A WEAP will be prepared to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project. The WEAP will address, among other topics, hazards and hazardous materials. The training program will emphasize site-specific physical conditions to improve hazard prevention and will include a review of spill response and proper BMP implementation. The WEAP program will be provided separately to CPUC staff prior to construction.

Table 3-8. Summary Table of Applicant-Proposed Measures

Applicant-Proposed Measures
APM HAZ-5: Potentially Contaminated Soil Where existing data are not available and there is known potential of contaminated soil in the trenching or excavation area, crews will be notified prior to commencement of earth-moving activities in that area. Excavation or trenching areas either within or directly adjacent to locations of known or suspected contaminated soil will be evaluated by PG&E's Remediation and Industrial Hygiene departments prior to soil disturbance to ensure soil-disturbing activities are supervised and conducted by appropriately trained and qualified individuals, as appropriate. In accordance with standard protocol for any soil-disturbing activities at PG&E facilities, soil showing visual, olfactory, or other evidence of contamination will be stockpiled and managed separately. Soil that is known or suspected of being contaminated (based on existing analytical data or visual, olfactory, or other evidence) and is removed during trenching or excavation activities will be segregated and stockpiled on top of one layer of 20-mil polyethylene sheeting (or equivalent). When the stockpiled material is not actively being handled, top sheeting will be adequately secured or equivalent soil stabilization methods will be employed so that all surface areas are covered or equivalently prevented from dispersion or mixing with nearby soils. The stockpiled soil will have a temporary berm placed around the stockpile to prevent runoff from leaving the area and will not be positioned near storm drains. Soil sampling and testing will be conducted for each stockpile, the purpose of which will be to characterize the chemical quality of the soil for potential reuse, disposal, and worker health and safety risks. The location, distribution, and frequency of the sampling locations where there is known or suspected contaminated soil in a trenching or excavation area will be determined by a qualified Environmental Scientist based on the quantity of excavated material to ensure analytical data adequately characterizes the material with the intent to provide adequate representation of the conditions in the construction area. All soil intended for disposal will be tested in accordance with landfill requirements, regardless of known or suspected contamination being present. Appropriate handling, transportation, and disposal locations for soil will be determined based on results of the analyses. If the soil is contaminated at concentrations greater than state or federal hazardous waste levels, it will be contained and disposed of offsite at a licensed hazardous waste facility. In addition, results will be provided to contractors and construction crews to inform them about soil conditions and potential hazards.
Section 5.10 Hydrology and Water Quality (HYD)
APM HYD-1. Worker Environmental Awareness Program – Water Quality Portion A WEAP will be prepared for the project to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project. The WEAP will include, among other topics, spill prevention and response measures and proper BMP implementation. A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to the CPUC.
Section 5.11 Land Use and Planning
The project will have no impact on land use and planning, so no APMs are included.
Section 5.12 Mineral Resources
The project will have no impact on mineral resources, so no APMs are proposed.
Section 5.13 Noise (NOI)
APM NOI-1: General Construction Noise Management PG&E will employ standard noise-reducing construction practices such as the following: ▪ Comply with manufacturer's muffler requirements on all construction equipment engines and ensure exhaust mufflers are in good condition. ▪ Turn off construction equipment when not in use, where applicable. ▪ Include noise control requirements for construction equipment and tools in specifications provided to construction contractors to the maximum extent practicable, including performing all work in a manner that minimizes noise.

Table 3-8. Summary Table of Applicant-Proposed Measures

Applicant-Proposed Measures
APM NOI-2: Noise Minimization with Portable Barriers Portable air compressors and other small stationary equipment used during construction of PG&E project components will be shielded with portable barriers if appropriate and in response to a noise complaint.
APM NOI-3: Noise Minimization with Quiet Equipment Quiet equipment will be used during construction of PG&E project components whenever possible (for example, equipment that incorporates noise-control elements into the design, such as quiet model compressors or generators [75 dBA at 20 feet], can be specified).
APM NOI-4: Noise Minimization through Direction of Exhaust When in proximity to noise-sensitive uses, equipment exhaust stacks and vents will be directed away from those noise-sensitive uses where feasible.
APM NOI-5: Nighttime Noise Disruption Minimization through Sensitive Receptor Notification In the event that nighttime construction is necessary – for instance, if certain activities need to continue to completion and the noise of the construction equipment expected to be in use is audible at the station fenceline over the ambient noise of the station operation – sensitive receptors within 0.5 mile of the work area will be notified in advance by mail, personal visit, phone call, or door hanger and will be informed of the expected work schedule.
APM NOI-6: Noise Minimization Equipment Specification PG&E will specify general construction noise reduction measures that require the contractor to ensure that all equipment is in good working order, adequately muffled, and maintained in accordance with the manufacturers' recommendations and that stationary equipment such as the temporary generators be in sound-reducing acoustic enclosures that limit noise, for example, to 75 dBA at 20 feet.
Section 5.14 Population and Housing
The project will have no impact on population and housing, so no APMs are proposed.
Section 5.15 Public Services
The project will have no impact on public services resources, so no APMs are proposed.
Section 5.16 Recreation
The project will have no impact on recreation facilities and no APMs are proposed.
Section 5.17 Transportation
The project will have less-than-significant impacts to roadways or transportation facilities, so no APMs are proposed.
Section 5.18 Tribal Cultural Resources (TCR)
APM TCR-1: Undiscovered Potential Tribal Cultural Resources After stopping work and following the procedure for determining eligibility in APM CUL-2, in the event that a prehistoric or protohistoric site is identified and cannot be avoided, PG&E will contact the CPUC and NAHC to identify an appropriate tribe with whom to consult on treatment. If no agreement can be reached for mitigation after discussions with the California Native American Tribe(s) or it is determined that the tribe(s)' preferred mitigation is not feasible, PG&E will implement one of the example mitigation measures listed in PRC Section 21084.3(b), or other feasible mitigation.
Section 5.19 Utilities and Service Systems
The project will have no impact on utilities and service systems, so no APMs are included.
Section 5.20 Wildfire
The project will have no impact related to wildfire and no APMs are proposed.

4. Description of Alternatives

This chapter considers and discusses alternatives to the project and is consistent with CEQA Section 15126.6, which states that an environmental impact report (EIR) must include "a range of reasonable alternatives to the project, or to the location of the project, that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." The alternatives are intended to foster informed decision making and public participation. The rationale for selecting the alternatives should be discussed. An EIR is not required to consider alternatives that are not feasible.

This chapter is also consistent with CPUC GO 177, which requires an application for a CPCN to include an analysis of alternatives.

PG&E anticipates that a negative declaration or mitigated negative declaration will be prepared for the proposed project because no significant impacts were identified and, therefore, alternatives would not be required. However, if the CPUC CEQA unit staff makes a determination that an EIR will be prepared for the proposed project, PG&E has prepared this chapter to identify and describe alternatives to the proposed project.

The description of alternatives is provided in this chapter of this PEA and the comparison of each alternative to the proposed project is provided in Chapter 6, Comparison of Alternatives. The project is described in detail in Chapter 3, Project Description, of this PEA.

4.1 Alternatives Evaluation Methodology

In GO 177, Section V.4, requires the CPCN application for gas infrastructure projects to include an analysis of alternatives, including non-pipeline alternatives, and a demonstration that no reasonable alternatives to the proposed project exist. GO 177 states that examination of non-pipeline alternatives shall consider the following:

- The customers to be served by the proposed project, and whether direct support for electrification, consumption reduction (energy efficiency, conservation, and demand response), and/or alternative methods to provide necessary energy supplies for these customers could be accomplished at a lower cost and/or with lesser environmental impact than the proposed project;
- The potential environmental impacts of alternatives, including emissions; and,
- An estimate of the costs of the environmental and health impacts of the project, as well as the direct and indirect costs of the project.

GO 177 further states that the CPCN application shall include reasons for adoption of the route or location selected, including comparison with alternative routes or locations, the advantages and disadvantages of each, the comparative availability of alternate routes or locations, and justification for the proposed route or location. If the proposed project is located within an ESJ Community as defined in the most recent version of the Commission's ESJ Action Plan, the discussion of alternatives shall discuss whether it is possible to relocate the project and, if so, steps taken to locate the project outside such areas.

Additional requirements for alternatives in GO 177 include the following:

- A listing of the governmental agencies with which proposed route reviews have been undertaken, including a written agency response to the applicant's written request for a brief position statement by each agency.8 In the absence of a written agency position statement, the utility may submit a statement of its understanding of the position of such agencies;
- The discussion of alternatives shall include a cost analysis comparing the proposed project with any feasible alternatives, including non-pipeline alternatives, calculated over the lifetime of the project; and,
- The discussion of alternatives shall consider pollution burden in the project location and shall discuss steps taken to minimize gas infrastructure density and/or ensure substantial economic benefits to local residents.

Because the proposed project is maintenance of an existing compressor station and does not include new pipelines or changes to existing pipelines, non-pipeline alternatives and alternative pipeline routing are not applicable and were not considered. The compressor station is located in an ESJ Community, thus, ESJ concerns were considered in developing alternatives.

As noted in the CEQA Guidelines Section 15126.6(a), alternatives must feasibly accomplish most of the basic project objectives, should reduce or eliminate one or more of the significant impacts of the proposed project, and must be potentially feasible. While the project does not have any significant impacts, to align with the CEQA guidelines, PG&E also screened potential alternatives based on these three criteria:

1. Does the alternative meet most basic project objectives?

Section 15124(b) of the CEQA Guidelines requires a clearly written statement of objectives to help the lead agency develop a reasonable range of alternatives to the proposed project to evaluate under CEQA. Moreover, a project may not limit its objectives in such a way as to effectively confine the range of feasible alternatives that are available. The purpose of this maintenance project is to replace the electrical distribution system within PG&E's Hinkley Compressor Station to increase reliability, maintainability, and operational safety. Refer to Chapter 2 for additional discussion of the project purpose.

The objectives of the project are as follows:

- Modernize the station's electrical distribution system to replace obsolete equipment and to align with current PG&E and industry standards.
- Enable the use of efficient, standardized training and operational and safety procedures.
- Reduce risk of unplanned station failure or shutdown by 2028 or as soon as feasible.
- Maintain existing station operations during construction.

2. Does the alternative avoid or substantially lessen any significant environmental effects of the proposed project (including consideration of whether the alternative itself could create significant environmental effects potentially greater than those of the proposed project)?

Per Section 15126.6(a) of the CEQA Guidelines, alternatives considered must "avoid or substantially lessen any of the significant effects of the project." Based on the analysis presented in Chapter 5, Environmental Analysis, the project is not expected to result in significant impacts. Nevertheless, PG&E evaluated alternatives based on their potential to reduce environmental impacts, including construction impacts to noise, air quality, and cultural, biological, and paleontological resources.

3. Is the alternative feasible?

As defined by Section 15364 of the CEQA Guidelines, "feasible" means capable of being accomplished in a successful manner within a reasonable time period, taking into consideration economic, environmental, legal, social, and technological factors. PG&E considered these factors in evaluating the overall list of potential alternatives. To evaluate the feasibility of different alternatives, PG&E considered the evaluation factors:

- Constructability
  - Duration of permitting and construction
  - Maintain station operations during construction
- Compatibility with Land Use and Land Ownership
  - Land ownership and jurisdiction, including need for new ROW or land acquisition
- Compatibility with Infrastructure
  - Existing utilities
  - Use of existing facilities
- Protection of Resources
  - Air quality
  - Biological resources
  - Cultural resources
  - Paleontological resources

4.2 Alternatives Considered

4.2.1 Process to Identify Potential Alternatives to the Project

PG&E obtained input on potential alternatives to this maintenance project from planners and engineers. Project consultation with agencies and Native American tribes is described in Section 2.2.2. In developing alternatives for this maintenance project, PG&E considered the following factors:

- Project phasing. No alternatives were identified for project phasing because the entire project must be built to meet basic objectives.
- Alternatives within the existing compressor station.
- Alternatives outside the existing compressor station.
- Engineering alternatives, including upgraded equipment locations within the station and upgrading instead of replacing some of the electrical distribution equipment.
- Renewable energy, energy conservation, energy efficiency, demand response, distributed energy resources, and energy storage. The potential for alternatives of this type was limited because none of these types of alternatives would replace the function of the compressor station within the California gas system.

The project already incorporates design strategies to reduce its footprint, including replacing MCCs in existing equipment footprints and modifying instead of replacing some MCCs.

The No Project Alternative is discussed in Section 4.3.

4.2.2 Identified Alternatives

Based on the information presented in Section 4.2.1, PG&E identified three alternatives to the project, as follows:

A. Rebuild Compressor Station on an Alternate Site
B. Switch Primary Power Source to Outside Power
C. Retire Compressor Station

These alternatives were evaluated against the criteria discussed in Section 4.1. Table 4-1 summarizes the alternatives evaluation.

Table 4-1. Summary of Alternatives Evaluation

Potential Alternative	Project Purpose and Objectives Criterion	Feasibility Criterion[a]	Environmental Criterion[b]
A. Rebuild Compressor Station on an Alternate Site	Meets project purpose and most objectives. Does not meet objective to replace the electrical system by 2028 or as soon as feasible.	May not be economically or legally feasible. Rebuilding the compressor station would be far more expensive than the proposed project. Multiple permits from other agencies may be required. If located off existing PG&E property, new land rights would be required.	Greater impacts than the proposed project. Would result in greater air emissions and noise during construction; greater impacts to paleontological resources; greater impacts to habitats and special-status species; and greater visual impacts because it would create new visible structures. Depending on the location, may result in loss of a recreational resource, the Barstow Gun Club, and may have potential for inundation from flooding along the Mojave River.
B. Switch Primary Power Source to Outside Power	Meets project purpose and most objectives. May not meet objective to replace the electrical system by 2028 or as soon as feasible.	May not be economically feasible because it would considerably increase the scope of the proposed project. This alternative would require collaboration with a separate utility to permit and acquire land rights for new transmission line(s). The upgrades planned in the proposed project would still be required to continue operation of the station. In addition, some of the permanent generators must remain as standby power. Therefore, the proposed project upgrades would be required, in addition to connecting to outside power and upgrading infrastructure to work with outside power.	Greater construction impacts, including to air quality, biological resources, and paleontological resources, than the proposed project. May reduce long-term operational air emissions by reducing electricity generation from natural gas.
C. Retire Compressor Station	Would not meet project purpose or objectives.	Not technologically feasible. Retirement of the station is not a viable option. The station is needed to operate the gas transmission system to meet market and system demands.	Greater impacts to most resources as alternate means must be employed to meet customer demands.

[a] Considers economic, environmental, legal, social, and technological factors.

[b] Proposed project will not result in significant environmental impacts.

4.2.3 Alternatives Carried Forward for PEA Evaluation

The No Project Alternative is carried forward for evaluation in this PEA. As discussed in Section 4.4, the other alternatives considered would have greater impacts than the proposed project and would not meet some or all of the objectives.

4.3 No Project Alternative

Section 15126.6(e) of the CEQA Guidelines requires that the No Project Alternative be considered to allow decision makers to compare the impacts of approving the proposed project against the impacts of not approving the proposed project. CEQA requires a discussion of what would be reasonably expected to occur in the foreseeable future if the project were not approved.

Under the No Project Alternative, no upgrades would be made to the electrical system of Hinkley Compressor Station. The station would continue to operate under current conditions. The existing electrical system would continue to require repairs using non-standard operating and safety procedures, and such repairs would be likely to increase in frequency. The aging infrastructure would continue to be a safety hazard to workers. Spare parts for obsolete equipment may no longer be available. The risk of station failure or shutdown would increase, leading to disruption in the transmission of gas to customers.

4.4 Rejected Alternatives

This section discusses all alternatives considered by PG&E that were not selected for further analysis. For each alternative, this section describes the alternative, a description of why the alternative was rejected, and comments from the public or agencies about the alternative. Table 4-1 summarizes the extent to which each alternative would meet the project purpose and objectives, its feasibility, its potential to reduce environmental impacts of the project, and any new impacts that could occur with its implementation.

4.4.1 Alternative A: Rebuild Compressor Station on an Alternate Site

4.4.1.1 Description

This alternative would construct a new compressor facility of comparable size to the existing approximately 64-acre facility, including new electric systems. This alternative provides greater reliability benefits compared to upgrading the electrical system at the existing compressor station because all equipment, not just the electrical system, would be new. This alternative would require identifying a site for the new compressor station in the vicinity of the existing station or along the pipeline corridor. A location not in the vicinity of the existing station would need to be identified along the gas transmission lines and at appropriate operational distances from Topock and Kettleman compressor stations. For purposes of the alternatives analysis, it was assumed that the rebuild would be south of the existing station on PG&E property. This alternative would meet the project purpose and some objectives, including modernizing the station's electrical distribution system and maintaining existing station operations during construction.

4.4.1.2 Rationale for Rejection

Construction of a new compressor facility would have substantially greater impacts than the proposed maintenance project. Construction activities, including excavation and grading, would be over a much larger area and would generate greater air emissions and noise than the proposed project.

The alternate site alternative would have greater impacts to paleontological resources because of the greater area of excavation and earth disturbance. The alternate site alternative likely would impact areas of allscale scrub and desert dune habitats and could result in impacts to special-status species, including desert tortoise and Mojave ground squirrel. It may result in the loss of a recreational resource, the Barstow Gun Club, which is located south of the existing station on PG&E property. It would result in greater visual impacts because it would create new visible structures that would be located closer to a state route designated as scenic. This alternate site would be in a Department of Water Resources 100-year flood hazard area and potentially subject to inundation.

PG&E could site the new facility in a different location; however, PG&E would have to acquire new land rights and, given the existing conditions of the surrounding areas, another location likely would still result in greater environmental impacts than the proposed project. In addition, a new station in a nearby area likely would still be within an ESJ Community. A new station in an area that is not within an ESJ Community likely would be miles from the current station. An alternate site identified through judicious siting could reduce some impacts, such as being outside of an ESJ Community, but the site could potentially have other greater impacts such as impacts to biological resources, cultural resources, and geology and soils.

In addition, because it would take years to permit, design, and construct, it would not meet the objective to reduce the risk of unplanned station failure or shutdown by 2028 or as soon as feasible. The risk of unplanned station failure would continue to increase, and the existing electrical system would continue to require repairs using non-standard operating and safety procedures during implementation of the alternative.

4.4.1.3 Public and Agency Comments

No public or agency requests for or comments on this alternative have been received.

4.4.2 Alternative B: Switch Primary Power Source to Outside Power

4.4.2.1 Description

This alternative would construct the same electrical system upgrades as the proposed project. However, this alternative also would require construction of electrical transmission infrastructure sufficient to provide primary power to the station. Station generators would still be required for power back up when the power went out from the outside source. This alternative would meet the project purpose and most objectives.

4.4.2.2 Rationale for Rejection

The alternative may not be economically feasible. Some of the current generation must be maintained as standby power; therefore, the proposed project upgrades would be required in addition to the cost to bring in outside power and upgrading infrastructure to work with outside power. The new transmission infrastructure would result in biological, cultural, paleontological, and other impacts outside the existing compressor station from installation of poles and construction access. New land rights would be required for a new transmission line.

4.4.2.3 Public and Agency Comments

No public or agency requests for or comments on this alternative have been received.

4.4.3 Alternative C: Retire Compressor Station

4.4.3.1 Description

Instead of making the upgrades necessary for safety and reliability, this alternative would retire Hinkley Compressor Station. As discussed in Section 2.1.1.1, Hinkley Compressor Station is a critical and integral part of PG&E's natural gas transmission system. Without this station, PG&E would not be able to maintain sufficient pressure to transport required quantities of natural gas to meet market and system demands.

4.4.3.2 Rationale for Rejection

This alternative would not meet project purpose and objectives and is technologically infeasible. The station is required to maintain sufficient pressure in the natural gas transmission needed to meet market and system demand.

4.4.3.3 Public and Agency Comments

No public or agency requests for or comments to retire the compressor station retirement as an alternative to the proposed project have been received.

5. Environmental Analysis

The following sections provide an assessment of environmental impacts anticipated from construction, operation, and maintenance of the S-238 Hinkley Compressor Station Electrical Upgrades Project (project). The environmental impacts are evaluated for the following resource areas, consistent with the requirements of the California Environmental Quality Act (CEQA):

1. Aesthetics
1. Agriculture and Forestry Resources
2. Air Quality
3. Biological Resources
4. Cultural Resources
5. Energy
6. Geology, Soils, and Paleontological Resources
7. Greenhouse Gas Emissions
8. Hazards, Hazardous Materials, and Public Safety
9. Hydrology and Water Quality
10. Land Use and Planning
11. Mineral Resources
12. Noise
13. Population and Housing
14. Public Services
15. Recreation
16. Transportation
17. Tribal Cultural Resources
18. Utilities and Service Systems
19. Wildfire
20. Mandatory Findings of Significance

Sections 5.1 through 5.21 present the environmental impact analysis for each resource area evaluated for the project. A checklist is provided in each section to summarize the anticipated level of impact (i.e., No Impact, Less Than Significant Impact, Less Than Significant Impact with Mitigation Incorporated, and Potentially Significant Impact) to each resource area, according to CEQA significance criteria. Each section addresses analysis methodology and environmental setting, applicable regulations, impact questions, Applicant-proposed Measures (APMs), and potential impacts.

With respect to Pacific Gas and Electric Company (PG&E), because the California Public Utilities Commission (CPUC) has exclusive jurisdiction over the siting, design, and construction of the project, PG&E's is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies (CUPAs) with respect air quality and hazardous waste regulations. A summary of local standards and ordinances pertaining to the resources within the project area is provided for informational purposes and to assist with the CEQA review process in each section.

The analysis concludes that all impacts will be less than significant. The implementation of APMs will further avoid or minimize impacts on environmental resources, ensuring that any remaining impacts will be less than significant.

5.1 Aesthetics

This section describes existing conditions and potential impacts to aesthetics/visual resources associated with construction of the project. Operation and maintenance activities associated with the existing station will not change as a result of the project. The analysis concludes that there will be no impacts on aesthetics/visual resources. The project's potential effects on aesthetics/visual resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.1-1 and discussed in more detail in Section 5.1.4.

5.1.1 Methodology and Environmental Setting

The description of visual features of the project area is based on photographs taken as part of the architectural history analysis of the station in July 2024, as well as online maps and existing documentation.

The Hinkley Compressor Station complex is segmented into three distinct areas within the station fenceline. Five retention ponds are located within the approximately 17 acre northern station area. The southwest portion of the property, approximately 28 acres, contains the main station entrance, access road, several large one- and two-story industrial warehouse-type buildings, structures such as cooling towers, and other mechanical equipment. The prominent exterior finishes are either bare metal or painted white or beige. Approximately 20 acres in the southeast portion of the property includes landscaped areas and trees with outdoor areas and buildings used for equipment and material staging, storage, and meetings, including worker picnic facilities. PG&E operates the station 24 hours per day and performs regular and as-needed maintenance. These existing station activities typically use equipment and vehicles similar to construction equipment.

Most of the physical changes proposed by the project will be within existing building, enclosures, or conduit, or will be buried underground, and will not be visible. Visible permanent changes proposed at the station are expected to be limited to three MCCs replaced outdoors, potential removal of Auxiliary Load Center No. 1, and installation of one new MCC outdoors that will replace function of the load center. The three replacement MCCs are custom designed to fit each existing MCC footprint with the new MCC having approximately the same dimensions the replacement MCCs. The new units will have an approximately 2-foot height increase (from an existing 8- to 8.5-foot height). The replacement unit will be within a temperature-controlled enclosure with an off-white exterior finish.

5.1.1.1 Landscape Setting

The project area is in the northwestern portion of unincorporated San Bernardino County, in the western Mojave Desert and in the Mojave River watershed. The Mojave River, approximately 1.2 miles south of the Compressor Station, has only intermittent and ephemeral flow along nearly its entire course. The City of Barstow is approximately 1 mile east of Hinkley Compressor Station. The unincorporated community of Hinkley is approximately 2.5 miles northwest of the project site.

The project area is relatively flat; the Mojave River Valley has an estimated average ground slope of 0.3 percent from the southeast to the northwest (San Bernardino County 2019). The project area consists primarily of rural residential areas and agricultural land with undeveloped, disturbed desert scrub land interspersed. Existing land uses surrounding the project are primarily undeveloped open space and rural residential with some agricultural activity and crop production. More intensive uses of land within the project area include Hinkley Compressor Station, where the project will be constructed, and the Desert View Dairy, located approximately 2 miles north of the project site near the intersection of Mountain View Road and Alcudia Road.

5.1.1.2 Scenic Resources

There are no scenic vistas, designated state scenic highways or national scenic areas within approximately 5 miles of the project site (LRWQCB 2013). The primary public views of the project site will be from Community Boulevard and Fairway Road, which are the nearest public roadways to the project.

Federal- and county-designated scenic roadways and a roadway classified as being eligible for the state scenic highway designation are within 5 miles of the project. SR 58 runs east to west approximately 1 mile north of the project site. It is a San Bernardino County scenic route (San Bernardino County 2020) and, although no portion of SR 58 is an officially designated scenic highway, the segment of SR 58 between U.S. Highway (US) 395 and Interstate (I)-15, which passes through the Hinkley area, has been classified as being eligible for state scenic highway designation by the California Department of Transportation (Caltrans) (Caltrans 2024).

Historic Route 66 is a county-designated scenic route (San Bernardino County 2019). It is approximately 3 miles southeast of the project at its closest stretch of road, where is runs southwest to northeast. Historic Route 66 also is a federal-designated National Scenic Byway in portions of California, Arizona, New Mexico, Oklahoma, Missouri, and Illinois. The National Scenic Byways Program (FHWA 2024a) describes Historic Route 66 as, "The charm, the history, and the atmosphere that make up The Mother Road bring travelers from all over the world to experience America the way it should be experienced – down a stretch of highway where anything goes is literal." The westernmost point of the federal designation is near SR 66's intersection with Delaney Road in Barstow, which is approximately 3.2 miles southwest of the project (FHWA 2024a).

5.1.1.3 Viewshed Analysis

A project viewshed is defined as the general area from which a project is visible. For purposes of describing a project's visual setting and assessing potential visual impacts, the viewshed can be broken down into foreground, middleground, and background zones. The foreground is defined as the zone within 0.25 mile to 0.5 mile of the viewer, the middleground is defined as the zone that extends from the foreground to a maximum of 3 to 5 miles from the viewer, and the background zone extends from the middleground to infinity (USDOT 2015). Viewing distance is a key factor that affects the potential degree of project visibility. Visual details generally become apparent to the viewer when they are observed in the foreground within 0.25 mile to 0.5 mile or less.

The project viewshed includes distant views of hills and mountains and their related ridgelines, as well as rare occasional views of mature Joshua trees and yucca trees and foreground views of old tree rows, agricultural fields, and areas of undeveloped land with undisturbed native vegetation. Agricultural fields are located to the east and north of the project. These fields are composed of fodder crops, primarily Bermuda grass and alfalfa. Other vegetation in the project area is sparse and consists primarily of scrub and ruderal vegetation (LRWQCB 2013).

Because the project involves only upgrades that will be entirely internal to the station, there will be no impact on the project viewshed. The station modifications will not change the public's distant views of mountains, ridgelines, hills, trees, agricultural land, or undeveloped land with undisturbed native vegetation.

5.1.1.4 Landscape Units

The most prominent landform features visible from the project site and vicinity are the distant mountains and hills beyond vast expanses of gently rolling hills or flat desert terrain. The predominant colors within the viewshed are provided by the bare soil and range from tan, brown, and gray to reddish brown depending on the moisture level at different times of year. Vegetation in the area ranges from light tan and gray to pale green. The scrub growth creates a coarse visual texture of great continuity and minimal diversity. In general, these landscape characteristics are homogenous and typical of this part of the region. In addition, there are a few single-story commercial, residential, and agricultural buildings in the viewshed, allowing full and clear views across the flat landscape to the distant mountains. Development in the area is predominantly light colored (for example, beige, light yellow, off-white). Because of the single-story, low-scale, and dispersed character of development in the Hinkley area, buildings blend into the tan and light gray-green, flat terrain of the surrounding landscape (LRWQCB 2013).

5.1.1.5 Viewers and Viewer Sensitivity

As discussed previously, all project upgrades will be contained within the boundaries of the existing station. Viewer sensitivity has been estimated and is discussed in the following subsections.

Residents

Two single-family residences are located within 0.25 mile of the project site. These residences have direct views of the project area from the edge of the properties primarily because the terrain is flat. However, each residential property contains outbuildings and, in both cases, trees that may obstruct views of the station. Viewers at these residences, where the view of the project site is not obscured, could have a moderate sensitivity to visual changes at the project site. The station's existing appearance is likely familiar to the nearby residents. The dominant visual features to residents are likely the station's large industrial buildings and outdoor equipment such as cooling towers, as well as vehicles and equipment associated with the 24-hour station operation. Visible permanent changes proposed at the station will be limited to three MCCs replaced outdoors, one new MCC outdoors, and potential removal of the outdoor Auxiliary Load Center No. 1. These locations are approximately 0.34 mile from each of the residences and are screened from residential views by trees or larger station equipment. Even if visible, the changes (approximately 2-foot height increase and soft yellow to off-white exterior color change) would be indistinguishable at the distance from either residence to the locations where equipment is being replaced. Therefore, there will be no visual changes from the perspective of these residents.

Roadway Users

Viewers traveling on SR 58 and local roadways in and immediately surrounding the project site are likely to possess generally low visual sensitivity to their surroundings. The passing landscape becomes familiar for local roadway users, and their attention typically is not focused on the passing views. At standard roadway speeds, views are of short duration. Roadway users are fleetingly aware of surrounding traffic, road signs, and other visual features. Travelers on the segment of SR 58 and SR 66 nearest the project site will be traveling at high rates of speed, typically 60 to 70 miles per hour. SR 58 is not a state designated scenic highway, and the visual setting of the project area and near vicinity through which SR 58 passes lacks significant visual resources other than views of distant mountain ridgelines and hills. These views will continue to be available to viewers were the project to be implemented. Because of the 1-mile distance from the project site, drivers on SR 58 will not be able to distinguish visual details of the project.

Recreational Users

The project area has lands on which recreation is allowed, but there is no formal recreation area nearby. Two recreation facilities within 0.5 mile of the project are the Barstow Gun Club, which is approximately 800 feet south of the station, and the Hinkley Community and Senior Center, which is approximately 0.5 mile to the west of the station (San Bernardino County Assessor 2024). The closest municipal parks are Jasper Park and Lenwood Park, located approximately 3 miles southeast of the project site in the City of Barstow. There are federal lands under the jurisdiction of the U.S. Bureau of Land Management (BLM) located near the community of Hinkley that can be used for recreation, such as hiking, but there are no designated recreational areas or areas of intense recreational use on the federal lands within 5 miles of the project site. Therefore, although recreational users typically have moderate to high sensitivity to views, viewers visiting local parks and federal lands are considered to have low sensitivity to visual changes at the project site, if the station is visible, because of the distance from the project site.

5.1.1.6 Representative Viewpoints

Because of the limited public views of the project site and the lack of scenic resources near the project site, one representative viewpoint from an adjacent public road was selected but no visual simulations were completed. Other than the four pieces of equipment located outdoors that will be replaced with similar equipment in the same locations, all physical changes are within existing building, enclosures, or conduit, or will be buried underground, and will not be visible.

The nearest public representative viewpoint of the project site is on Fairview Road. A viewpoint on Fairview Road, approximately 400 feet from the compressor station, is shown on Figure 5.1-1. The viewing direction is south-southeast. Roadway users on Fairview Road will experience this view as they travel south from Community Boulevard. The view is of the station's various buildings and structures, all of which are low, light colored, and industrial in appearance. The distant mountain ridgelines and hills are visible behind and on either side of the station.

5.1.1.7 Representative Photographs

A representative photograph of the project site from the viewpoint described in Section 5.1.1.6 is shown on Figure 5.1-1. The photograph was taken on July 16, 2024, at 11:55 a.m. using an iPhone 12 Pro Max with a 5 millimeter focal length. The camera was held at approximately 5 feet above ground at a location that is at approximately the same elevation as the project site.

5.1.1.8 Visual Resource Management Areas

No Visual Resource Management Areas were identified within 5 miles of the project.

5.1.2 Regulatory Setting

5.1.2.1 Federal

The National Scenic Byways Program is part of the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA). The program is a grassroots collaborative effort established to help recognize, preserve, and enhance selected roads throughout the United States. The U.S. Secretary of Transportation recognizes certain roads as All-American Roads or National Scenic Byways based on one or more archaeological, cultural, historic, natural, recreational, or scenic qualities. The features contributing to the distinctive characteristics of the corridor's intrinsic quality are recognized throughout the region and are considered regionally significant (FHWA 2024b).

5.1.2.2 State

The California Scenic Highway Program, a provision of the Streets and Highways Code, was established by the State Legislature in 1963 to preserve and enhance the natural beauty of California. The California Scenic Highway Program includes highways that are either eligible for designation as scenic highways or already have been designated as such. The status of a state scenic highway changes from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation from Caltrans (Caltrans 2024). A city or county may propose to add routes with outstanding scenic elements to the list of eligible highways; however, state legislation is required for a highway to be officially designated.

5.1.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process.

The San Bernardino Countywide Plan includes Goal NR-4 for scenic resources that highlight the natural environment and reinforce the identity of local communities and the county (San Bernardino County 2020). Policies that support this goal include the following:

- Policy NR-4.1 Preservation of scenic resources, to "consider the location and scale of development to preserve regionally significant scenic vistas and natural features, including prominent hillsides, ridgelines, dominant landforms, and reservoirs."
- Policy NR-4.3 Off-site signage, to "prohibit new off-site signage and encourage the removal of existing off-site signage along or within view of County Scenic Routes and State Scenic Highways."

5.1.3 Impact Questions

The project's potential effects on aesthetics were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.1-1 and discussed in more detail in Section 5.1.4.

Table 5.1-1. CEQA Checklist for Aesthetics

Would the project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒

Table 5.1-1. CEQA Checklist for Aesthetics

Would the project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

5.1.3.1 Additional CEQA Impact Questions

None.

5.1.4 Potential Impact Analysis

Project impacts related to aesthetics and visual resources were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. Because the project will have no impact on aesthetics and visual resources, APMs are not included for this section.

5.1.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on aesthetics was evaluated for each of the criteria listed in Table 5.1-1, as discussed in Section 5.1.4.3.

5.1.4.2 Applicant-Proposed Measures

The project will have no impact on aesthetics or visual resources, and no APMs are included.

5.1.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, its users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to aesthetics resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) **Would the project have a substantial adverse effect on a scenic vista? *No Impact.***

CEQA requires the project be evaluated to determine whether its implementation will have a substantial adverse effect on a scenic vista. For purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. As described in Section 5.1.1.3, the project viewshed includes distant views of hills and mountains and their related ridgelines, rare occasional views of mature Joshua trees and yucca trees, and foreground views of old tree rows, agricultural fields, and undeveloped land with undisturbed native vegetation. However, the construction of the station's electrical upgrades will not block views of the distant hills and mountains or otherwise substantially alter the character or quality of the existing landscape views currently experienced by the public. In addition, the existing station buildings will screen most views from outside the station of changes from project upgrades. No impact will occur.

b) **Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? *No Impact.***

The SR 58 corridor approximately 1 mile north of the project site has been classified as being an eligible state scenic highway and is a San Bernardino County scenic route. Historic Route 66, approximately 3 miles southeast of the project, is a county-designated scenic route as well as a federal-designated National Scenic Byway. At the middleground distances to the station from both roadways, the visual details of the construction to upgrade the station's electrical equipment will not be apparent to the roadway users. The project will not alter the overall appearance of equipment within the station when viewed from designated scenic roadways. The project will not substantially damage scenic resources within a state scenic highway or affect views from the SR 58 corridor or the Historic Route 66 corridor. No impact will occur.

c) **In nonurbanized areas, would the project 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 points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? *No Impact*.**

The project will not substantially degrade the existing visual character or quality of public views of the site and its surroundings in its nonurbanized area. During construction, visual impacts will include the presence of workers, temporary generators, construction equipment, and vehicles associated with the station upgrades. Although the west side of the station is located adjacent to a public roadway, the large existing station buildings and outdoor equipment will either block or largely reduce the view of electrical equipment upgrades from roadway users. Construction is expected to take approximately 23 months, but most of the project work, which will be performed by approximately 18 workers, will occur within buildings or enclosures. Existing station operations typically use equipment and vehicles similar to the project's construction equipment. In addition, nearby residences generally are screened by vegetation. Because of ongoing station operations, and the limited number of affected viewers who are accustomed to existing activities associated with station operation, temporary construction-related visual effects will have no impact. As described in impact a), the completed project will not block views of the distant hills and mountains or otherwise substantially alter the character or quality of the existing landscape views experienced by the public. No impact will occur.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? *No Impact.*

During construction, the project will not change existing station lighting and no nighttime construction work requiring temporary lighting is planned. Glare exists when a high degree of contrast between bright and dark areas in a field of view makes it difficult for the human eye to adjust to differences in brightness. At high levels, glare can make it difficult to see, such as when driving westward at sunset. Where the electrical upgrades are occurring outside of existing station buildings or enclosures, the upgraded equipment will be installed underground, within existing conduit, or within replacement MCC structures. Outdoor MCC structures will have a dull, off-white exterior finish that will not create a new source of glare. The project construction will not install equipment that will create a new source of substantial light or glare that will adversely affect day or nighttime views in the area. No impact will occur.

5.1.4.4 CPUC Draft Environmental Measures

Refer to Section 3.5.2 for discussion of keeping the construction area tidy as identified in CPUC Draft Environmental Measure, *Aesthetics Impacts Reduction During Construction*.

5.2 Agriculture and Forestry Resources

This section describes existing conditions and potential impacts to agriculture and forestry resources associated with construction of the project. Operation and maintenance activities associated with the existing station will not change as a result of the project. The analysis concludes that there will be no impacts on agriculture and forestry resources. The project's potential effects on agriculture and forestry resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.2-1 and discussed in more detail in Section 5.2.4.

5.2.1 Methodology and Environmental Setting

Several sources were consulted to complete the analysis for agriculture and forestry resources, including the following:

- California Department of Conservation (DOC) Farmland Mapping & Monitoring Program (FMMP) data and maps
- California Land Conservation Act of 1965 (Williamson Act) contract maps
- Aerial imagery
- *San Bernardino Countywide Plan*, county zoning, and associated maps
- Environmental impact reports for other projects in the area

The mapped agricultural and forestry designations and contracted lands were compared with the project area.

5.2.1.1 Agriculture Resources

Hinkley Valley was dominated by agricultural uses from the 1930s to the early 1990s. The agricultural types have varied but consisted primarily of dairy farming and fodder crops (LRWQCB 2013). Crop cultivation has been declining for the past two decades; land to the south and west of the station is no longer used for agriculture and is now undeveloped open space and rural residential. Crop production and other agriculture, including a dairy, are located to the north and east of the project site.

No Farmland of Prime, Unique, or Statewide Importance occurs on the project site (DOC 2024). There are no Williamson Act contracts on the project site (DOC 2023). However, the agricultural uses to the north and east of the project site include designations of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (DOC 2024). The nearest of these is approximately 1,200 feet from the project. In addition, Williamson Act parcels are located approximately 0.75 mile northeast of the project (DOC 2023). Refer to Figure 5.2-1.

The project site is zoned by San Bernardino County as RL-5 (Rural Living – 5 acres minimum) (San Bernardino County 2020). Parcels adjacent to the station also are zoned RL-5.

5.2.1.2 Forestry Resources

There is no tree cover, forest land, timberland, or timberland zoned production on or near the project site as defined in California PRC Section 12220(g), Section 4526, or California Government Code Section 51104(g). Refer to Section 5.4, Biological Resources, for more information on existing vegetation in the project area.

5.2.2 Regulatory Setting

This section identifies applicable federal, state, and local laws, policies, and standards regarding agriculture and forestry resources. No forestry resources regulations apply to the project.

5.2.2.1 Federal

No federal regulations related to agriculture or forestry resources are applicable to the project.

5.2.2.2 State

Farmland Mapping and Monitoring Program

The California DOC, under the Division of Land Resource Protection, has established the FMMP to monitor the conversion of the state's farmland to and from agricultural use (DOC 2024). The goal of the FMMP is to provide consistent and impartial data to decision makers for use in assessing status, reviewing trends, and planning for the future of California's agricultural land resources. The FMMP maps agriculturally viable lands and designates specific categories.

Agricultural land is designated by the DOC under the Division of Land Resource Protection, identified in the 2018 FMMP (DOC 2018), and defined by CEQA. The FMMP produces Important Farmland Series Maps, which combine soil quality, available irrigation, and land use information (DOC 2024).

"Agricultural land" is defined by California PRC Section 21060.1 as land that qualifies as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, described as follows:

- Prime Farmland has the best combination of physical and chemical characteristics able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- Unique Farmland consists of lesser-quality soils but produces the state's leading agricultural crops. This land usually is irrigated but includes nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
- Farmland of Statewide Importance is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

Additional categories, including Farmland of Local Importance, Grazing Land, Urban and Built-up Land, and Other Land, are identified within Important Farmland Series Maps. For the purposes of this PEA, Important Farmland is defined consistent with the California PRC Section 21060.1 definition of "agricultural land," as well as the CEQA Environmental Checklist Form (Appendix G of the CEQA Guidelines), and includes areas designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance.

5.2.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process. No such policies or goals associated with agriculture and forestry resources were identified in local plans. Refer to Section 5.11, Land Use, for a detailed discussion on general plan land use and zoning designations.

5.2.3 Impact Questions

The project's potential effects on agriculture and forestry resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.2-1 and discussed in more detail in Section 5.2.4.

Table 5.2-1. CEQA Checklist for Agriculture and Forestry Resources

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural land?	☐	☐	☐	☒
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 by Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by GC Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest uses?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in the conversion of farmland to nonagricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

5.2.3.1 Additional CEQA Impact Questions

None.

5.2.4 Potential Impact Analysis

Project impacts related to agricultural and forestry resources were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase. Because the project will have no impact on agriculture and forestry resources, APMs have not been included for this section.

5.2.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. In accordance with Appendix G of the CEQA Guidelines, the potential significance of project impacts on land use and planning were evaluated for each of the criteria listed in Table 5.2-1, as discussed in Section 5.2.4.3.

5.2.4.2 Applicant-Proposed Measures

The project will have no impact on agriculture and forestry resources, so no APMs are included.

5.2.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than electrical distribution equipment upgrades will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to agriculture and forestry resources resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) **Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural land? *No Impact*.**

All construction activities for the proposed project will take place within the existing station fenceline. The project site, including the work area and staging area, does not include any existing farmland or land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Nearby agricultural lands will not be affected by project construction. Therefore, the project will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural land. No impact will occur.

b) **Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? *No Impact*.**

No zoning for agricultural use exists on the project site, nor are there Williamson Act contracts on the project site. The nearby Williamson Act contract lands, approximately 1 mile from the project site, will not be affected by project construction. Therefore, the project will not conflict with existing zoning for agricultural use or a Williamson Act contract. No impact will occur.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined by Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by GC Section 51104(g))? *No Impact*.

Neither the project site nor the surrounding area is zoned as forest land or timberland. No areas of protected timberland and no commercial timberland are located on the project site or in the project area. Therefore, the project will not conflict with the zoning of forest lands or timberland. No impact will occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest uses? *No Impact*.

No forest land exists on the project site or in the project area. Therefore, the project would not result in the loss of forest land or the conversion of forest land to non-forest uses. No impact will occur.

e) Would the project involve other changes in the existing environment, which, due to their location or nature, could result in the conversion of farmland to nonagricultural use or conversion of forest land to non-forest use? *No Impact*.

The project will upgrade the electrical component of an existing compressor station within the current facility. All work will be contained within the project site and nearby agricultural lands will not be disturbed. Therefore, project implementation will not discourage the continued use of surrounding land for agricultural purposes. No impact will occur.

5.2.4.4 CPUC Draft Environmental Measures

None.

5.3 Air Quality

This section discusses potential air quality issues associated with the project construction, including both regional and site-specific concerns. Air quality emissions will occur within the Mojave Desert Air Basin (MDAB) under the jurisdiction of the MDAQMD. This air quality impact assessment follows Appendix G of the CEQA Guidelines and MDAQMD's *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines* (MDAQMD 2020) for activities within its jurisdiction.

Primary air emissions from construction of the project include emissions associated with fugitive dust, heavy construction equipment, portable generators, material and equipment transport trucks, and construction workers commuting to and from the project site. The project will not change existing gas capacities, station operation or gas transmission system function or layout, or PG&E service areas or customers. Existing operation activities will continue following project construction, so no change in emissions will occur from project operations.

Air emissions evaluated include reactive organic gases (ROG), carbon monoxide (CO), nitrogen oxides (NOx), particulate matter less than 10 micrometers in aerodynamic diameter (PM_{10}), particulate matter less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$), and sulfur dioxide (SO_2). Greenhouse gas (GHG) emissions are discussed separately in Section 5.8, Greenhouse Gas Emissions. The analysis concludes that impacts to air quality will be less than significant and incorporation of the APMs described in Section 5.3.4.2 will further reduce potential impacts.

5.3.1 Methodology and Environmental Setting

5.3.1.1 Methodology

Short-term construction emissions of ROG, CO, NOx, PM_{10}, $PM_{2.5}$, and SO_2 were evaluated. Construction emissions from off-road construction equipment, portable generators, and fugitive dust were estimated using the methodologies and emission factors described in the California Emissions Estimator Model (CalEEMod) User's Guide (ICF 2022) as well as MDAQMD's default emission factors for internal combustion engines. On-road vehicle emissions were estimated using the methodologies described in the CalEEMod User's Guide (ICF 2022) and emission factors obtained from the EMFAC2021 emissions model (CARB 2024a). Projected construction emissions were estimated for each year based on the anticipated project schedule and activities. Although most construction activities will occur in 2027, construction emission estimates were developed using equipment and vehicle emission factors for model year 2026, which is the year in which construction is expected to begin. This approach provides for a more conservative emissions estimate as equipment and vehicle emission factors are expected to improve each year based on developments in control technologies and the required use of cleaner equipment and vehicles over time. Detailed construction emission calculations, including the assumptions used, are presented in Appendix A.

As noted previously, because the project involves rebuilding existing infrastructure, no change will occur to current operations or associated long-term air emissions because of this project. For this reason, air emissions associated with operations were not quantified.

While operation emissions will not change as a result of this project from the existing situation, approximately 22 temporary PERP generators will be used to power the station during periods of construction when the stationary generators are not operating. The PERP generators will be removed from the facility when the stationary generators resume operation. Emissions have been conservatively estimated from the use of PERP generators and do not include the reduction of emissions from when the stationary generators are offline. For example, PERP generator use conservatively calculates operation 24 hours per day for 8 months. The PERP generators will not be operating continuously during project construction. The PERP generators will only operate to power station equipment when the equipment is disconnected from its permanent power source. The actual use of energy during project construction will not increase beyond what typically is used during normal station operation. The project does not change the throughput of energy.

This analysis is consistent with MDAQMD's CEQA and Federal Conformity Guidelines that require evaluation of any existing or planned (zoned) sensitive receptor land use within 1,000 feet of the project (MDAQMD 2020).

Air emission calculations for this document were based on worst-case estimates of emissions to ensure a conservative environmental analysis. This analysis may be revised, as needed, to reflect changes to the project plans.

5.3.1.2 Environmental Setting

The project will be in the unincorporated community of Hinkley in San Bernardino County, California, which lies within the MDAB. The MDAB is characterized by "mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB" (MDAQMD 2020) via surrounding mountain passes.

The climate in the MDAB in the summer is dominated "by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south" (MDAQMD 2020). "The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inches of precipitation). The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least three months have maximum average temperatures over 100.4 degrees Fahrenheit (°F)" (MDAQMD 2020).

5.3.1.3 Ambient Air Quality

CARB maintains ambient air monitoring stations for criteria pollutants throughout California. The air monitoring station closest to the project area is on East Buena Vista Street in Barstow approximately 8 miles east of the project site. Data from this location were used in this study for ozone (O_3), nitrogen dioxide (NO_2), and PM_{10}. Because the Buena Vista Barstow location does not monitor for CO and $PM_{2.5}$, these data were taken instead from the air monitoring stations located on East Mountain View Street in Barstow and Park Avenue in Victorville, respectively. These sites were conservatively used based on their proximity and similar orientation as the Buena Vista Barstow location with the Transverse Mountain Range to the south. Table 5.3-1 summarizes available data from these air monitoring stations during a recent 3-year period (2020 to 2022). As shown, multiple exceedances of the O_3 and particulate matter National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been recorded recently.

Table 5.3-1. Ambient Criteria Pollutants Concentration Data in Barstow and Victorville

Pollutant	Metric	Maximum Concentrations and Frequencies of Exceeded Standards		
		2020	2021	2022
O_3[a]	Maximum 1-Hour Concentration (ppm)	0.117	0.099	0.095
	Days > 0.090 ppm (CAAQS)	3	2	1
	Maximum 8-Hour Concentration (ppm)	0.098	0.087	0.084
	Days > 0.070 ppm (NAAQS/CAAQS)	25	20	13
CO[b]	Maximum 1-Hour Concentration (ppm)	5.5	1.0	No data
	Days > 35 ppm (NAAQS)	0	0	No data
	Days > 20 ppm (CAAQS)	No data	No data	No data
	Maximum 8-Hour Concentration (ppm)	1.0	0.7	No data
	Days > 9.0 ppm (NAAQS/CAAQS)	0	0	No data
NO_2[a]	Maximum 1-Hour Concentration (ppm)	0.063	0.062	0.060
	Days > 0.18 ppm (CAAQS)	0	0	0
	Days > 0.10 ppm (NAAQS)	0	0	0
	Annual Average Concentration (ppm)	0.014	0.015	0.014
	Days > 0.030 ppm (CAAQS)	No Data	No Data	No Data
PM_{10}[a]	Maximum 24-Hour Concentration (μg/m^3)	213.5	372.7	225.1
	Days > 50 μg/m^3 (CAAQS)	No Data	No Data	No Data
	Days > 150 μg/m^3 (NAAQS)	1	1	6
	Annual Average Concentration (μg/m^3)	33.3	29.9	30.9
	Days > 20 μg/m^3 (CAAQS)	No data	No data	No data
$PM_{2.5}$[c]	Maximum 24-Hour Concentration (μg/m^3)	48.7	87.1	24.6
	Days > 35 μg/m^3 (NAAQS)	4	1	0
	Annual Average Concentration (μg/m^3)	10.4	10.3	9.0
	Days > 12 μg/m^3 (NAAQS/CAAQS)[d]	No data	No data	No data

Sources: CARB 2024c; EPA 2024b

[a] Data from the monitoring station located at 200 East Buena Vista Street in Barstow, California (CARB #36155).

[b] Data from the monitoring station located at 301 East Mountain View Street in Barstow, California (EPA #060710001).

[c] Data from the monitoring station located at 14306 Park Avenue in Victorville, California (CARB #36306).

[d] Data are presented for comparison to the NAAQS available at the time monitoring data were collected, and not the new, lower standard of 9 μg/m^3, which took effect on May 6, 2024.

> = greater than
μg/m^3 = microgram(s) per cubic meter
ppm = parts per million (by volume)

Attainment status for the project area is summarized in Table 5.3-2. Under the NAAQS, the project area is currently designated as nonattainment for the O_3 and PM_{10} standards and as attainment or unclassified for the $PM_{2.5}$, CO, NO_2, SO_2, and lead standards. Under the CAAQS, the project area is currently designated as nonattainment for the O_3, PM_{10}, and $PM_{2.5}$ standards and as attainment or unclassified for all other pollutant standards.

Table 5.3-2. Attainment Status for the Project Area

Pollutant	NAAQS	CAAQS
O_3	Nonattainment (Severe)	Nonattainment
PM_{10}	Nonattainment (Moderate)	Nonattainment
$PM_{2.5}$	Attainment/Unclassified	Nonattainment
CO	Attainment/Unclassifiable	Attainment/Unclassifiable
NO_2	Attainment/Unclassifiable	Attainment/Unclassifiable
SO_2	Attainment/Unclassified	Attainment/Unclassified
Lead (particulate)	Attainment/Unclassifiable	Attainment/Unclassifiable
Hydrogen Sulfide	No Standard	Unclassified
Sulfates	No Standard	Attainment
Visibility-Reducing Particles	No Standard	Unclassified
Vinyl Chloride	No Standard	No Information Available

Sources: CARB 2024b; EPA 2024a

5.3.1.4 Sensitive Receptors

Sensitive receptors include hospitals, residences, schools, daycare facilities, elderly housing, convalescent facilities, prisons, dormitories, and parks. These are places where the occupants may be relatively more susceptible to the adverse effects of exposure to toxic air contaminant (TAC) emissions and other pollutants. As described in Chapter 3, Project Description, the project will rebuild infrastructure in the unincorporated community of Hinkley. Land uses surrounding the project site primarily consist of industrial and agricultural (open space).

No occupied residences are located within 1,000 feet of the project. No nonresidential sensitive receptors, such as hospitals, convalescent facilities, prisons, elderly housing, daycare facilities, schools, parks, and dormitories, are within 1,000 feet of the project site.

5.3.2 Regulatory Setting

5.3.2.1 Federal

Clean Air Act and National Ambient Air Quality Standards

The federal Clean Air Act (CAA) establishes the statutory framework for regulation of air quality in the United States. Pursuant to this act, the U.S. Environmental Protection Agency (EPA) has established various regulations to achieve and maintain acceptable air quality, including the adoption of NAAQS, mandatory state implementation plan (SIP) or maintenance plan requirements to achieve and maintain NAAQS, and emission standards for both stationary and mobile sources of air pollution. NAAQS were first established in 1970 for six pollutants: CO, O_3, PM_{10} and $PM_{2.5}$, NO_2, SO_2, and lead. These pollutants are commonly referred to as criteria pollutants because they are considered the most prevalent air pollutants known to be hazardous to human health. The NAAQS contain primary standards that protect public health and secondary standards that protect public welfare. A summary of the NAAQS and the CAAQS is provided in Table 5.3-3.

Table 5.3-3. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[a]	NAAQS[b]	
			Primary[c]	Secondary[d]
O_3	8 hours	0.070 ppm	0.070 ppm	0.070 ppm
	1 hour	0.09 ppm	NA	NA
PM_{10}	Annual arithmetic mean	20 μg/m^3	NA	NA
	24 hours	50 μg/m^3	150 μg/m^3	150 μg/m^3
$PM_{2.5}$	Annual arithmetic mean	12 μg/m^3	12 μg/m^3[e]	15 μg/m^3
	24 hours	NA	35 μg/m^3	35 μg/m^3
CO	8 hours	9 ppm	9 ppm	NA
	1 hour	20 ppm	35 ppm	NA
NO_2	Annual arithmetic mean	0.03 ppm	0.053 ppm	0.053 ppm
	1 hour	0.18 ppm	0.100 ppm	NA
SO_2	24 hours	0.04 ppm	NA	NA
	3 hours	NA	NA	0.5 ppm
	1 hour	0.25 ppm	0.075 ppm[f]	NA
Lead[g]	Rolling 3month average	NA	0.15 μg/m^3	0.15 μg/m^3
	30 day average	1.5 μg/m^3	NA	NA
Visibility-reducing particles	8 hours	NA [h]	NA	NA
Sulfates	24 hours	25 μg/m^3	NA	NA
Hydrogen sulfide	1 hour	0.03 ppm	A	NA
Vinyl chloride[g]	24 hours	0.01 ppm	NA	NA

Source: CARB 2016

[a] CAAQS for O_3, CO, SO_2 (1 hour and 24 hour), NO_2, and suspended particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles) are not to be exceeded. All others are not to be equaled or exceeded.

[b] NAAQS other than O_3, particulate matter, and those based on annual averages or annual arithmetic means are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, is equal to or less than the standard.

[c] NAAQS Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[d] NAAQS Secondary Standards: The levels of air quality necessary to protect the public welfare from known or anticipated adverse effects of a pollutant.

[e] The EPA recently adopted a lower annual $PM_{2.5}$ standard of 9 μg/m^3, which took effect on May 6, 2024.

[f] Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 parts per billion.

[g] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. CARB made this determination following the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[h] In 1989, CARB converted the general statewide 10-mile visibility standard to instrumental equivalents, which is "extinction of 0.23 per kilometer."

NA = No standard exists for this pollutant averaging period

EPA classifies areas as being in attainment or nonattainment with the NAAQS for each criteria pollutant. A region that meets the NAAQS for a pollutant is designated as being in attainment for that pollutant. A region that does not meet the NAAQS for a pollutant is designated as being in nonattainment for that pollutant. An area that was previously designated as a nonattainment area but has met the standard and has been reclassified by EPA as in attainment with a maintenance plan is a maintenance area. The attainment status for the project area was shown previously in Table 5.3-2.

The 1977 CAA amendment requires each state to develop and maintain a SIP for each nonattainment criteria pollutant. The SIP serves as a tool to help avoid and minimize emissions of nonattainment criteria pollutants and their precursor pollutants and achieve compliance with the NAAQS. In 1990, the CAA was amended to strengthen regulation of both stationary and mobile emission sources.

Toxic Air Contaminant and Odorous Emissions

In addition to the criteria pollutants, EPA also regulates emissions of hazardous air pollutants (HAPs) or TACs. TACs include airborne inorganic and organic compounds that can have both short-term (acute) and long-term (carcinogenic, chronic, and mutagenic) impacts on human health. Odorous compounds include those that can be detected by the human olfactory system, such as hydrogen sulfide and other sulfurous compounds.

Controlling air toxic emissions became a national priority with the passage of the CAA amendments in 1990, when Congress mandated that EPA regulate 188 air toxics. Prior to the 1990 CAA amendments, national emission standards were established for benzene, vinyl chloride, radionuclides, mercury, asbestos, beryllium, inorganic arsenic, radon 222, and coke oven emissions. The 1990 CAA amendments required EPA to set standards for categories and subcategories of sources that emit HAPs, rather than for the pollutants themselves. EPA began issuing the new standards in November 1994. National emission standards set before 1991 remain applicable.

Odorous emissions typically are regulated by local air districts under nuisance prohibitory rules. Because odor generally is a subjective phenomenon that affects people differently, development of odor emissions standards has proven impractical. Therefore, regulators have relied on the nuisance standard to assist in enforcing control of odorous emissions. Determination of the presence of a nuisance emission is based on the number of odor complaints received by the air district during an odor episode.

5.3.2.2 State

California Clean Air Act and Air Quality Standards

CARB is the state agency responsible for California air quality management, including establishment of CAAQS, mobile source emission standards, and GHG regulations, as well as oversight of regional air quality districts and preparation of implementation plans, including regulations for stationary sources of air pollution. The CAAQS generally are more stringent, except for the 1-hour NO_2 and SO_2 standards, and include more pollutants than the NAAQS (refer to Table 5.3-3). California specifies four additional criteria pollutants: visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Similar to the EPA, CARB designates counties in California as being in attainment or nonattainment for the CAAQS (refer to Table 5.3-2).

The California CAA, which was approved in 1988, requires each local air district, where ambient concentrations violate the CAAQS, to prepare an air quality management plan to achieve compliance with the CAAQS as a part of the SIP. CARB has ultimate responsibility for the SIP for nonattainment pollutants but relies on each local air district to adopt mandatory statewide programs and provide additional strategies for sources under its jurisdiction. The SIPs are a compilation of new and previously submitted plans, programs (monitoring, modeling, and permitting), district rules, state regulations, and federal controls. Local air districts and other agencies prepare SIP elements and submit them to CARB for approval. CARB forwards SIP revisions to EPA for approval and publication in the *Federal Register*.

Statewide Portable Equipment Registration Program

Voluntary registration under the Statewide PERP allows owners or operators of portable engines to operate their equipment throughout California without having to obtain individual air district permits (13 CCR Sections 2450 through 2465). Diesel engines eligible for PERP registration must not be self-propelling, must be certified to Tier 4 emissions standards, and must not reside in the same location longer than 12 consecutive months. Examples of portable equipment include air compressors, generators, pumps, drills, and welders.

Air Toxics

California's Air Toxic "Hot Spots" Information and Assessment Act (AB 2588), which was enacted in 1987, identifies TAC hot spots where emissions from specific sources may expose individuals to an elevated risk of adverse health effects, particularly cancer or reproductive harm. TACs also are referred to as HAPs. AB 2588 requires that a business or other establishment identified as a significant source of toxic emissions provide the affected population with information about health risks posed by the emissions. Diesel particulate matter (DPM) is the primary TAC emitted by construction activities. The existing Hinkley Compressor Station is subject to the AB 2588 program and periodically reports operating data to MDAQMD. However, the project and long-term operation emissions for the facility will continue to be included in California's statewide AB 2588 emissions inventory. The project will not affect the facility's ongoing compliance with this program because it will not alter the facility's long-term operation emissions.

CARB has adopted the Diesel Risk Reduction Plan (CARB 2000) and a series of airborne toxic control measures (ATCMs) for mobile and stationary sources, which are intended to reduce overall diesel exhaust emissions in California. CARB also has adopted ATCMs for controlling naturally occurring asbestos. CARB and local air districts have authority to enforce the federal National Emission Standards for Hazardous Air Pollutants regulations for asbestos. Key ATCMs and CARB regulations relevant to this project are described as follows:

- ATCM for DPM from Portable Engines Rated at 50 Horsepower and Greater. To reduce DPM emissions throughout the state, CARB has established the ATCM for DPM from Portable Engines Rated at 50 Horsepower and Greater (13 CCR Section 93116). This ATCM requires portable diesel-fueled engines having a maximum rating of 50 hp and greater to meet fleet-average DPM emissions standards.
- ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling. CARB has established the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to DPM and other pollutants by establishing idling restrictions, emission standards, and other requirements for heavy-duty diesel engines (13 CCR Section 2485). This ATCM applies to diesel-fueled commercial motor vehicles with a gross vehicle weight rating greater than 10,000 pounds that are licensed for operation on highways. Under this ATCM, vehicles will not idle for more than 5 consecutive minutes in any location. There also are provisions for alternative idle reduction technologies, such as internal

combustion engine auxiliary power systems, including required compliance with emissions performance specifications.

- Regulation for In-Use Off-Road Diesel-Fueled Fleets. CARB has established the Regulation for In-Use Off-Road Diesel-Fueled Fleets to reduce NOx, DPM, and other criteria pollutant emissions from in-use off-road diesel-fueled vehicles (13 CCR Section 2449). This regulation applies to all self-propelled off-road diesel vehicles rated 25 hp or greater, including vehicles that are rented or leased, and requires restricted vehicle idling time, reporting of vehicle use, and compliance with fleet-average emission standards. It also provides a schedule by which lower-tiered engines cannot be added to a vehicle fleet.
- Statewide Portable Equipment Registration Program. Voluntary registration under the Statewide Portable Equipment Registration Program allows owners or operators of portable engines to operate their equipment throughout California without having to obtain individual air district permits (13 CCR Sections 2450 through 2465). Diesel engines eligible for PERP registration must not be self-propelling, must be certified to Tier 4 emissions standards, and must not reside in the same location longer than 12 consecutive months. Examples of portable equipment include generators, plate compactors, drills, and welders.
- Asbestos ATCM for Construction, Grading, Quarrying, and Surface-Mining Operations. CARB has established the Asbestos ATCM for Construction, Grading, Quarrying, and Surface-Mining Operations to minimize the generation of asbestos from earth disturbance or construction activities (13 CCR Section 93105). The Asbestos ATCM applies to any project that will include sites to be disturbed in a geographic ultramafic rock unit area or an area where naturally occurring asbestos (NOA), serpentine, or ultramafic rocks are determined to be present. The Asbestos ATCM establishes notification, management practices, mitigation plans, transport and disposal, and administrative (recordkeeping and reporting) requirements for subject projects to reduce the generation of asbestos from all aspects of construction, grading, quarrying, and mining operations. The project is neither located in an area where NOA has historically been encountered (Churchill and Hill 2000; USGS 2011), nor is it expected based on the known types of soil in the project vicinity. If NOA is encountered during construction, the project will comply with the requirements of the Asbestos ATCM.

5.3.2.3 Regional

Air District Regulations

The project is located within the jurisdiction of the MDAQMD. The MDAQMD is the regional agency charged with preparing, adopting, and implementing emission control measures and standards for stationary sources of air pollution pursuant to delegated state and federal authority. The facility has an existing Title V Operating Permit and air district-issued permits for other sources that will not be altered by construction.

MDAQMD confirmed that the 22 portable temporary generators are exempt from MDAQMD stationary source permitting and approved their use under Section 2453(m)(4)(E)(2) of the California Air Resources Board PERP regulation (MDAQMD 2024b).

Because the project will not involve construction and long-term operation of new stationary sources of criteria pollutants or TACs, such as emergency generators, or modify the facility's existing stationary sources, there are no permitting regulations relevant to the project. Similarly, the project will not be subject to MDAQMD Regulation XI, Rule 1102, which aims to control fugitive ROG emissions from component leaks at natural gas transfer and storage facilities, because it will not modify the facility's existing gas infrastructure. However, the project will be subject to the fugitive dust control provisions of MDAQMD Regulation IV, Rule 403, as this project involves disturbing surface soil. These requirements, described in the following subsection, are expected to be met through implementation of the APMs discussed in Section 5.3.4.2.

MDAQMD Regulation IV, Rule 403

This rule aims to limit the quantity of particulate matter in the atmosphere from anthropogenic fugitive dust sources by generically requiring actions to prevent, reduce, or mitigate fugitive dust. For construction and earth-moving operations with disturbed areas of at least 5 acres, the rule additionally requires the development and implementation of a dust control plan, which outlines specific measures to control dust emissions. These measures may include watering disturbed surface areas, preventing project-related trackout onto paved surfaces, covering bulk material when it is being stored or transported, and reducing earth-moving activities during times of high winds. The project is not expected to require a dust control plan, because the total area disturbed will be no more than 4 acres, but PG&E will take every reasonable precaution to minimize fugitive dust emissions associated with excavation and grading.

MDAQMD Rule 1000

This rule aims to control emissions of asbestos during demolition and establish appropriate waste disposal procedures for asbestos-containing materials. Demolition is defined as the wrecking, moving, or dismantling of any load-supporting structural member, or portion thereof, of a building or facility and includes, but is not limited to, any related cutting, disjointing, stripping, or removal of structural elements. Under this rule, visible emissions of asbestos-containing material are strictly prohibited. To prevent such emissions, MDAQMD provides explicit procedures by which asbestos-containing materials should be treated during cutting, stripping, demolition, removal, handling, and disposal. The affected structure shall also be thoroughly surveyed prior to commencement of demolition. A written plan or notification of intent to demolish, even if there is no asbestos present, shall be provided to MDAQMD at least 10 working days prior to commencement of demolition (MDAQMD 2024a). If concrete with asbestos is encountered during construction, the project will comply with the requirements of the MDAQMD to avoid potentially exposing sensitive receptors to asbestos.

Air Quality Plans

Under the California CAA, which was approved in 1988 and amended in 1992, MDAQMD is required to develop an air quality plan to achieve and maintain compliance with federal and state nonattainment criteria pollutants within the air district. In response, MDAQMD has developed the *Federal 70 parts per billion (ppb) Ozone Attainment Plan* (Western Mojave Desert Nonattainment Area), adopted in January 2023, and the Mojave Desert Planning Area Federal Particulate Matter (PM_{10}) Attainment Plan, adopted in July 1995, to achieve and maintain compliance with the state and federal O_3 and particulate matter standards, respectively.

The O_3 Attainment Plan: (1) demonstrates that the MDAQMD will meet the primary required federal O_3 planning milestone, attainment of the 70 ppb 8-hour O_3 NAAQS, by August 2033; (2) presents the progress the MDAQMD will make toward meeting all required O_3 planning milestones; and (3) discusses the 2015 70 ppb 8-hour O_3 NAAQS in preparation of an expected nonattainment designation for the new NAAQS. It also identifies regional strategies to help achieve California's many air quality, climate, and community risk reduction goals (MDAQMD 2023). The PM_{10} Attainment Plan identifies local control strategies to reduce fugitive dust emissions from unpaved road travel, construction/demolition activities, disturbed areas, and Lucerne Valley industrial activities (MDAQMD 1995). The control strategies specific to construction/demolition activities generally align with the requirements of MDAQMD Regulation IV, Rule 403, and are expected to be met by the project through implementation of the APMs discussed in Section 5.3.4.2.

While not the most current plan regarding O_3 nonattainment issues, MDAQMD also adopted the 8-Hour Reasonably Available Control Technology (RACT) – SIP Analysis in May 2015. This plan identifies RACT applicable to major sources of O_3 and its precursors (ROG and NOx). As a major source, the existing Hinkley Compressor Station is identified within this plan as needing to comply with RACT for NOx emissions from stationary internal combustion engines (ICEs) (MDAQMD 2015). RACT for controlling ROG emissions from equipment leaks from natural gas processing plants also applies to the Hinkley Compressor Station (MDAQMD 2015). Because this project will not modify the existing stationary ICEs, install new permanent stationary ICEs, or modify the existing natural gas infrastructure, the RACT identified in this plan is not applicable to the project.

MDAQMD CEQA and Federal Conformity Guidelines

MDAQMD's *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*, updated February 2020, provide guidance to assist local jurisdictions and lead agencies in determining whether a project will: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emissions reductions or other milestones of any federal attainment plan (MDAQMD 2020). MDAQMD's significant emissions thresholds can be used to quantitatively evaluate whether a project is considered significant, thereby requiring the incorporation of mitigation.

5.3.2.4 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations, respectively. However, plans and policies for San Bernardino County are considered for informational purposes to assist with the CEQA review process, based on the expected location of project construction activities.

San Bernardino County Development Code

The San Bernardino County Development Code contains provisions governing construction and operational activities that may affect air quality, including the following (San Bernardino County 2014):

- Obtain equipment permits, as required, from the local air district and file a copy of the permit(s) with the county within 30 days of approval.
- Comply with diesel exhaust emissions control measures, which generally align with the ATCMs described in Section 5.3.2.2.

San Bernardino County Policy Plan

The San Bernardino Countywide Plan serves as the general plan for the unincorporated areas of San Bernardino County. The San Bernardino County Policy Plan is part of the Countywide Plan and contains the long-term goals and policies that will guide county decisions, investments, and improvements toward achieving the countywide vision. Goals and policies that may apply to the project and aim to reduce pollutant emissions within the county include the following (San Bernardino County 2022):

- Goal IU-5, Power and Communications. Unincorporated area residents and businesses have access to reliable power and communication systems.
  - Policy IU-5.5, Energy and fuel facilities. We encourage the development and upgrade of energy and regional fuel facilities in areas that do not pose significant environmental or public health and

safety hazards, and in a manner that is compatible with military operations and local community identity.

- Goal NR-1, Air Quality. Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally generated emissions.
  - Policy NR-1.3, Coordination on air pollution. We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.
  - Policy NR-1.6, Fugitive dust emissions. We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.
  - Policy NR-1.8, Construction and operations. We invest in county facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage county contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.
- Goal HZ-3, Environmental Justice. For unincorporated environmental justice focus areas, equitable levels of protection from environmental and health hazards; expanded opportunities for physical activity and meaningful civic engagement; and access to healthy food, public facilities, safe and sanitary housing.
  - Policy HZ-3.1, Health risk assessment. We require projects processed by the county to provide a health risk assessment when a project could potentially increase the incremental cancer risk by 10 in 1 million or more in unincorporated environmental justice focus areas, and we require such assessments to evaluate impacts of truck traffic from the project to freeways. We establish appropriate mitigation prior to the approval of new construction, rehabilitation, or expansion permits.

5.3.3 Impact Questions

The project's potential effects related to air quality were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.3-4 and discussed in more detail in Section 5.3.4.

Table 5.3-4. CEQA Checklist for Air Quality

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 nonattainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

Table 5.3-4. CEQA Checklist for Air Quality

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

5.3.3.1 Additional CEQA Impact Questions

None.

5.3.4 Potential Impact Analysis

Potential project impacts related to air quality were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. While operation emissions will not change as a result of this project from the existing situation, temporary PERP generators will be used when the stationary generators are not operating. Emissions have been conservatively estimated from the use of PERP generators and do not include the reduction of emissions from when the stationary generators are offline. The actual use of energy during project construction will not increase beyond what typically is used during normal station operation. The project does not change the throughput of energy.

The APMs discussed will further minimize potential less-than-significant impacts.

5.3.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on air quality were evaluated for each of the criteria listed in Table 5.3-4, as discussed in Section 5.3.4.3.

CEQA Guidelines state that the significance criteria established by the air quality management district or air pollution control district may be relied on to make impact determinations. The MDAQMD's *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines* (MDAQMD 2020) provide recommended air quality emission thresholds for various air pollutants, including CO, NOx, ROG, SO_2, PM_{10}, $PM_{2.5}$, hydrogen sulfide, and lead, for evaluating the significance of project emissions. If the emissions are below the significance thresholds, impacts would be considered less than significant. If the emissions are greater than the significance thresholds, impacts would be considered significant, thereby requiring mitigation. Table 5.3-5 presents the MDAQMD air quality significance thresholds applicable to the project (MDAQMD 2020). These significant emissions thresholds are given as daily and annual values, so that multiphased projects (such as projects with construction and operational phases) with phases shorter than 1 year can be compared to the daily values.

Table 5.3-5. MDAQMD Air Quality Thresholds of Significance

Pollutant	Significant Emissions Thresholds	
	Annual Emissions (tons)	Daily Emissions (pounds)
ROG	25	137
NOx	25	137
SO_2	25	137
Hydrogen sulfide	10	54
Lead	0.6	3
PM_{10}	15	82
$PM_{2.5}$	12	65
CO	100	548

Source: MDAQMD 2020

5.3.4.2 Applicant-Proposed Measures

The project will have less-than-significant impacts on air quality. Implementation of the following APMs will further minimize potential impacts.

APM AIR-1: Dust Control During Construction

PG&E will control fugitive dust by using BMPs, as follows:

- Water or cover with coarse rock all exposed surfaces with the potential to generate dust to reduce the potential for airborne dust from leaving the site.
- Limit the simultaneous occurrence of more than two ground-disturbing construction phases on the same area at any one time. Phase activities to reduce the amount of disturbed surfaces at any one time.
- Cover all haul trucks entering/leaving the site and trim their loads, as necessary.
- Use wet power vacuum street sweepers to sweep all paved access roads, parking areas, staging areas, and public roads adjacent to the project site daily (at minimum) during construction. Do not use dry power sweeping
- Wash off all trucks and equipment, including their tires, prior to leaving the project site.
- Apply gravel or non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at the project site.
- Water and/or cover soil stockpiles daily.
- Plant vegetative ground cover in disturbed areas as soon as possible and water it appropriately until vegetation is established.
- Limit all vehicle speeds to 15 miles per hour (mph) or less on unpaved areas.
- Implement dust monitoring in compliance with the standards of MDAQMD.
- Halt construction during any periods when wind speeds exceed 50 mph.

APM AIR-2: Minimize Construction Equipment Exhaust

In accordance with APM GHG-1, PG&E will minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible and by minimizing idling time. In particular, cranes, off-highway trucks, and tractors/loaders/backhoes used during project construction will comply with Tier 4 emissions standards.

5.3.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. While operation emissions will not change as a result of this project from the existing situation, temporary PERP generators will be used when the stationary generators are not operating. Emissions have been conservatively estimated from the use of PERP generators and do not include the reduction of emissions from when the stationary generators are offline. The actual use of energy during project construction will not increase beyond what typically is used during normal station operation. The project does not change the throughput of energy.

As such, impacts related to air quality resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) **Would the project conflict with or obstruct implementation of the applicable air quality plan?** ***Less-than-Significant Impact.***

Air quality plans provide an overview of the region's air quality and identify the pollution control measures needed to expeditiously attain and maintain air quality standards. These air quality plans propose emission-reduction measures that are designed to bring the region into attainment of the CAAQS and NAAQS. Federal, state, and regional air quality regulations and rules were developed by incorporating the requirements from the air quality plans to ensure the implementation of these plans. The project will comply with applicable federal, state, and local regulations as further discussed in the following paragraphs. Because the regional air regulations and rules are developed to ensure the implementation of the regional air quality plans, compliance with these regulations indicates that the project's activities will not obstruct implementation of the air quality plans of the region.

In addition to the air quality regulations and rules, MDAQMD adopted emission thresholds for CEQA evaluation to ensure that the project emissions will not conflict with or hinder the implementation of the air quality plans. Therefore, consistency with the air quality plans and standards also is analyzed by evaluating whether the project's emissions will exceed MDAQMD's CEQA significance thresholds.

Construction activities will cause temporary air pollutant emissions over the estimated 23-month construction period resulting from off-road construction equipment and machinery, vehicular traffic generated by construction workers and material and equipment transport trucks, and grading and material hauling. Following project completion, all construction emissions will cease. The project's maximum daily and annual average construction emissions are provided in Table 5.3-6. These emissions were estimated per the methodology described in Section 5.3.1.1, based on the construction schedules and the anticipated overlapping construction activities that potentially will occur on the same day. Details of the emission calculations are provided in Appendix A. APMs are implemented as part of the project; however, construction emissions are shown with and without APMs for informational purposes.

Table 5.3-6. Estimated Construction Emissions

Construction Period	Daily Emissions (pounds)					
	ROG	CO	NOx	SO_2	PM_{10}[a]	$PM_{2.5}$[a]
Construction without APMs	12.9	348	25.4	0.46	14.8	14.6
Construction with APMs[b]	12.9	348	21.5	0.46	14.5	14.3
MDAQMD CEQA Significance Thresholds	137	548	137	137	82	65
Exceeds Threshold?	No	No	No	No	No	No
Construction Period	**Annual Emissions (tons)**					
	ROG	CO	NOx	SO_2	PM_{10}[a]	$PM_{2.5}$[a]
Construction without APMs	1.55	41.7	3.05	0.06	1.78	1.75
Construction with APMs[b]	1.55	41.7	2.58	0.06	1.74	1.72
MDAQMD CEQA Significance Thresholds	25	100	25	25	15	12
Exceeds Threshold?	No	No	No	No	No	No

[a] PM_{10} and $PM_{2.5}$ emissions represent both exhaust and fugitive dust emissions.

[b] These emission estimates account for reductions achieved through incorporation of APM's AIR-1 and AIR-2, which targets PM and NOx emissions.

As shown, project construction emissions even without incorporation of APM AIR-1 and APM AIR-2 will be lower than the MDAQMD's CEQA thresholds for all pollutants analyzed. In addition, implementation of APM AIR-1 will ensure the following:

- Project conformance with the control strategies of MDAQMD's PM10 Attainment Plan and Goal NR-1 of the San Bernardino County Policy Plan
- Compliance with CARB's ATCMs for diesel-fueled construction equipment and vehicles, which will ensure project conformance with the San Bernardino County Development Code
- The intention to upgrade the facility's existing infrastructure, which will align with Policy IU-5.5 of the San Bernardino County Policy Plan

Therefore, the project will not conflict with or obstruct implementation of the applicable air quality plan and thus will have less-than-significant impacts during construction.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard? *Less-than-Significant Impact.*

Under federal standards, MDAB has been designated by the EPA as nonattainment for O_3 and PM_{10}. Under state standards, MDAB has been designated by CARB as nonattainment for O_3, PM_{10}, and $PM_{2.5}$. In its *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*, the MDAQMD has provided project-level thresholds of significance for criteria pollutants for which the MDAB is in nonattainment, as well as for elevated localized concentrations of CO, ROG, NOx, SO_2, hydrogen sulfide, and lead (refer to Table 5.3-5). These are the levels at which the MDAQMD has determined that an individual project's contribution to the cumulative impact (nonattainment) is cumulatively considerable (MDAQMD 2020). In other words, if an individual project's contribution (even with incorporation of all feasible APMs) exceeds the thresholds, the project would have a significant and adverse impact. Alternately, if an individual project's contribution is below the project-level thresholds of significance, the project would have a less-than-significant impact.

Based on the criterion described above, project construction will not result in a cumulatively considerable net increase in the nonattainment pollutants (PM_{10}, $PM_{2.5}$, and O_3) because the emissions will be temporary; the daily emissions are less than the significance thresholds even without implementation of APM AIR-1, as summarized in Table 5.3-6; and BMPs for reducing fugitive dust emissions will be implemented through APM AIR-1. Therefore, construction of the project will not result in a cumulatively considerable net increase of any pollutants for which the region is in nonattainment and there will result in a less-than-significant impact.

Additionally, because project construction is not expected to result in more than 50 peak hour vehicle trips per day (from worker commutes and truck trips), the project is expected to comply with the San Bernardino County Congestion Management Program (SANBAG 2016) and will have a less-than-significant impact on traffic/circulation patterns within the project vicinity.

c) Would the project expose sensitive receptors to substantial pollutant concentrations? *Less-than-Significant Impact.*

Construction activities will involve the operation of heavy equipment and activities that will temporarily produce additional dust and air emissions. Construction activities will be confined to the Hinkley Compressor Station property. As stated in Section 5.3.1.4, no occupied residences are within 1,000 feet of the project. MDAQMD's CEQA and Federal Conformity Guidelines (MDAQMD 2020) require evaluation of any existing or planned (zoned) sensitive receptor land use within 1,000 feet of the project. This property could be affected by construction-generated air emissions; however, exposure will be periodic and temporary. There are no other sensitive receptors located within 1,000 feet of the project. In addition, as shown in Table 5.3-6, criteria pollutant emissions from project construction will be below the MDAQMD's significance thresholds even without implementation of APM AIR-1, indicating that the project is unlikely to cause violations to the ambient air quality standards that were developed to protect public health. If concrete with asbestos is encountered during construction, the project will comply with the requirements of the MDAQMD to avoid potentially exposing sensitive receptors to asbestos.

Therefore, the project will not expose sensitive receptors to substantial criteria pollutant concentrations.

TACs from project construction generally will be associated with DPM from diesel-fueled engines. TACs can result in health risks associated with exposure to DPM from diesel equipment, vehicles, and generators (CARB 1998). It is expected that implementation of APM AIR-1 and compliance with CARB's ATCMs and regulations limiting idling from diesel-fueled fleets, as applicable, will further reduce the project's already less-than-significant DPM emissions (conservatively represented by PM_{10} emissions). Therefore, project construction will not expose sensitive receptors to substantial TAC concentrations.

The generation of TACs will be temporary because of the variable nature of construction activities, particularly considering the short amount of time equipment will be within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. For these reasons, a health risk assessment was not considered appropriate for project construction.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? *Less-than-Significant Impact*.

Construction of the project will not result in other emissions, including those leading to odors that will adversely affect a substantial number of people. Typical odor nuisances include hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions. However, no significant sources of these pollutants will be used during construction. Construction of the project will require use of diesel-based equipment that will result in emissions of diesel fumes. Diesel odors from construction may be perceived as objectionable in lower concentrations than required to cause a health risk. However, any odors from construction will be periodic and temporary in nature. Therefore, impacts related to odors and other emissions during construction will be less than significant.

5.3.4.4 CPUC Draft Environmental Measures

CPUC Draft Environmental Measure *Dust Control During Construction* has been incorporated into APM AIR-1.

5.4 Biological Resources

This section describes existing conditions and potential impacts to biological resources (vegetation, wildlife, and aquatic resources) associated with construction of the project. Operation and maintenance activities associated with the existing station are not changed as a result of the project. The analysis concludes that there will be no impacts on biological resources. The project's potential effects on biological resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.4-3 and are discussed in more detail in Section 5.4.4. Figure 5.4-1 identifies project components and the BSA for the project.

5.4.1 Methodology and Environmental Setting

This section summarizes the methods used to identify biological resources, including waters, wetlands, and special-status plants and wildlife species, and to analyze potential impacts.

The biological study area (BSA) is defined as the area where biological studies were conducted. It includes the project footprint, the entire Hinkley Compressor Station, and the areas adjacent to the station where vegetation exists outside of the station but within the BSA. The project footprint is defined as the area that may be directly affected by the proposed project, including temporary and permanent impacts, and represents the maximum extent of ground-disturbing activities at the potential work area. The BSA includes the approximately 25.5-acre project footprint within the approximately 64-acre fenced station and a 600-foot-wide buffer around the fenced station. Based on CPUC guidelines, a 1,000-foot-wide buffer was used for identifying vegetation communities and land cover types. The 1,000-foot-wide buffer was only used for identifying vegetation communities and land cover types; project impacts to wildlife were assessed used the 600-foot-wide buffer.

The approximately 64-acre fenced station is on an approximately 160-acre parcel adjacent to Community Boulevard at Fairview Road. The landscape surrounding the station generally is flat, which limits potential for erosion, sedimentation, and other indirect effects. The upland habitat observed throughout the BSA is either hardscaped (pavement and sidewalks) or otherwise developed/landscaped, agriculture, or disturbed habitat.

Special-status species identified during the database and literature review were evaluated to determine their potential to occur within the BSA based on known or expected geographic range, nearby occurrence records, and the presence of known or expected habitat within or near the study area. A full summary of the special-status species identified, along with their potential to occur in the BSA, is provided in Appendix B1, which is submitted separately.

Special-status plants include species meeting one or more of the following criteria:

- Listed, proposed for listing, or candidate for listing as threatened or endangered under the federal Endangered Species Act (FESA) (50 Code of Federal Regulations [CFR] 17.11 for wildlife; 50 CFR 17.12 for plants; 67 *Federal Register* 40658 for candidate species; and various notices in the *Federal Register* for proposed species).
- Listed under the California Endangered Species Act (CESA) as threatened or endangered, or as proposed or candidates for listing.
- Designated as rare under the Native Plant Protection Act.
- Species that otherwise meet the definition of rare, threatened, or endangered species under CEQA Guidelines Section 15380. This includes species listed by the California Native Plant Society (CNPS) in

the online version of its Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2024) as List 1A, 1B, 2A, 2B, 3, or 4.

Sensitive vegetation communities and habitats include species that meet one or more of the following criteria:

- Sensitive vegetation communities/habitats identified in local or regional plans, policies, or regulations, or designated by the CDFW or the USFWS
- Areas that provide habitat for locally unique biotic species/communities (for example, desert wash, dunes, sand flats)
- Habitat that contains or supports rare, endangered, or threatened wildlife or plant species as defined by CDFW and USFWS
- Habitat that supports CDFW Species of Special Concern (SSC)
- Areas that provide habitat for rare or endangered species and that meet the definition in CEQA Guidelines Section 15380

Special-status wildlife includes species that meet one or more of the following criteria:

- Listed, proposed for listing, or candidate for listing as threatened or endangered under FESA
- Listed or candidate for listing as threatened or endangered under CESA
- Designated as an SSC or a Fully Protected (FP) species by the CDFW
- Designated as a Bird of Conservation Concern by the USFWS
- Species that otherwise meet the definition of rare, threatened, or endangered species under CEQA Guidelines Section 15380
- Bird species protected under the federal Bald and Golden Eagle Protection Act (BGEPA) and bat species considered by the Western Bat Working Group to be "high" or "medium" priority (WBWG 2024)

Most birds without a status designation are protected under the Migratory Bird Treaty Act of 1918 (MBTA). The MBTA implements a series of international treaties that provides migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds and the act provides that it is unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird" (16 United States Code [USC] Section 703).

5.4.1.1 Database and Literature Review

The following biological databases were queried for records of special-status plants, natural communities, and wildlife that might have potential to occur in the project site:

- USFWS Information for Planning and Consultation (IPaC) list of federally listed and proposed endangered, threatened, and candidate species and their designated critical habitat (USFWS 2024a)
- CNPS's Inventory of Rare and Endangered Plants of California database for special-status plant species within the Hinkley U.S. Geological Survey (USGS) 7.5-minute quadrangle, which encompasses the project site (CNPS 2024)
- California Natural Diversity Database (CNDDB) for documented occurrences of special-status species within 5 miles of the project site (CDFW 2024)
- The National Wetlands Inventory database (USFWS 2024b) for the presence of waters and wetlands and to identify suitable habitat for special-status species.

- CDFW VegCAMP program for sensitive habitats mapped in the BSA (CDFW 2024a)
- National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) West Coast Region Protected Resource App mapping tool (NOAA 2024) was reviewed.
- NOAA Fisheries Essential Fish Habitat mapper (NOAA 2024a) was reviewed.
- Topographic maps and aerial imagery (Google Earth Pro, NAIP and ESRI World Imagery, and USGS 7.5-minute quadrangle maps of the area) to identify aquatic habitats in a 3-mile radius to evaluate the potential for special-status amphibians and fish to occur in the project site.

The CNDDB and CNPS search for special-status species typically includes nine USGS 7.5-minute quadrangle maps for a project located within a single quadrangle—the quadrangle that covers the project site and the eight quadrangles that surround the project quadrangle. The nine USGS 7.5-minute quadrangle maps in the project vicinity include: Hinkley, Barstow, Barstow SE, Twelve Gauge Lake, Lockhart, Water Valley, Bird Spring, Mud Hills, Wild Crossing, and Hodge. The CNDDB search was further refined to a 5-mile buffer around the project site. The USFWS IPaC species list was generated for the project BSA. The NOAA Fisheries species were generated using the NOAA Fisheries West Coast Region Protected Resource App mapping tool and NOAA Fisheries Essential Fish Habitat mapper.

Other information sources consulted to determine which special-status species could potentially occur in the project site included the following:

- Natural Resources Conservation Service (NRCS) Web Soil Survey, to obtain information about soils in the BSA (NRCS 2024)
- Hinkley Groundwater Remediation Project Habitat Conservation Plan (HCP), to obtain information about covered activities and covered species (PG&E 2017)
- Observations made during biological surveys and monitoring conducted while implementation of groundwater remediation activities at the site (Strohl 2024)
- BLM Areas of Critical Environmental Concern (ACEC), to determine if they are present in the project site and BSA
- Desert Renewable Energy Conservation Plan Land Use Plan Amendment, to obtain information regarding unique landscape features, rare vegetation types, and special-status species and habitats within the BSA (BLM 2016)
- Aerial photographs
- Jepson Manual: Vascular Plants of California (Greenhouse et al. 2012)

5.4.1.2 Biological Resources Technical Report

The Biological Resources Technical Report was prepared to provide the results of a background review, reconnaissance-level survey, habitat assessment and species-specific surveys of the project site. The report includes a review of relevant databases and literature, the results of reconnaissance-level and protocol-level field surveys, and an analysis of project impacts on biological resources at this project location. The Biological Resources Technical Report is Appendix B1, which is submitted separately.

Field Surveys

A reconnaissance-level field survey was conducted on April 12, 2024, to assess habitat present within the BSA to determine suitability for special-status species and sensitive and regulated habitats. Biologists surveyed all areas in the BSA that might include habitat for sensitive biological resources. Based on the results of the reconnaissance-level survey, protocol-level surveys for desert tortoise (*Gopherus agassizii*), Mohave ground squirrel (*Xerospermophilus mohavensis*), and burrowing owl (*Athene cunicularia*) were conducted. In addition, a rare plant survey was conducted, on April 15 and 16, 2024, and a bat habitat assessment was conducted, on July 10. 2024, to determine the potential bat species to occur in the project site.

Likelihood of Presence of Special-Status Species

Using the information generated from literature reviews and field surveys, in addition to the results from the Biological Resources Technical Report, a list of special-status species with the potential to occur within the project site was generated. The likelihood of special-status species occurrence was determined based on natural history parameters and the species' range, habitat, foraging needs, migration routes, and reproductive requirements using the following general categories:

- Present—Reconnaissance-level, focused, or protocol-level surveys documented the occurrence or observation of a species in the project site.
- Likely to occur (onsite or offsite where the species may be affected by the project from noise, dust, lighting, hydrological modifications, and so on)—The species has a strong likelihood to be found in the project site prior to or during construction, but it has not been directly observed to date during project surveys. The likelihood that a species may occur is based on the following considerations: (1) suitable habitat that meets the life history requirements of the species is present on or near the project site; (2) migration routes or corridors are near or within the project site; (3) records of sighting are documented on or near the project site; and (4) there is an absence of invasive predators (for example, bullfrogs). The main assumption is that records of occurrence have been documented within or near the project site, the project site falls within the range of the species, and suitable habitat is present, but it is undetermined whether the habitat is currently occupied.
- Potential to occur—There is a possibility that the species can be found in the project site prior to or during construction, but it has not been directly observed to date. The likelihood that a species may occur is based on the following conditions: (1) suitable habitat that meets the life history requirements of the species is present on or near the project site; (2) migration routes or corridors are near or within the project site; and (3) there is an absence of invasive predators (for example, bullfrogs). The main assumption is that the project site falls within the range of the species, suitable habitat is present, but no records of sighting are located within or near the project site and it is undetermined whether the habitat is currently occupied.
- Unlikely to occur—The species is not likely to occur in the project site based on the following considerations: (1) lack of suitable habitat and features that are required to satisfy the life history requirements of the species (for example, absence of foraging habitat, lack of reproductive areas, and lack of sheltering areas); (2) presence of barriers to migration/dispersal; (3) presence of predators or invasive species that inhibit survival or occupation (for example, the presence of bullfrogs or invasive fish); and (4) lack of hibernacula, hibernation areas, or estivation areas onsite.
- Absent—Suitable habitat does not exist in the project site, the species is restricted to or known to be present only within a specific area outside of the project site, or focused or protocol-level surveys did not detect the species.

Unless otherwise noted, the methodology and environmental information presented in this section are summarized from the Biological Resources Technical Report, which is Appendix B1 and submitted separately.

5.4.1.3 Survey Area (Local Setting)

The BSA, which contains the compressor station and a 600-foot-wide buffer, is located within and adjacent to the unincorporated community of Hinkley, with a small area extending into the city limits of Barstow to the east of the station. Refer to Figure 5.4-1 for the BSA. The project site is in Hinkley Valley east and southeast of Lynx Cat Mountain, west and southwest of Mount General, and south of Black and Opal Mountains and northeast Harper Valley. The entire project site is within the Hinkley Compressor Station and under private ownership (lands owned by PG&E). Topographically, the project site is relatively flat; the elevation of the project site is approximately 2,100 feet above mean sea level.

The Mojave River generally is located southeast of the BSA. Surface flow within the Mojave River typically is ephemeral and associated with heavy seasonal rainfall events. The region is considered arid, with nearby Barstow averaging slightly more than 4 inches of rainfall annually. Maximum air temperatures in Barstow (averaged by month) range from approximately 60°F in January to more than 102°F in July, with minimum temperatures ranging from approximately 31°F in December to approximately 67°F in July (WRCC 2024).

Landscape surrounding the compressor station is a mix of agricultural areas, developed residential areas, and small private property holdings. Lands located north and east of the project site are primarily active agricultural fields. To the north, PG&E operates alfalfa cultivation as part of its groundwater recharge project. To the east, lands outside of and adjacent to the station fence are disturbed native scrub, with a dairy farm and alfalfa field opposite Summerset Road. Lands located to the south and west are a mix with urban development (including the Barstow Gun Club), transportation corridors, and undeveloped lots. To the west, lands are a mix of rural residential and somewhat disturbed native habitat. Several PG&E underground gas lines pass through lands adjacent to the fenced facility.

The project site is within the station, occupied by numerous buildings housing natural gas generators, offices, and associated infrastructure. The entire project site is disturbed from previous work activities associated with the station. The station is almost completely denuded of any vegetation except for ornamental landscape plantings along the access road and large ornamental trees (athel [*Tamarix aphylla*], ornamental elm [*Ulmus* sp.], and ornamental pine [*Pinus* sp.]) and shrubs within the proposed project staging area, adjacent to an employee recreation area, and a small area of native vegetation in the western portion of the station (refer to Section 5.4.1.4).

5.4.1.4 Vegetation Communities and Land Cover

The upland habitat observed throughout the BSA is either hardscaped or otherwise developed/ landscaped, agricultural land, disturbed habitat consisting of primarily ruderal or nonnative species, or is undeveloped desert scrub. Representative vegetation alliances from the Manual of California Vegetation, second edition (Sawyer et al. 2009) are referenced and discussed in the following subsections. Land cover types in the BSA and surrounding areas are shown on Figure 5.4-2. No sensitive vegetation communities or habitats identified in local plans, policies, or regulations, or as designated by CDFW or USFWS, are present within the BSA. The acreages of land cover types within the BSA are shown in Table 5.4-1.

The only natural habitat within the fenced area of the station is an approximately 2-acre area on the western boundary of the station (south of the entrance) consisting of Allscale Scrub with occasional creosote bush (*Larrea tridentata*) (refer to Figure 5.4-2). Ongoing operation of the station results in continued disturbance and prevents the development of natural habitat within the fenced boundary. Outside of the fenced area within the BSA, some natural habitat exists; areas of Creosote Bush Scrub and Allscale scrub surround the station in all directions.

Vegetation Communities

The vegetation communities and land cover types within a 1,000-foot buffer of the compressor station consist of developed areas, disturbed areas, agriculture, and degraded Creosote Brush Scrub and degraded Allscale Scrub vegetation communities. Vegetation communities within 1,000-foot buffer, which includes the BSA, are shown on Figure 5.4-2. A detailed description for each vegetation community is provided in the following subsections.

Table 5.4-1. Landcover Types within 1,000 Feet of the Station

Vegetation Community	Acres
Creosote Bush Scrub	34.10
Allscale Scrub	140.24
Disturbed	14.61
Agriculture	37.01
Developed	71.74
Desert Dunes	6.97
Total	**304.67**

Creosote Bush Scrub

This vegetation community is present in the southwestern portions of the 1,000-foot buffer, adjacent to the station in one portion. It is most accurately keyed to the Creosote Bush-White Bursage-Allscale Scrub Association (of the Creosote Bush-White Bursage Alliance) (Sawyer et al. 2009). The Creosote Bush-White Bursage vegetation alliance must contain at least 1 percent absolute cover of creosote bush and 1 percent absolute cover of white bursage (*Ambrosia dumosa*), with these two species exceeding twice the cover of other shrub species (with a few exceptions). This scrub alliance is common throughout a variety of mainly upland habitats but also may be common in minor washes and rills. Around the station, within the 1,000-foot buffer, allscale (*Atriplex polycarpa*) also is common in this community, allowing a further classification of this community into the Creosote Bush-White Bursage-Allscale Scrub Association. Adjacent to the project site outside of the station, this scrub association is disturbed, with red-stemmed filaree (*Erodium cicutarium*) and Mediterranean schismus (*Schismus barbatus*), although native species are also present in high quantities and diversity. Common native species included evening primroses (*Eremothera/Oenothera* spp.), blue dicks (*Dichelostemma capitatum* ssp. *pauciflorus*), tick-seed (*Coreopsis* spp.), rigid spiny-herb (*Chorizanthe rigida*), and desert plantain (*Plantago ovata*). The Creosote-Bush Scrub community occupies 34.10 acres within the 1,000-foot buffer. This is the dominant land cover type along the southwestern undeveloped portion of the 1,000-foot buffer (refer to Figure 5.4-2).

Allscale Scrub

Most of the vegetation outside of the station, along the eastern, northern, and western portions of the 1,000-foot buffer, can be classified as Allscale Scrub. This vegetation community is common in low-lying, sandy soil areas of the Mojave Desert, particularly the western Mojave. It is common on low-lying areas such as alluvial fans, edges of playas, and along washes. This community type is dominated by allscale (allscale composes at least 2percent of the absolute cover) but may contain other species of shrubs for up to 50 percent of the relative cover (Sawyer et al. 2009). Allscale Scrub within the 1,000-foot survey buffer around the station is dominated by allscale, with almost no other shrub species present. In openings between shrubs, annual species may be present. These annual species were uncommon but included gilias (*Gilia* spp.), buckwheat (*Eriogonum* spp.), comb seed (*Pectocarya* spp.), fiddleneck (*Amsinckia* spp.), annual bur-sage (*Ambrosia acanthicarpa*), and snakehead (*Atriplex coulteri*). This Allscale Scrub habitat varies from moderately high-quality west of the station to low quality north and northeast of the station, where disturbance was more recent and weeds such as London rocket (*Sisymbrium irio*), brome grasses (*Bromus* spp.), and prickly lettuce (*Lactuca serriola*) were common. The Allscale Scrub community occupies 140.24 acres within the 1,000-foot buffer (refer to Figure 5.4-2).

Disturbed

This vegetation community is located along the southern, northeastern, and western edges of the station within the 1,000-foot buffer and is characterized by mostly bare disturbed soils dominated by low-growing ruderal (weedy) vegetation and few native species. This vegetation community is associated with anthropogenic disturbances, including agricultural practices, residential clearing and grubbing, refuse dumping, dirt roads, and powerline easements. This land cover includes the Barstow Gun Club in the southeast portion of the 1,000-foot buffer. This land cover type occupies approximately 14.61 acres within the 1,000-foot buffer (refer to Figure 5.4-2).

Agriculture

Agricultural lands are located on the eastern and northern edges of the 1,000-foot buffer. Outside the buffer, agricultural lands extend to the north and the east. These lands include agricultural fields and orchards currently or recently in operation as well as the existing agricultural treatment units for remediation activities at the station. The treatment units currently support alfalfa as well as Bermuda grass and Sudan grass. This land cover type occupies approximately 37.01 acres within the 1,000-foot buffer (refer to Figure 5.4-2).

Developed

Developed areas refer to areas that have been constructed upon or otherwise physically altered to an extent that native vegetation communities are no longer supported. This land cover type generally consists of semi-permanent structures, homes, parking lots, pavement or hardscape, and sometimes landscaped areas that require maintenance and irrigation (ornamental greenbelts). Developed areas comprise most of the project site and the larger compression station. The small area of ornamental landscaped trees, near the clubhouse, is within the staging area and is considered part of the developed land cover. Portions of two residential properties (although not residences) are within the 1,000-foot buffer and also are classified as Developed. This land cover type occupies approximately 71.74 acres within the 1,000-foot buffer (refer to Figure 5.4-2).

Desert Dunes

This vegetation community is located outside of the project site and BSA, along the southeastern edge of the 1,000-foot buffer. The aerial photography analysis revealed that this community can be highly variable on the amount of vegetation that is supported from year to year based on major flood and wind events. Dominant plant species within the desert dunes community consist of wing saltbush, allscale, white bursage, California jointfir (*Ephedra californica*), mormon tea (*Ephedra viridis*), and desert dandelion (*Malacothrix glabrata*). This land cover type occupies approximately 6.97 acres within the 1,000-foot buffer (refer to Figure 5.4-2). No activities are proposed within the desert dunes vegetation community.

5.4.1.5 Common Species

The BSA and surrounding areas support habitat for several common plant and wildlife species. Common species identified during surveys are noted within the Biological Resources Technical Report (Appendix B1). Most species identified are common desert species or species typically associated with developed areas, but several waterbirds are present in the vicinity of the lined evaporation ponds on the north part of the station.

5.4.1.6 Wetland and Aquatic Resources

There are no wetlands or aquatic resources present within the BSA (USFWS 2024b). No blue line streams designated by the USGS occur onsite. There are no watercourse crossings associated with the proposed project and no watercourse crossings will be affected by construction activities. Surface waters in the project area flow to the Mojave River.

Historic agricultural pumping resulted in a drop in groundwater levels in the Hinkley Valley. Groundwater levels in the Hinkley Valley often are 75 feet or more below the ground surface, which is too deep to support wetlands or other surface vegetation (CPUC 2010). The groundwater at the station is approximately 80 feet below ground surface.

5.4.1.7 Special-Status Species

This section describes special-status species observed (present) during field surveys and any species considered to be likely to occur or have potential to occur in the BSA. During the April 12, 2024, reconnaissance field survey, biologists assessed habitat suitability for special status species known to occur within 5-miles of the project site. Special-status species unlikely to be found in the project site or not affected by the project are not discussed in this section and are included in Appendix B1.

For this document, special-status species are plants and animals that are legally protected under FESA, CESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Special-status species are defined as species that are:

- Listed, proposed for listing, or candidates for listing under the FESA as threatened or endangered
- Listed or candidates for listing under the CESA as threatened or endangered
- Listed as rare under the Native Plant Protection Act
- A state SSC or FP species; a state SSC is a species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:
    - Is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role
    - Is listed as federally threatened or endangered, but not state threatened or endangered or meets the state definition of threatened or endangered but has not formally been listed
    - Is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status
    - Has naturally small populations exhibiting high susceptibility to risk from any factor(s) that, if realized, could lead to declines that would qualify it for State threatened or endangered status
- Migratory birds protected under the federal BGEPA and MBTA
- A BLM sensitive animal, defined as (1) under status review by the USFWS/NOAA Fisheries; (2) whose numbers are declining so rapidly that federal listing may become necessary; (3) with typically small and widely dispersed populations; or (4) inhabiting ecological refugia or other specialized or unique habitats. Existing California BLM policy concerning the designation of sensitive species identifies two conditions that must be met before a species may be considered as BLM sensitive: (1) a significant population of the species must occur on BLM-administered lands, and (2) the potential must exist for improvement of the species' condition through BLM management.

The CNPS maintains lists of plants as rare or endangered. Unless separately listed by the state or federal government, the plants on the CNPS' lists are not formally protected under the law. The CNPS lists are as follows:

- California Rare Plant Rank (CRPR) List 1A: plants presumed extinct
- CRPR List 1B: plants rare, threatened, or endangered in California and elsewhere
- CRPR List 2: plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR List 3: plants about which more information is needed—a review list
- CRPR List 4: plants of limited distribution—a watch list

Plants listed on CNPS List 1A, 1B, or 2 meet the definition of Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 (CESA) of the California Fish and Game Code. Thus, for the purposes of this document, plants on CNPS List 1A, 1B, or 2 are considered "rare" plants for the purposes of impact evaluation.

BLM sensitive plants are defined as plants found on BLM lands whose survival is of concern based on: (1) their limited distribution; (2) low number of individuals and populations; and (3) potential threats to habitat. Thus, for the purposes of this document, plants listed as BLM sensitive are considered "rare" plants for the purposes of impact evaluation.

The CNDDB, CNPS, NOAA Fisheries, and USFWS database searches identified 34 special-status species within approximately 5 miles of the project, including 12 special-status plant species and 22 special-status wildlife species (refer to Section 5.4.1.1). There is no designated critical habitat on the project site or in the vicinity.

State and Federally Listed Plants

Two protected plant species, Lane Mountain milk-vetch (*Astragalus jaegerianus;* federally endangered) and Western Joshua tree (*Yucca brevifolia*; state candidate), were identified as having some potential to occur within the geographical vicinity of the BSA based on habitat requirements and available occurrence data (CDFW 2024). Based on the results of the rare plant survey, these federally and state-protected plant species are identified as unlikely to occur and absent from the project site and are, therefore, not discussed further.

Nonlisted Special-Status Plants

Nonlisted special-status species are species that are not listed under the CESA or the FESA but are sufficiently rare to require special consideration and are either tracked in the CNDDB, CNPS or are designated as "sensitive" by the BLM. Ten nonlisted special-status plants were identified in the literature search and habitat assessment as occurring in the vicinity of the project area (Consortium of California Herbaria 2024, CDFW 2024, CNPS 2024). Based on the results of the rare plant survey, there are no special-status plants identified as having the potential to occur within the project site. Based on conditions observed during the field survey, only one species, Barstow woolly sunflower (*Eriophyllum mohavense*), was determined to have potential to occur within the BSA. The remaining nine nonlisted special-status species identified in the desktop review were either determined to be absent from the BSA or unlikely to occur and are, therefore, not discussed further.

Barstow Woolly Sunflower

Barstow woolly sunflower is a CRPR 1B.2 species and BLM Sensitive species but is not state or federally listed. It is an annual herb in the *Asteraceae* family, associated with creosote bush scrub, saltbush scrub, and playas. This plant is endemic and found only in the Mojave Desert of California.

Several collections of this species have been made east and west of the project area with the closest CNDDB reported occurrence approximately 6-miles northwest of the study area.

A protocol-level floristic survey of the BSA was conducted on April 16,2024. Prior to completing the floristic survey, several reference population areas for Barstow woolly sunflower were visited on April 15, 2024, to confirm that the plant was blooming in the area. The reference populations were within approximately 10-20 miles west of the project site. No Barstow woolly sunflowers were observed blooming in any of the reference population areas on April 15. No remnants of the species were observed, suggesting that the species did not germinate this year, or that it germinated so early that no remnants of the species were visible by the time of the reference population checks. Outreach to several additional botanists regarding this species did not reveal any observations of this species by these botanists anywhere in 2024.

No special-status plant species, including Barstow woolly sunflower, were observed during the 2024 floristic survey of the station and the BSA, including the approximate 2-acre area with native vegetation on the west side of the station. A complete list of plants observed during the surveys is in the Biological Resources Technical Report (Appendix B1), submitted separately.

State and Federally Listed Wildlife

Ten state- and/or federally listed threatened and/or endangered wildlife species were found to have some potential to occur within a 5-mile radius of the project site based on habitat requirements and available occurrence data (CDFW 2024). Of the nine state- and federally listed threatened and endangered wildlife species, only three were determined to have some potential to occur within the BSA based on observed conditions during the field evaluation. These three species are the burrowing owl, the desert tortoise, and the Mohave ground squirrel. Detailed species descriptions are provided in the Biological Resources Technical Report (Appendix B1). The CNDDB occurrences of special-status species in a 5-mile radius of the project site are shown on Figure 5.4-3.

Burrowing Owl

The burrowing owl is designated a California species of special concern by CDFW, a BLM sensitive species and has been listed as a Candidate for listing under CESA (CDFW 2024). The burrowing owl has a large range from south central and southwestern Canada through the Great Plains and western US to central Mexico. The burrowing owl requires habitat with three basic soil and vegetal attributes: open, well-drained terrain; short, sparse vegetation; and underground burrows or burrow-like openings. Throughout their range, most burrowing owls rely on burrows excavated by ground squirrels, badgers, foxes, desert tortoise, and coyotes. Burrowing owls may also nest within or immediately adjacent to the agricultural areas. Burrowing owls are found year-round in old piping at long-abandoned agricultural units.

There are seven CNDDB reported occurrences of burrowing owls within 5 miles of the station (Figure 5.4-3). The two most recent occurrences each reported one adult and an active burrow southeast of the station in 2010 and several individuals south of the station in 2007.

There was no suitable foraging or nesting habitat present within the station or BSA, and no burrowing owls were detected during the breeding season surveys (refer to Appendix B1, Biological Resources Technical Report). Surrounding agricultural operations (alfalfa fields and dairy farms) may provide suitable foraging habitat; however, these areas are located outside of the station. Therefore, the burrowing owl is not likely to occur in the project site

Desert Tortoise

The Mojave population of desert tortoise (*Gopherus agassizii*) was listed as threatened under the FESA on April 2, 1990 (USFWS 1990) and was listed as threatened under the CESA in 1989. Throughout most of the Mojave Desert, tortoises occur most commonly on gently sloping terrain with sandy-gravel soils and where there is sparse cover of low-growing shrubs that allows establishment of herbaceous plants. Soils must be loose enough for digging of burrows, but firm enough so that burrows do not collapse.

Critical habitat for the desert tortoise was designated in 1994. This critical habitat consists of the following primary constituent elements: (1) sufficient space to support viable populations and provide for movements, dispersal, and gene flow; (2) sufficient quantity and quality of forage species and the proper soil conditions to provide for the growth of such species; (3) suitable substrates for burrowing, nesting, and overwintering; (4) burrows, caliche caves, and other shelter sites; (5) sufficient vegetation for shelter from temperature extremes and predators; and (6) habitat protected from disturbance and human-caused mortality. Designated critical habitat for the desert tortoise encompasses portions of the Mojave and Colorado Deserts (59 *Federal Register* 5820, 5822 [Feb. 8, 1994]). Based on a review of USFWS Critical Habitat documentation and maps, critical habitat for the desert tortoise is mapped approximately 2.6 miles northeast of the compressor station (Figure 5.4-4) (USFWS 2024a).

A portion of the project site falls within an area designated as Fremont-Kramer to Ord-Rodman Linkage for desert tortoise; however, the habitat value is described as "non-habitat" and "lost or severely disturbed habitat." Additionally, the project site does not overlap with any portions of the Superior-Cronese Desert Wildlife Management Area (DWMA), which is designated by BLM as an ACEC and is wholly located within the western Mojave recovery unit for desert tortoise (USFWS 2011b).

There are nine CNDDB reported occurrences of desert tortoise within 5 miles of the project site. Most of the occurrences report individuals and active burrows observed within a 3- to 5-mile radius of the study area in 2007. The occurrence closest to the compressor station reported one adult west of the station (Figure 5.4-4). Observations made as part of the desert tortoise surveys conducted from 2011 to 2013 to support the development of the HCP, which are not reflected in the CNDDB, also are shown on Figure 5.4-4. Two live occurrences of desert tortoise to the west outside the boundary of the station were reported between 2011 and 2013 and were noted as observations along Fairview Road and Highcrest Road (Strohl 2024). As part of its ongoing groundwater remedy activities for the station, PG&E submits CNDDB reports to CDFW of any desert tortoise observations made during routine biological surveys; however, these data have not been added by CDFW to the database. Between 2021 and 2023, four desert tortoise occurrences were reported. One carcass was found in 2021 approximately 1 mile west of the station and a live female desert tortoise was observed approximately 1.9 miles west of the station. In 2023, one live female and one live male desert tortoise were observed on Hinkley Road approximately 4.5 miles and 5 miles, respectively, north of the station. It is noted that some of the desert tortoise observations could be domesticated individuals (not wild) based on the history of residents keeping desert tortoises as pets. The most recent observation, reported in March 2024, recorded one severely injured adult (appeared to have been hit by a passing vehicle) approximately1.6 miles northwest of the station (Figure 5.4-4).

Based on the habitat conditions within the project site and the previous desert tortoise locations, desert tortoise was determined to have low potential to occur within the undeveloped portions of the BSA. Desert tortoise is determined to be absent from the project site because the station is completely enclosed by a chain link fence and no suitable habitat is present within the fenced facility. Figure 5.4-2 shows a broad overview of the suitability of the habitat based on the following breakdown of mapped plant communities: suitable habitat includes allscale scrub (located in the western portion of the BSA) and ruderal/disturbed/ barren. Unsuitable desert tortoise habitat includes developed and agriculture areas. Protocol-level desert tortoise surveys were performed during 2024 and found no evidence of the species within the BSA. Therefore, this species is unlikely to occur within the BSA.

Mohave Ground Squirrel

Mohave ground squirrel (*Xerospermophilus mohavensis*) was listed as threatened under CESA in 1993. There is currently no federal listing for this species. The Mohave ground squirrel does not appear to have a plant community preference because it occurs in the exact same proportion as the distribution of plant communities within its range (BLM et al. 2005). The plant communities with the highest percentage of Mohave ground squirrel occurrence are Mojave Creosote Brush Scrub, Desert Saltbush Scrub, and Mojave Mixed Woody Scrub (BLM et al. 2005). The Mohave ground squirrel is absent from steep, rocky areas and playas (for example, a sandy, salty, or mud-caked flat floor of a desert drainage basin that is periodically covered with water). Soil characteristics are important because Mohave ground squirrels construct burrows to shelter from temperature and humidity extremes, to escape predators, and to give birth (USFWS 2010a).

There are three CNDDB reported occurrences within 5 miles of the study area (Figure 5.4-5). One record, dated 1949, detected one female Mohave ground squirrel southeast of the compressor station. The second report, dated 1990, recorded an unknown number of individuals occurring east of the study area. The third, and most recent, record dated 2012 is located northwest of the compressor station. The record states one adult was observed foraging and resting near and inside a burrow (Figure 5.4-5). Because of the similar appearance between Mohave ground squirrel and round-tailed ground squirrel (*Xerospermophilus tereticaudus),* live trapping or photo trapping yields more reliable Mohave ground squirrel sightings. The 1990 occurrence was an observation siting and was found to be questionable by Leitner and Matocq. The 2012 occurrence is also a visual observation.

The entire project site is developed and does not contain suitable habitat for the species; however, there is suitable habitat present within the undeveloped scrub habitat within the BSA. No Mohave ground squirrels were captured during the 2024 surveys, which included protocol-level trapping efforts with 10 cameras operated for 28 days (refer to Appendix B1, Biological Resources Technical Report). Because of the lack of suitable habitat and reported absence during the trapping effort, Mohave ground squirrel is not anticipated to occur within the project site.

Nonlisted Special-Status Wildlife

Birds

There are twelve nonlisted special-status species with potential to occur within the geographical vicinity of the project area based on habitat requirements and available occurrence data (CDFW 2024), but only four were determined to have some potential to occur within the BSA based on observed conditions during the field evaluation. These species were:

- Golden eagle (*Aquila chrysaetos*)
- Mountain plover (*Charadrius montanus*)
- Loggerhead shrike (*Lanius ludovicianus*)
- Le Conte's thrasher (*Toxostoma lecontei*)

The eight remaining nonlisted special-status species identified were determined to be absent from the BSA and are, therefore, not discussed further. No nonlisted special-status species were detected within the project site during 2024 field surveys.

Golden Eagle

The golden eagle is designated a fully protected species by CDFW and a BLM sensitive species. Golden eagles inhabit diverse terrains, from tundra to deserts, but typically prefer open areas near cliffs. Sensitive to human disturbance, they tend to avoid developed regions. There is no potential nesting habitat present within the BSA. There is marginal foraging habitat present in undeveloped scrub within outer portions of the BSA.

Because of the developed nature of the project site and lack of preferred suitable foraging habitat, the species may be seen migrating through the BSA, but it is unlikely individuals would remain for foraging or breeding. Therefore, this species is unlikely to occur within the BSA.

Mountain Plover

The mountain plover is designated a species of special concern by CDFW. This species nests in shortgrass prairie, especially where blue grama, buffalo grass, and western wheat grass are dominant, and in grassy semidesert with scattered saltbush, sage, prickly pear, and yucca, at elevations ranging from 2,100 to 10,663 feet. It also nests in fallow or recently plowed agricultural fields and in overgrazed landscapes that mimic their natural shortgrass habitat. During migration, they may appear in almost any shortgrass habitat, including sod farms, playas, or tilled fields.

Despite the presence of the station's lined evaporation ponds within the BSA, the banks of the ponds are lined with black plastic and the remainder of the area around the complex of ponds is covered in aggregate gravel and is devoid of any vegetation. There is no suitable nesting habitat present within the BSA. There are no CNDDB recorded occurrences within 5 miles of the station (CDFW 2024). The species may be seen migrating through the BSA, but it is unlikely individuals would remain for foraging or breeding. Therefore, this species is unlikely to occur within the BSA or project site.

Loggerhead Shrike

The loggerhead shrike is designated a species of special concern by CDFW only when nesting. All other non-nesting occurrences of loggerhead shrike are not considered sensitive. Loggerhead shrikes breed mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. They require tall shrubs or trees, and may also use fences or power lines, for hunting perches, territorial advertisement, and pair maintenance; open areas of short grasses, forbs, or bare ground for hunting; and large shrubs or trees for nest placement. They also need impaling sites for prey manipulation or storage; such sites can include sharp, thorny, or multi-stemmed plants and barbed-wire fences (Yosef 1996). Nests are generally well hidden in taller shrubs or low in trees and are often located in areas where there is a break in the landscape, such as at the base of slopes or edge of a woodland or clump of trees (Yosef 1996).

The majority of the BSA (other than the station and other developed areas) provides potential foraging habitat for loggerhead shrike. However, there is no suitable nesting habitat present within the BSA. There are no CNDDB-recorded nests within 5 miles of the station (CDFW 2024). The species may be seen migrating through the BSA, but it is unlikely individuals would remain for breeding.

Le Conte's Thrasher

The Le Conte's thrasher is designated a species of special concern and a BLM sensitive species. This species inhabits low, open deserts with sparse vegetation. It prefers flat or gently rolling terrain with vegetation consisting of saltbush, shadscale, cholla cactus, creosote, yucca, mesquite, and ocotillo. It usually is sparsely distributed in these mostly flat or rolling landscapes. Generally, individuals do not inhabit steep-sided canyons, preferring small arroyos, open flats, or dunes.

Most of the BSA (other than the station and other developed areas) provides potential foraging habitat for Le Conte's thrasher. No suitable breeding habitat is present within the project site. There are no CNDDB recorded occurrences within 5 miles of the station (CDFW 2024). The species may be seen migrating through the BSA, but it is unlikely individuals would remain for breeding based on the lack of habitat. Therefore, this species is unlikely to occur within the BSA or the project site.

Bats

There are nine species of bats whose known range overlaps the project site. Of these nine species identified as having potential to occur within the BSA, only five were considered based on BLM and CDFW status and WBWG ranking. Table 5.4-2 lists these species and provides a brief description of habitat requirements for each.

Table 5.4-2. Bat Species Potentially Present in the BSA

Species	Habitat Requirements
Pallid bat *Antrozous pallidus*	Roosts in caves, crevices, mines, and occasionally hollow trees and buildings in a wide variety of habitats, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forest. Most common in open, dry habitats with rocky areas for roosting.
Townsend's big-eared bat *Corynorhinus townsendii*	Roosts in caves, tunnels, mines, and buildings in all habitats found in California except subalpine and alpine.
Spotted bat *Euderma maculatum*	Roosts mostly in rock crevices; also, occasionally roosts in caves and buildings in arid deserts, grasslands, and mixed conifer forests at elevations up to and sometimes higher than 10,000 feet.
Western mastiff bat *Eumops perotis*	Roosts in crevices in cliff faces, tall buildings, trees, and tunnels in open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas.
Silver-haired bat *Lasionycteris noctivagans*	Roosts in hollow trees, snags, buildings, rock crevices, caves, and under exfoliating bark. Maternity roosts typically are in dense foliage or hollow trees. Habitat types include coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats, generally at elevations less than 9,000 feet.

Most buildings and structures inspected during the July 12, 2024, bat habitat assessment had some crevices in the ceiling or at the juncture of the wall and ceiling; they were all examined for potential use by bats. No body oils or other evidence of bats using these crevices was observed during the survey. The floor below all crevices in which bats could be roosting was examined for guano and none was detected. Trees on the western portion of the station had dense branches and foliage all the way to the ground, which does not provide potential roosting habitat for bats (bats need a few feet clear of branches or other obstructions to drop from the roosting site when taking flight). No bats were detected, nor was evidence of roosting bats noted in any of the buildings, other structures, or trees and, therefore, these species are considered absent from the project site.

5.4.1.8 Critical Habitat

There is no critical habitat present within the BSA. Final critical habitat for the desert tortoise is present within the 5-mile buffer of the station, located approximately 2.6 miles northeast of the station.

5.4.1.9 Native Wildlife Corridors and Nursery Sites

The BSA and the western portion of the station are located within an area designated as Fremont-Kramer to Ord-Rodman Linkage for desert tortoise. Desert tortoise linkages are areas that connect conservation areas where desert tortoises can live and reproduce. The habitat value within the BSA and western portion of the station is described as "non-habitat" and "lost or severely disturbed habitat." The project area does not overlap with any portions of the Superior-Cronese DWMA, which is designated by BLM as an ACEC and is wholly located within the western Mojave recovery unit for desert tortoise (USFWS 2011b) (Figure 5.4-4).

Other than the desert tortoise linkage, there are no native wildlife corridors or nursery sites within the 5-mile buffer, outside of the BSA, or within the BSA. The station, including the project site, is enclosed with fencing, which has inhibited almost all movement through the station. Species that might move across the project site include small-sized mammals such as California ground squirrel and reptiles such as lizards. In addition, the station is subject to a high level of ongoing human disturbance and the surrounding area consists of public roadways that function as inhibitors to wildlife movement.

5.4.1.10 Biological Resource Management Areas

A portion of the project area is within the USFWS-designated Fremont-Kramer DWMA (Figure 5.4-4). DWMAs are administered and designated as ACECs and define specific management areas based on the general recommendations for DWMAs in the 1994 Recovery Plan for the desert tortoise (USFWS 2011a). Other than the DETO linkage, there are no additional biological resource management areas within the 5-mile buffer, outside of the BSA, or within the BSA.

5.4.1.11 PG&E Hinkley Groundwater Remediation Project Habitat Conservation Plan

PG&E has an HCP, Hinkley Groundwater Remediation Project Habitat Conservation Plan (PG&E 2017), to guide its remediation activities at Hinkley Compressor Station. The Hinkley Groundwater Remediation Project HCP provides mitigation and minimization guidelines for groundwater remediation activities associated with the station that may affect the wildlife species covered by the HCP for permitted activities. The HCP authorizes incidental take of the Mojave population of desert tortoise (desert tortoise) (*Gopherus agassizii*) and the incidental take of Mohave ground squirrel (*Xerospermophilus mohavensis*) for groundwater remediation activities conducted by PG&E at and near Hinkley Compressor Station.

5.4.2 Regulatory Setting

The following sections present the federal, state, and local regulations that apply to the project.

5.4.2.1 Federal Regulations

Endangered Species Act

The FESA (16 USC 1531–1544), as amended, protects plants, fish, and wildlife that are listed as endangered or threatened by the USFWS or NOAA Fisheries. Section 9 of the FESA prohibits the "take" of listed fish and wildlife, where "take" is defined as "to 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 prohibits removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging up, damaging, or destroying any listed plant in knowing violation of state law (16 USC 1538).

The FESA allows for issuance of incidental take permits to private parties either in conjunction with an HCP or as part of a Section 7 consultation. Under Section 10 of the FESA, a private party may obtain incidental take coverage by preparing an HCP to cover target species within the project site, identifying impacts to the covered species, and presenting the measures that will be undertaken to avoid, minimize, and mitigate these impacts.

Under Section 7 of the FESA, federal agencies are required to consult with USFWS and NOAA Fisheries, as applicable, if their actions—including permit approvals or funding—may affect a federally listed species (including plants) or designated critical habitat. If the project is likely to adversely affect a species, the federal agency will initiate formal consultation with the USFWS or NOAA Fisheries, which will issue a biological opinion as to whether the proposed agency action is likely to jeopardize the continued existence of a listed species (jeopardy) or adversely modify critical habitat (adverse modification). As part of the biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided that the action will not jeopardize the continued existence of the species or adversely modify designated critical habitat.

The Recovery Plan for the Mojave Population of the Desert Tortoise

The Recovery Plan for desert tortoise (USFWS 2011b) identifies six recovery units, in which one to four DWMAs were designated, and describes the development and implementation of specific recovery actions focused within the DWMAs. BLM administers the DWMAs on federal land to protect important wildlife and natural resources, such as the desert tortoise. Maintaining high survivorship of adult desert tortoise was identified as the key factor in recovery (USFWS 2011b). The project site occurs within a portion of the Superior-Cronese DWMA. The recovery plan is considered by regulatory agencies in establishing compensatory mitigation or other requirements during the ESA permitting process.

Migratory Bird Treaty Act

The MBTA (16 USC 703–711) protects all migratory birds, including active nests and eggs. Birds protected under the MBTA include all native waterfowl, shorebirds, hawks, eagles, owls, doves, and other common birds such as ravens, crows, sparrows, finches, swallows, and others, including their body parts (for example, feathers and plumes), active nests, and eggs. A complete list of protected species can be found in 50 CFR 10.13. Enforcement of the provisions of the federal MBTA is the responsibility of USFWS. Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and other similar activities. USFWS is responsible for overseeing compliance with the MBTA, and the U.S. Department of Agriculture's Animal Damage Control Officer makes recommendations on related animal protection issues.

The landscape trees in the project staging area support habitat for the presence of nesting birds and migratory birds protected under the MBTA.

Bald and Golden Eagle Protection Act

The BGEPA (16 USC 668) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal and civil penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any Bald Eagle ... [or any Golden Eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." "Disturb" is defined as "agitate or bother a Bald or Golden Eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an Eagle,

(2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

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

The project site does not include suitable nesting or foraging habitat for bald eagles or golden eagles. However, there is potential foraging habitat for golden eagles in the undeveloped areas outside of the project site, within the BSA.

Federal Noxious Weed Act

Public Law 93-629 (7 USC 2801 et seq.; 88 Stat. 2148), enacted January 3, 1975, established a federal program to control the spread of noxious weeds. The Secretary of Agriculture was given the authority to designate plants as noxious weeds by regulation, and the movement of all such weeds in interstate or foreign commerce was prohibited except under permit. The Secretary also was given authority to inspect, seize, and destroy products and to quarantine areas if necessary to prevent the spread of such weeds. The Secretary also was authorized to cooperate with other federal, state, and local agencies, farmers associations, and private individuals in measures to control, eradicate, or prevent or retard the spread of such weeds. Section 1453 of Public Law 101-624, the 1990 Farm Bill, enacted November 28, 1990 (104 Stat 3611) amended the Act by requiring each federal land-managing agency to:

- Designate an office or person adequately trained in managing undesirable plant species to develop and coordinate a program to control such plants on the agency's land.
- Establish and adequately fund this plant management program through the agency's budget process.
- Complete and implement cooperative agreements (requirements for which are provided) with the states regarding undesirable plants on agency land.
- Establish integrated management systems (as defined in the section) to control or contain undesirable plants targeted under the cooperative agreements.

The law also requires that any environmental assessments or impact statements that may be required to implement plant control agreements must be completed within 1 year of the time the need for the document is established.

The project site contains noxious weeds and potential for the proliferation of noxious weeds from project implementation.

The Federal Noxious Weed Act does not require specific permits to conduct actions where noxious weeds are present, provided that noxious weeds are not moved. However, the assessment of impacts in this document accounts for the concerns in the analysis.

Waters and Wetlands: Clean Water Act Sections 401 and 404

The purpose of the Clean Water Act (CWA) (33 USC 1251 et seq.) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Waters of the United States include rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3).

The U.S. Army Corps of Engineers (USACE) issues permits for work in wetlands and other waters of the United States based on guidelines established under Section 404 of the CWA. This regulation prohibits the discharge of dredged or fill material into waters of the United States, including wetlands, without a permit from the USACE. The EPA also has authority over wetlands and may, under Section 404(c), veto a USACE permit. Section 401 of the CWA requires all Section 404 permit actions to obtain a state Water Quality Certification or waiver, as described in more detail in Section 5.10, Hydrology and Water Quality.

The West Mojave Plan

The West Mojave Plan is a federal land use plan that outlines the strategy to conserve and protect more than 100 sensitive plant and animal species, as well as provide guidance for compliance with requirements of the state and federal Endangered Species Acts (BLM et al. 2005). The West Mojave Plan planning area extends through portions of San Bernardino, Los Angeles, Kern, and Inyo Counties. The West Mojave Plan originally started as a broader effort to establish a habitat conservation plan that would cover activities on both private and public land throughout the western Mojave Desert. However, the West Mojave Plan was only adopted as a federal land management plan for federal lands under the jurisdiction of the BLM. The West Mojave Plan does not apply to areas outside of federal land. The West Mojave Plan includes the following species for conservation:

- Desert tortoise (*Gopherus agassizii*)
- Mohave ground squirrel (*Xerospermophilus mohavensis*)
- Burrowing owl (*Athene cunicularia*)
- Mojave fringe-toed lizard (*Uma scoparia*)
- Desert cymopterus (*Cymopterus deserticola*)
- Mojave monkeyflower (*Mimulus mohavensis*)

5.4.2.2 State Regulations

California Endangered Species Act

Sections 2050 to 2098 of the California Fish and Game Code (CESA) prohibit the take of state-listed endangered and threatened species unless specifically authorized by the CDFW. The state definition of "take" is to hunt, pursue, catch, capture, or kill a member of a listed species or attempt to do so. CDFW administers CESA and authorizes take through permits or memorandums of understanding issued under Section 2081 of CESA, or through a consistency determination issued under Section 2080.1. Section 2090 of CESA requires state agencies to comply with threatened and endangered species protection and recovery and to promote conservation of these species.

California Department of Fish and Wildlife Regulations

Protected Species in the Fish and Game Code

The California Fish and Game Code provides protection from take for a variety of species, referred to as fully protected species. Section 5050 lists fully protected amphibians and reptiles and prohibits the take of such reptiles and amphibians except as provided in Sections 2081.7 or 2835. Section 5515 prohibits take of fully protected fish species except as provided in Sections 2081.7 or 2835. Fully protected birds are listed under Section 3511, and fully protected mammals are listed under Section 4700; both sections prohibit take except as provided in Sections 2081.7 and 2835. Except for take related to scientific research, all take of fully protected species is prohibited.

Mammal Hunting Regulations

The Mammal Hunting Regulations at Section 2011 to 2012, Subdivision 2, Game and Furbearers, Chapter 5, Furbearing Mammals, Section 460, states that fisher, marten, river otter, desert kit fox, and red fox may not be taken at any time.

California Native Plant Protection Act and Natural Community Conservation Planning Act

The Native Plant Protection Act of 1973 (Fish and Game Code Sections 1900 to 1913) includes provisions that prohibit the taking of endangered or rare native plants. CDFW administers the Native Plant Protection Act and generally regards as rare many plant species included on the CRPR 1A, 1B, 2A, and 2B lists of the CNPS Inventory of Rare, Threatened, and Endangered Plants of California. In addition, sometimes CRPR 3 and 4 plants are considered if the population has local significance in the area and is impacted by the project.

Section 1913(b) includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by CDFW, within a right-of-way to allow a public utility to fulfill its obligation to provide service to the public.

Bird/Raptor Protections in the Fish and Game Code

Similarly to the federal MBTA, Section 3503 of the California Fish and Game Code prohibits take, possession, or destruction of eggs and nests of all birds. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Take or possession of any migratory non-game bird as designated in the MBTA is prohibited under Sections 3513 and 3800. Section 86 of the Fish and Game Code defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

California Species of Special Concern

"Species of Special Concern" is a category conferred by CDFW to fish and wildlife species that meet the state definition of threatened or endangered, but have not been formally listed (for example, federally- or state-listed species), or are considered at risk of qualifying for threatened or endangered status in the future based on known threats. SSC is an administrative classification only, but these species should be considered "special status" for the purposes of the CEQA analysis (refer to Section 5.4.1.7 of this document).

Streambed Alteration Agreements

CDFW has jurisdictional authority over rivers, streams, and lakes under California Fish and Game Code Section 1602. CDFW has the authority to regulate all work under the jurisdiction of California that would: substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed.

In practice, CDFW marks its jurisdictional limit at the top of the stream or lake bank or the outer edge of the riparian vegetation, where present, and sometimes extends its jurisdiction to the edge of the 100-year floodplain. Because riparian habitats do not always support wetland hydrology or hydric soils, wetland boundaries, as defined by CWA Section 404, sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Therefore, jurisdictional boundaries under Section 1602 may encompass a greater area than those regulated under CWA Section 404.

CDFW enters into a Streambed Alteration Agreement with an applicant and can request conditions to ensure that no net loss of wetland values or acreage will be incurred. The streambed or lakebed alteration agreement is not a permit but, rather, a mutual agreement between CDFW and the applicant.

California Desert Native Plants Act

The California Desert Native Plants Act (Division 23 of the California Food and Agriculture Code) regulates the unlawful harvesting on both public and privately owned lands of specified desert native plants. Any specified desert native plants require a permit issued by the commissioner of the county in which the plants are growing.

The California Desert Native Plants Act regulates the following desert native plants, which cannot be harvested except under a permit:

- All species of *Burseraceae* family (elephant tree)
- Saguaro cactus (*Carnegiea gigantea*)
- California barrel cactus (*Ferocactus cylindraceus* synonym *Ferocactus acanthodes*)
- Crucifixion thorn (*Castela emoryi*)
- Panamint dudleya (*Dudleya saxosa*)
- Bristlecone pine (*Pinus longaeva)*
- California fan palm (*Washingtonia filifera*)

To date, none of the species regulated by the California Desert Native Plants Act have been observed in the project site.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act established the State Water Resources Control Board (SWRCB) and divided the state into nine regional basins, each with a regional water quality control board. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies, while the regional boards are responsible for developing and enforcing water quality objectives and implementation plans (refer to Section 5.10, Hydrology and Water Quality).

5.4.2.3 Local Regulations

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process.

San Bernardino County Plant Protection and Management

Chapter 88.01 (Plant Protection and Management) of the San Bernardino County Plant Protection and Management chapter regulates the removal or harvesting of specified desert native plants and the removal of vegetation within 200 feet of the bank of a stream, or in an area indicated as a protected riparian area on an overlay map or Specific Plan. Any removal of specified desert native plants or vegetation within 200 feet of a bank or stream requires approval of a Tree or Plant Removal Permit in compliance with Section 88.01.050 (Tree or Plant Removal Permits).

The following desert native plants, or any part of them except fruit, will not be removed except under a Tree or Plant Removal Permit in compliance with Section 88.01.050:

- The following desert native plants with stems 2 inches or greater in diameter or 6 feet or greater in height: Smoke tree (*Psorothamnus spinosa* synonym *Dalea spinosa*) and all species of the genus *Prosopis* (mesquites).
- All species of the family *Agavaceae* (century plants, nolinas, yuccas).
- Creosote rings 10 feet or greater in diameter.
- All Joshua trees (*Yucca brevifolia*).
- Any part of the following species, whether living or dead: desert ironwood (*Olneya tesota*), all species of the genera *Prosopis* (*mesquites*) and *Cercidium* (*palos verdes*).

To date, none of the species regulated by the San Bernardino County Plant Protection and Management ordinance have been observed in the project site.

5.4.3 Impact Questions

The project's potential effects on biological resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.4-3 and discussed in more detail in Section 5.4.3.1.

Table 5.4-3. CEQA Checklist for Biological Resources

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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 the U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including marsh, vernal pool, coastal, and others) 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?	☐	☐	☒	☐

Table 5.4-3. CEQA Checklist for Biological Resources

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

5.4.3.1 Additional CEQA Impact Questions

The project's potential effects on biological resources also were evaluated using the CPUC's Additional CEQA Impact Questions for Transportation in the *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* (CPUC 2019). These additional impact questions are evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.4-4 and discussed in more detail in the impact analysis that follows.

Table 5.4-4. Additional CEQA Impact Questions for Biological Resources

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Create a substantial collision or electrocution risk for birds or bats?	☐	☐	☐	☒

5.4.4 Potential Impact Analysis

The following sections describe significance criteria for impacts related to biological resources derived from Appendix G of the CEQA Guidelines, provide APMs and BMPs, and assess potential project-related construction and operational impacts on biological resources.

5.4.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "… a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on biological resources were evaluated for each of the criteria listed in Tables 5.4-3 and 5.4-4-, as discussed in Section 5.4.4.3.

5.4.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs: Refer to Appendix B2 for the PG&E Nesting Birds: Species-Specific Buffers.

APM BIO-1: Protect Nesting Birds

If construction is to occur during the avian nesting season (March 1 through August 15), a preconstruction migratory bird and raptor nesting survey will be performed by a qualified biologist who is familiar with local avian species and nesting birds. Surveys will occur only in publicly accessible areas and areas where PG&E has existing access; private property will not be accessed and will instead be observed from adjacent accessible areas.

Preconstruction nesting bird surveys will be performed in accordance with PG&E's Nesting Bird Management Plan. The preconstruction survey will cover a radius of 200 feet for nonlisted raptors and 100 feet for nonlisted passerines from project locations that will be actively worked at in the near term. The survey will cover all affected areas where ground disturbance is required. If any active nests containing eggs or young are found, an appropriate nest exclusion zone will be established by the PG&E biologist in accordance with PG&E's Nesting Bird Management Plan. No heavy equipment will be operated in this exclusion zone until the biologist has determined that the nest is no longer active, and the young have fledged. If it is not practicable to avoid work in an exclusion zone around an active nest, work activities will be modified to minimize disturbance of nesting birds but may proceed in these zones at the discretion of the biologist. As appropriate, the biologist will monitor work activities in these zones daily or periodically when construction is occurring and assess their effect on the nesting birds. If the biologist determines that certain activities pose a high risk of disturbing an active nest, the biologist will recommend additional, feasible measures to minimize the risk of nest disturbance. If work cannot proceed without disturbing the nesting birds, or signs of disturbance are observed by the monitor, work may need to be halted or redirected to other areas until the nesting and fledging is completed or the nest has otherwise failed for reasons not related to construction.

APM BIO-2: Protect Wildlife Trapped in Trenches or Steep-walled Holes

Field crews will fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife is not trapped. If any wildlife is found, work will stop, and the PG&E biologist will be contacted to move the animal out of harm's way.

APM BIO-3: Preconstruction Surveys

Preconstruction biological clearance surveys will be completed by a qualified biologist prior to construction activities beginning and will occur throughout the project site to minimize impacts on wildlife.

APM BIO-4. Worker Environmental Awareness Program – Biological Resources Portion

A worker environmental awareness program (WEAP) will be prepared for the project to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project. A PG&E biologist or designee familiar with resources in the area will deliver the WEAP biological resources portion. Training will include a discussion of the potential for nesting birds and possible buffers, along with the requirement to protect wildlife from becoming trapped in trenches or steep-walled holes. Training will include information about federal laws protecting nesting birds. A copy of the training sign-in sheets documenting participation in the training will be provided to the CPUC.

5.4.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to biological resources resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service? *No Impact*.

The project site is occupied by buildings housing natural gas generators, offices, and associated infrastructure, and is disturbed from previous work activities associated with the station. The project site does not contain habitat for any species identified as a candidate, sensitive, or special-status species. The project site is entirely within the fenced compressor station, which is developed and has regular human activity. No candidate, sensitive, or special-status species, including Barstow woolly sunflower, desert tortoise, Mohave ground squirrel, and burrowing owl, have been identified in the station in the past, and none were observed during field surveys. These species are not expected to be present on the project site. Based on the developed and disturbed nature of the project area, there will be no impact to natural habitat. All work will be completed within previously disturbed, urban/developed habitat. The project does not include removal of any vegetation; all construction activities are in unvegetated areas. Access will use existing roads. All project-related impacts are temporary; following the completion of the project, all temporarily impacted areas will be returned to preconstruction conditions and armored as needed to prevent erosion. Therefore, the project will not 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 the U.S. Fish and Wildlife Service. No impacts will occur. Nevertheless, in an abundance of caution, PG&E will implement APM BIO-2, APM BIO-3, and APM BIO-4, and APM BIO-5 to further ensure that the project does not affect wildlife.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? *No Impact*.

The project site is occupied by buildings and structures that contain natural gas generators, offices, and associated infrastructure. The project site is disturbed from previous work activities associated with the station. The compressor station, including the project site, does not contain riparian vegetation or other sensitive natural community. The project will not 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, and no impacts will occur.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including marsh, vernal pool, coastal, and others) through direct removal, filling, hydrological interruption, or other means? *No Impact*.

There are no state or federally protected wetlands present within the project site or in adjacent areas. As described in Section 5.10 Hydrology, project construction will not result in impacts to surface water quality. Therefore, the project will not have a substantial adverse effect on federally protected wetlands through direct removal, filling, hydrological interruption, or other means, and no impacts will occur.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? *Less-than-Significant Impact*.

There are no aquatic habitats on or adjacent to the project site. The nearest waterbody, the Mojave River, is approximately 1.2 miles south of the project site and is dry most of the year. No impacts to fish or other aquatic species will occur.

As discussed in Section 5.4.1.7, only two special-status wildlife species were determined to have some potential to occur in the project site, desert tortoise and Mojave ground squirrel. Occurrences of desert tortoise have been identified within 5 miles of the project site, and the southwest corner of the station is within the Fremont-Kramer to Ord-Rodman Desert Tortoise Linkage. However, the desert tortoise is determined to be absent from the project site because the station is completely enclosed by a chain link fence and highly disturbed. Because of the lack of suitable habitat and reported absence during the trapping effort, Mohave ground squirrel is not expected to occur within the project site. The project will not interfere with the movement of or impede the use of native wildlife nursery sites for desert tortoise or Mojave ground squirrel. Nevertheless, in an abundance of caution, PG&E will implement APM BIO-2, APM BIO-3, and APM BIO-4 to further ensure that the project does not affect wildlife.

No bats and no evidence of bat roosting were identified during surveys of the project site. Migratory birds may move through the BSA during construction activities; however, no foraging habitat for birds was identified on the project site. Birds such as golden eagle may nest in landscape trees at the compressor station and in the BSA. However, trees will not be trimmed or removed as part of project construction. The only construction activity that will be occurring with 200 feet of the trees is construction staging. No suitable nesting habitat within the station was identified for ground-nesting birds, including burrowing owl, mountain plover, loggerhead shrike, and LeConte's thrasher. The project is not expected to substantially interfere with nesting birds and impacts will be less than significant. Implementation of APM BIO-1 and APM BIO-3, and APM BIO-4 will further minimize any potential effects to nesting birds.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? *No Impact*.

Although not subject to local regulations, PG&E strives to be consistent with local requirements for the protection of biological resources, where feasible, while remaining consistent with safety considerations. The project will be consistent with local policies and ordinances protecting biological resources. No trees or other vegetation will be trimmed or removed as part of the project. The project will not affect waterbodies or riparian vegetation. No impacts will occur.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? *No Impact*.

The project is located within the boundaries of the PG&E Hinkley Groundwater Remediation Project HCP (PG&E 2017). However, based on the project design, survey results, and APMs, the project will avoid take of special-status species covered under the HCP. Therefore, there will be no conflict with any habitat conservation plan and no impacts will occur.

5.4.4.4 Additional CEQA Impact Questions

a) Would the project create a substantial collision or electrocution risk for birds or bats? *No Impact.*

The project will replace existing electrical equipment infrastructure (for example, switchgear, MCCs, conduits and cable) at ground level, belowground, or in existing buildings or structures where there is no potential for collision or electrocution hazards. The project's replaced outdoor MCCs will be a similar height to the existing MCCs and will not change the collision risk for birds or bats. Therefore, the project does not create a substantial collision or electrocution risk for birds or bats and no impact will occur.

5.4.4.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures provided for consideration to address in Biological Resources.

5.5 Cultural Resources

This section describes existing conditions and potential impacts related to cultural resources associated with construction of the project. Operation and maintenance (O&M) activities associated with the existing station will not change as a result of the project. The analysis concludes that the proposed project will have a less-than-significant impact on cultural resources. Incorporation of the APMs described in Section 5.5.4.2 will further minimize potential less-than-significant impacts on cultural resources. The project's potential effects on cultural resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.5-3 and discussed in more detail in Section 5.5.4.

The project area analyzed in this assessment encompasses all areas that may contain historical resources that could be impacted by the project's construction, implementation, and operation. The project area includes all proposed locations of ground disturbance, including excavations for the removal and installation of underground pipeline or foundations, access, laydown areas required for equipment, and areas for the temporary generators. In addition, this assessment considers potential physical, visual, atmospheric, and audible effects from the project. Existing station operation will not change after project construction. In general, the project's atmospheric and audible impacts will be limited to the construction period. Physical impacts will occur in defined construction areas and are not planned to affect the built environment outside of the station.

The vertical component for the project area is approximately 5 feet below surface to account for all excavations and approximately 5 feet above existing ground surface for all electrical upgrades. The study area includes the project area and a 0.5 mile buffer.

The following summary concerning cultural resources is derived from the Cultural Resources Assessment Report completed in support of the project (refer to Appendix C), which will be submitted separately to CPUC staff. The assessment included a cultural resource records search, SLF search, literature review, pedestrian survey, Native American outreach, and a buried site sensitivity analysis.

5.5.1 Methodology and Environmental Setting

5.5.1.1 Methodology

Background and archival searches were completed using PG&E's Confidential Cultural Resources Database (CCRD) of the California Historical Resources Information System, as well as additional sources described in this section. The NAHC and interested Native American individuals were contacted. In addition, an architectural field survey of the project area was completed.

Records Search and Historical Research

Jacobs requested a literature search extract on June 14, 2024, from PG&E's cultural resources GIS contractor, who completed a search of the CCRD and provided the results to Jacobs. The last update of the CCRD occurred summer of 2023. The records search included a review of all previously conducted cultural resources investigations and previously recorded cultural resources within the project area and a 0.5-mile buffer, identified as the study area. In addition, a review was completed to identify resources listed in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR); listed as California Historical Landmarks or California Points of Historical Interest; or listed in local registers of significant resources.

Primary and secondary sources consisting of assessor's records, maps, aerial images, and digitized newspaper archives also were reviewed. Maps and aerials reviewed included the following:

- 1855 Bureau of Land Management General Land Office (GLO) Records Original Survey San Bernardino County, California, Township 9 North, 3 West (GLO 1855)
- 1932 USGS, Barstow, California, 15-minute topographical map (USGS 1932)
- 1953 USGS, Barstow, California, 15-minute topographical map (USGS 1953)
- 1956 USGS, San Bernardino, California, 1:250,000 topographical map (USGS 1956)
- 1966 USGS, San Bernardino, California, 7.5-minute topographical map (USGS 1966)
- 1971 USGS, Hinkley, California, 7.5-minute topographical map (USGS 1971)
- 1985 National Environmental Title Research (NETR), Hinkley, California, aerial imagery (NETR 2024)
- Aerials: 1952, 1970, 1976, 1979, and 2024

In addition, the countywide plan and county ordinances of San Bernardino County were reviewed to identify regulations and policies that may pertain to cultural resources, as well as county or local listings of cultural resources that may be located within the study area.

Buried Site Sensitivity

The potential of an area to contain buried resources can often be assessed by an examination of an area's topography, soil types, and proximity to water. Buried sites are found in many contexts, especially alluvial fans and stream terraces. Buried sites are more likely in certain locations near water courses where deposition is deep, where previous studies have shown there is a higher density of sites, or where there is ongoing deposition. All these conditions were reviewed to assess the sensitivity for subsurface archaeological deposits in the project area. Additionally, previous studies, particularly those including excavations or archaeological monitoring, and depositional information (Dibblee 1967; USGS 2020; and NRCS 2024) were reviewed.

Archaeological and Architectural Survey

The literature search results document that the project area has been subject to intensive archaeological pedestrian surveys, so no archaeological pedestrian survey is necessary for this assessment.

Investigators who meet the Secretary of the Interior's Professional Qualification Standards in Architectural History and History, per 36 *Code of Federal Regulations* Part 61, oversaw the performance of an architectural field survey of the project area completed on July 17, 2024. The pedestrian survey was physically conducted by a consulting surveyor and overseen by a Jacobs Architectural Historian. Survey methods were designed to meet local, state, and federal requirements, and follow guidance in the Office of Historic Preservation's *Instructions for Recording Historical Resources*. The survey was consistent with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (*Federal Register* Volume 48, Section 44716).

Prior to conducting the in-person survey, the Architectural Historian completed property development and archival research to identify both potential and previously documented architectural resources dating to 1979 or earlier (older than 45 years of age). Repositories referenced include current mapping software, the San Bernardino County Assessor's and California Parcel Quest data, historic map databases, aerial images, newspaper databases, and the PG&E *Historic-era Infrastructure Management Plan*.

As a part of the survey, the extent of the project area was visually verified to ensure that all potentially affected historic-age resources were captured. Surveyors used the ArcGIS Collector application to collect photographs of roads, buildings, structures, objects, mechanical and engineering components, and any additional unidentified resources (if applicable). Surveyors also took pertinent notes on architectural style, form, condition, and historic integrity. The Architectural Historian assigned estimated construction dates for buildings and features based on both archival and development research, through field verification, and using professional judgement.

Resources older than 45 years of age (built in 1979 or earlier) and eligible for consideration in the CRHR were recorded on California Department of Parks and Recreation (DPR) 523 series forms.

Native American Coordination

As part of the outreach efforts to Native American organizations and individuals, PG&E requested an SLF search by the NAHC on April 25, 2024, to determine if traditional cultural properties are located near the project area. NAHC responded on May 13, 2024, indicating there were no results from the SLF search, and it forwarded a list of Native American tribes in whose ancestral lands include the project area for consultation. PG&E sent out tribal outreach letters on August 6, 2024, providing information about the project and soliciting input on the project from interested Native American groups and individuals. The tribal letter and any responses received by PG&E are included in Appendix C of the cultural resources technical report.

5.5.1.2 Record Search Results

The records search identified 16 cultural resources studies conducted within the project area. Two cultural resources investigations included the entire project area. Both studies included intensive pedestrian surveys completed within the last 10 years. One previous study reported the results of an archaeological monitoring program that included a portion of the project area in 2021. Sixteen additional studies covered portions of the 0.5-mile buffer. Table 5.5.-1 presents the previously conducted cultural resources investigations within the project area and the 0.5-mile-radius search area. Figure 5.5-1 displays the previous archaeological surveys within the 0.5-mile-radius search area.

Table 5.5-1. Previously Conducted Cultural Resources Investigations within the Project Area and 0.5-Mile-Radius Search Area

Author and Date	Report Title	Report Number
Within the 0.5-Mile Radius		
Unknown 1972	Coolwater-Kramer 220 kV Transmission Line Environmental Report, Southern California Edison	S-000125
Weil, Weisbord, and Blakely 1984	Cultural Resources Literature Search, Records Check, and Sample Field Survey for the California Portion of the Celeron/All American Pipeline Project	KE-1772
Schmidt 2007	WO 4713-1533: Kramer-Tortilla 115 kV Transmission Line Deteriorated Pole Replacement Project, Hinkley and Barstow Areas, San Bernardino County, California	SB-05431
AECOM 2011	Cultural Resources Class III Survey Report for the Proposed Mojave Solar Project and Lockhart Substation Connection & Communication Facilities, San Bernardino County, California	SB-007381
Far Western 2012	Archaeological Inventory of Pacific Gas and Electric Company-owned Land in the Vicinity of Hinkley, San Bernardino County, California	SB-07550

Table 5.5-1. Previously Conducted Cultural Resources Investigations within the Project Area and 0.5-Mile-Radius Search Area

Author and Date	Report Title	Report Number
Leach-Palm 2012	Archaeological Inventory of Pacific Gas & Electric Company-owned Land in the Vicinity of Hinkley, San Bernardino County, California, PG&E Contract No. 4400005002	Leach-Palm 2012
Nettles 2012	Cultural Review for Clearance of Figueroa House and Property (APN# 0488-112-09), Hinkley, CA	Nettles 2012
Nettles 2013	Hinkley Built Environment Cultural Resources Review – Whitson Property	Nettles 2013
Strudwick 2013	Cultural Resources and Paleontology Monitoring Report – SCE Sandlot (Water Valley) Project, Victorville-Kramer Junction-Barstow-Daggett, San Bernardino County, California	SB-007899
Hamilton et al. 2014	Volume 5 Phase II Testing and Evaluation of CA-SBR-1688H and CA -SBR-16823H	Hamilton et al. 2014
Higgins et al. 2014	Cultural Resources Inventory of a Hydrostatic Pressure Test Segment on L-300B Between Mileposts 149.33 and 160.88, San Bernardino County, California	SB-07958
McDougall 2015	Emergency Investigations of Æ-2504-1, a Lithic Scatter Identified within the Community East Agricultural Treatment Unit Immediately Northwest of the Intersection of Community Boulevard and Summerset Road in Hinkley, San Bernardino County, California	McDougall 2015
Wendel 2017	Volume 7 Archaeological Evaluation of CA-SBR-16110H and CA-SBR-16143H	Wendel 2017
Ollendorf 2019	Final Cultural and Paleontological Resource Findings Report: Replacement of Dry Wells (SC-MW-02M and SC-MW-03M), San Bernardino County, California	Ollendorf 2019
Shi 2019	Final Cultural and Paleontological Resource Findings Report: Installation of Monitoring Well 44S (SC-MW-44S), San Bernardino County, California	Shi 2019
Ambrosino 2020	Hinkley D-1073A L-314 MP 0.27 Immediate ILI Dig Project Weekly Monitoring Log	Ambrosino 2020
Within the Project Area		
New Mexico State University 1989	Cultural Resources Report for the All American Pipeline Project: Santa Barbara, California to McCamey, Texas and Additional Areas to the East Along the Central Pipeline Route in Texas	SB-01979
McGuire 1990	A Cultural Resources Inventory and Limited Evaluation of the Proposed Mojave Pipeline Corridor in California and Arizona	SB-02388
Glover and Wohlgemuth 1992	A Cultural Resources Inventory of the Hinkley Lateral (PG&E) in San Bernardino County, California	SB-02593
Clay and Hause 1990	An Archaeological Inventory of Two Proposed PG&E Pipeline Corridor Segments: Newberry Springs to Hinkley 29.6 Miles by 200 FT (717.6 AC), San Bernardino County, CA, and Arvin to Kern River 25.2 Miles by 200 FT (600.9 AC), Kern County, CA.	SB-02233
Garlinghouse 2005	Cultural Resources Survey of Six Parcels, Hinkley, California	Garlinghouse 2005

Table 5.5-1. Previously Conducted Cultural Resources Investigations within the Project Area and 0.5-Mile-Radius Search Area

Author and Date	Report Title	Report Number
Underwood and Cleland 2002	Cultural Resources Survey of Line 1903, All American Pipeline Conversion Project from Mettler, Kern County, CA to Daggett, San Bernardino County, CA	SB-07570
Far Western 2011	Cultural Resources Constraints Analysis for Gas Hydrotesting at T-56 on Gas Transmission Line 300A (PG&E)	Segment 56 CRCR
Thomas and Higgins 2011	Cultural Resources Inventory of Five Hydrostatic Pressure Test Segments on Natural Gas Pipelines 300a, 300a1, and 300b, San Bernardino County, California	SB-008112
Far Western 2011	Cultural Resources Constraints Analysis for Gas Hydrotesting at T-79 on Gas Transmission Line 300B (PG&E)	Segment 79 CRCR
Higgins et al. 2013	Cultural Resources Inventory of 5,300 Acres for the PG&E Pipelines 300A and 300B, San Bernardino and Kern Counties, California	KE-04476
McDougall et al. 2014	Volume 1 Cultural Resources Survey of Portions of the Operable Units (Ous), 1, 2, and 3 for the PG&E Groundwater Remediation Project, Hinkley, San Bernardino County, CA.	McDougall et al. 2014
Thomas 2014	Cultural Resources Constraints Report for the 2014 Hydrotest Segment T-350-14 PG&E Project	T-350-14-CRCR
Wisely 2014	Cultural Resources Constraints Report for the Cultural Resources Constraints Report for the 2015 Hydrotest Segment T-1062 PG&E Project	T-1062-15-CRCR
Higgins 2020	Cultural Resources Constraints Report for the Hydrotest 2020 Segment T-1486 Project (PG&E)	Higgins 2020
Boomgaarden 2021	Cultural Resources Constraints Report L-300A Emergency Maintenance Anomaly Digs at Six Locations (602F-3, 602F-4, 602F-5, 602F-9, 602F-10, Hinkley CS Laydown Area) on Line 300A	Boomgaarden 2021
Roberson 2021	Completion of Archaeological Monitoring for Hydrotest 2020 Segment T-1486 (Line 300B), San Bernardino County, California	Roberson 2021

Source: CCRD 2024

The records search did not identify any previously recorded resources within the project area. A total of 29 previously recorded cultural resources finds were identified within the 0.5-mile buffer, including 3 isolated finds, 3 Precontact era lithic scatters, 16 Historic era archaeological sites, and 7 Historic era features, such as roads and water conveyance features. Table 5.5-2 presents the previously recorded cultural resources within the 0.5-mile buffer.

Table 5.5-2. Previously Recorded Cultural Resources within the 0.5-Mile Buffer

Resource Number	Resource Type	Resource Description	Evaluation/Year
Within the 0.5-Mile Buffer			
P-36-025154	Historic	Refuse scatter	Unevaluated/2011
P-36-025155	Historic	Refuse scatter	Unevaluated/2011

Table 5.5-2. Previously Recorded Cultural Resources within the 0.5-Mile Buffer

Resource Number	Resource Type	Resource Description	Evaluation/Year
Within the 0.5-Mile Buffer			
P-36-025163	Historic	Residential ruins	Unevaluated/2011
P-36-025165	Historic	Refuse scatter	Not eligible/2017
P-36-025182	Historic	Refuse scatter	Unevaluated/2011
P-36-025183	Historic	Refuse scatter	Unevaluated/2011
P-36-026441	Historic	Fairview Road	Unevaluated/2013
P-36-026442	Historic	Summerset Road	Unevaluated/2013
P-360026570	Historic	Irrigation feature	Unevaluated/2013
P-36-026571	Historic	Refuse scatter	Unevaluated/2013
P-36-026572	Historic	Refuse scatter	Unevaluated/2013
P-36-026573	Historic	Residential foundation and refuse	Unevaluated/2013
P-36-026574	Historic	Farmstead ruins	Unevaluated/2013
P-36-026575	Historic	Farmstead ruins	Unevaluated/2013
P-36-026576	Historic	Residential remains and refuse	Unevaluated/2013
P-36-026577	Historic	Irrigation feature: standpipe	Unevaluated/2013
P-36-026578	Historic	Refuse scatter	Unevaluated/2013
P-36-026598	Historic	Dump site	Unevaluated/2013
P-36-026599	Historic	Refuse scatter	Unevaluated/2013
P-36-026600	Historic	Refuse scatter	Unevaluated/2013
P-36-026601	Precontact	Lithic scatter	Unevaluated/2013
P-36-026612	Precontact	Lithic scatter	Unevaluated/2013
P-36-027744	Precontact	Lithic scatter	Unevaluated/2013
P-36-034156	Historic	Transmission line access road	Not eligible/2021
P-36-034189	Historic	Hervey Road	Not eligible/2021
P-36-034190	Historic	Unnamed dirt road	Not eligible/2021

Other Sources

No development within the study area is depicted on the 1855 GLO survey map. The 1932 topographic map shows the Mojave River in a slightly different alignment than modern day and the project area would have been closer to the river's western bank. Unnamed dirt roads traverse through the study area. The Hinkley Valley is depicted as peppered with residential structures. No residential developments or neighborhoods or streets with more than two houses each are shown. There also is no commercial development shown within the study area. The Atchison, Topeka, and Santa Fe (AT&SF) Railway is shown in the same alignment as today. The Bakersfield Highway, also Old Highway 58, is visible on this map, running roughly parallel to modern State Route 58.

The 1952 aerial image shows Hinkley Compressor Station as built and situated between Community Boulevard to the north, Summerset Road to the east, Riverview Road to the south, and Fairview Road to the west. The 1952 aerial also shows the following structures: Parking Shelter 2 (Resource ID 3), Garage (4), Storage Building (5), Office Building (7), Building B (10), Raw Water Tanks (21a and 21b), MCC 7 and 8 Building (22), Old Auxiliary Building (23), E-202 (29), and Cooling Tower A (39) (NETR 2024). The 1953 topographical map depicts approximately 70 percent fewer roads and residential structures than shown on the 1932 map. Several landing strips in the Hinkley Valley are depicted on this map and the Riley Landing Strip is mapped in the study area.

The 1955 aerial image shows the following buildings have been constructed within Hinkley Compressor Station: Parking Shelter 1 (2), Structure A (11), Tank Cluster A (25), Cooler E-25tA (28), the Carpenter Building (32), and Cooling Tower B (35). In approximately 1965, Cooler E-266 (26), Cooler E-265 (27), Building F (41), Bathroom (42), and Picnic Shelter (44) also appear on the reference materials (NETR 2024; USGS 1956).

The 1966 map depicts a near modern level of development. Hinkley Union School and Hinkley Bible Church are mapped. Lenwood Road and the "4 Lanes Dual" Highways 66, 91, and 15 meet in Barstow and follow a single alignment south to Victorville.

Topographic maps and aerials from 1970 and 1976 indicate that the Retention Ponds (1) were added to the station in approximately 1975 (NETR 2024). Historical imagery available through the National Environmental Title Research (NETR) agency indicates that 22 buildings and structures were added to the property between 1979 and 2024, including electrical and mechanical equipment, auxiliary structures, a Guard Station (6), the Auxiliary Building (13), the Air Compressor Building (17), Motor Control Center 6 and Cooling Tower D (19), Auxiliary Load Center, and a Control Room (30) (NETR 2024).

No significant cultural resources listed locally pursuant to an ordinance or a general plan were identified in the study area.

Results of Native American Coordination

On May 13, 2024, Jacobs received a response from the NAHC reporting a negative result for sacred sites located within the project area. Additionally, the NAHC provided a list of 14 individuals and groups to contact for consultation.

On September 2, 2024, the Twenty-Nine Palms Band of Mission Indians replied to PG&E's outreach letter. The Tribe stated that, based on the presence of a small surface scatter, there was a possibility of cultural resources being discovered below ground and requested a copy of the cultural resources report and the Phase II investigation. The Tribe additionally requested that PG&E reach out to other tribes with cultural affiliation with the project area. On September 3, 2024, PG&E replied that there is no precontact surface scatter previously recorded within the project area and requested clarification from the Tribe to determine if the Tribe has knowledge of a cultural resource not previously recorded within the project area. No response was received and, on October 1, 2024, PG&E sent another email to the Twenty-Nine Palms Band to request information about the artifact scatter. PG&E also sent an email to additional contacts within the Twenty-Nine Palms Band on October 2, 2024. To date, no additional response has been received from the Twenty-Nine Palms Band. On October 3, 2024, the Fort Yuma Quechan Indian Tribe sent an email stating that they do not wish to comment on the project. To date, no other responses have been received from the tribal outreach letters sent on August 6, 2024.

Results of Field Inventory

One cultural resource was identified as a result of the archival research and field survey. Hinkley Compressor Station, established by PG&E in 1952, is legally sited at 35863 Fairview Road (Assessor Parcel Number 488-112-52) (Parcel Quest 2024).

Hinkley Compressor Station is on an approximately 159.4-acre parcel bound by Community Boulevard to the north, Summerset Road to the east, Highcrest Road to the south, and Fairview Road to the west (Parcel Quest 2024). The developed portion of the parcel, a fenced area of approximately 64 acres, includes buildings, associated structures, and mechanical features, as well as landscaping from circa 1930 associated with a residence that is no longer extant.

The Hinkley Compressor Station complex has three distinct areas. The northern portion of the complex is occupied by five Retention Ponds (Resource ID 1). South of the retention ponds, the original station complex consists of a tightly clustered collection of buildings, structures, and mechanical equipment. This area is characterized by utilitarian, premanufactured, warehouse-type buildings with elevated ceilings, support structures, and industrial equipment. East of the original complex and south of the retention ponds, there is a cluster of several buildings and a Picnic Shelter (44) situated within the circa 1930 Landscape Features (46). The Landscape Features consist of two rows of eucalyptus trees and other deciduous trees that dominate this part of the station and predate any of PG&E's development of Hinkley Compressor Station.

Most of the buildings within the station are premanufactured, one-story, warehouse-type buildings with rectangular slab foundations and side-gable, moderately pitched roofs. The buildings are predominantly clad in corrugated metal and are equipped with garages, storage areas, and loading docks. Ten extant buildings and structures are original to Hinkley Compressor Station's construction in 1952. By 1965, five buildings and structures were added to the property and, by 1975, four of the extant Retention Ponds were added to the property. A total of 22 buildings and structures were added to the property between 1979 and 2024 (NETR 2024; USGS 1932, 1956).

Hinkley Compressor Station was evaluated pursuant to Section 15064.5, which states a cultural resource is historically significant if it meets the criteria for listing on the CRHR (Public Resources Code [PRC] Section 5024.1; California Code of Regulations Title 14, Section 4852). Hinkley Compressor Station does not meet any of the criteria for listing in the CRHR, either individually or as part of a potential historic district. Per guidance found in CEQA Section 15064.5(a)(2)-(3) and in Section 5024.1 of the PRC, Hinkley Compressor Station is not recommended as a historical resource for the purposes of CEQA.

5.5.1.3 Environmental Setting

Prehistory

Paleoindian Period (10,000 to 8,000 BCE)

The Paleoindian Period covers the interval from the first accepted presence of humans in southern California in the Late Pleistocene until approximately 8,000 calibrated years (cal) before current era (BCE). Artifacts and cultural activities from this period represent a predominantly big-game hunting culture. Diagnostic artifacts include extremely large, often fluted bifaces associated with use of the spear and the atlatl. Populations appeared to have been relatively small and highly mobile, living in temporary camps near readily available water. Evidence for Clovis occupation in the Mojave Desert is currently limited to scattered isolated points and a single site at Lake China that is presumed to be an occupation site (Sutton et al. 2007: p. 234). Additionally, a single Clovis-like point fragment was found in the Tehachapi

Mountains and other points resembling Clovis have been found in the Tiefort Basin, Searles Lake, and other locations within the region (Moratto 2004: p. 87).

Lake Mojave Complex (8,000 to 6,000 BCE)

In the deserts of southern California, the earliest substantive remains of human occupation are found along the shoreline of ancient Lake Mojave in San Bernardino County, for which this period is termed, and at ancient Lake Cahuilla in Riverside and Imperial counties. The Lake Mojave Period is associated with now-dry pluvial (also called paleo) lakes found throughout the Mojave Desert. Artifacts observed at Lake Mojave Period sites include stylized dart points of the Lake Mojave and Silver Lake series, well-made bifacial knives and other cutting tools, large domed scrapers or scraping planes, crescents, occasional cobble core tools, and ground stone implements (Moratto 2004: p. 96; Wallace 1962; Sutton et al. 2007: p. 237). Flaked stone artifacts, which make up the largest part of the toolkit, are often formal tools made of nonlocal materials, while ground stone tools, present in far smaller numbers, generally show ephemeral wear, suggesting long-term curation of more easily ported items and less reliance on floral resources. Site types include extensive habitation sites, small camps, and workshops (Sutton et al. 2007).

Pinto Complex (7,000 to 3,000 BCE)

The Pinto Complex is the most widely distributed of the early complexes in the Mojave Desert and occurs in a wide variety of topographic and environmental zones, including near remnant pluvial lake basins, near fossil stream channels, near springs or seeps, and in upland areas. Large Pinto Complex sites with deep middens and a wide range of artifact types appear to correlate with stable water sources. Pinto sites are found in a wide range of environments and the flourishing of new economies, including greater plant resource exploitation, is seen both in the desert and along the Pacific coast during the Pinto Complex. Olivella shell beads have been found with Pinto sites, potentially indicating the beginnings of trade with the coast. Diagnostic artifacts recovered from Pinto Period archaeological sites include heavy-keeled scrapers, flat millingstones, manos, and Pinto series projectile points, which are large, coarsely made points, indicating the continued use of darts and atlatls (Warren 1984). By the end of the Middle Holocene, conditions in the Mojave Desert became much warmer and much drier. Currently, few sites are known to date to the period between 3,000 and 2,000 cal BCE, and it appears that parts of the Mojave may have been abandoned (Sutton et al. 2007).

Gypsum Complex (2,000 BCE to 200 Current Era [CE])

The start of the Gypsum Complex coincides with the beginning of the Little Pluvial wetter climatic episode at approximately 2,000 BCE and continues into the drier period following the Little Pluvial. Artifacts that offer strong evidence for the beginning of trade between the desert and the coast include Olivella shell beads and Haliotis rings from the coast and split twig figures from the southwest, which are found at Gypsum sites. Gypsum Complex toolkits include the diagnostic Elko and Elko-eared points, leaf-shaped points, rectangular-based knives, flake scrapers, T-shaped drills, the occasional large scraper plane, and hammerstones. Elko series points are associated by Moratto (2004) with the spread of Uto-Aztecan speakers throughout the Mojave during this period. A shift in food procurement strategies also marks this period when grinding implements, including manos and millingstones, became common and mortars and pestles were introduced (Warren 1984).

Rose Spring Complex (200 to 1,100 CE)

During this period, a strong coastal influence extended into the western Mojave Desert (Warren 1984) and the eastern Mojave experienced an influx from Colorado River groups. Generally, the Rose Spring Complex appears to be in strong continuity with the Gypsum Complex. Similar artifacts, including millingstones, manos, mortars, pestles, and incised stones, were still used. Desert populations continued a successful hunting and gathering adaptation to the desert environment through increasingly complex subsistence strategies, including the development of the bow and arrow. The sites from this period contain a variety of trade items, including southern California shell beads, steatite items, and other coastal artifacts. Eastgate and Rose Spring projectile points are the diagnostic artifacts (Sutton et al. 2007).

Rose Spring sites are found near springs, washes, and occasionally lakeshores. Architectural evidence of pit houses, wickiups, and other types of structures indicate an increase in sedentism during this period. The Medieval Climatic Anomaly began during the Rose Springs Complex and the resulting desiccation of existing lakes and other water sources in the Mojave Desert appears to have significantly changed settlement patterns, resulting in a shift in dependence upon permanent water sources to more ephemeral ones. The Rose Spring Complex ended by approximately 1,100 CE.

Late Prehistoric Complexes (1,100 CE to Historic Times)

During this period, there was a strong reliance on plant food gathering and hunting of small game and a decreased reliance on large game (Warren 1984). Separate complexes emerged that appear to represent historically known Native American linguistic and cultural ethnic groups. Anasazi turquoise mining, Hakatayan influence from the Colorado River, and the spread of the Numic Paiute and Shoshone cultures east from the western Mojave Desert occurred during this period (Sutton et al. 2007: p. 242). Seasonal movement was common and resulted in a diverse array of site types. For the populations in the project region within the Mojave, large village sites remain marked by a paucity of pottery. Characteristic artifacts include Desert series and Cottonwood projectile points, buffware and brownware ceramics, shell and steatite beads, and milling tools. Trade continued to develop and expand with groups on the coast (Sutton et al. 2007: p. 242). At the end of the Late Prehistoric Complex, there appears to be an abandonment of village sites in the desert region (Moratto 2004: p. 391; Thomas 2011: p.17-18).

Ethnographic Period

The project area is located within the traditional territories of the Chemeheuvi – specifically, the Kawaiisu branch, and the Serrano – specifically, the Vanyume desert branch.

Chemehuevi

The Chemehuevi belong to the Shoshonean language group, a Southern Numic branch of the Uto-Aztecan language family. Although the Kawaiisu lived primarily in the foothills and mountains, they would travel to lower elevations during the cooler seasons. The Kawaiisu lived in chieftanships, which generally were based on familial ties. Kawaiisu chiefs did not inherit the role of chief; rather, any wealthy Kawaiisu man might become a village chief. A son might succeed his father as chief, if he gained enough property on his own, because a man's property was destroyed at his funeral. Jimson weed was employed as a hallucinogenic for religious and shamanistic purposes as well as puberty rites among the Kawaiisu, much as it was throughout southern California. The Kawaiisu shamans practiced rain magic and rain doctors would minister to the sick as well as summon the rain.

Kawaiisu subsistence was based on hunting, fishing, and gathering. Acorns were one of their staple crops. Piñon nuts could be gathered at higher elevations of Kawaiisu territory. Seeds, shoots, leaves, bulbs, tubers, and berries were collected as well. Large game, including deer, bear, mountain sheep, and antelope, was hunted, as was smaller game such as squirrels, mice, and rabbits. The Kawaiisu would join the nearby Tubatulabal and Yokuts in communal antelope drives in the San Joaquin Valley (Smith 1978).

Chemehuevi beliefs were closer to those of groups found east of Chemehuevi territory, rather than those of the geographically closer southern or central California groups. Many Chemehuevi songs are similar, if not the same, as Mojave songs, including their Shaman and Doctoring songs (Kroeber 1925). The

Chemehuevi had external relationships with the Mojave, Navajo, and Utes who were sometimes friendly and sometimes hostile. The Southern Paiutes often accused the Ute and Navajo of kidnapping raids. Relations with the Western Shoshone to the north and northwest were generally friendly and often involved intermarriage. The Chemehuevi also had generally amicable relations with other Mojave Desert groups, including the Serrano and Vanyume, Cahuilla, and Diegueño. Although the Chemehuevi borrowed heavily from Mojave culture (Kelly and Fowler 1986: p. 369-370), Kroeber (1925: p. 596) asserts that the Chemehuevi generally tried to avoid the frequent warfare that involved many of their more powerful and populous regional neighbors to the east.

Serrano

The Vanyume, a desert subdivision of the Serrano, are classified as belonging to the Takic linguistic branch, a subdivision of the Uto-Aztecan language family, and are considered to be a part of the Shoshonean or Takic migration into California (Byrd 1996; Moratto 2004; Sutton 2005). In addition to its occupation of the upper Mojave River drainage, the Vanyume, or Desert branch of the Serrano, appear to have occupied a substantial area within the western Mojave region. Vanyume territory extended from the eastern Mojave Desert through modern day Victorville and as far west as the city of Palmdale in the Antelope Valley (Bean and Smith 1978; Earle et al. 1998; Earle 2012; O'Rourke 2005). The subsistence practices of the Serrano were primarily hunting and gathering within diverse ecological zones. Foods consumed included acorns and piñon nuts and other seeds from the foothills of the San Bernardino Mountains; yucca, mesquite, and cactus from desert environs; game such as deer, rabbit, antelope, and other small mammals; and fish. The primarily desert-dwelling Vanyume had resources available to them from outside of their territories through trade and networking with other Serrano groups who occupied areas in both the San Gabriel and San Bernardino Mountains (Bean and Smith 1978).

Settlement locations were dictated by water resources and villages tended to be based near streams, springs, and rivers, with village sizes ranging from 50 up to 100 people (Earle et al. 1998). Family dwellings were of the style encountered with many groups in southern California, constructed in a circular-domed fashion made of willow and tule. Each dwelling had a central fire for heat and minor cooking, although most domestic activities occurred outdoors. Other structures found in a Vanyume village would be composed of armadas, an unenclosed structure roofed with brush, and a ceremonial house occupied by a village leader (Bean and Smith 1978).

The annual cycle of social, ceremonial, and economic activities of all Serranos was dictated by the seasonal availability of important subsistence resources (Earle et al. 1998; Earle, 2012). They engaged particularly in hunting, craft activities, and visiting during the winter months after the fall piñon and acorn harvests. Early spring was the period of greatest food scarcity during the year.

Historic Period

In California, the Historic era generally is divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present).

Spanish Period (1769 to 1821)

In 1542, Juan Rodríguez Cabrillo reached California by ship, entered San Diego Bay, and claimed Alta California for Spain. The Historic Period in California began with the establishment of Spanish colonial military outposts, the first of which was Mission San Diego de Alcalá, founded in 1769 by Junípero Serra. During this period, 21 missions were built in California, lined up from south to north along the El Camino Real. This period also introduced the era of Missionization, a period of forced conversion of the Native Americans who occupied the region. Many perished from ill treatment, but more died because of the introduction of European diseases, ultimately devastating the Native American populations. The Old Spanish Trail connected Villa Real de Santa Fé de San Francisco, now Santa Fe, New Mexico, and El Pueblo de Nuestra Señora La Reina de Los Ángeles, now Los Angeles, California, and traversed through the Barstow area. The last mission to be founded was San Francisco Solano in 1823. Later, as Spain lost its rule over New Spain and secularization was sought by the new government, the Mission system was disbanded (Weber 2006).

Mexican or Rancho Period (1821 to 1848)

Mexico became independent of Spain in 1821 and the Decree of Secularization, passed in 1834, effectively ended the Spanish Period in California. In 1842, Alta California Governor Juan B. Alvarado (governor from 1837 to 1842) granted Rancho San Bernardino to colonial settlers José del Carmen, José María Lugo, Vicente Lugo, and Diego Sepúlveda. The families ranched cattle on the 35,509-acre ranch, approximately 55 percent of contemporary San Bernardino County (Cataldo 2023).

American Period (1848 to Present)

Following the signing of the Treaty of Guadalupe Hidalgo in 1848, the United States took possession of California. The treaty bound the United States to honor the legitimate land claims of Mexican citizens residing in captured territories. The Land Act of 1851 established a Board of Land Commissioners to review these records and adjudicate claims and charged the Surveyor General with surveying confirmed land grants (Gutiérrez and Orsi 1998). From 1852 to 1856, a Board of Land Commissioners determined the validity of grant claims. The commissioners rejected many of the original rancho claims, which then became public domain and open for claim by squatters.

Due to the harsh climate and limited water access, the project region continued to be unsettled and was used primarily as a travel corridor leading from the coast into the territories of Nevada, Utah, Arizona, and other parts of the southwestern United States. The Gold Rush triggered a huge interest in mining operations and drew many prospectors into the Mojave Desert in search of mineral resources (Edwards AFB 1998). In 1876, the Southern Pacific Railroad reached the Antelope Valley and established stops in Randsburg, Rosamond, Barstow, and Mojave. The railroad connected the desert towns, rural ranching communities, and mining camps to large consumer markets (Earle et al 1998).

In 1882, a group of agrarian immigrants disembarked the Barstow-to-Mojave Branch of the AT&SF Railway and established the rural community of Hinckley (now Hinkley). The AT&SF opened the western Mojave Desert to permanent settlements and broad-scale agricultural production by providing farmers and ranchers a direct connection to commercial markets in Barstow (12 miles east) and Mojave (61 miles west (Gudde and Bright 1998: p. 166; Bryant 1974). Although equipped for passenger service, Hinkley Station primarily functioned as a water stop and pumping station for the AT&SF's steam engines. In approximately 1908, Hinkley experienced a small population boom when AT&SF constructed a section house for its railroad operations (Bryant 1974).

PG&E's Hinkley Compressor Station was established in 1952, at a cost of $3.5 million. The compressor station was part of the company's "Super Inch" pipeline project and was originally equipped with seven of the largest compressors made for pipeline booster service, as well as operational buildings and offices, cooling towers, water treatment equipment, and storage facilities (PG&E 2024). After the initial construction, PG&E expanded the plant to accommodate California's growing utility demand (NETR 2024).

5.5.2 Regulatory Setting

The following subsections identify applicable federal, state, and local laws, policies, and standards for cultural resources.

5.5.2.1 Federal

No federal regulations related to cultural resources are applicable to the project.

5.5.2.2 State

California Register of Historical Resources

Under Section 21083.2 of CEQA, an important archaeological or historical resource is an object, artifact, structure, or site that is listed on, or eligible for listing on, the CRHR. Eligible resources are those that can be clearly shown to meet any of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- Is associated with the lives of persons important in our past
- 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 value
- Has yielded, or may be likely to yield, information important in prehistory or history

Automatic listings include properties that are listed on the NRHP. In addition, Points of Historical Interest nominated from January 1998 onward are to be jointly listed as Points of Historical Interest and in the CRHR.

Resources listed in a local historic register or deemed significant in a historical resources survey, as provided under PRC Section 5024.1(g), are presumed to be historically or culturally significant unless the preponderance of evidence demonstrates that they are not. A resource that is not listed on or determined to be ineligible for listing on the CRHR, not included in a local register of historical resources, or not deemed significant in a historical resources survey may nonetheless be historically significant, as determined by the lead agency (PRC Section 21084.1 and Section 21098.1).

California Health and Safety Code and Public Resources Code

Broad provisions for the protection of Native American cultural resources are contained in the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010 through 8030).

Several provisions of the Public Resources Code also govern archaeological finds of human remains and associated objects. Procedures are detailed under PRC Section 5097.98 through 5097.996 for actions to be taken whenever Native American remains are discovered. Furthermore, Section 7050.5 of the California Health and Safety Code states that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under PRC Section 7100 has committed a public offense that is punishable by imprisonment.

PRC Chapter 1.7, Section 5097.5/5097.9 (Stats. 1965, c. 1136, p. 2792), entitled Archaeological, Paleontological, and Historical Sites, defines any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources.

5.5.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process. Background research indicated that no cultural resources designated for local listing are located in the project area.

5.5.3 Impact Questions

The project's potential effects on cultural resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.5-3 and discussed in more detail in Section 5.5.4.

Table 5.5-3. CEQA Checklist for Cultural Resources

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

5.5.3.1 Additional CEQA Impact Questions

None.

5.5.4 Potential Impact Analysis

Project impacts related to cultural resources were evaluated against the CEQA significance criteria and are discussed in the following subsections. The impact analysis evaluates potential project impacts during the construction phase.

5.5.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts to cultural resources were evaluated for each of the criteria listed in Table 5.5-3, as discussed in Section 5.5.4.3.

5.5.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

APM CUL-1: Worker Environmental Awareness Training Program – Cultural Resources Portion

A worker environmental awareness training program (WEAP) will be prepared to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project performing excavation or trenching activities. This training will be administered by a qualified cultural resource professional either as a standalone training or as part of the overall environmental awareness training required by the project and may be recorded for use in subsequent training sessions. The WEAP program will be provided separately to CPUC staff prior to construction. The WEAP will address, among other topics, at a minimum:

- A review of archaeology, history, precontact, and Native American cultures associated with historical resources near the project
- A review of applicable local, state, and federal ordinances, laws, and regulations pertaining to historic preservation
- A discussion of procedures to be followed if unanticipated cultural resources are discovered during implementation of the project
- A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies
- A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, PG&E policies, and other applicable laws and regulations

APM CUL-2: Inadvertent Cultural Resource Discoveries

If unanticipated cultural resources are identified during construction, the following procedures will be initiated:

- All ground-disturbing construction activities within 100 feet of the discovery will halt immediately.
- The construction crew will protect the discovery from further disturbance until a qualified archaeologist has assessed it.
- The construction supervisor will immediately contact the project environmental inspector and the PG&E cultural resource specialist.
- The PG&E cultural resources specialist will coordinate with the CPUC and NAHC, as appropriate. If the discovery can be avoided or protected and no further impacts will occur, then the resource will be documented on DPR 523 forms, and no further effort will be required. If the resource cannot be avoided and may be subjected to further impacts, qualified personnel will evaluate the significance of the discovery in accordance with the state laws outlined previously; personnel will implement data recovery or other appropriate treatment measures, if warranted. A qualified historical archaeologist will complete an evaluation of historic period resources, while evaluation of precontact resources will be completed by a qualified archaeologist specializing in California prehistoric archaeology. Evaluations may include archival research, oral interviews, and/or field excavations to determine the full depth, extent, nature, and integrity of the deposit.

APM CUL-3: Unanticipated Discovery of Human Remains

If human remains or suspected human remains are discovered during PG&E construction, work within 100 feet of the find will stop immediately and the construction supervisor will contact the PG&E cultural resources specialist who meets the Secretary of Interior's Standards for archaeology. Upon discovery, the Specialized Investigations Division of the San Bernardino County Sheriff's Department will be contacted for identification of human remains. The Coroner has 2 working days to examine the remains after being notified.

If the remains are Native American, the Coroner must notify the NAHC about the discovery within 24 hours. The NAHC then will identify and contact a Most Likely Descendant (MLD). The MLD may make recommendations to the landowner or representative for the treatment or disposition, with proper dignity, of the remains and grave goods. When proper consultation has occurred, a procedure that may include the preservation, excavation, analysis, and curation of artifacts and/or reburial of those remains and associated artifacts will be formulated and implemented.

If the remains are not Native American, the Coroner will consult with the archaeological research team and the lead agency to develop a procedure for the proper study, documentation, and ultimate disposition of the remains. If a determination can be made as to the likely identity – either as an individual or as a member of a group – of the remains, an attempt should be made to identify and contact any living descendants or representatives of the descendant community. As interested parties, these descendants may make recommendations to the owner or representative for the treatment or disposition, with proper dignity, of the remains and grave goods. Final disposition of any human remains or associated funerary objects will be determined in consultation between the landowner and the Most Likely Descendant (MLD).

5.5.4.3 Impact Analysis

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to cultural resources resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

Project impacts on cultural resources are defined by CEQA as a change in the characteristics of a resource that convey its significance or justify its eligibility for inclusion in the NRHP, CRHR, or a local register. Direct impacts may occur by (1) physically damaging, destroying, or altering all or part of a resource, (2) altering characteristics of the surrounding environmental setting that contribute to the significance of a resource, (3) allowing a resource to deteriorate through neglect, or (4) incidental discovery of archaeological resources without proper notification. Direct impacts can be assessed by determining the exact location of historical resources and assessing their significance under NRHP and CEQA criteria, identifying the types and extent of the proposed impacts and their effect on significant resources, and determining appropriate measures to reduce impacts to less-than-significant levels. Indirect impacts may include changes to the viewshed of a significant resource through introduction of a new project element.

CEQA recommends avoidance or preservation in place as the preferred treatment for eligible properties and unique or significant archaeological or historical resources (PRC Section 21083.2). If avoidance is not a feasible option, data recovery is a common treatment. For architectural resources, if physical changes to a property – excluding demolition – can be treated following the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and

Reconstructing Historic Buildings, the project-related impact on the historical resource will generally be considered reduced below a level of significance.

a) **Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? *No Impact*.**

No historical resources were identified within the project area. No impacts are expected to historical resources from project implementation.

b) **Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? *Less-than-Significant Impact*.**

No known archaeological sites are present in the project area. The analysis for potential for buried archaeological resources indicates the potential for encountering archaeological resources is low. Excavated areas will be up to 5 feet deep and will cover a small area, approximately 2,395 square feet (approximately 0.06 acre) in total. Although the potential for encountering subsurface cultural resources is low, there remains potential for cultural resources to be found in excavations during construction. In the unlikely event that archaeological resources are discovered, the impacts to any resources, will be considered less than significant, with the implementation of APM CUL-1 through APM CUL-3.

c) **Would the project disturb any human remains, including those interred outside of formal cemeteries? *Less-than-Significant Impact*.**

No known burial sites are in the project area and the proposed project will not impact any known graves. Project impacts on human remains are not anticipated. If human remains are discovered, PG&E will implement APM CUL-3. Impacts will be less than significant.

5.5.4.4 CPUC Draft Environmental Measures

Refer to APM CUL-3 for discussion regarding avoidance and protection of human remains as identified in CPUC Draft Environmental Measure, *Human Remains*.

5.6 Energy

This section describes existing conditions and potential impacts on energy as a result of construction of the project. Operation and maintenance activities of the existing station will not change as a result of the project. The analysis concludes that less-than-significant impacts on energy will occur. The project's potential effects on energy resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.6-2 and discussed in more detail in Section 5.6.4.

5.6.1 Methodology and Environmental Setting

Local and state websites were reviewed for regulatory background information and information on existing energy providers and resources in San Bernardino County.

5.6.1.1 Methodology

The impact analysis used assumptions regarding construction-related fossil fuel use and operational energy requirements. Construction-related fossil fuel use was estimated based on the anticipated construction equipment use and vehicle trips. The CARB Off-Road Emissions Inventory (CARB 2024b) was used to estimate the gasoline and diesel fuel used by construction equipment, based on equipment category and horsepower rating. Engine specific total maximum heat input and the EPA's established average gross heating value of natural gas was used to estimate natural gas fuel consumed by PERP temporary generators used during construction. Refer to Appendix D for energy use details.

The EMFAC2021 (CARB 2024a) motor vehicle emissions model was used to estimate the gasoline and diesel fuel used by on-road vehicles, assuming the following based on VMT:

- Workers are assumed to travel in gasoline-fueled passenger vehicles (67 percent light-duty automobiles, 5 percent light-duty trucks class 1, and 28 percent light-duty trucks class 2), even though some of these trips may occur in diesel-fueled, electric, or plug-in hybrid vehicles.
- Onsite construction vehicles and offsite material and equipment transport are assumed to occur in diesel-fueled heavy-duty trucks (100 percent heavy-duty trucks), even though some of these trips may occur in gasoline-fueled, electric, or natural gas-fueled vehicles.

The station energy use will not change during construction or operation compared to existing station energy use; refer to Section 5.6.4.3.

5.6.1.2 Environmental Setting

The Hinkley Compressor Station is in unincorporated San Bernardino County, California, within the MDAB. The MDAB is characterized by "mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor." (MDAQMD 2020)

"Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses." (MDAQMD 2020)

"The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriels by the Cajon Pass (4,200 feet). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains (the Morongo Valley)." (MDAQMD 2020)

"During the summer the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. […] The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inches of precipitation)." (MDAQMD 2020)

The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least 3 months have maximum average temperatures greater than 100.4 degrees Fahrenheit (MDAQMD 2020).

The project's existing surrounding land uses are primarily undeveloped open space and rural residential with some agricultural activity and crop production.

5.6.1.3 Existing Natural Gas and Electrical Services

Hinkley Compressor Station is not located within PG&E service territory. Rather, it is a major compressor station on PG&E's "backbone" gas transmission system, which transports natural gas to millions of customers in California. The station uses four natural gas engine-driven generators to supply electric power for most of the station operation, including the natural gas compression at the station. Utility agreements prevent PG&E from using the power generated at the station outside the immediate area of the station. During construction, temporary generators will replace the permanent generators to provide the station's electrical power. The facility's infrastructure will continue to be available outside of the project scope to ensure PG&E's service reliability.

Most of San Bernardino County is served by Southern California Edison (SCE) (San Bernardino County 2019). San Bernardino County has 19 power plants, with natural gas being the primary fuel for electricity generation. Solar, hydroelectric, and coal also are used for electricity generation, but to a lesser degree than natural gas (approximately 37 percent in total as compared to approximately 63 percent for natural gas) (Find Energy 2024). Although the station produces electricity for most of its operations, the fire pump and the technical shop building within the compressor station, as well as areas around the station, are supplied electricity by SCE.

The California Energy Commission (CEC) provides data on energy production sources. Table 5.6-1 shows energy production sources for SCE.

Table 5.6-1. 2021 Energy Resources for Electricity Service Providers in San Bernardino County

Retail Suppliers	Eligible Renewables (Total)[a]	Large Hydroelectric	Natural Gas	Nuclear	Other[b]	Unspecified Power	Total
Southern California Edison[c]	33.2%	3.4%	24.7%	8.3%	0.1%	30.3%	100.0%

Source: CEC 2024b

[a] Eligible renewable resources include biomass and biowaste, geothermal, hydroelectric, solar, and wind.

[b] Other does not include coal.

[c] Southern California Edison offers several different service plans. The energy resources shown here conservatively reflect the plan with the fewest renewables.

5.6.1.4 Existing Energy Use

Within San Bernardino County, total energy consumption has increased since the early 1990s. However, natural gas consumption has increased at a lower rate than electricity consumption, suggesting an ongoing transition away from fossil fuels (CEC 2024c; CEC 2024d). In 2022, residential and nonresidential consumption of electricity in San Bernardino County was approximately 6,302 million kilowatt hours (kWh) and 10,327 million kWh, respectively (CEC 2024c). For the same year, residential and nonresidential consumption of natural gas in San Bernardino County was approximately 267 million therms and 295 million therms, respectively (CEC 2024d). Energy consumption in the immediate project area is associated with the land uses (undeveloped open space, rural residential or agricultural). The station is powered by permanent generators fueled by natural gas from PG&E's supplies.

Hinkley Compressor Station used approximately 7,900 megawatt-hours of electricity in 2023.

5.6.2 Regulatory Setting

The following sections contain an overview of regulations related to the use of energy and energy conservation.

5.6.2.1 Federal

Energy Policy Act of 2005

The Energy Policy Act created energy-related tax incentives from 2005 to 2016 to promote energy efficiency and conservation pertaining to renewable energy, oil and gas production and transmission, coal production, and electric generation and transmission.

Energy Independence and Security Act of 2007

On December 19, 2007, President Bush signed the Energy Independence and Security Act (EISA) with the goal of pushing the nation toward greater energy independence and security. Building on Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, EISA introduced more-aggressive requirements and created provisions that aim to further develop renewable fuel production and increase the efficiency of products, buildings, and vehicles (EPA 2024a).

American Recovery Reinvestment Act of 2009

As part of a larger stimulus package, the American Recovery Reinvestment Act authorized federal funding to the U.S. Department of Energy to forward specific energy priorities, including modernizing the nation's electric transmission grid, which would indirectly reduce natural gas consumption.

Executive Order 14008, Tackling the Climate Crisis at Home and Abroad

President Biden signed Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, on January 27, 2021, to promote a safe global temperature and increase climate resilience (EPA 2024b). Executive Order 14008 requires agencies to support robust climate action and submit a Climate Action Plan. Such provisions aim to achieve a carbon pollution-free electricity sector by 2035, which would indirectly reduce natural gas consumption.

5.6.2.2 State

California 2008 Energy Action Plan Update

Originally developed in 2003 and updated in 2005 and 2008, the California Energy Action Plan identifies specific action areas to ensure that California's energy resources are adequate, affordable, technologically advanced, and environmentally sound. The plan's first-priority actions to address California's increasing energy demands are energy efficiency and demand response (namely, reduction of customer energy usage during peak periods to address system reliability and support the best use of energy infrastructure). Additional priorities include the use of renewable sources of power and distributed generation. The plan also notes that investment in conventional transmission infrastructure is crucial to help the state meet its renewable energy goals, including reduction in natural gas consumption.

Executive Order S-3-05

State Executive Order S-3-05, issued in 2005, established GHG reduction targets for the state of California. The targets called for a reduction of GHG emissions to 2000 levels by 2010; a reduction of GHG emissions to 1990 levels by 2020; and a reduction of GHG emissions to 80 percent below 1990 levels by 2050 (Office of the Governor 2005). The secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate development and implementation of strategies to achieve the GHG reduction targets, including reduction in natural gas consumption.

Global Warming Solutions Act of 2006

In 2006, the California State Legislature signed the Global Warming Solutions Act of 2006 (AB 32), which provides the framework for regulating GHG emissions in California. This law required CARB to design and implement emission limits, regulations, and other measures so that statewide GHG emissions were reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020.

Climate Change Scoping Plan

Part of CARB's direction under AB 32 was to develop a scoping plan that contained the main strategies California used to reduce GHG emissions, which cause climate change. CARB first approved the AB 32 Scoping Plan in 2008 and its latest adopted plan is the 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022). The 2022 scoping plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045 (CARB 2022). This path includes strategies for reducing California's dependency on petroleum (for example, electrifying the transportation sector and continuing to build out renewable energy resources), minimizing the use of chemicals and refrigerants with high global warming potentials, and expanding the role of natural and working lands in capturing and storing carbon (CARB 2022).

Executive Order B-30-15

In April 2015, Governor Brown signed Executive Order B-30-15 that added the intermediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030.

Clean Energy and Pollution Reduction Act

In 2015, Senate Bill (SB) 350, the Clean Energy and Pollution Reduction Act, was signed into law, establishing new clean energy, clean air, and GHG reduction goals for 2030 and beyond. SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030.

Specifically, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030 by reducing reliance on fossil fuels, including natural gas.

Senate Bill 32 and Assembly Bill 197

On September 8, 2016, Governor Brown signed SB 32 and AB 197, which codified the 2030 GHG emissions reduction target of 40 percent below 1990 levels and provided additional direction for updating the scoping plan. The 2017 Scoping Plan established a path that would get California to its 2030 target, which is reiterated and expanded upon in the 2022 scoping plan update.

Renewable Portfolio Standard Program

Established in 2002, California's Renewable Portfolio Standard aims to ensure that a minimum amount of renewable energy is included in the portfolio of electricity resources serving a state or county. In September 2018, SB 100 was signed into law to update the renewable portfolio standard. SB 100 directed the CPUC, CEC, and CARB to plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. Through initial SB 100 analysis, increased energy storage and advancements in zero-carbon technologies can reduce natural gas capacity needs. The law also notes that retaining some natural gas power capacity may minimize costs while ensuring uninterrupted power supply during the transition.

Renewable Energy Transmission Initiative

The Renewable Energy Transmission Initiative 2.0 is a statewide, nonregulatory planning effort convened by the California Natural Resources Agency, with participation from the CEC, CPUC, California Independent System Operator, and the BLM, California Office. The Renewable Energy Transmission Initiative 2.0 was created to explore the renewable generation potential available to California utilities to help meet statewide GHG reduction and renewable energy goals and to identify the potential transmission implications of accessing and integrating these resources.

Integrated Energy Policy Report

The CEC adopts an Integrated Energy Policy Report every 2 years, which provides a cohesive approach to identifying and solving the state's pressing energy needs and issues. The report contains an integrated assessment of major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources and ensure a reliable, secure, and diverse energy supply, among other objectives. An update is published every other year and was most recently published in January 2024 to address 2023 trends. Some of the key recommendations or actions from this update, as related to energy resources, include the following (CEC 2024a):

- Expand proactive investment in electric grid infrastructure.
- Facilitate flexible service connections and deployment of temporary power solutions to connect projects while permanent infrastructure is constructed.
- Advance decarbonization efforts such as development of low-carbon fuels (including clean and renewable hydrogen), electrification, and renewable energy.

5.6.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations, respectively. However, plans for San Bernardino County are considered for informational purposes and to assist with the CEQA review process, based on the expected location of project activities.

San Bernardino County Regional Greenhouse Gas Reduction Plan

In response to AB 32, the San Bernardino Council of Governments (SBCOG) developed the San Bernardino County Regional Greenhouse Gas Reduction Plan (SBCOG 2021), which commits the SBCOG's 25 partnership jurisdictions to the following GHG emissions reduction activities:

- Prepare a baseline (2016) GHG emissions inventory for each of the 25 partnership jurisdictions in the county.
- Prepare future year (2020, 2030, and 2045) GHG emissions forecasts for each of the jurisdictions.
- Develop general GHG reduction measures and jurisdiction-specific measures appropriate for each jurisdiction.
- Develop consistent baseline information for jurisdictions to use for their development of community climate action plans meeting jurisdiction-identified reduction goals.

As stated within this plan, unincorporated San Bernardino County has a goal to reduce its GHG emissions 40 percent below its 2020 GHG emissions by 2030 through a combination of state (CARB) and local efforts. State efforts primarily target the on-road transportation sector, whereas local efforts primarily target the building energy and waste sectors through solar installation and waste diversion and reduction initiatives, respectively (SBCOG 2021). While most of the strategies do not apply to this project, the project will not conflict with any of the plan's strategies (refer to the analysis in Section 5.6.4.3).

San Bernardino County Policy Plan

The San Bernardino Countywide Plan serves as the general plan for the unincorporated areas of San Bernardino County. The San Bernardino County Policy Plan is part of the Countywide Plan and contains the long-term goals and policies that will guide county decisions, investments, and improvements toward achieving the countywide vision. Goals and policies that may apply to the project and aim to reduce energy consumption within the county include the following (San Bernardino County 2022):

- **Goal IU-5, Power and Communications.** Unincorporated area residents and businesses have access to reliable power and communication systems.
  - Policy IU-5.1, Electricity and natural gas service. We partner with other public agencies and providers to improve the availability and stability of electricity and natural gas service in unincorporated communities.
  - Policy IU-5.5, Energy and fuel facilities. We encourage the development and upgrade of energy and regional fuel facilities in areas that do not pose significant environmental or public health and safety hazards, and in a manner that is compatible with military operations and local community identity.
- **Goal RE-1.** The county will pursue energy efficiency tools and conservation practices that optimize the benefits of renewable energy.
  - Policy RE-1.1. Continue implementing the energy conservation and efficiency measures identified in the County of San Bernardino Greenhouse Gas Emissions Reduction Plan.
- **Goal NR-1, Air Quality.** Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally generated emissions.

- Policy NR-1.7, Greenhouse gas reduction targets. We strive to meet the 2040 and 2050 GHG emission reduction targets in accordance with state law.
- Policy NR-1.8, Construction and operations. We invest in county facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage county contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.

5.6.3 Impact Questions

5.6.3.1 Impact Questions

The project's potential effects on energy were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.6-2 and Table 5.6-3 and discussed in more detail in Section 5.6.4.

Table 5.6-2. CEQA Checklist for Energy

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Result in potential 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?	☐	☐	☐	☒

5.6.3.2 Additional CEQA Impact Question

The project's potential effects on energy also were evaluated using the CPUC's Additional CEQA Impact Questions for Energy in the *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* (CPUC 2019). This additional impact question is evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are presented in Table 5.6-3 and discussed in more detail in Section 5.6.4.

Table 5.6-3. Additional CEQA Impact Questions for Energy

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Add capacity for the purpose of serving a nonrenewable energy resource?	☐	☐	☐	☒

5.6.4 Potential Impact Analysis

Potential project impacts related to energy were evaluated against the CEQA significance criteria and are discussed in the following subsections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. The APMs discussed will further minimize potential less-than-significant impacts.

5.6.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to energy was evaluated for each of the criteria listed in Table 5.6-2 and Table 5.6-3 and is discussed in Sections 5.6.4.3 and 5.6.4.4.

5.6.4.2 Applicant-Proposed Measures

The project will have less-than-significant impacts on energy. Implementation of APM GHG-1 will further minimize potential impacts. APM GHG-1 (refer to Section 5.8.4.2) will simultaneously reduce GHG emissions and contribute to reducing energy use during construction.

5.6.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served. As described in Chapter 3, Project Description, the project will include various upgrades to the electrical system at the Hinkley Compressor Station. Project O&M will be conducted with existing staffing using existing access.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to energy resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) Would the project result in potential significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation? *Less-than-Significant Impact*.

The project will not change existing gas capacities, station operation or gas transmission system function or layout, PG&E service areas or customers. The project will not result in a potential significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction.

Construction of the project has an expected duration of approximately 23 months and will temporarily require consumption of nonrenewable resources to fuel construction vehicles and equipment. PG&E's engineering and construction staff also have developed an efficient construction plan and sequence that minimizes vehicle trips and avoids wasteful, inefficient, or unnecessary consumption of energy. Implementation of APM GHG-1, which minimizes unnecessary construction vehicle idling time, will further reduce construction energy consumption.

During construction when the switchgear is replaced, the station will receive power for operation of its critical loads from temporary generator units powered by natural gas.

During construction, PERP temporary natural gas fueled engines will be utilized. Total natural gas consumption from these units is included in fuel consumption estimates below. Natural gas has been conservatively estimated from the use of PERP generators. The estimates do not include the reduction of natural gas use from the stationary generators being offline when the PERP generators are in use. The PERP generator use conservatively calculates operation 24 hours per day for 8 months. The PERP generators will not be operating continuously during project construction. The PERP generators will only operate to power station equipment when the equipment is disconnected from its permanent power source. The actual use of energy during project construction will not increase beyond what typically is used during normal station operation. The project does not change the throughput of energy.

As shown in Table 5.6-4, construction of the project will result in the consumption of an estimated 5,841 gallons of gasoline, 90,139 gallons of diesel, and 179 million standard cubic feet (MMscf) of natural gas.

As compared to the statewide total fuel consumption for 1 year, the project's construction activities will consume a minimal amount of fuel, less than 0.01 percent of the statewide fuel consumption, as shown in Table 5.6-5. Therefore, the consumption of these energy resources will not be unnecessary, inefficient, or a wasteful use and construction of the project will result in a less-than-significant impact.

Table 5.6-4. Summary of Estimated Fuel Consumption During Construction

Project Activity	Gasoline (gallons)	Diesel (gallons)	Natural Gas (MMscf)
Construction Duration	5,841	90,139	179

Table 5.6-5. Summary of Estimated Fuel Consumption During Construction Compared to Statewide Fuel Consumption

Project Activity	Fuel Type	Estimated Amount of Fuel Consumed (gallons or MMscf)[a]	Statewide Fuel Resources Consumed (gallons)[b]	Consumed by Project (%)
Construction	Gasoline	5,841	12,746,185,200	0.00005%
	Diesel	90,139	2,373,378,000	0.004%
	Natural Gas	179	NA	NA

Source: CEC 2024e

[a] Total gallons of fuel consumed for project construction represents the total gasoline and diesel from employee vehicle trips, construction equipment, and material and equipment transport truck trips during the construction phases, as applicable. Total natural gas consumed (in million standard cubic feet [MMscf]) represents the total natural gas from use of the PERP engines during construction.

[b] A conservative estimate of annual statewide fuel resources consumed is assumed to be equivalent to 100 percent of annual production/ stocks consumed within the state for the period of January 1, 2023, through December 31, 2023.

NA = not applicable

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? *No Impact*.

By upgrading the electrical system at the existing Hinkley Compressor Station, construction of the project will help maintain reliability of the existing energy infrastructure, thus supporting the state's phased transition to renewable energy sources as they become available. For this reason, no impact will occur during construction.

5.6.4.4 Additional Impact Question

a) Would the project add capacity for the purpose of serving a nonrenewable energy resource? *No Impact*.

The project will not change existing gas capacities, station operation or gas transmission system function or layout, PG&E service areas or customers. The project will not add capacity for the specific purpose of serving a nonrenewable energy resource. The project infrastructure will continue to operate as part of a natural gas system supporting the state's phased transition to renewable energy sources as they become available. No impact will result.

5.6.4.5 CPUC Draft Environmental Measures

None.

5.7 Geology, Soils, and Paleontological Resources

This section describes existing conditions and potential impacts related to geology, soils, and paleontological resources associated with construction of the project. O&M activities associated with the existing station will not change as a result of the project. The analysis concludes that any impacts related to geology, soils, and paleontological resources will be less than significant; the implementation of APMs described in Section 5.7.4.3 will further reduce less-than-significant impacts. The project's potential effects associated with geology, soils, and paleontological resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines.

The conclusions are summarized in Table 5.7-4 and discussed in more detail in Section 5.7.4.

5.7.1 Methodology and Environmental Setting

5.7.1.1 Methodology

Information on the geology and soils in the project area was compiled from published literature and maps and via examination of aerial photographs and previous environmental study and analysis that was completed for Hinkley Compressor Station. The *San Bernardino Countywide Plan* and final Programmatic Environmental Impact Report also were reviewed to understand the overall geology and soils of the Hinkley area.

Paleontological information was obtained from an existing paleontological evaluation report (refer to Appendix E) that included the project site (PG&E 2014), which will be submitted separately to CPUC staff.

5.7.1.2 Regional and Local Geologic Setting

The project area is within the Mojave Desert geomorphic province, which is characterized by isolated mountain ranges with expansive areas of alluvial deposits that terminate at dry lakebeds (playas). The province has a distinct topographic feature: a northwest-southeast trend controlled by the San Andreas Fault on the southwest border of the province and the Garlock Fault, which forms the northern boundary of the province (LRWQCB 2013).

The Hinkley Valley, a portion of the Mojave Desert geomorphic province, comprises predominantly alluvial fill deposits, including clay, silt, sand, and gravel transported by the Mojave River, lacustrine deposits, aeolian fine sands, and alluvial fan deposits derived from the surrounding hills and mountains (LRWQCB 2012). Fluvial deposits derived from the Mojave River dominate the basin-fill sediment Alluvium is loose, unconsolidated (not cemented together into a solid rock) soil or sediments that have been eroded, reshaped by water, and redeposited (for example, from river flooding events and flashfloods from the surrounding high bedrock features). It typically is made up of a variety of materials, including fine particles of silt and clay and larger particles of sand and gravel (LRWQCB, 2013).

Regionally, the lithology is highly variable (LRWQCB 2012). It consists of interbedded sands and silty sands, varying from coarse to fine over short distances both laterally and vertically. The coarse-grained sediments contain varying degrees of fine sand, silt, and clay, with minor amounts of gravel in some locations. The fine-grained sediments contain varying amounts of fine sand and clay, which results in heterogeneous and locally complex hydrogeologic conditions. Sediments near the surface and within the upper aquifer consist primarily of sand and silt mixed with gravel and clay.

The NRCS web soil survey identifies soils on the project site as Cajon Loamy Sand with minor components of Norob-Halloran series soils (NRCS 2024). These soils typically are described as excessively drained to well-drained sandy loams and are not identified as typical expansive soils, which are composed of a high clay content. Soils in the Project area are shown on Figure 5.7-1.

Beneath the project area, soils comprise interbedded sands, gravels, silts, and clays (LRWQCB 2012). The soils encountered in the geotechnical borings completed for a prior project at the compressor station consist of clayey sands extending to a depth of approximately 8 feet bgs overlying poorly graded sands and silty sands that extend to the bottom of the boreholes at a depth of approximately 19.5 feet bgs (LRWQCB 2012).

5.7.1.3 Seismic Hazards

The following subsections identify and describe regional and local seismic risk, including faults, seismic-induced landslides, liquefaction, and subsidence.

Faults

The nearest faults to the project site are the Lenwood-Lockhart Fault, which appears to cross the compressor station on or near its southwest corner, and the Mount General Fault, which is approximately 3.5 miles northeast of the project site (LRWQCB 2013). The faults are shown on Figure 5.7-2. These faults are primarily right-lateral strike-slip faults of the Eastern California Shear Zone, which is east of the San Andreas Fault. They are two of the northwest-southeast trending faults that cross the Mojave Block, which is a region of increased seismic activity that stretches from the San Andreas Fault near Indio, north-northeast across the Mojave Desert, and then northward into Owens Valley (LRWQC 2012).

The Lockhart fault cuts through the southwestern portion of the project area and extends into the unconsolidated rocks south of the Mojave River. The Lockhart Fault is from the Holocene-Late Quaternary era, which suggests displacement within the last 0.7 million years or sooner (LRWQCB 2013). The fault has two sections: Lenwood and Lockhart. However, because there is insufficient data to differentiate the segments, the Lockhart and Lenwood faults are termed the Lenwood-Lockhart Fault Zone. The southeastern portion of the Lenwood-Lockhart Fault Zone has been described as active (LRWQCB 2013); the Lenwood Fault southeast of the project site is mapped as an Alquist-Priolo Fault Zone (San Bernardino County 2020). The Lenwood-Lockhart fault zone has a low slip rate and a long interval – 3,000 to 5,000 years – between major ruptures (LRWQCB 2013).

The Mount General Fault is from the Holocene era in the middle, but otherwise it is considered Quaternary era; little else is known about the fault because it is not listed by the California Geological Survey (CGS) as being an active fault (LRWQCB 2013).

Landslides

A landslide is a mass of rock, soil, or debris that has been displaced downslope by sliding, flowing, or falling. Landslides and mudslides generally have the potential to occur in areas with steep slopes. Several factors contribute to landslide risk, including slopes greater than 15 percent; weak, unconsolidated, or shallow soils; water saturation; a history of landslides; active earthquake faults; and extensive grading or vegetation removal (from fires or development activity). Historic landslides in an area make it more likely that that there will be future landslides in that area. The deformation from a landslide creates lower soil strength (remolded strength). Slope failures occur most frequently during and following the rainy season when high groundwater (elevated pore pressure) conditions persist. Landslides also can occur during or following earthquakes, triggered by the strain induced in soil and rock by the ground-shaking vibrations, or following significant rainfall events.

Slopes on the project site and surrounding areas generally are flat (refer to Table 5.7-2). Soils generally are not saturated and groundwater depth at the station is approximately 75 feet bgs. The interactive map of reported landslides in California produced by the California Department of Conservation shows that there are no areas with landslide reports within approximately 58 miles of the compressor station (DOC 2024). The project is located on soil with a 0 to 5 percent slope (refer to Table 5.7-2). No areas prone to seismic-induced landslides were identified in the project area.

Liquefaction

Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained granular soils behave similar to 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 soil contact, and therefore, loss of strength. Liquefaction occurs when three general conditions exist: shallow groundwater (40 feet or less bgs); low-density, fine-grained sandy soils; and high-intensity ground motion. Lateral spreading is lateral movement of saturated soils on gentle to steep slopes that is caused by earthquake-induced liquefaction. The project area has reported groundwater depths of 75 feet and greater and generally dense subsurface granular soils (LRWQCB 2012).

Subsidence

Subsidence caused by groundwater withdrawal has occurred in the alluvial valley area in southwestern San Bernardino County (LRWQCB 2012). Historical agricultural irrigation pumping in the Hinkley Valley caused groundwater elevations to decline by as much as 90 feet or more bgs from 1930 to the late 1980s. The project area also experienced substantial groundwater drawdown prior to the early 1990s when the Mojave River groundwater adjudication began and started to allow groundwater levels to recover by reducing agricultural pumping (LRWQCB 2012). It would be expected that land settling from subsidence would have had the opportunity to occur during this historical period. However, no evidence of historically significant land subsidence was identified in the Hinkley Valley, although it is possible that unreported localized land subsidence may have occurred because of prior agricultural pumping (LRWQCB 2012). Nevertheless, with increased groundwater pumping in the Hinkley Valley, subsidence is recognized as a potential problem in parts of the Mojave Desert (LRWQCB 2012).

5.7.1.4 Geologic Units

The geological units underlying Hinkley Compressor Station are listed in Table 5.7-1 and shown on Figure 5.7-3. Nearly the entire compressor station, including the project work area, is underlain by geologic unit Qoa.

Table 5.7-1. Geological Units Identified within Hinkley Compressor Station

Unit Label	Geological Age	Unit Type
Qoa	Presumably Pleistocene	Quaternary older alluvium. Older alluvium gravel, sand, and silt, light gray, poorly bedded, undeformed
Qa	Very late Pleistocene and Recent	Quaternary surficial sediments. Alluvial sand of valley areas, arkosic, coarse to fine, light gray, grades to mostly gravel and sand near hills

Source: Dibblee 2008

5.7.1.5 Soils

The NRCS compiles soil data from across the country and makes them available through its online Web Soil Survey (NCRS 2024). Soils within the station are listed in Table 5.7-2 and are shown on Figure 5.7-1.

As can be seen on Figure 5.7-1, station soils almost entirely consist of Cajon loamy sand with a 0 to 2 percent slope. The project's ground disturbance for conduit and foundation installation will occur in soil consisting of Cajon loamy sand. These soil types have a parent material of alluvium derived from granite (NRCS 2024).

Table 5.7-2. NRCS Soil Units and Properties at the Hinkley Compressor Station

NRCS Soil Unit	NRCS Soil Unit Name	Slope (percent)	Erosion Hazard (On-/Off-Road) Ratings	Corrosion of Concrete Rating	Corrosion of Steel Rating	Shallow Excavation Rating	Dwellings Without Basements – Shrink/Swell Potential
117	Cajon loamy sand	0-2	Slight/Slight	Moderate	High	Somewhat Limited	Not limited
112	Cajon sand	0-2	Slight/Slight	Low	Low	Very limited	Not limited
152	Norob-Halloran Complex	0-5	Moderate/Slight	High	High	Somewhat Limited	Somewhat limited (0.16)

Source: NRCS 2024

Erosion is the process by which rocks, soil, and other land materials are abraded or worn away from the Earth's surface over time. The rate of erosion depends on many factors, including soil type and geologic parent materials, slope and placement of soils, and human activity. The potential for erosion is highest in loose, unconsolidated soils. The steepness of slopes and absence of vegetation also are factors that increase the natural rates of erosion. The erosion hazard rating indicates the hazard of soil loss. The on-road rating is for unsurfaced roads and trails; the off-road rating is for off-road and off-trail areas after disturbance activities that expose the soil surface. On-road ratings are based on soil erosion factor K, slope, and content of rock fragments while off-road ratings are based on slope, soil erosion factor K, and an index of rainfall erosivity (R). The hazard is described as "slight," "moderate," "severe," or "very severe." The erosion hazard for the ground disturbance areas and most of the project site is slight.

The corrosion of concrete rating is based on the sulfate and sodium content, texture, moisture content, and acidity of the soil. The corrosion of steel rating is based on the soil moisture, particle size distribution, acidity, and electrical conductivity of the soil. Both rating systems express rates as "low," "moderate," or "high." The buried conduit and MCC foundations will be in Cajon loamy sand that has a moderate corrosion of concrete rating and a high corrosion of steel rating.

The shallow excavation rating is an evaluation of the ease of digging to approximately 6 feet, based on the ease of digging and the soil's resistance to sloughing. A "somewhat limited" rating describes soil that could be moderately difficult to excavate, but difficulties can be overcome by engineering protocols. A "very limited" rating describes a soil that could prove difficult to excavate and could require significant engineering maintenance. The project's excavation and trenching will occur in soil with a somewhat limited shallow excavation rating.

The Dwellings without Basements (shrink/swell potential) rating is shown as a decimal fraction ranging from 0.01 to 1.00. It indicates gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). The project does not have dwellings with or without basements.

Soil Stability

Unstable soils can result in liquefaction, landslides, erosion, subsidence, cyclical shrink/swell, and collapse. Susceptibility of soils to liquefaction (and lateral spreading resulting from liquefaction), landslides, subsidence, shrink/swell, and erosion are discussed in previous sections.

5.7.1.6 Paleontological Resources

PG&E's *Cultural and Paleontological Resource Studies for the Pacific Gas & Electric Groundwater Remediation Project, Hinkley Compressor Station, San Bernardino County, Volume 3, Paleontological Evaluation Report* (2014) was used as the paleontological report for the proposed project. In the report, the station located in the southwest portion of Operable Unit 1 (OU1) of the larger remediation project.

No documented fossil collection localities were identified within the project area or a 500-foot buffer.

Paleontological resources include the fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils present in geologic formations. The potential for paleontological resources to be present within the compressor station soils is shown in Table 5.7-3 by geologic unit. Refer to Figure 5.7-1 for the location of rock type in the project area. The Quaternary older alluvium underlies most of the project site and is exposed near the project site. Quaternary older alluvium most likely underlies the majority of Hinkley Valley at moderately shallow depths and is considered to have moderate paleontological sensitivity per the Potential Fossil Yield Classification System (PFYC) developed by the BL) and high paleontological sensitivity per the Society of Vertebrate Paleontology (SVP) standards (PG&E 2014).

A moderate PFYC paleontological sensitivity rating is defined by the BLM as: *A fossiliferous rock unit with moderate potential is a sedimentary deposit where the significance, abundance, and predictability of recovery of fossils vary. In some cases, available literature on a particular geologic unit will be scarce and a determination of whether or not it is fossiliferous or potentially fossiliferous will be difficult to make. Under these circumstances, the sensitivity is unknown and further study is needed to determine the unit's paleontological resource potential.* The BLM's Mitigation Recommendations for a moderate PFYC paleontological sensitivity rating is: *Due to the unknown potential or moderate or infrequent occurrence of fossils, surface disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action. Management recommendations may include a preconstruction field survey, monitoring, or avoidance.*

A high paleontological sensitivity is defined by SVP standards as: *Geologic units with high potential for paleontological resources are those that have been proven to yield vertebrate or significant invertebrate, plant, or trace fossils in the past or are likely to contain new vertebrate materials, traces, or trackways, but may vary in occurrence and predictability. A unit with high sensitivity is susceptible to surface disturbing activities and includes fossiliferous sedimentary deposits that are well exposed with little vegetative cover as well as those shallowly covered by soil, alluvium, or vegetation.* SVP standards for Mitigation Recommendations for high paleontological sensitivity *Typically, a field survey as well as on-site construction monitoring will be required. Any significant specimens discovered will need to be prepared, identified, and curated in a museum. A final report documenting the significance of the finds will also be required.*

Table 5.7-3. Paleontological Sensitivity Corresponding to Geological Units at the Project Site

Geologic Unit	PFYC Sensitivity Rating	VP Sensitivity Rating	Basis for Sensitivity Rating
Qoa - Quaternary Older Alluvium	Moderate	High	Fine-grained Pleistocene lacustrine deposits, which typically have the potential to produce significant vertebrate fossils, have yielded vertebrate remains in the vicinity. Vertebrate fossils are known to occur within the Pleistocene alluvial deposits that underlie the area on and southwest of the project site.
Qa - Quaternary surficial sediments	Low	Low	Holocene-age surficial alluvial, eolian, playa, and valley-axis deposits are determined to have a low paleontological resource potential at the surface because they are either too young or unlikely to preserve significant fossilized remains due to their coarse-grained nature. However, younger alluvial deposits may overlie sensitive Pleistocene deposits at moderately shallow depth.

Source: PG&E 2014

5.7.2 Regulatory Setting

5.7.2.1 Federal

Earthquake Hazards Reduction Act of 1977

The Earthquake Hazards Reduction Act of 1977 is a law formulating a national policy to diminish the dangers of earthquakes in the United States. The Earthquake Hazards Program is part of the USGS Natural Hazards Mission Area and is the USGS component of the multiagency National Earthquake Hazards Reduction Program (NEHRP), established by Congress in 1977. The USGS Advanced National Seismic System was established by Congress as an NEHRP facility. The NEHRP agencies pursue the goals of the program through collaboration with each other and numerous partners. In addition to other federal agencies, program partners include state and local governments, universities, research centers, professional societies, trade associations, businesses, and associated councils, commissions, and consortia. NEHRP's work encompasses research, development, and implementation activities. Program research helps to advance understanding of why and how earthquakes occur and impact the natural and built environments. The program develops strategies, tools, techniques, and other measures that can reduce the adverse effects of earthquakes and facilitates and promotes implementation of these measures, thereby strengthening earthquake resilience among at-risk communities.

Antiquities Act of 1906

The Antiquities Act of 1906 (Title 16 USC Sections 431–433) was enacted with the primary goal of protecting cultural resources in the United States. This act explicitly prohibits appropriation, excavation, injury, and destruction of any historic or prehistoric ruin or monument, or any "object of antiquity" located on lands owned or controlled by the federal government, without prior permission of the secretary of the federal department that has jurisdiction over the site. The act also establishes criminal penalties, including fines and imprisonment, for these acts. The Antiquities Act contains a requirement for studies by qualified experts in the subject matter and contains precise stipulations regarding the management/curation of collected materials. Although the Antiquities Act itself and its implementing regulation (Title 43 CFR Section 3) do not specifically mention paleontological resources, "objects of antiquity" have been interpreted to include paleontological resources by the National Park Service, the BLM, the U.S. Forest Service, and other federal agencies.

5.7.2.2 State

Alquist-Priolo Earthquake Fault Zoning Act

California enacted the Alquist-Priolo Special Studies Zones Act in 1972, which was renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994. Also known as the Alquist-Priolo Act, it requires the establishment of earthquake fault zones along known active faults in California (Bryant and Hart 2007). Regulations on development within these zones are enforced to reduce the potential for damage resulting from fault displacement. Information on earthquake fault zones is provided for public information purposes (refer to Section 5.7.1.4, Seismic Hazards, for further discussion).

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) of 1990 addresses earthquake hazards other than fault rupture, including liquefaction and seismically induced landslides. Seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The SHMA states that "it is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety." Section 2697(a) of the SHMA additionally requires that "cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard."

California Public Resources Code

The California PRC, Chapter 1.7, Sections 5097.5 and 30244, include additional state-level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, define the removal of paleontological sites or features from state lands as a misdemeanor, and prohibit the removal of any paleontological site or feature from state land without permission of the applicable jurisdictional agency. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur from development on public lands. Furthermore, California Penal Code Section 622.5 sets the penalties for damage or removal of paleontological resources.

5.7.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process. No such policies or goals associated with geology, soils, or paleontological resources were identified in local plans.

5.7.3 Impact Questions

The project's potential effects on geology, soils, and paleontological resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.7-4 and discussed in more detail in Section 5.7.4.

Table 5.7-4. CEQA Checklist for Geology, Soils, and Paleontological Resources

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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?	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv. Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit of 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?	☐	☐	☒	☐

5.7.3.1 Additional CEQA Impact Questions

None.

5.7.4 Potential Impact Analysis

Project impacts related to geology, soils, and paleontological resources were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change.

5.7.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on geology, soils, and paleontological resources was evaluated for each of the criteria listed in Table 5.7-4, as discussed in Section 5.7.4.3.

5.7.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs (see Section 5.10, Hydrology and Water Quality, for APMs related to erosion control):

APM PAL-1: Retain a Qualified Paleontological Principal Investigator

A Paleontological Principal Investigator who meets the standards set forth by the Society of Vertebrate Paleontology will be retained to ensure that all APMs related to paleontological resources are properly implemented during construction. The Paleontological Principal Investigator will have a master's degree or Ph.D. in geology or paleontology, have knowledge of the local paleontology, and be familiar with paleontological procedures and techniques.

APM PAL-2: Worker Environmental Awareness Training Program– Paleontological Portion

A WEAP will be prepared to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project performing excavation or trenching activities. The WEAP will address, among other topics, paleontological resources protection. Training may be provided by PG&E as a stand-alone training, or it may be included as part of the overall environmental awareness training as required by the project. The WEAP program will be provided separately to CPUC staff prior to construction.

The paleontological training portion will include the following:

- The types of fossils that could occur at the project site
- The types of lithologies in which the fossils could be preserved
- The procedures that should be taken in the event of a fossil discovery
- Penalties for disturbing paleontological resources

APM PAL-3: Paleontological Resource Monitoring for Project Excavation or Trenching Activities

A paleontological monitor will be present to monitor for paleontological resources where excavation or trenching occurs. Monitoring is not required if this work occurs in soil or sediment that is imported or previously disturbed. The paleontological monitor will be able to: (1) recognize fossils and paleontological deposits and deposits that may be paleontologically sensitive; (2) take accurate and detailed field notes, photographs, and locality coordinates; and (3) document project-related ground-disturbing activities, their locations, and other relevant information, including a photographic record. The qualified paleontologist will be responsible for a weekly reassessment of paleontological sensitivity after reviewing monitoring reports, which may result in reducing or increasing the amount of monitoring required.

APM PAL-4: Unanticipated Paleontological Discovery

If significant paleontological resources are discovered during PG&E's excavation and trenching activities, the following procedures will be followed:

- Stop work immediately within 100 feet of the fossil find.
- Contact the designated project inspector and PG&E Cultural Resource Specialist (CRS) immediately.
- Protect the site from further impacts, including looting, erosion, or other human or natural damage.
- Arrange for a qualified paleontologist to evaluate the discovery. If the discovery is determined to be significant, PG&E will implement measures to protect and document the paleontological resource. Work may not resume within 100 feet of the find until approved by the paleontologist and CRS.
- Collect and curate fossils only when it is safe for the qualified paleontological to be in the project work area. Collect fossils only when the collection activity will not damage the resource further than not collecting it as determined by the qualified paleontologist. Curate all fossils discovered in an appropriate repository.

5.7.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. The project's concrete design is consistent with the 2019 CBC and ACI standards for reinforced concrete, hot weather concrete and cold weather concrete, and follows the site-specific soil and seismic design recommendations from a geotechnical report developed for a previous station project. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to aesthetics resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) Would the project 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? *Less-than-Significant Impact*.

The Mount General Fault is not considered to be an active fault and is approximately 3.5 miles from the project site. Although the Lenwood-Lockhard Fault Zone may cross the southwest corner of the compressor station, it has a long rupture interval of 3,000 to 5,000 years. Additionally, the equipment at the station was sited avoid the fault location. Therefore, no construction activities will be performed and no modified or replaced equipment will be placed on this fault. No occupied structures will be modified or constructed as part of the project. The project's concrete design follows the site-specific soil and seismic design recommendations from a geotechnical report developed for a previous station project. Although near an active fault, the project will not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, and impacts will be less than significant.

ii) Strong seismic ground shaking? *Less-than-Significant Impact*.

The project site could be subject to strong seismic ground shaking from the Lenwood-Lockhard Fault Zone and upgraded electrical equipment at the station could be susceptible to damage from earthquake shaking. However, the project will increase reliability and maintainability of the station's electrical distribution system and enable standard safety procedures and operation. It will replace the existing aging electrical distribution system with modern up-to-date equipment. The project's concrete design follows the site-specific soil and seismic design recommendations from a geotechnical report developed for a previous station project. Potential impacts will be less than significant.

iii) Seismic-related ground failure, including liquefaction?*No Impact*.

Liquefaction requires saturated sandy soils less than 40 feet bgs at the time of a seismic event. Although soils onsite are sandy loams, the groundwater levels in the station area are at approximately 75 feet or greater and the subsurface soils are relatively dense; therefore, potential for liquefaction does not exist (LRWQCB 2012). In addition, the project site is not in a county-designated liquefaction hazard zone (San Bernardino County 2020). Therefore, no impacts will occur from seismic-related ground failure, including liquefaction.

iv) Landslides? *No Impact*.

Typically, landslides occur on hillsides or in steep terrain. The project site is flat, with grades of 0 to 2 percent across most of the station (refer to Table 5.7-2). The project includes only a minor amount of excavation up to approximately 5 feet deep, and no changes to site topography will occur. The interactive map of reported landslides in California produced by the California Department of Conservation shows that there are no areas with landslide reports within approximately 58 miles of the compressor station (DOC 2024). No impacts associated with landslides will occur.

b) Result in substantial soil erosion or the loss of topsoil? *Less-than-Significant Impact*.

To complete the electric system upgrades at Hinkley Compressor Station, ground disturbance will occur by trenching for replacement conduit and for MCC replacement foundations. Excavated soils acceptable to reuse as backfill will be stored onsite in small, temporary stockpiles near excavation areas. Backfill will be compacted as appropriate and the ground surface restored to preconstruction condition contours. Project activities will not alter existing natural drainage patterns, soil contours, vegetation, station erosion control measures, landscaping, or public areas. Sediment and erosion control measures will be implemented to control erosion and minimize offsite sediment discharge during construction. Refer to Section 5.10, Hydrology and Water Quality. The project will not result in substantial soil erosion or loss of topsoil, and impacts will be less than significant.

c) Be located on a geologic unit of 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? *No Impact*.

The compressor station is on Pleistocene nonmarine, alluvial deposits. The soils at the site are considered excessively drained to well-drained sandy loams on at less than 2 percent slope (NRCS 2024). The geologic unit of soil at the project site is not considered unstable (LRWQCB 2012). The relatively flat topography and type of soil found onsite is not prone to landslides or other types of ground failure, including lateral spreading, subsidence, and liquefaction. No impacts will occur.

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? *No Impact*.

Cajon loamy sands are not considered expansive soils and have a low shrink-swell potential (NRCS 2024). There is no risk or threat to life or property and no impact will occur.

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? *No Impact*.

The project does not modify existing site septic systems and will not add new septic tanks or wastewater disposal systems. No impact will occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? *Less-than-Significant Impact*.

Most of the compressor station overlays a geologic unit of moderate to high sensitivity for paleontological resources; refer to Table 5.7-3. Excavation up to approximately 5 feet deep to install underground replacement conduits and MCC replacement foundations will result in subsurface disturbance. Excavations for underground conduits will occur within or adjacent to areas with installed equipment and structures where it is likely that the soil has been previously disturbed. The MCC replacement foundations will replace existing foundations, so any excavation is likely to take place in previously disturbed soils. PG&E does not have records of previous encounters with paleontological resources in the station.

Although the excavations are shallow, paleontological resources with moderate to high sensitivity may be encountered. However, excavation and trenching are expected to use hand tools, which are used with less force than mechanical equipment and tend to have a smaller surface area that will limit the effect of contacting a resource with a tool. In addition, PG&E will implement paleontology APMs. APM PAL-1 requires a qualified project paleontologist; APM PAL-2 requires worker awareness training; APM PAL-3 requires monitoring during select construction activities; and APM PAL-4 requires recovery of paleontological resources. Because the excavations are in or adjacent to areas with installed equipment and previously disturbed soil, construction impacts will be less than significant with the implementation of APM PAL-1, APM PAL-2, APM PAL-3, and APM PAL-4.

5.8 Greenhouse Gas Emissions

This section discusses potential GHG emissions associated with project construction a. Operation and maintenance activities of the existing station will not change as a result of the project. GHG emissions were calculated and reported in carbon dioxide equivalents (CO_2e) for carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) emissions from on-road vehicles and off-road equipment. The analysis concludes that impacts associated with GHG emissions will be less than significant. The implementation of the APMs described in Section 5.8.4.2, as well as those described in Section 5.3, Air Quality, will further reduce less-than-significant impacts.

The project's potential effects on GHG emissions were evaluated using the criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.8-2 and discussed in more detail in Section 5.8.4.

5.8.1 Methodology and Environmental Setting

5.8.1.1 Methodology

The effect each GHG has on global warming is a combination of the amount of its emissions and its global warming potential (GWP). GWP is a measure of how much energy the emissions of 1 ton of a gas would absorb over a given time period, relative to the emissions of 1 ton of CO_2. GHG emissions are presented in terms of metric tons (MT) of CO_2e, which is calculated as the product of the mass emitted of a given GHG and its specific GWP. The GHG emissions were calculated using the 100-year GWP values from Table A-1 of Subpart A of 40 CFR Part 98 – Global Warming Potentials.

Short-term construction GHG emissions were evaluated. Construction GHG emissions from off-road construction equipment were estimated using the methodologies and emission factors described in the CalEEMod User's Guide (ICF 2022). On-road vehicle emissions were estimated using the methodologies described in the CalEEMod User's Guide (ICF 2022) and emission factors obtained from the EMFAC2021 emissions model (CARB 2024b). Projected construction emissions were estimated for each year based on the anticipated project schedule and activities. Although most of the construction activities will occur in 2027, construction emission estimates were developed using equipment and vehicle emission factors for model year 2026, which is the year in which construction is expected to begin. This approach provides for a more conservative emissions estimate because equipment and vehicle emission factors are expected to improve each year based on developments in control technologies and the required use of cleaner equipment and vehicles over time. Detailed construction emission calculations, including the assumptions employed, are presented in Appendix A.

The project will not change existing gas capacities, station operation or gas transmission system function or layout, or PG&E service areas or customers. Because the project involves rebuilding existing infrastructure, there will be no change to current operations or associated long-term GHG emissions because of this project. For this reason, GHG emissions associated with project operation were not quantified.

GHG emission calculations in this document were based on worst-case estimates of emissions to ensure presentation of a conservative environmental analysis. This analysis may be revised, as needed, to reflect changes to the project plans.

5.8.1.2 Environmental Setting

GHGs are global concerns, unlike criteria air pollutants or toxic air contaminants that are of regional and local concern. Scientific research indicates that observed climate change is most likely a result of increased GHG emissions associated with human activity (IPCC 2023). Global climate change describes a collection of phenomena, such as increasing temperatures and rising sea levels, occurring across the globe from increasing anthropogenic emissions of GHGs. GHGs contribute to climate change by allowing ultraviolet radiation to enter the atmosphere and warm the Earth's surface, but also preventing some infrared radiation from the Earth from escaping back into space. The largest anthropogenic source of GHGs is the combustion of fossil fuels, which results primarily in CO_2 emissions.

As defined in AB 32, "greenhouse gas" or "greenhouse gases" include CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF_6). California is a substantial contributor to global GHG emissions. In 2021, the annual California statewide GHG emissions were 381.3 million metric tons (MMT) of CO_2e. The transportation sector accounts for approximately 39 percent of the statewide GHG emissions. The industrial and electric power sectors account for approximately 22 percent and 16 percent, respectively, of the total statewide GHG emissions. The dominant GHG emitted is CO_2, primarily from fossil fuel combustion (CARB 2024a).

5.8.1.3 GHG Setting

The Hinkley Compressor Station is in unincorporated San Bernardino County within the MDAB, which is regulated by the MDAQMD. This area also falls within the jurisdiction of the SBCOG, which is an organization that represents 24 cities and towns within San Bernardino County as well as the unincorporated portions of San Bernardino County.

As part of the *San Bernardino County Regional Greenhouse Gas Reduction Plan* (SBCOG 2021), the SBCOG has prepared baseline GHG emissions inventories to analyze GHG emissions produced within each of its 25 jurisdictions that may contribute to climate change. Table 5.8-1 provides an overview of the 2016 GHG emissions inventory for the unincorporated portion of San Bernardino County, which is the most recently updated inventory available for the project area.

Table 5.8-1. 2016 Unincorporated San Bernardino County GHG Emissions Inventory

End-Use Sector	% of Total Emissions	CO_2e Emissions (MT/Year)
Building Energy	33%	948,183
On-Road Transportation	53%	1,519,146
Off-Road Equipment	1.2%	35,618
Waste	6.9%	197,260
Agriculture	5.0%	143,146
Wastewater Treatment	0.34%	9,651
Water Conveyance	0.71%	20,465
Total	100%	2,873,469

Source: SBCOG 2021

As shown in Table 5.8-1, the Building Energy and On-Road Transportation sectors are the two largest contributors of GHG emissions within the unincorporated portion of San Bernardino County at 33 percent and 53 percent, respectively.

No existing infrastructure with potential or known GHG emissions will be upgraded or replaced by the project. As such, there are no existing project-specific sources of GHG emissions for consideration.

The PERP generators, to be used during the electric equipment replacement and modification portion of construction, will operate when the stationary generators are offline. GHG emissions estimated from the PERP generators are conservative because the permanent generators will not operate simultaneously with the PERP generators. The PERP generator use conservatively calculates operation 24 hours per day for 8 months. The PERP generators will not be operating continuously during project construction. The PERP generators will only operate to power station equipment when the equipment is disconnected from its permanent power source. The actual use of energy during project construction will not increase beyond what typically is used during normal station operation. The project does not change the throughput of energy.

5.8.2 Regulatory Setting

5.8.2.1 Federal

The Supreme Court decision in Massachusetts et al. v. Environmental Protection Agency et al. (Supreme Court Case 05 1120) found that the EPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the federal CAA. On December 7, 2009, EPA found that CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6 may contribute to air pollution and may endanger public health and welfare (EPA 2024). In response to this decision, EPA has established reporting regulations that require specific facilities and industries to report their GHG emissions annually and permit their GHG emissions sources.

Because the project is not expected to include the long-term operation of new stationary combustion sources, the project will not itself be subject to federal GHG reporting and permitting regulations. The project related GHG emissions (from the temporary PERP generators) will be reported and maintain compliance with the current state and federal mandatory GHG reporting requirements.

5.8.2.2 State

In addition to regulating emissions of criteria pollutants and toxic air contaminants, as described in Section 5.3, Air Quality, CARB also is responsible for regulating GHG emissions in California. Key laws, policies, and standards through which CARB strives to do so are described in the following subsections.

Executive Order S-3-05

State Executive Order S-3-05, issued in 2005, established GHG reduction targets for the state of California. The targets called for a reduction of GHG emissions to 2000 levels by 2010; a reduction of GHG emissions to 1990 levels by 2020; and a reduction of GHG emissions to 80 percent below 1990 levels by 2050 (Office of the Governor 2005). The secretary of the CalEPA is required to coordinate development and implementation of strategies to achieve the GHG reduction targets.

Global Warming Solutions Act of 2006

In 2006, the California State Legislature signed the Global Warming Solutions Act of 2006 (AB 32), which provides the framework for regulating GHG emissions in California. This law requires CARB to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. The statewide

2020 emissions limit is 431 MMT of CO_2e (CARB 2024c) and, based on the statewide inventory presented in Section 5.8.1.2, this limit has been successfully achieved.

Because the operation of Hinkley Compressor Station is already subject to CARB's GHG reporting regulation, all GHG emissions from temporary stationary sources (PERP generators) at the facility will be included in the facility's annual GHG report to CARB.

Climate Change Scoping Plan

Part of CARB's direction under AB 32 was to develop a scoping plan that contains the main strategies California will use to reduce GHG emissions that cause climate change. The scoping plan includes a range of GHG reduction actions that include direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program (CARB 2008). CARB first approved the AB 32 Scoping Plan in 2008 and its latest adopted plan is the 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022). The 2022 scoping plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045 (CARB 2022). This path includes strategies for reducing California's dependency on petroleum (for example, electrifying the transportation sector and continuing to build out renewable energy resources), minimizing the use of chemicals and refrigerants with high GWPs, and expanding the role of natural and working lands in capturing and storing carbon (CARB 2022).

Interim CEQA Significance Thresholds

CARB published a Preliminary Draft Staff Proposal titled *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under CEQA* in October 2008, which included a proposal that nontransportation-related sources with GHG emissions less than 7,000 MT of CO_2e per year should be presumed to have a less-than-significant impact.

CEQA Guidelines

On December 30, 2009, the California Resources Agency adopted amendments to the CEQA Guidelines to include analysis of GHG emissions in CEQA documents, deferring significance thresholds to the lead agency. The amendments became effective on March 18, 2010.

Executive Order B-30-15

In April 2015, Governor Brown signed Executive Order B-30-15 that added the intermediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030.

Clean Energy and Pollution Reduction Act

In 2015, SB 350 was signed into law, establishing new clean energy, clean air, and GHG reduction goals for 2030 and beyond. SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030 and increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030.

Senate Bill 32 and Assembly Bill 197

On September 8, 2016, Governor Brown signed SB 32 and AB 197, which codified the 2030 GHG emissions reduction target of 40 percent below 1990 levels and provided additional direction for updating the scoping plan. The 2017 Scoping Plan established a path that would get California to its 2030 target, which is reiterated and expanded upon in the 2022 update.

Short-Lived Climate Pollutant Reduction Strategy

To best support the reduction of GHG emissions consistent with AB 32, CARB published the *Short-Lived Climate Pollutant Reduction Strategy* in March 2017. This plan, developed pursuant to SB 605 and SB 1383, establishes targets for statewide reductions in short-lived climate pollutant emissions of 40 percent below 2013 levels by 2030 for CH_4 and hydrofluorocarbons and 50 percent below 2013 levels by 2030 for anthropogenic black carbon. This strategy was integrated into the 2022 version of the scoping plan described previously (CARB 2024d).

The 100 Percent Clean Energy Act of 2018

SB 100, signed into law in 2018, requires California utilities to reach 50 percent renewable resources by December 31, 2026, and 60 percent by December 31, 2030. Through initial SB 100 analysis, increased energy storage and advancements in zero-carbon technologies can reduce natural gas capacity needs. SB 100 also establishes policy that renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity by December 31, 2045; however, the policy acknowledges that retaining some natural gas power capacity may minimize costs while ensuring uninterrupted power supply during the transition.

Oil and Gas Regulation

With the Oil and Gas Regulation (Title 17 of the CCR, Sections 95665 to 95677), CARB has established GHG emission standards for crude oil and natural gas facilities. These standards include requirements for leak detection and repair, emissions control, and inspection and testing. The existing Hinkley Compressor Station complies with these requirements, as applicable. The electrical upgrades proposed by this project are not expected to interfere with the station's continued compliance with this regulation.

5.8.2.3 Regional

The project lies within the unincorporated portion of San Bernardino County located within the MDAB and under the jurisdiction of the MDAQMD. MDAQMD is the agency charged with preparing, adopting, and implementing emission control measures and standards for mobile, stationary, and area sources of air pollution in the MDAB.

None of the MDAQMD's permitting regulations specifically target GHG emissions from facilities that are not otherwise classified as a Prevention of Significant Deterioration source under 40 CFR Part 52 or a Major Facility under MDAQMD Rule 1201. Because the project is not expected to include the long-term operation of new stationary combustion sources, it is not itself expected to be classified as a PSD source or Major Facility. In addition, the project is not expected to alter the existing facility's permitted sources, such that it also will not constitute a modification to a Major Facility. Therefore, climate plans and guidance documents published by the MDAQMD and other regional organizations were reviewed instead for relevancy to the project, as summarized in the following sections.

Local air districts act under state law and their discretionary requirements apply to PG&E utility projects, as applicable.

Clean Air Plans

Under the California CAA, which was approved in 1988 and amended in 1992, MDAQMD is required to develop an air quality plan to achieve and maintain compliance with federal and state nonattainment criteria pollutants within the air district. In response, MDAQMD has developed plans to achieve and maintain compliance with the federal ozone and PM_{10} standards. The most recent of these plans is the MDAQMD's *Federal 70 parts per billion (ppb) Ozone Attainment Plan* (Western Mojave Desert Nonattainment Area), adopted in January 2023, which: (1) demonstrates that the MDAQMD will meet the primary required federal ozone planning milestone, attainment of the 70 ppb 8-hour ozone National Ambient Air Quality Standard (NAAQS), by August 2033; (2) presents the progress the MDAQMD will make toward meeting all required ozone planning milestones; and (3) discusses the 2015 70 ppb 8-hour ozone NAAQS in preparation of an expected nonattainment designation for the new NAAQS. The Plan also identifies regional strategies to help achieve the state's many air quality, climate, and community risk reduction goals (MDAQMD 2023).

MDAQMD CEQA and Federal Conformity Guidelines

MDAQMD's *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*, updated February 2020, provides guidance to assist local jurisdictions and lead agencies in determining whether a project will: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emissions reductions or other milestones of any federal attainment plan (MDAQMD 2020). MDAQMD's significant emissions thresholds can be used to quantitatively evaluate whether a project is considered significant, thereby requiring the incorporation of mitigation.

GHG Reduction Exchange

The California Air Pollution Control Officers Association has established the Greenhouse Gas Reduction Exchange (GHG Rx) for GHG emission credits in California. Credits listed on the GHG Rx come from voluntary emission reduction projects and can be purchased to offset GHG emissions.

5.8.2.4 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations, respectively.

5.8.3 Impact Questions

The project's potential effects related to GHG emissions were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.8-2 and discussed in more detail in Section 5.8.4.

Table 5.8-2. CEQA Checklist for Greenhouse Gas Emissions

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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 any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

5.8.3.1 Additional CEQA Impact Questions

None.

5.8.4 Potential Impact Analysis

Potential project impacts related to GHG emissions were evaluated against the CEQA significance criteria and are discussed in the following subsections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. The APMs discussed will further minimize potential less-than-significant impacts.

5.8.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. CEQA allows for significance criteria established by the applicable air pollution control districts to be used to assess the impact of a project related to GHG emissions, at the discretion of the CEQA Lead Agency.

MDAQMD's *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines* (MDAQMD 2020) provides significant emissions thresholds for various air pollutants, including GHGs, and considers any project that exceeds the thresholds to be significant, thereby requiring mitigation. The annual CO_2e threshold is 100,000 tons and the daily threshold is 548,000 pounds (lbs). These significant emissions thresholds are given as a daily and annual value, so that multiphased projects (such as projects with construction and operational phases) with phases shorter than 1 year can be compared to the daily value. These thresholds will be used to evaluate the project's construction-related GHG emissions in lieu of CARB's interim significance threshold because CARB's threshold is intended for nontransportation-related emission sources, of which there are expected to be very few during project construction. Per Appendix G of the CEQA Guidelines, the potential significance of the project's GHG emissions were evaluated for each of the criteria listed in Table 5.8-2, as discussed in Section 5.8.4.3.

5.8.4.2 Applicant-Proposed Measures

The project will have less-than-significant impacts on GHG emissions. Implementation of APM GHG-1 will further minimize potential impacts.

APM GHG-1: PG&E Minimize GHG Emissions

PG&E will implement the following measures to minimize GHG emissions consistent with the recommendations provided in the CPUC's Draft Environmental Measures:

- Encourage construction workers to carpool to the job site if suitable park-and-ride facilities are available in the project vicinity.
- Develop a carpool program to the job site.
- Maintain on-road and off-road vehicle tire pressures to manufacturer specifications. Check and reinflate tires at regular intervals.
- Recycle demolition debris for reuse to the greatest extent feasible.
- Maintain construction equipment per manufacturer's specifications.
- Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following startup that limit their availability for use following startup. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction supervisors will include briefings to crews on vehicle use as part of preconstruction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.
- Register portable diesel-fueled construction equipment with engines 50 horsepower or larger and manufactured in 2000 or later under the CARB Statewide PERP.

5.8.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

PERP generators will be used during the electrical equipment replacement and modification portion of construction. The PERP generators are expected to operate when the permanent stationary generators are offline. GHG emissions estimated from the PERP generators are conservative because the permanent generators will not operate simultaneously with the PERP.

During project construction anticipated in 2027, use of PERP equipment is expected in lieu of the four existing permanent station generators. This will result in a minimum temporary GHG impact during this time; however, long-term operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to GHG emissions resulting from the electrical upgrades project will not change from existing conditions and no permanent operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *Less-than-Significant Impact.*

Construction of the project will generate GHG emissions over the estimated 23-month construction period resulting from off-road construction equipment and machinery, use of PERP equipment, vehicular traffic generated by construction workers, grading, and material and equipment transport. Following project completion, all construction emissions will cease. As shown in Table 5.8-3, the maximum daily CO_2e emissions generated during the 23-month construction period is approximately 92,026 lbs per day; an annual maximum of approximately 11,043 tons of CO_2e could be generated during the 23-month construction period.

As shown in Table 5.8-3, daily and annual CO_2e emissions from the project are expected to be below the MDAQMD's CEQA significant emissions thresholds and, therefore, will have a less-than-significant impact on climate change. Reduction in GHG emissions associated with implementation of APM GHG-1 may further reduce the project's construction-related GHG emissions, but this potential reduction is not quantifiable and is not included in the emission estimates.

Table 5.8-3. Estimated Construction-Related Greenhouse Gas Emissions

Construction Year	Daily Emissions (lbs CO_2e/day)	Annual Emissions (tons CO_2e/year)
GHG Emissions for Construction Year 2026	3,589	108
GHG Emissions for Construction Year 2027	92,026	11,043
GHG Emissions for Construction Year 2028	2,478	198
GHG Emissions during 23-Month Period	92,026 (Maximum)	11,043 (Maximum)
MDAQMD CEQA Significance Thresholds	548,000	100,000

b) Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? *No Impact*.

The project will not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions. The minimal short-term construction GHG emissions will not interfere with the long-term goal of SB 32 to reduce GHG emissions to 40 percent below 1990 levels by 2030. Additionally, as described in Section 5.3, Air Quality, compliance with applicable airborne toxic control measures will ensure construction equipment and vehicles are operated and maintained in an efficient manner with the added benefit of reducing already minimal GHG emissions. Therefore, project construction will not conflict with plans, policies, or regulations intended to reduce GHGs; no impact will occur.

Although the use of fossil fuels (such as natural gas) is expected to decline in the future as a result of statewide initiatives, PG&E has a statutory obligation to provide safe and reliable gas service to all customers within its service area. By upgrading the electrical system at the existing Hinkley Compressor Station, the project will help maintain reliability of the existing energy infrastructure, thus supporting the phased transition to renewable energy sources as they become available. Therefore, project operation will continue to be consistent with the goals of the AB 32 Scoping Plan and promote achievement of the energy efficiency and renewable energy targets of SB 350 and SB 100.

5.8.4.4 CPUC Draft Environmental Measures

CPUC Draft Environmental Measure *Greenhouse Gas Emissions Reduction During Construction* has been incorporated into APM GHG-1.

5.9 Hazards, Hazardous Materials, and Public Safety

This section describes existing conditions and potential impacts related to hazards, hazardous materials, and public safety associated with construction of the project. The project upgrades will enable standard safety procedures and operation as well as improve inspection and maintenance efficiency. The analysis concludes that any impacts related to hazards, hazardous materials, and public safety will be less than significant; the implementation of APMs described in Section 5.9.4.3 will further reduce less-than-significant impacts. The project's potential effects associated with hazards, hazardous materials, and public safety were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.9-2 and Table 5.9-3 and discussed in more detail in Section 5.9.4. Appendix F discusses the potential soil contamination that could be encountered in soil during project construction.

5.9.1 Methodology and Environmental Setting

5.9.1.1 Methodology

Potential impacts on the environment related to hazards, hazardous materials, and public safety were evaluated based on the type and location of anticipated project-related construction activities. The evaluation was based on review of publicly available information about existing land uses, airports, wildfire hazard zones, and known soil and groundwater contamination sites within and near the station and the project area. A review of the published studies and databases for the site was conducted to determine the likely presence of hazardous substances from a release to the environment or the presence of hazardous substances under conditions that would pose a material threat of a future release to the environment. This review included information on sites within 0.25 mile of the project site that were identified in federal, state, and local databases related to the use, storage, or release of hazardous materials and wastes (refer to Section 5.9.1.8). As part of the search, multiple databases were searched for properties with active or historical documented hazardous materials releases and businesses that use, generate, or dispose of hazardous materials in their operation. In addition, a review was conducted to identify active contaminated sites that are currently undergoing monitoring and remediation. Due to limited amount of development in the area surrounding the station and the well documented conditions onsite at the station, a Phase I Environmental Site Assessment was not prepared for the site. Appendix F was completed for the project by a California Professional Engineer who reviewed publicly available information about known soil and groundwater contamination sites within 0.5 mile of the project site. The memorandum discusses the potential soil contamination that could be encountered in soil during project construction.

As specified by CEQA significance criterion d) (refer to Table 5.9-2), the review was also used to identify any nearby sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 ("Cortese List"). Because the Cortese List is no longer specifically updated by the state, those requesting a copy of the Cortese List are now referred directly to the appropriate information resources contained on the Internet websites of the boards or departments that are referenced in the statute.

The potential for activities and equipment that could pose fire hazards was evaluated through review of state fire hazard maps, including the California Department of Forestry and Fire Protection (CAL FIRE) (CAL FIRE 2024) and the CPUC Fire-Threat Map (CPUC 2024).

5.9.1.2 Environmental Setting

The project area is in northwestern unincorporated San Bernardino County, in the western Mojave Desert and in the Mojave River watershed. The Mojave River, approximately 1.2 miles south of the project site, has only intermittent and ephemeral flow along nearly its entire course. The City of Barstow is approximately 1 mile east of the project. The unincorporated community of Hinkley is approximately 2.5 miles northwest of the project. The existing surrounding land uses in these areas primarily are undeveloped open space and rural residential. Inside the PG&E property boundary, the fenced station site includes the compressor station, a station staging area, and evaporation ponds.

5.9.1.3 Airports

The nearest public airport to the project site in San Bernardino County is the Barstow-Daggett Airport approximately 20 miles to the southeast. The nearest heliport facility to the project is the Barstow Community Hospital Heliport, a private heliport, located in Barstow, California, approximately 8 miles east of the project site. The Barstow-Daggett Airport does have an Airport Comprehensive Land Use Plan; however, the project is outside of the Safety Review Area for this airport (San Bernardino County 1992).

5.9.1.4 Wildland Fire Hazards

As described in Section 5.20.2, the CAL FIRE fire hazard severity zone (FHSZ) maps identify federal responsibility areas (FRAs), state responsibility areas (SRAs), or local responsibility areas (LRAs) for preventing or suppressing fires. Within SRAs, the director of CAL FIRE has designated areas as moderate, high, and very high FHSZs based on factors such as potential fuel sources, terrain, weather, fire behavior characteristics, burn probabilities, and the likelihood of vegetation exposure. Within LRAs, CAL FIRE has recommended the locations of very high FHSZs that may be adopted by local governing agencies. The CAL FIRE maps also show FRAs and fire hazard designations within those federal areas.

According to the CAL FIRE Fire Hazard Severity Zone Viewer (CAL FIRE 2024), the project area is wholly within an LRA in San Bernardino County. No work area or access road of the project contains an FHSZ CAL FIRE designation.

The CPUC adopted fire hazard mapping in 2021 with its High Fire-Threat Map, which designates fire-threat areas that require enhanced fire safety (CPUC 2024a). CPUC defines Zone 1 as the Tier 1 high-hazard zones from the U.S. Forest Service and CAL FIRE joint map of tree mortality. Tier 2 identifies areas with an elevated risk of wildfire associated with overhead utility power lines or overhead utility power line facilities also supporting communication facilities. Tier 3 identifies areas where there is an extreme risk of wildfires associated with overhead utility power lines or overhead utility power line facilities also supporting communication facilities. The project site is located outside of the CPUC high fire hazard threat district (CPUC 2024b).

Additional information regarding wildland fires and risks is presented in Section 5.20. Fire protection services and equipment near the project alignment are discussed in Section 5.15, Public Services.

5.9.1.5 Metallic Objects

No metallic pipelines or cables within 25 feet of the project have been identified that will create a hazard, hazardous materials, or a public safety issue. Additionally, the electrical cables installed will be connected with the existing station grounding grid.

5.9.1.6 Pipeline History (for Natural Gas Projects)

The project will not modify components that contain natural gas within the station or PG&E's natural gas pipeline system. For information about PG&E's gas safety programs and natural gas systems, refer to the descriptive narrative at https://www.pge.com/en/about/pge-systems/gas-systems.html. Detailed reports with summaries concerning safety and inspection history of PG&E's gas systems are available at https://www.pge.com/en/about/pge-systems/gas-systems/pipeline.html.

5.9.1.7 Schools

There are no schools within a 1-mile radius of the project.

5.9.1.8 Existing Hazardous Materials and Sites

A review of federal, state, and local databases was conducted for a 0.25-mile buffer from the station fenceline. The following databases were reviewed: the CalEPA's Cortese List, the California Department of Toxic Substances Control's (DTSC's) Envirostor, the SWRCB's Geotracker, the California Department of Resources Recycling and Recovery's (CalRecycle's) Solid Waste Information System (SWIS), and the USGS's Mineral Resources Data System (Mines MRDS). The following sections describe the results of the database reviews. An Environmental Data Resources report was not obtained for the project area because of the low level of development surrounding the site and the well-documented history of Hinkley Compressor Station.

Hinkley Compressor Station

Chromium has historically been used at Hinkley Compressor Station since 1952 to prevent corrosion from the cooling tower water. Untreated cooling tower water then was discharged to unlined ponds at the station until 1964. In 1965, phosphate replaced chromium as the corrosion inhibitor and the ponds were taken out of service in 1966. The ponds then were replaced in 1972 with double-lined ponds.

As a result of the prior practices, chromium has percolated into the groundwater, resulting in plumes throughout the area. PG&E has implemented remediation activities to clean the groundwater impacted by historical chromium discharges from Hinkley Compressor Station, pursuant to existing SWRCB orders. A Comprehensive Groundwater Cleanup Strategy was approved in 2013 (SWRCB 2013). Groundwater depth at the station is approximately 80 feet below ground surface. The project expected depth of excavation is approximately 5 feet and groundwater is not expected to be encountered during project activities.

Appendix F discusses the potential soil contamination that could be encountered in soil during project construction. While there is no detailed information in the public databases about the soil to be encountered during implementation of the project, the project is within the boundaries of an operating industrial station. The station has been in operation since 1952, and station operations likely used fuels and hazardous substances over time.

California Environmental Protection Agency's Cortese List

As specified by CEQA significance criterion d) (refer to Table 5.9-2), the review was used to identify any nearby sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List). Because the Cortese List is no longer specifically updated by the state, those requesting a copy of the Cortese List are now referred directly to the appropriate information resources contained on the Internet websites of the boards or departments that are referenced in the statute (CalEPA 2024). While Hinkley Compressor Station is under an active Cleanup and Abatement

Order with the SWRCB and meets the Cortese List requirements (SWRCB 2024a), no other Cortese List sites or Superfund sites located within 0.25 mile of the project site were identified.

California Department of Toxic Substances Control's Envirostor

Based on a review of the DTSC's Envirostor database, no DTSC-regulated sites were identified within the 0.25-mile buffer of the project. The nearest site, "Victorville PBR N-3," is located more than 5 miles to the northwest (DTSC 2024).

State Water Resource Control Board's GeoTracker

Based on a review of the SWRCB's GeoTracker database, except for Hinkley Compressor Station, no other tracked sites are within a 0.25-mile buffer from the project fenceline. The nearest site from the station fenceline is the Hinkley Dairy Farm approximately 1.75 miles to the east. The dairy is under a cleanup and abatement order from high levels of nitrate and total dissolved solids in groundwater. The case remains active.

Hinkley Compressor Station was identified as having a closed leaking underground storage tank (LUST) cleanup site. The case was opened in October 1987 and closed in March 1995. No further action is required. In addition to the closed LUST, the station site is under the SWRCB's site cleanup program from historic chromium use at the site. The case remains open with ongoing groundwater monitoring and remediation (SWRCB 2024b).

California Department of Resources Recycling and Recovery's Solid Waste Information System

As identified in the CalRecycle SWIS database, there are no solid waste disposal sites within 0.25 mile of the project site. The nearest site is the Barstow Sanitary Landfill approximately 9 miles to the southeast of the project site (CalRecycle 2024).

U.S. Geological Survey's Mineral Resources Data System

No USGS Mines MRDS site is within 0.25 mile of the project. The nearest site is approximately 3.5 miles to the west and is identified as an "Unnamed Limestone Occurrence." No other information is available (USGS 2024).

5.9.1.9 Project-Related Hazardous Materials and Hazardous Waste

Hazardous Material Use

Construction of the project will require the use of hazardous materials such as fuels, lubricants, and cleaning solvents, as shown in Table 5.9-1. The amount of hazardous materials used during operation is not expected to change with project implementation. Natural gas from within the station will be used during construction to fuel the 22 temporary PERP generators[2]. The temporary PERP generators will connect to existing natural gas fuel lines in the station. The temporary PERP generators will operate only during the electrical equipment replacement and modification portion of construction when the permanent station generators are not operating and are not using natural gas. The natural gas estimate in Table 5.9-1 does not include the reduction of natural gas use from the stationary generators being offline when the temporary PERP generators are in use. The other hazardous materials in Table 5.9-1 will be used

[2] Mojave Desert Air Quality Management District (MDAQMD). 2024. Letter: Approval of the Temporary Use of PERP Registered NG ICE for Electrical Upgrade. Sent by Pacific Gas and Electric Company, August 14, 2024, for S238 Hinkley Compressor Station Electrical Upgrades Project. Approved August 19.

to power a limited number of internal combustion engines, lubricate internal combustion engines and other construction equipment and hardware, and clean vehicles and equipment. It is anticipated that no pesticides or herbicides will be needed during construction activities. No painting or welding activities are expected. If needed, material will be transported in specialty trucks or in other approved containers.

Table 5.9-1. Types, Uses, and Volumes of Hazardous Materials Used during Construction

Hazardous Material[a]	Use	Approximate Volume[b]
Diesel	Engine fuel	89,914 gallons
Gasoline	Engine fuel	5,964 gallons
Natural Gas	Temporary PERP Generator engine fuel	179 MMscf
Hydraulic Fluids/Lubricants	Engine and equipment lubrication and powering of hydraulic equipment	4,794 gallons
Other Construction Fluids (solvents)	Cleaning, lubricating hardware, and other uses	240 gallons

[a] Hazardous materials identified will not be stored onsite. All fueling and storage will occur offsite.

[b] Diesel, gasoline, and natural gas fuel volumes are from Section 5.6, Energy. MMscf = million standard cubic feet.

Hydraulic fluids and lubricants volumes are anticipated to be 5 percent of total diesel and gasoline fuel volumes. Other construction fluids volumes are anticipated to be 5 percent of hydraulic fluids and lubricants volumes.

Safety Data Sheets (SDSs) will be provided to onsite personnel for information in case of emergency during use of hazardous materials. These hazardous liquid materials will not be stored onsite at the total approximate volume. As hazardous liquid materials are needed, they will be obtained by construction vehicles at a gas station and other materials such as hydraulic fluids/liquids will be ordered at volumes that are appropriate for storage on a maintenance truck and dispensed at the staging area during limited maintenance activities such as topping off fluids. Oil changes and full maintenance activities will occur at a PG&E yard, contractor yard, or licensed mechanics shop outside of the project footprint. Neither a Spill Prevention, Control, and Countermeasure (SPCC) Plan nor a Hazardous Materials Business Plan (HMBP) is expected to be required for the project (in accordance with 40 CFR Parts 112.1 to 112.7 and CA HSC Section 25507, respectively). The station's existing HMBP and SPCC will not require modification for the project.

Hazardous material use during O&M activities associated with the existing station will not change as a result of the project. After the project construction is complete, station operation and maintenance will continue to use the existing station health and safety plan that is updated regularly for station operation in alignment with applicable regulations and PG&E standards and guidelines.

Hazardous Waste

Limited hazardous waste will be generated during project construction and will be handled and disposed of in accordance with local, state, and federal requirements. Typical hazardous waste derived during construction may include limited quantities of lead-based paint, asbestos, used oil, containers, rags, and other used petroleum products. Based on the age of the conduit, motor control center equipment, and concrete foundations that will be removed, there is potential for limited amounts of lead-based paint or asbestos waste to be generated during construction activities. If these components are found during construction activities, they will be removed and disposed of at a licensed waste facility per applicable regulations.

In addition, up to approximately 443 yd^3 of excavated soil may be removed during excavation and conduit trenching activities. The project excavation and trenching will be performed in areas with no known contamination. If excavated soils show signs of contamination, for example through odor or staining, these soils will be separated on plastic and tested for disposal offsite at appropriately licensed facilities.

Hazardous waste generated during O&M activities associated with the existing station will not change as a result of the project.

5.9.2 Regulatory Setting

The following sections contain an overview of regulations related to the use of hazardous materials and the disposal of hazardous wastes.

5.9.2.1 Federal

Resource Conservation and Recovery Act

Under the Resource Conservation and Recovery Act (RCRA) (42 USC Section 6901 et seq.), individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as the federal RCRA requirements. The federal government approved California's RCRA program, called the Hazardous Waste Control Law (HWCL), in 1992. In California, the RCRA program is administered by Cal EPA's DTSC, per direction from the EPA.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC Chapter 103) and associated Superfund amendments provide the EPA with the authority to identify hazardous sites, to require site remediation, and to recover the costs of site remediation from polluters. CERCLA enabled the revision of the National Oil and Hazardous Substances Pollution Contingency Plan, also known as the National Contingency Plan (NCP). The NCP provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants.

Clean Water Act

The CWA gives EPA the authority to regulate the discharge of pollutants and hazardous materials into the waters of the United States. As part of the CWA, EPA oversees and enforces the oil pollution prevention regulation (40 CFR Part 112). The regulations describe the requirements for facilities to prepare, amend, and implement SPCC plans to create a comprehensive spill prevention program that minimizes the potential for discharges from specific sources, such as oil-containing transformers.

The EPA designates hazardous substances under the CWA (40 CFR Chapter I, Subchapter D, Parts 116 and 117) and determines quantities of designated hazardous substances that must be reported (40 CFR Part 116) or that may be discharged into waters of the United States (40 CFR Part 117).

U.S. Department of Transportation Hazardous Materials Regulations

The USDOT Hazardous Materials Regulations (Title 49 CFR Parts 100 and 185) cover all aspects of hazardous materials packaging, handling, and transportation.

5.9.2.2 State

Hazardous Waste Control Law

The HWCL (CA HSC, Chapter 6.5, Section 25100 et seq.) authorizes CalEPA and DTSC, a department within CalEPA, to regulate the generation, transport, treatment, storage, and disposal of hazardous wastes. DTSC also can delegate enforcement responsibilities to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of HWCL. Businesses that store more than threshold quantities of hazardous materials must prepare an HMBP, which includes spill prevention and response provisions.

Hazardous Substance Account Act

The Hazardous Substance Account Act (HSAA) (CA HSC, Chapter 6.8, Section 25300 et seq.) is California's equivalent to CERCLA. It addresses hazardous waste sites and apportions liability for them. The HSAA also provides that owners are responsible for the cleanup of such sites and the removal of toxic substances, where possible.

The two state agencies with primary responsibility for enforcing federal and state regulations related to hazardous material transport and responding to hazardous material transportation emergencies are the California Highway Patrol and Caltrans, respectively.

Occupational Safety and Health

The California Division of Occupational Safety and Health (CalOSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state (CCR Title 8). CalOSHA standards are more stringent than federal Occupational Safety and Health Administration regulations and take precedence. Section 1518 of the California PRC requires that suitable protection equipment or devices will be provided or used on or near energized equipment for the protection of employees where there is a recognized hazard of electrical shock or burns.

Hazardous Materials Management

The California Office of Emergency Services is the state office responsible for establishing emergency response and spill notification plans related to hazardous materials accidents. Title 26 of the CCR is a compilation of the chapters or titles of the CCR that are applicable to hazardous materials management.

Porter-Cologne Water Quality Control Act

As discussed in more detail in Section 5.10, the Porter-Cologne Water Quality Control Act (California Water Code, Division 7) is the provision of the California Water Code that regulates water quality in California and authorizes the SWRCB and nine Regional Water Quality Control Boards (RWQCBs) to implement and enforce the regulations. The Porter-Cologne Act provides several means of enforcement for unauthorized discharge of pollutants to waters of the state, including cease and desist orders, cleanup and abatement orders, administrative civil liability orders, civil court actions, and criminal prosecution. The project area is under the jurisdiction of the Lahontan Regional Water Quality Control Board (LRWQCB) (Region 6).

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (CCR Title 27) was mandated by the state of California in 1993. The Unified Program was created to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for six hazardous materials programs. The program has six elements, including:

- Hazardous Waste Generators and Hazardous Waste On-site Treatment
- Underground Storage Tanks
- Aboveground Petroleum Storage Act
- Hazardous Materials Release Response Plans and Inventories (also known as HMBPs)
- California Accidental Release Prevention
- Uniform Fire Code Hazardous Materials Management Plans and Hazardous Materials Inventory Statements

At the local level, implementation of a Unified Program is accomplished by identifying a CUPA that coordinates all these activities to streamline the process for local businesses. The Hazardous Materials Section of the San Bernardino County Fire Protection District is approved by CalEPA as the CUPA for San Bernardino County.

California Fire Code

The California Fire Code 2010 (CCR Title 24, Part 9) is based on the International Fire Code from the International Code Council and contains consensus standards related to establishing good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new or existing buildings, structures, and premises.

5.9.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and CUPAs with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process. Additional local plans and policies regarding emergency response are presented in Section 5.20.

County-Adopted Emergency Response Plans

The San Bernardino County Office of Emergency Services has both an Emergency Operation Plan (EOP), which details the County's comprehensive approach to emergency management (San Bernardino County 2019), and a Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), which focuses on reducing or eliminating long-term risks to people and property from natural and man-made hazards (San Bernardino County 2022).

The EOP addresses "…the County's response to emergencies associated with natural disasters or human-caused emergencies. It describes the methods for conducting emergency operations, the process for rendering mutual aid, the emergency services of governmental agencies, how resources are mobilized, how the public will be informed, and the process to ensure continuity of government during an emergency or disaster…" (San Bernardino County 2019). The EOP provides a single comprehensive guide identifying the procedures for the County to prepare and respond to emergencies.

The purpose of the MJHMP is to demonstrate a plan for reducing and eliminating risk within unincorporated areas of the county and within areas overseen by the Flood Control, Fire, and Special Districts. The plan engages communities within the unincorporated county to build a more disaster resilient community by developing goals and projects that reduce risks and hazards (San Bernardino County 2022).

San Bernardino County Fire Protection District

The San Bernardino County Fire Protection District, the designated CUPA for San Bernardino County under the CUPA Program, enforces state regulations governing hazardous materials storage, hazardous waste generators, aboveground petroleum storage, accidental release prevention, and hazardous substance underground storage tanks. The San Bernardino County Fire Protection District assists businesses in preparing HMBPs.

Airport Land Use Plans

The project area is not located within the jurisdiction of any airport land use plans as discussed in Section 5.9.1.3.

5.9.2.4 Touch Thresholds

Federal Occupational Safety and Health Administration (OSHA) general industry electrical safety standards are published in Title 29 CFR Part 1910.302 through 1910.308, Design Safety Standards for Electrical Systems, and 1910.331 through 1910.335, Electrical Safety-Related Work Practices Standards (*Federal Register* 2021). OSHA's electrical standards are based on the National Fire Protection Association (NFPA) codes and standards: NFPA 70, National Electrical Code, and NFPA 70E, Standard for Electrical Safety in the Workplace (NFPA 2022).

CalOSHA regulations on electrical safety require California employers to provide workers with a safe and healthful workplace. These regulations are contained in Title 8 of the CCR. Most of the electrical health and safety regulations can be found in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2299 through 2989. CalOSHA regulations on electrical safety are grouped by electrical voltage units. Regulations for low voltage (0 to 600 volts [V]) are given in Sections 2299 to 2599 and regulations for high voltage (greater than 600 V) are given in Sections 2700 to 2989. Section 1518 addresses the safety requirements for the protection of workers and others from electric shock in construction.

The project will be designed to all applicable standards and regulations that will provide for adequate horizontal and vertical clearances from electrical equipment. All authorized personnel working onsite, during either construction or O&M, are or will be trained according to OSHA, CalOSHA, NFPA, and PG&E standards. Although electric power lines will not be disturbed during project activities, in the event it is necessary, all electric power lines will be designed in accordance with CPUC GO 95 guidelines for safe ground clearances established to protect the public from electric shock.

5.9.3 Impact Questions

The project’s potential effects on hazards, hazardous materials, and public safety were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.9-2 and discussed in more detail in Section 5.9.4.

Table 5.9-2. CEQA Checklist for Hazards, Hazardous Materials, and Public Safety

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within 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 to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

5.9.3.1 Additional CEQA Impact Questions

The project's potential effects on hazards, hazardous materials, and public safety also were evaluated using the CPUC's Additional CEQA Impact Questions for Hazards, Hazardous Materials, and Public Safety in the *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* (CPUC 2019). These additional impact questions are evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.9-3 and discussed in more detail in Section 5.9.4.

Table 5.9-3. Additional CEQA Impact Questions for Hazards, Hazardous Materials, and Public Safety

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Would the project create a significant hazard to air traffic from the installation of new power lines and structures?	☐	☐	☐	☒
b) Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters?	☐	☐	☐	☒
c) Would the project expose people to a significant risk of injury or death involving unexploded ordnance?	☐	☐	☐	☒
d) Would the project expose workers or the public to excessive shock hazards?	☐	☐	☒	☐

5.9.4 Potential Impact Analysis

Project impacts related to hazards, hazardous materials, and public safety were evaluated against the CEQA significance criteria and are discussed in the following sections. This section evaluates potential project impacts during the construction phase and operation phase. The APMs discussed will further minimize potential less-than-significant impacts.

5.9.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to hazards, hazardous materials, and public safety were evaluated for each of the criteria listed in Table 5.9-2, as discussed in Section 5.9.4.3. In addition, the potential significance of project impacts was evaluated for each of the CPUC criteria listed in Table 5.9-3, as discussed in Section 5.9.4.4.

5.9.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

APM HAZ-1: Development and Implementation of Hazardous Material and Emergency Response Procedures

PG&E will implement construction controls, training, and communication to minimize the potential exposure of the public and site workers to potential hazardous materials during all phases of project construction. Construction procedures that will be implemented include worker training appropriate to the worker's role, and PG&E containment and spill control practices.

APM HAZ-2: Emergency Spill Supplies and Equipment

Materials will be available on the project site during construction to contain, collect, and dispose of any minor spill. Oil-absorbent material, tarps, and storage drums will be available on the project site during construction and will be used to contain and control any minor releases of oil. If excess water and liquid concrete escape during pouring, they will be directed to lined and bermed areas within the staging area, where the concrete will dry and then be transported for disposal per applicable regulations.

APM HAZ-3: Shock Hazard Safety Measures

All authorized personnel working onsite during either construction or O&M will be trained according to PG&E shock hazard safety standards.

APM HAZ-4: Worker Environmental Awareness Training Program – Hazards Portion

A WEAP will be prepared to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project. The WEAP will address, among other topics, hazards and hazardous materials. The training program will emphasize site-specific physical conditions to improve hazard prevention and will include a review of spill response and proper BMP implementation. The WEAP program will be provided separately to CPUC staff prior to construction.

APM HAZ-5: Potentially Contaminated Soil

Where existing data are not available and there is known potential of contaminated soil in the trenching or excavation area, crews will be notified prior to commencement of earth-moving activities in that area. Excavation or trenching areas either within or directly adjacent to locations of known or suspected contaminated soil will be evaluated by PG&E's Remediation and Industrial Hygiene departments prior to soil disturbance to ensure soil-disturbing activities are supervised and conducted by appropriately trained and qualified individuals, as appropriate. In accordance with standard protocol for any soil-disturbing activities at PG&E facilities, soil showing visual, olfactory, or other evidence of contamination will be stockpiled and managed separately.

Soil that is known or suspected of being contaminated (based on existing analytical data or visual, olfactory, or other evidence) and is removed during trenching or excavation activities will be segregated and stockpiled on top of one layer of 20-mil polyethylene sheeting (or equivalent). When the stockpiled material is not actively being handled, top sheeting will be adequately secured, or equivalent soil stabilization methods will be employed so that all surface areas are covered or equivalently prevented from dispersion or mixing with nearby soils. The stockpiled soil will have a temporary berm placed around the stockpile to prevent runoff from leaving the area and will not be positioned near storm drains. Soil sampling and testing will be conducted for each stockpile, the purpose of which will be to characterize the chemical quality of the soil for potential reuse, disposal, and worker health and safety risks. The location, distribution, and frequency of the sampling locations where there is known or suspected contaminated soil in a trenching or excavation area will be determined by a qualified Environmental Scientist based on the quantity of excavated material to ensure analytical data adequately characterizes the material with the intent to provide adequate representation of the conditions in the construction area.

All soil intended for disposal will be tested in accordance with landfill requirements, regardless of known or suspected contamination being present. Appropriate handling, transportation, and disposal locations for soil will be determined based on results of the analyses. If the soil is contaminated at concentrations greater than state or federal hazardous waste levels, it will be contained and disposed of offsite at a licensed hazardous waste facility. In addition, results will be provided to contractors and construction crews to inform them about soil conditions and potential hazards.

5.9.4.3 Impact Analysis

Project impacts related to hazards, hazardous materials, and public safety were evaluated against the CEQA significance criteria and are discussed in this section. The impact analysis evaluates potential project impacts during the construction phase and the operation phase.

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than electrical distribution equipment upgrades will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

This project is needed to upgrade the station's electrical distribution system, which will improve station reliability, upgrade to current safety standards, and modify existing or install replacement equipment to modern standards, which will increase reliability and worker safety. Station reliability is crucial to avoid unplanned station shutdown and meet gas customer expectations. Under existing conditions, the station currently must operate using specialized safety procedures and upgraded personal protective equipment to avoid potential harm to workers. With these improvements during operations, the project will allow the station to use standard safety procedures and equipment, easing the burden on staff. Modifications to equipment planned for the project also will ensure that the station aligns with current PG&E and industry standards. O&M activities for the station upgrades will be improved from current practices. As such, impacts related to hazards, hazardous materials, and public safety resulting from this project will improve from existing conditions. Therefore, the following impact analysis is limited primarily to construction impacts.

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? *Less-than-Significant Impact*.

Construction of the project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Table 5.9-1 identifies hazardous materials expected to be used onsite during construction.

Construction of project facilities will require the use of motorized heavy equipment, including trucks, forklifts, generators, backhoes, and air compressors. Although this equipment requires the use of hazardous materials, such as gasoline, diesel fuel, oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, cleaning solvents, and other fluids, these materials will be transported to the work site according to DOT standards and used in the designated construction staging area or other suitable locations within the compressor station identified prior to the onset of construction. APM HAZ-2 and APM HAZ-4 require construction crews to be trained in safe handling of hazardous materials prior to the initiation of construction, which will further reduce the small risk of minor exposure of the environment, the public, or site workers to potentially hazardous materials during construction. PG&E will follow its existing worker training programs.

The project is not expected to use or store large quantities of hazardous materials. Natural gas used to fuel temporary PERP generators will replace the use of natural gas used to fuel the permanent station generators during the electrical equipment replacement and modification portion of construction. The temporary PERP generators will connect to existing natural gas fuel lines in the station. During construction, typical petroleum-based products such as gasoline, diesel fuel, crankcase oil, lubricants, and cleaning solvents will be used to fuel, lubricate, and clean vehicles and equipment, and will be transported in specialty trucks or in other approved containers. When not in use, hazardous materials will be properly stored as instructed by SDSs to prevent drainage or accidents. SDSs will be provided to onsite personnel for training purposes in case of emergency.

The anticipated volume of hazardous liquid materials, such as fuel, are calculated based on the equipment and vehicles expected to be used during construction. These hazardous liquid materials will not be stored onsite at the total approximate volume. Instead, as hazardous liquid materials are needed, they will be obtained by construction vehicles at a gas station, and other materials such as hydraulic fluids/liquids will be ordered at volumes that are appropriate for storage on a maintenance truck and dispensed at the staging area during a routine maintenance activity during construction. Modification of the station's existing SPCC and HMBP is not expected to be required.

Because hazardous materials will be transported, used, and disposed of in accordance with appropriate procedures, the project will not create a significant hazard to the public or environment. Any impacts will be less than significant, and PG&E's existing worker safety training programs described in APM HAZ-2 and APM HAZ-4 will further reduce less-than-significant impacts.

There will be no large volumes of known hazardous waste resulting from project construction. Minor volumes of hazardous waste will be disposed of using the appropriate methods of handling and transportation, with disposal at a certified hazardous waste disposal facility. For the project, hazardous waste is expected to be disposed of at the Kettleman Hills Industrial Waste Codisposal Facility; refer to Section 3.5.11.3.

There is no known soil contamination in the project area; however, there is potential for unknown contaminated soils to be encountered during construction. Contaminated soils are not known to occur at the surface of the project site and are unlikely to occur at the expected depth of excavation that is at approximately 5 feet below ground surface. In the unlikely event contaminated soils are encountered during construction, APM HAZ-5 will be implemented. Potentially contaminated soil that has not been precharacterized will be stockpiled separately to be tested, managed, and transported for disposal as appropriate. Soil intended for disposal will be tested. If suspected hazardous substances or waste are unexpectedly encountered during trenching activities (using indicators such as sheen, odor, and soil discoloration), work will be stopped at the trenching activity when safe to do so until the material is properly characterized and appropriate measures are taken to protect human health and the environment. Appropriate personal protective equipment will be used, and waste management will be performed in accordance with applicable regulations. If excavation of hazardous materials is required, the materials will be disposed of in accordance with applicable regulations.

Improvements to O&M activities are anticipated with implementation of the project. The project will increase reliability and maintainability of the station's electrical distribution system. In addition, the project upgrades will enable standard safety procedures and operation and improve inspection and maintenance efficiency, thus no impacts associated with O&M will occur.

b) Would the project 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? *Less-than-Significant Impact*.

Project construction will require the use of motorized heavy equipment. During construction activities, there is a potential for an accidental release of fluids from a vehicle or motorized piece of equipment. To reduce the likelihood and significance of an accident involving hazardous materials, APM HAZ-1, APM HAZ-2, and APM HAZ-4 will provide crews with knowledge, preparation, techniques, and materials to avoid exposing the public, project crews, and environmental resources to hazardous materials. In the event of an accidental release of hazardous material caused by an upset or accident, crews will follow protocol outlined by APM HAZ-1, APM HAZ-2, and APM HAZ-4 to minimize the effects of an accidental spill. These BMPs include having spill kits in all active work areas to be used to prevent materials from draining onto the ground or into drainage areas in the event of a spill.

Because construction will occur within the permanent security fenceline of the existing Hinkley Compressor Station, it is anticipated that the public will have no access to construction activities. Station operations staff present during project activities will be informed of project construction activities during daily station safety tailboards. Within the station, interior security fencing with locked gates or doors controls access between outdoor and indoor areas. Where project activities are occurring in the project work area, including excavation and trenching, temporary signs or barriers such as safety cones or fencing will be placed to identify the project activity. Additionally, if excavations or trenches need to remain open outside of construction activities, typically they will be covered in addition to the temporary barriers. For worker safety, shoring plates or other typical bracing equipment will be used to keep an excavation or trench open depending on soil type or for safety proposes.

Improvements to O&M activities are anticipated with implementation of the project. The project will increase reliability and maintainability of the station's electrical distribution system. In addition, the project upgrades will enable standard safety procedures and operation and improve inspection and maintenance efficiency, therefore, no impacts associated with O&M will occur.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? *No Impact.*

No schools are located within approximately 0.25 mile of the project site (refer to Section 5.15, Public Services) and, therefore, no impact will occur as a result of the project.

d) Would the project 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? *Less-than-Significant Impact*.

The proposed project is located on a site listed pursuant to Section 65962.5, as described in Section 5.9.1.7. Because there is known soil and groundwater contamination at the station from historic practices, implementation of APM HAZ-4 and APM HAZ-5 will ensure that human health and the environment are protected. The operation associated with the project is not expected to include disturbance of subsurface materials, so no impact will occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? *No Impact*.

The proposed project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. Furthermore, the new and modified equipment will be well below the Federal Aviation Administration height threshold of 200 feet. The outdoor replaced MCCs will be approximately 10.5 feet tall, an increase from the existing height of 8 to 8.5 feet tall. Therefore, the project will not result in a safety hazard for people residing or working in the project area during either the construction or the operation phases; no impact will occur.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? *No Impact*.

Because all project activities will occur within the existing station fenceline and no lane or road closures are required for construction access, the project will not impair the implementation of or physically interfere with the San Bernardino County Energy Operation Plan or the MJHMP and, therefore, no impact will occur.

g) Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? *No Impact*.

Wildfire risk is discussed in Section 5.20. The project site can be described as a desert shrub landscape with nearby light agriculture use. As discussed in Section 5.9.1.4, the project is not located in a CAL FIRE designated FHSZ or CPUC designated fire threat district. The site is located within the San Bernardino County LRA. The primary risk for potential fire hazards will be associated with the use of vehicles and equipment during construction that could generate heat or sparks that could ignite dry vegetation and cause a fire. During construction, PG&E will implement APM WFR-1, Construction Fire Prevention Plan, which require workers to be trained in fire prevention practices and carry emergency fire suppression equipment that will reduce the wildland fire risk. PG&E will continue to comply with its current Wildfire Mitigation Plan. There will be no construction impacts to people and structures from wildland fires; no impact will occur.

Improvements to O&M activities are anticipated with implementation of the project. The project will increase reliability and maintainability of the station's electrical distribution system. In addition, the project upgrades will enable standard safety procedures and operation and improve inspection and maintenance efficiency. Therefore, no impacts associated with O&M will occur.

5.9.4.4 Additional Impact Questions

a) Would the project create a significant hazard to air traffic from the installation of new power lines and structures? *No Impact*.

The project does not include installation of new power lines and structures. No impact will occur.

b) Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters? *No Impact*.

The project will not use a helicopter. No impact will occur.

c) Would the project expose people to a significant risk of injury or death involving unexploded ordnance? *No Impact*.

No portion of the project overlies a current or former military installation (State of California Office of the Governor 2024). Therefore, no unexploded ordnance is expected to be encountered. As a result, the project will not expose people to a significant risk of injury or death involving unexploded ordnance, resulting in no impact.

d) Would the project expose workers or the public to excessive shock hazards? *Less-than-Significant Impact*.

The design and construction of PG&E project components will comply with federal and state regulations and standards. High-voltage work will not be conducted as part of this project. However, all authorized personnel working onsite during either construction or O&M will be trained according to OSHA safety standards (United States Department of Labor 2019), which are based on applicable federal, state, and local safety regulations. To reduce shock hazards and avoid electrocution of workers, PG&E will comply with the provisions found in CalOSHA Title 8 of the CCR, particularly the electrical health and safety regulations found in Chapter 4, Subchapter 5, in the Electrical Safety Orders. Furthermore, the public will not have access to these upgrades and, therefore, will not be exposed to excessive shock hazards. The potential for exposure to excessive shock hazards will be further reduced by APM HAZ-3, which requires worker to be trained according to PG&E standards. As a result, the project will not expose workers or the public to excessive shock hazards, resulting in a less-than-significant impact.

5.9.4.5 CPUC Draft Environmental Measures

None.

5.10 Hydrology and Water Quality

This section describes existing conditions and potential impacts related to hydrology and water quality associated with construction of the project. O&M activities associated with the existing station will not change as a result of the project. The analysis concludes that any impacts related to hydrology and water quality will be less than significant; the implementation of APMs described in Section 5.10.4.2 will further reduce less-than-significant impacts. The project's potential effects associated with hydrology and water quality were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.10-1 and discussed in more detail in Section 5.10.4.

5.10.1 Methodology and Environmental Setting

5.10.1.1 Methodology

Information on surface water and groundwater in the project area was obtained from published studies prepared by state, county, and local water agencies and related organizations, including the following:

- *San Bernardino Countywide Plan* and final Programmatic Environmental Impact Report
- San Bernardino County Local Hazard Mitigation Plan
- California Department of Water Resources (DWR)
- Federal Emergency Management Agency (FEMA)
- SWRCB

5.10.1.2 Regional Setting

The project is in the South Lahontan Hydrologic Region within the Centro Subarea of the Mojave River Groundwater Basin (LRWQCB 2013). The project area is relatively flat; the Mojave River Valley has an estimated average ground slope of 0.3 percent from the southeast to the northwest (San Bernardino County 2019). The project area consists primarily of rural residential areas and agricultural land with undeveloped, disturbed desert scrub land interspersed. Existing land uses surrounding the project are primarily undeveloped open space and rural residential with some agricultural activity and crop production. The City of Barstow is located approximately 1 mile east of the project site. The unincorporated town of Hinkley is approximately 2.5 miles northwest of the project site.

5.10.1.3 Climate

The project is in the MDAB, which is characterized by "mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB via surrounding mountain passes (MDAQMD 2020).

The climate in the MDAB in the summer is dominated "by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south" (MDAQMD 2020). "The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inches of precipitation). The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least three months have maximum average temperatures over 100.4 degrees Fahrenheit (°F)" (MDAQMD 2020). Data from the Barstow Daggett Airport, approximately 20 miles southeast of the project, show an annual average of 3.87 inches and 23 days of precipitation (MDAQMD 2020).

5.10.1.4 Waterbodies

The project is in the North Desert region of San Bernardino County. The only surface waters in the project vicinity are the Mojave River, small desert washes that flow south to the Mojave River, and desert washes that flow north to Harper Lake during infrequent large rain events (LRWQCB 2013). Refer to Figure 5.10-1. No waterbodies are crossed by the project. The Mojave River, the most prominent drainage feature in the North Desert region, is an approximately 120-mile-long river that is dry most of the year. The Mojave River starts in the San Bernardino Mountains southwest of the project and terminates at Soda Lake and Silver Lake, dry lakes approximately 63 miles and 67 miles northeast of the project, respectively. However, there are areas of year-round surface flows, where groundwater is forced to the surface in areas with impermeable bedrock, including near Victorville approximately 25 miles south of the project (San Bernardino County 2019). At its nearest point, the Mojave River is approximately 11.2 miles south of the project site. This stretch of the Mojave River flows only during major storms (LRWQCB 2013). Harper Lake, approximately 7 miles northwest of the compressor station, is a dry lake except during and immediately after storm events; surface water either evaporates or infiltrates at the lake (LRWQCB 2013). The USACE made a determination for the nearby Abengoa Solar project that Harper Lake and drainages to it are not waters of the U.S. (LRWQCB 2013).

5.10.1.5 Flooding

The *San Bernardino Countywide Plan* includes a map of the FEMA 100-year and 500-year flood zones and the DWR 100-year flood hazard areas (flood prone areas without specific depths and other flood hazard data). Areas along the Mojave River are in the FEMA flood zones, and some washes are designated as DWR flood hazard areas. However, the compressor station, including the project site, is not located in a FEMA 100-year or 500-year flood zone or a DWR 100-year flood hazard area (San Bernardino County 2020a). The project site is in an area FEMA designates as "Area in Which Flood Hazards are Undetermined, but Possible" (FEMA 2024). Refer to Figure 5.10-2.

The project site is not near any bodies of water that could produce a tsunami or seiche. The Pacific Ocean is approximately 100 miles east of the project site, on the other side of the San Bernardino Mountains. Only dry lakes are present in the desert region of San Bernardino County.

No dams are in the desert region of San Bernardino County. The nearest dams to the project site are on the upper Mojave River or its tributaries in the San Bernardino Mountains, approximately 45 miles south of the project site. These dams include the following:

- Mojave River Dam. Construction of this dam on the Mojave River was completed by the USACE in 1971. The earth-fill dam is an ungated flood protection structure. The drainage area above the dam consists of approximately 215 square miles of mountainous terrain, drained by two main tributaries, Deep Creek and West Fork Mojave River, which converge just above the dam to form the Mojave River (USACE 2023). In 2019, the USACE changed the dam risk characterization from low to high urgency of action (USACE 2019). Failure of the dam could result in flooding of downstream areas along the Mojave River, including the communities of Hesperia, Apple Valley, Victorville, and Barstow (USACE 2019). USACE is currently preparing a master plan for future management of the dam (USACE 2023).
- Lake Arrowhead Dam. Located on Little Bear Creek, a tributary to the Mojave River, Lake Arrowhead Dam is an earthen embankment dam constructed in 1922 (LACSD 2024). Construction of the current dam was completed in 1973 (ALA 2024). Construction of a second dam downstream of the original

dam, along with a smaller reservoir (Papoose Lake), was completed in 1977 to ensure safety in case of a seismic event (LACSD 2024). The dam and lake are owned and managed by the Arrowhead Lake Association to provide water supply to the communities of Arrowhead Woods, Deer Lodge Park, and Rimforest (LACSD 2024). The dam's storage capacity is 48,000 acre-feet and its catchment area is 7 square miles (Dams of the World 2024).

- Cedar Springs Dam. This dam forms Silverwood Lake, which receives State Water Project (SWP) water from the East Branch of the California Aqueduct (DWR 2024a). The reservoir is operated by DWR for water supply and recreation. The earth rockfill dam was constructed in 1971 and is located on a tributary of the Mojave River. The reservoir catchment area is 34 square miles (Dams of the World 2024).

Dam inundation zones are areas subject to flooding if an upstream dam breaks during an earthquake or as the result of flooding. Potential dam inundation areas from failure or flooding of the dams described previously include the Mojave River channel and areas north and northwest of the project site, including Harper Lake (San Bernardino County 2011). However, dam inundation is identified as having a low probability of occurrence and is considered a low priority risk in the *2022 San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan* (San Bernardino County 2022).

5.10.1.6 Water Quality

No rivers near the project are on the state Section 303(d) list. Although upstream portions of the Mojave River had been considered for inclusion on the state's Section 303(d) list for ammonia, the final decision was to not list the river (SWRCB 2024). Refer to Section 5.10.2.1 for a discussion of Section 303(d) listing.

5.10.1.7 Groundwater Basin

The project is in the Mojave River Groundwater Basin, which is approximately 1,400 square miles and extends from the San Bernardino and the San Gabriel Mountains in the south to north of Harper and Coyote Lakes (both dry) (USGS 2024). The groundwater basin is bordered on the west by Antelope Valley and shares its southeastern boundary with the Morongo Groundwater Basin. For water management purposes, the Mojave River Groundwater Basin is divided into five subareas, partially based on the Mojave River drainage basin boundary: Baja, Centro, Alto, Este, Oeste (USGS 2024). The project is in the Centro subarea. Refer to Figure 5.10-3. DWR Bulletin 118, the State's official publication on the occurrence and nature of groundwater in California, further divides the Mojave River Groundwater Basin into smaller subbasins; the project site is in the Harper Valley Subbasin (DWR 2024b; MWA 2021). The depth to groundwater under the compressor station is approximately 80 feet below ground surface (Alisto 2014).

The primary source of groundwater recharge in the Mojave River Groundwater Basin is intermittent streamflow in the Mojave River, which usually occurs during January through March, and from sporadic releases of imported water from the SWP at several recharge sites (USGS 2024).

The aquifer system (that is, water-bearing rocks and sediments) in the Mojave River Groundwater Basin consists of unconsolidated alluvial materials such as gravel, sand, silt, and clay, as well as deposits of fine sand, silt, and clay along the margins of the basin (LRWQCB 2013). The water-bearing deposits form two aquifers – a floodplain aquifer and a regional aquifer underlying and surrounding the floodplain aquifer. The floodplain aquifer is more productive than the regional aquifer, yielding most of the groundwater pumped from the basin. These alluvial deposits are 100 to 200 feet thick and extend outward from the Mojave River. Wells drilled in the river deposits typically yield between 100 and 2,000 gallons per minute (LRWQCB 2013).

5.10.1.8 Groundwater Wells and Springs

The State Water Resources Control Board Groundwater Ambient Monitoring and Assessment data was used to identify wells in the area and the United States Geologic Survey National Hydrography Dataset was used to identify sprints in the area. Within 150 feet of the project, 4 monitoring wells and 1 municipal well were identified, as shown on Figure 5.10-3 (SWRCB 2023). The monitoring wells generally are associated with the ongoing groundwater remediation effort at the compressor station. PG&E does not use any wells in the area of the municipal well identified in the state data, and PG&E was unable to confirm ownership or location of the municipal well. No springs were identified within 150 feet of the project site (USGS 2023).

5.10.1.9 Groundwater Management

Mojave Water Agency (MWA) was formed in 1960 in response to concerns over the regional overdraft condition resulting from the annual use of ground water resources exceeding the long-term average annual supply (MWA 2024). Adjudication of the Mojave Basin was initiated by a lawsuit filed in 1990 by the City of Barstow and the Southern California Water Company (*City of Barstow, et al., v. City of Adelanto, et al.*). The lawsuit alleged that the cumulative increase in water use in the upper part of the Mojave Basin caused or threatened to cause a reduction in the natural flow of water to the central part of the Mojave Basin, including the City of Barstow. The complaint requested that MWA be required to act pursuant to its statutory authority to obtain and provide supplemental water for use within the Mojave Basin area. MWA filed a cross-complaint that requested the Court to declare the native natural water supply of the Mojave Basin inadequate to meet the demands of cumulative water production within the basin. MWA also requested that the Court determine individual water production rights of water producers of whatever nature throughout the entire Mojave Basin Area, upstream and downstream of the City of Barstow.

The stipulated judgment for the lawsuit was issued in 1996; it created the basis for the Mojave River Basin Adjudication (LRWQCB 2013). The stipulated judgment addresses water shortages in the Mojave Basin area through a designation of five subareas, all of which were found to be in overdraft, and each having an amount of groundwater that can be extracted by all parties based on a court-determined Production Safe Yield to maintain proper water balances within each subarea. MWA is the designated water master and is responsible for administering the judgment, which involves measuring and tracking aquifer conditions and water use information in the Mojave River Basin. PG&E has rights to groundwater from the Mojave River Groundwater Basin through the adjudication process. Water for the project will come from PG&E-owned wells.

MWA obtained a contract with DWR to secure rights to and take delivery of SWP water from the California Aqueduct. The initial entitlement was up to 50,800 acre-feet per year (afy) of water, increased by purchases of an additional 25,000 afy of entitlement in 1998 and 14,000 afy in 2009 (MWA 2024). MWA uses the SWP water to recharge the watershed, including spreading basins upstream of Barstow (LRWQCB 2013).

Between 1993 and 2011, average pumping within the Centro subarea has been approximately 28,000 afy, with a 5-year average between 2006 and 2011 of 25,000 afy. The Free Production Allowance from the MWA totals 39,000 afy, indicating that there has been, on average, a surplus of approximately 14,000 afy between 2006 and 2011 (LRWQCB 2013).

MWA is currently in the process of developing a master plan to inform and prioritize its water resources management policies, programs, and projects to meet future water demands, including from growth in the Barstow area.

5.10.2 Regulatory Setting

The following sections identify applicable federal, state, and local laws, policies, and standards for hydrology and water quality.

5.10.2.1 Federal

Clean Water Act Section 303(d)

Section 303(d) of the CWA (33 USC 1251-1376) requires states, territories, and authorized tribes to develop a list of impaired waters within their boundaries that do not meet water quality standards and objectives, even after point sources of pollution have installed the minimum required levels of pollution control technology. The Section 303(d) list is the state's list of impaired and threatened waters (stream/river segments, lakes). States are required to submit their lists for EPA consideration every 2 years. For each water on the list, the state identifies the pollutant causing the impairment, when known. The law further requires that these jurisdictions establish priority rankings for waters on the list and develop action plans, called total maximum daily loads, to improve water quality. The RWQCBs and the SWRCB implement this federal regulation in California.

National Flood Insurance Program

FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies. FEMA also is responsible for distributing the flood insurance rate maps used in the National Flood Insurance Program (NFIP) (42 USC 50, Section 4102). These maps identify the locations of special flood hazard areas, including 100-year floodplains. FEMA allows nonresidential development in the floodplain; however, FEMA has criteria to "… constrict the development of land which is exposed to flood damage where appropriate" and to "… guide the development of proposed construction away from locations which are threatened by flood hazards." Federal regulations governing development in a floodplain are set forth in 44 CFR Part 60, enabling FEMA to require municipalities that participate in the NFIP to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

5.10.2.2 State

Porter-Cologne Water Quality Control Act (California Water Code, Division 7)

Under this state law, the SWRCB has authority over state waters and water quality. "Waters of the state" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code Section 13050[e]). Examples include rivers, streams, lakes, bays, marshes, mudflats, unvegetated and seasonally ponded areas, drainage swales, sloughs, wet meadows, natural ponds, vernal pools, diked baylands, seasonal wetlands, and riparian woodlands. The RWQCBs have local and regional authority. The LRWQCB has authority in the project area. The RWQCBs prepare and periodically update basin plans (water quality control plans), which establish the following:

- Beneficial uses of water designated for each protected waterbody
- Water quality standards for both surface water and groundwater
- Actions necessary to maintain these water quality standards

Projects that will discharge waste to waters of the state must file a report of waste discharge with the appropriate RWQCB if the discharge could affect the quality of waters of the state (Article 4, Section 13260). The RWQCB will issue waste discharge requirements or a waiver of the waste discharge requirements for the project. The requirements will implement any relevant water quality control plans that have been adopted and must take into consideration the beneficial uses to be protected and the water quality objectives reasonably required for that purpose (Article 4, Section 13263).

Fish and Game Code, Section 5650

This section of California law makes is unlawful to deposit in, to permit to pass into, or to place where it can pass into waters of the state specific pollutants or any substance or material deleterious to fish, plant life, mammals, or bird life.

Fish and Game Code, Section 1602

This section of California law makes it unlawful to substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities

The SWRCB regulates stormwater discharges from construction sites to protect against the mobilization of pollutants into waterbodies or watersheds. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation. Dischargers whose projects disturb 1 acre or more of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 acre or more, are required to obtain coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities.

Sustainable Groundwater Management Act

In September 2014, legislation was passed to strengthen local management and monitoring of groundwater basins most critical to the state's water needs. The Sustainable Groundwater Management Act (SGMA) prioritizes groundwater basins that currently are overdrafted and sets a timeline for implementation:

- By 2017, local groundwater management agencies must be identified.
- By 2020, overdrafted groundwater basins must have sustainability plans.
- By 2022, other high- and medium-priority basins not currently in overdraft must have sustainability plans.
- By 2040, all high- and medium-priority groundwater basins must achieve sustainability.

The SGMA also provides measurable objectives and milestones to reach sustainability and a state role of limited intervention when local agencies are unable or unwilling to adopt sustainable management plans. MWA, which is responsible for adjudicating groundwater in the Mojave River and Morongo basins, is exempt from the SGMA because the agency already has a system in place to manage adjudication in the basins (MWA 2024).

5.10.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified

Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process.

Water Quality Control Plan for the Lahontan Region (Basin Plan)

The Basin Plan for the Lahontan Region sets forth water quality standards for the surface and groundwater of the region, which include both designated beneficial uses of water and the narrative and numerical objectives that must be maintained to protect those uses. It identifies general types of water quality problems that can threaten beneficial uses in the region and lists required or recommended control measures for these problems. In some cases, it prohibits certain types of discharges in particular areas. The Basin Plan incorporates applicable provisions of SWQCB policies. The beneficial uses identified for the Mojave River Groundwater Basin include municipal and domestic supply, agricultural supply, industrial service supply, freshwater replenishment, and aquaculture (LRWQCB 2013). There are no groundwater quality objectives established specifically for the Mojave River Groundwater Basin (LRWQCB 2013). However, objectives for total dissolved solids and nitrates have been established for the Mojave River groundwaters (reaches of the Mojave River which flow underground in a confined channel) (LRWQCB 2021).

San Bernardino Countywide Plan

The Infrastructure and Utilities Element of the *San Bernardino Countywide Plan* contains policies for water supply in the county (San Bernardino County 2020b). Water supply policies include the following:

- Policy IU-1.8 Groundwater management coordination. This policy calls for collaboration with watermasters, groundwater sustainability agencies, water purveyors, and other government agencies to ensure groundwater basins are being sustainably managed. New development is discouraged when it would create or aggravate groundwater overdraft conditions, land subsidence, or other "undesirable results" as defined in the California Water Code. Safe yields are required for groundwater sources covered by the Desert Groundwater Management Ordinance.

5.10.3 Impact Questions

The project's potential effects on hydrology and water quality were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.10-1 and discussed in more detail in Section 5.10.4.

Table 5.10-1. CEQA Checklist for Hydrology and Water Quality

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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 groundwater quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐

Table 5.10-1. CEQA Checklist for Hydrology and Water Quality

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 off-site	☐	☐	☐	☒
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?	☐	☐	☒	☐

5.10.3.1 Additional CEQA Impact Questions

None.

5.10.4 Potential Impact Analysis

Project impacts related to hydrology and water quality were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change.

5.10.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts to hydrology and water quality was evaluated for each of the criteria listed in Table 5.10-1, as discussed in Section 5.10.4.3.

5.10.4.2 Applicant-Proposed Measures

PG&E will implement the following APM:

APM HYD-1. Worker Environmental Awareness Program – Water Quality Portion

A WEAP will be prepared for the project to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project. The WEAP will include, among other topics, spill prevention and response measures and proper BMP implementation. A copy of the training materials and training sign-in sheets documenting participation in the training will be provided to the CPUC.

5.10.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to hydrology and water quality resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) **Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? *Less-than-Significant Impact*.**

Potential impacts during project construction include erosion, increased runoff and sedimentation, and release of hazardous materials from construction equipment and vehicles. Construction activities conducted during the rainy season have the potential for increasing erosion and sediment transport locally. Project construction includes excavation for foundations for new motor control centers and for trenches for electric conduits. Excavated areas will be up to 5 feet deep and will cover a small area, approximately 2,395 square feet (approximately 0.06 acre) in total. Small, temporary stockpiles of excavated soil may be located near an excavation to be used for backfill.

Project excavation and trenching activities will be conducted using handheld equipment and supported by a vacuum truck. Because of the small area of excavation, a stormwater pollution prevention plan is not required for the project. However, PG&E will develop an erosion and sedimentation control plan (ESCP) that identifies BMPs to be used to control erosion, sedimentation, and runoff. BMPs may include straw wattle or gravel bag berms, stockpile management, effective dust control measures, good housekeeping measures and stabilization measures, which may include soil compaction. BMPs will be installed prior to construction activities that will create erosion, sedimentation, or runoff. BMPs will be inspected by the PG&E Environmental Field Specialist or designee and improved as needed to minimize erosion and sediment transport from temporarily disturbed areas. BMPs such as wattles will remain in place until disturbed areas are backfilled as needed, compacted as appropriate, and restored to preconstruction condition contours. In addition, the project site is flat and annual rainfall amounts are low; erosion from stormwater runoff is unlikely. A water truck, typically with a capacity of up to approximately 3,000 gallons, will support project construction activities, including dust suppression. Water applied for dust control will be used to dampen the soil; overapplication of water that could create runoff will be avoided. The staging area will include berms or other methods to contain excess water from concrete wash water. Any contaminated soils encountered during construction will be taken offsite for disposal in the Kettleman Hills Industrial Waste Codisposal Facility in Kettleman City, California, or Clean Harbors Buttonwillow LLC facility in Buttonwillow, California. In addition, PG&E will implement APM HYD-1 to further minimize the potential to affect water quality.

Accidental releases of hazardous materials that are used during construction – for example, gasoline, diesel fuel, oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, cleaning solvents, and other fluids – have the potential to occur. An accidental release of fuel or lubricant at the surface or within excavations poses minimal risk to groundwater quality, given the small amounts of material used, depth to groundwater, and spill response procedures, as described in Section 5.9. Potential impacts will be further minimized by implementing APM HYD-1 and by APM HAZ-1 and APM HAZ-2, which are discussed in Section 5.9.4.2. The project is not expected to use or store large quantities of hazardous materials. Fuel, grease, and fluids needed for equipment operation will be onsite periodically; these will be handled, in keeping with APM HYD-1, APM HAZ-1, and APM HAZ-2 for proper use, storage, and cleanup (if warranted).

The project site does not include and will have no direct impact on rivers or other water bodies. The project will not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts will be less than significant.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? *Less-than-Significant Impact*.

Ground-disturbing work will be up to approximately 5 feet below ground and is not expected to encounter groundwater, which is estimated at approximately 80 feet below ground at the station. No dewatering is expected to be required. In the unlikely event that rain occurs while the trenches are open, it is expected that the water will evaporate and percolate into the soil. If appropriate, the rainwater also can be pumped out and stored for later beneficial reuse as dust control.

The project's replacement MCCs are custom designed to fit within the existing MCC footprint. The installation of MCC-9 (replacing the function of existing Auxiliary Load Center No. 1) will have a permanent footprint of approximately 243 square feet when installed. If the load center is retired in place instead of being removed, the project will increase impervious area within the station by approximately 243 square feet. This minor increase in impervious area is not expected to affect groundwater recharge.

A small amount of water will be used during project construction. A water truck, typically with a capacity of up to approximately 3,000 gallons, will support project construction activities, including dust suppression and, if needed in the event of a fire, fire suppression. The total volume available within the truck onsite is not expected to be used daily. Water required for construction is expected to come from the two offsite wells that supply the station's water. The wells are owned by PG&E and are part of the adjudicated water rights in the groundwater basin. The PG&E wells collectively used approximately 88.5 million gallons (approximately 270 acre-feet) of water in 2023 (Hirst 2024), less than the 3,619 acre-feet free production allocated to PG&E. These wells have adequate capacity to serve the project either independently or in combination and remain within their adjudicated amounts. The project will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin, and impacts will be less than significant.

c) Would the project 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? *No Impact*.

No streams or rivers are on or adjacent to the project site and none would be affected by the project. As discussed in Impact b), the project will add a minimal amount of impervious surface to the project site. The project site is flat, with an average ground slope of 0.3 percent, and excavated areas will be backfilled, compacted as appropriate, and returned to preconstruction condition contours. Therefore, the project will not result in substantial erosion or siltation onsite or offsite, and no impacts will occur.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? *No Impact*.

As discussed in Impact b), the project will add a minimal amount of impervious surface to the project site. The project site is flat, with an average ground slope of 0.3 percent, and excavated areas will be backfilled, compacted as appropriate, and returned to preconstruction contours. Therefore, the project will not substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite, and no impacts will occur.

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? *No Impact*.

As discussed in Impact b), the project will add a minimal amount of impervious surface to the project site. The project site is flat, with an average ground slope of 0.3 percent, and excavated areas will be backfilled, compacted as appropriate, and returned to preconstruction condition contours. As discussed in Impact a) PG&E will develop an ESCP that identifies BMPs to be used to control runoff. Some water may be used onsite for dust suppression or, in the event of a fire, fire suppression. However, construction staging areas will include berms and other methods to contain excess water applied for dust control, concrete wash water, and similar liquid construction wastes. Water contained within the berms is expected to evaporate or sink into the ground. The hardened concrete in the concrete washout station will be managed as a solid waste and recycled or disposed of offsite. Therefore, the project will not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and no impacts will occur.

iv) Impede or redirect flood flows? *No Impact*.

As shown on Figure 5.10-2, the project is not located in a 100-year or 500-year floodplain. The project entails replacing existing electrical infrastructure that will not impede or redirect flood flows. The project will not impede or redirect flood flows, and no impact will occur.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? *No Impact*.

As shown on Figure 5.10-2, the project is not located in a 100-year or 500-year floodplain and is not in a flood hazard zone. The project site is not near any bodies of water that could produce a tsunami or seiche. No impacts will occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? *Less-than-Significant Impact*.

As discussed in Impact b), the project will use a small amount of water during construction for dust suppression or potential fire suppression, and this water use will be temporary. Water will be sourced from existing PG&E wells for which the use allotment has been determined through an adjudication process, as discussed in Section 5.10.1.9. The anticipated construction water use is well within PG&E's available allotment. As discussed in Impact a), project construction will not substantially degrade surface or groundwater quality. The project will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and impacts will be less than significant.

5.10.4.4 CPUC Draft Environmental Measures

None.

5.11 Land Use and Planning

This section describes existing conditions and potential impacts on land use resources associated with construction of the project. Operation and maintenance associated with the existing station will not change as a result of the project. The analysis concludes that no impacts on land use will occur. The project's potential effects on land use resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.11-1 and discussed in more detail in Section 5.11.4.

5.11.1 Methodology and Environmental Setting

Aerial photographs, area plans and policies, land use maps, zoning ordinances, and previous environmental impact studies completed at Hinkley Compressor Station were reviewed for the project area, including the following:

- San Bernardino County Policy Plan
- San Bernardino County Code of Ordinances
- San Bernardino County interactive land use map
- West Mojave Plan
- Hinkley Groundwater Remediation Program
- Class II Surface Impoundments 6R and 7R, PG&E Hinkley Compressor Station, Hinkley, Initial Study/ Mitigated Negative Declaration

5.11.1.1 Land Use

According to the LRWQCB, Hinkley Valley was dominated by agricultural uses from the 1930s to the early 1990s (LRWQCB 2012). The agricultural types have varied but consisted primarily of dairy farming and fodder crops. Crop cultivation has declined over the last two decades and land to the south and west of the compressor station is no longer used for agriculture. The existing surrounding land uses in these areas primarily are undeveloped open space and rural residential. There is some agricultural activity and crop production on the parcels of land to the north and east of the compressor station. Scattered rural residences in unincorporated San Bernardino County are to the west and northwest of the project site. Inside the PG&E property boundary, the site includes the compressor station and evaporation ponds, characterized as highly disturbed saltbush scrub vegetation.

The unincorporated community of Hinkley is approximately 2.5 miles northwest of the project site. The western limit of the City of Barstow is approximately 1 mile east of the project site. The City of Barstow includes the communities of Grandview (approximately 3 miles east-southeast of the project site) and Lenwood (approximately 3 miles southeast of the project site).

The San Bernardino Countywide Plan, which serves as the County's general plan, designates the land use at the project site as Rural Living (one dwelling unit per 2.5 acres maximum) (San Bernardino County 2020). The San Bernardino County zoning for the project site is RL-1 (Rural Living – 2.5-acre minimum) (San Bernardino County 2022).

Although the project site is not within the Barstow city limits, it is within Barstow's General Plan sphere of influence (City of Barstow 2015). In the Land Use Element of the Barstow General Plan, the project site is in an area of the sphere of influence designated as Resource Conservation Open Space.

5.11.1.2 Special Land Uses

Per the San Bernardino Countywide Plan, the project site is within the military influence overlay (San Bernardino County 2020), which includes some restrictions on development to avoid encroaching on operations of military installations in the region. Within the overlay, the project site is in a designated Military Influence Area. Marine Corps Logistics Base Barstow, approximately 12 miles east of the project site, is the closest military installation.

5.11.1.3 Habitat Conservation Plan

The project area is within the site governed by the West Mojave Plan (BLM 2004), but it falls outside the designated habitat conservation areas. There are no proposed impacts to habitats covered by the plan (LRWQCB 2012). Also refer to Section 5.4, Biological Resources.

5.11.2 Regulatory Setting

5.11.2.1 Federal

Section 10 of the FESA allows for the creation of HCPs to protect listed and candidate species in connection with the issuance of an Incidental Take Permit for federally listed species (refer to Section 5.4).

5.11.2.2 State

The CPUC has exclusive jurisdiction over the design, siting, installation, operation, maintenance, and repair of natural gas facilities, pursuant to Article XII, Section 8, of the California Constitution. The CPUC is the lead agency for CEQA review for this project and has authority through GO 177 over the discretionary project approval that PG&E seeks.

5.11.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) land use and zoning regulations or discretionary permits except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local land use plans and policies are considered for informational purposes and to assist with the CEQA review process. No such policies or goals associated with land use were identified in local land use plans.

5.11.3 Impact Questions

The project's potential effects on land use and planning were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.11-1 and discussed in more detail in Section 5.11.4.

Table 5.11-1. CEQA Checklist for Land Use and Planning

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

5.11.3.1 Additional CEQA Impact Questions

None.

5.11.4 Potential Impact Analysis

Project impacts related to land use were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. An analysis of impacts to adjacent land uses during construction is included in other sections of this PEA, including Aesthetics, Air Quality, Hazards and Hazardous Materials, Noise, Recreation, and Transportation and Traffic. Because the project will have no impact on land use and planning, APMs have not been included for this section.

5.11.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. In accordance with Appendix G of the CEQA Guidelines, the potential significance of project impacts on land use and planning were evaluated for each of the criteria listed in Table 5.11-1, as discussed in Section 5.11.4.3.

5.11.4.2 Applicant-Proposed Measures

The project will have no impact on land use and planning, and no APMs are included.

5.11.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to land use and planning resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) Would the project physically divide an established community? *No Impact*.

Upgrades to the compressor station will be within the boundaries of the existing facility. No established community will be divided by the project.

b) Would the project 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? *No Impact*.

Upgrades to the compressor station will be within the boundaries of the existing facility, which has a designated land use of Rural Living with a maximum of 1 dwelling unit per 2.5 acres and a zoning designation of RL-1 (Rural Living – 2.5-acre minimum). Utility facilities are conditionally allowed uses in this zoning designation. Project construction and operation will not change the use of the site or impede the implementation of the Policy Plan or its corresponding avoidance or mitigation of environmental effects. No conflict with any land use plan, policy, or regulation will occur.

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan? *No Impact*.

Upgrades to the compressor station will be within the boundaries of the existing facility, which is located within the plan area of the West Mojave Plan that is outside any designated habitat conservation areas. As described in Section 5.4, there are no potential impacts to habitats covered by the plan; the project will not conflict with the West Mojave Plan. No other HCPs or natural community conservation plans apply to the project area; no impact will occur.

5.11.4.4 CPUC Draft Environmental Measures

None.

5.12 Mineral Resources

This section describes existing conditions and potential impacts on mineral resources associated with construction of the project. Operation and maintenance associated with the existing station will not change as a result of the project. The analysis concludes that the proposed project will have no impact on mineral resources. The project's potential effects on mineral resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.12-1 and discussed in more detail in Section 5.12.4

5.12.1 Methodology and Environmental Setting

Information on potential mineral resources was identified using the San Bernardino Countywide Plan, California DOC website, and other published literature and maps.

The CGS publication Open File Report 92-06 identified the area in which the project is located as Mineral Resource Zone (MRZ) 3a, defined as areas containing known mineral occurrences of undetermined mineral resource significance (Miller 1993). San Bernardino County, in its Countywide Plan Mineral Resources Zones policy web map, shows that the project site is in an area designated as a Moderate Potential or Possible Location of Aggregate Resources MRZ Class 3 (San Bernardino County 2020).

The nearest mines to the project site include the following (DOC 2024):

- Best Rock Quarry, an open pit rock, sand, and gravel mine approximately 4 miles east of the project site
- White Hat Dolomite Mine, approximately 6 miles southwest of the project site
- Lynx Cat Mountain Quarry, a rock quarry approximately 8 miles northwest of the project site

No active mining claims, active mines, or resource recovery sites are located within the existing station fenceline or within 0.5 mile of the project site.

5.12.2 Regulatory Setting

5.12.2.1 Federal

No federal regulations related to mineral resources are applicable to the project.

5.12.2.2 State

The California Surface Mining and Reclamation Act of 1975 requires that the State Geologist classify land into MRZs according to the known or inferred mineral potential of the land (PRC Sections 2710–2796).

5.12.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process.

The San Bernardino Countywide Plan Natural Resources Element includes the following mineral resources policy:

- Policy NR-6.1 Mineral resource areas: We prioritize the conservation of land area with mineral resources by prohibiting or discouraging development of land that would substantially preclude the future development of mining facilities in areas classified as MRZ 2a, 2b, or 3a.

5.12.3 Impact Questions

The project's potential effects on mineral resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.12-1 and discussed in more detail in Section 5.12.4.

Table 5.12-1. CEQA Checklist for Mineral Resources

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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?	☐	☐	☐	☒

5.12.3.1 Additional CEQA Impact Questions

None.

5.12.4 Potential Impact Analysis

Project impacts related to mineral resources were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. Because the project will have no impact on mineral resources, APMs have not been included for this section.

5.12.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on aesthetics was evaluated for each of the criteria listed in Table 5.12-1, as discussed in Section 5.12.4.3.

5.12.4.2 Applicant-Proposed Measures

The project will have no impact on mineral resources, and no APMs are proposed.

5.12.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than electrical distribution equipment upgrades will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to mineral resources resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) **Would the project 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? *No Impact*.**

Although the project site is in an area designated by the state and the county as an MRZ, the project site is already in use as a gas compressor station and there are no plans for mining on this site. There are no known active mining claims or active mining operations within 0.5 mile of the project. The project will 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. No impacts will occur.

b) **Would the project 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? *No Impact*.**

The San Bernardino Countywide Plan has designated the area in which the project site is located as a Moderate Potential or Possible Location of Aggregate Resources MRZ. However, there are no known active mineral resource recover sites, mining claims, or active mining operations within the station or within 0.5 mile of the project. The project site is already in use as a gas compressor station and there are no plans for mining on this site. The project will not result in the loss of availability of a locally important mineral resource recovery site; therefore, no impacts will occur

5.12.4.4 CPUC Draft Environmental Measures

None.

5.13 Noise

This section describes existing conditions and potential noise impacts associated with construction of the project. Operation and maintenance activities of the station will not change as a result of the project. The analysis concludes that impacts from construction are temporary and less than significant. The APMs described in Section 5.13.4.2 will reduce potential temporary construction impacts. The project's potential noise-related effects were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.13-7 and discussed in more detail in Section 5.13.4.

Fundamentals of Acoustics

Acoustics is the study of sound, and noise is defined as unwanted sound. Airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure, creating a sound wave. Table 5.13-1 provides the definitions of some acoustical terms used in this chapter.

Table 5.13-1. Definitions of Acoustical Terms

Term	Definition
Ambient Noise Level	The composite of noise from all sources, near and far. The normal or existing level of environmental noise or sound at a given location. The ambient noise level is typically defined by the Leq level.
Background Noise Level	The underlying, ever-present, lower-level noise that remains in the absence of intrusive or intermittent sounds. Distant sources, such as traffic, typically make up the background. The background level generally is defined by the L90 percentile noise level.
Intrusive	Noise that intrudes over and above the existing ambient noise level at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, tonal content, the prevailing ambient noise level, and the sensitivity of the receiver. The intrusive level generally is defined by the L10 percentile noise level.
Sound Pressure (Noise) Level Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 μPa (20 $\mu N/m^2$).
A-Weighted Sound Pressure (Noise) Level (dBA)	The sound level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound (noise) levels in this report are A-weighted.
Equivalent Noise Level (Leq)	The average A-weighted noise level, on an equal energy basis, during the measurement period.
Percentile Noise Level (Ln)	The noise level exceeded during n% of the measurement period, where n is a number between 0 and 100 (for example, L90).
Day-Night Noise Level (Ldn or DNL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 dB from 10:00 p.m. to 7:00 a.m.

Source: adapted from Caltrans 2013 and Caltrans 2015

μPa = micropascal(s)
$\mu N/m^2$ = micronewton(s) per square meter

The most common metric is the overall A-weighted sound level measurement adopted by regulatory bodies worldwide. The A-weighting network mimics the human ear's response to typical environmental sounds. There is consensus that A-weighting is appropriate for estimating the hazard of noise-induced hearing loss. With respect to other effects, such as annoyance, A-weighting is acceptable for typical sounds that are dominated by middle and high frequencies; however, if the noise is unusually high at low frequencies or contains prominent low-frequency tones, the A-weighting may not give a valid measure.

A-weighted sound levels typically are measured or presented as equivalent noise level (Leq), which is defined as the average noise level on an equal energy basis for a stated period of time and is commonly used to measure steady-state sound or noise that is usually dominant, such as highway traffic or equipment operation.

Some metrics used in determining the impact of environmental noise consider the different responses that people have to daytime and nighttime noise levels. During the nighttime, exterior background noises generally are lower than the daytime levels. However, most household noise also decreases at night, so exterior noise becomes more noticeable. Furthermore, most people sleep at night and are sensitive to intrusive noises. The day-night sound level (Ldn) index accounts for greater human sensitivity to nighttime noise levels.

Ldn values are calculated by averaging hourly Leq sound levels for a 24-hour period and applying a weighting factor to nighttime Leq values. The weighting factor, which reflects the increased sensitivity to noise at night, is added to each hourly Leq sound level before the 24-hour Ldn is calculated. To assess noise, the 24-hour day is divided into two time periods, with the following weightings:

- Daytime: 7:00 a.m. to 10:00 p.m. (15 hours), with weighting factor of 0 dB
- Nighttime: 10:00 p.m. to 7:00 a.m. (9 hours), with weighting factor of 10 dB

The two time periods are averaged to compute the overall Ldn value. For a continuous noise source, the Ldn value is easily computed by adding 6.4 dBA to the overall 24-hour noise level (Leq). For example, if the expected continuous noise level from a facility was 60.0 dBA, the resulting Ldn from the facility would be 66.4 dBA. The Community Noise Equivalent Level (CNEL) is similar to the Ldn, but adds an evening weighting factor of 5 dB for the hours from 7:00 p.m. to 10:00 p.m. For a continuous noise source, the CNEL value is computed by adding 6.7 dBA to the overall 24-hour noise level (Leq).

The effects of noise on people can be listed in three general categories:

1. Subjective effects of annoyance, nuisance, and dissatisfaction
2. Interference with activities, such as speech, sleep, and learning
3. Physiological effects, such as startling and hearing loss

Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise as well as the nature of work or human activity that is exposed to the noise source. The health effects of noise-induced hearing loss are largely an occupational hazard and are not relevant to this analysis as it is assumed that workers onsite would follow safety protocols to mitigate their risk of hearing loss.

There is no completely accurate way to measure the subjective effects of noise or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is primarily from the wide variation in individual thresholds of annoyance and habituation to noise. Thus, one way of determining a person's subjective reaction to a new noise is by comparing it to the existing, ambient environment that person has adapted to. In general, the more the level or the tonal (frequency) variations of a noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

Table 5.13-2 shows the relative A-weighted sound levels for common sounds.

Table 5.13-2. Typical A-weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet flyover at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher in the next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	— 20 —	
		Broadcast or recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013

5.13.1 Methodology and Environmental Setting

This section describes methodology and environmental setting.

5.13.1.1 Methodology

Evaluation of potential noise impacts from the project included developing predictions of noise from project construction activities, reviewing county noise standards that would assist with the environmental review, characterizing the existing noise environment, and identifying potential impacts during construction. Existing operation and maintenance activities will continue following project construction; therefore, projections of noise from operations and maintenance activities were not prepared.

Construction Noise

Project construction will use heavy equipment such as bulldozers, compactors, and scrapers. Noise levels from heavy equipment operations were estimated based on data and methods derived from the FHWA's

Roadway Construction Noise Model User's Guide (FHWA 2006) and the Federal Transit Administration's (FTA's) Transit Noise and Vibration Impact Assessment Manual (FTA 2018). The data represent the most recent and comprehensive tabulation of noise from common pieces of heavy equipment. Table 5.13-3 summarizes the construction equipment noise levels.

Table 5.13-3. Construction Equipment Noise Levels from the Roadway Construction Noise Model User's Guide

Equipment Description	Acoustical Usage Factor (%)	Specified Lmax at 50 feet (dBA)	Actual Measured Lmax at 50 feet (dBA)	Actual Data Samples (No.)
All other equipment > 5 hp	50	85	NA	0
Auger drill rig	20	85	84	36
Backhoe	40	80	78	372
Bar bender	20	80	NA	0
Blasting	-	94	NA	0
Boring jack power unit	50	80	83	1
Chain saw	20	85	84	46
Clam shovel (dropping)	20	93	87	4
Compactor (ground)	20	80	83	57
Compressor (air)	40	80	78	18
Concrete batch plant	15	83	NA	0
Concrete mixer truck	40	85	79	40
Concrete pump truck	20	82	81	30
Concrete saw	20	90	90	55
Crane	16	85	81	405
Dozer	40	85	82	55
Drill rig truck	20	84	79	22
Drum mixer	50	80	80	1
Dump truck	40	84	76	31
Excavator	40	85	81	170
Flatbed truck	40	84	74	4
Front end loader	40	80	79	96
Generator	50	82	81	19
Generator (less than 25 kVA, VMS signs)	50	70	73	74
Gradall	40	85	83	70
Grader	40	85	NA	0
Grapple (on backhoe)	40	85	87	1
Horizontal boring hydraulic jack	25	80	82	6
Hydra break ram	10	90	NA	0
Impact pile driver	20	95	101	11
Jackhammer	20	85	89	133

Table 5.13-3. Construction Equipment Noise Levels from the Roadway Construction Noise Model User's Guide

Equipment Description	Acoustical Usage Factor (%)	Specified Lmax at 50 feet (dBA)	Actual Measured Lmax at 50 feet (dBA)	Actual Data Samples (No.)
Person lift	20	85	75	23
Mounted impact hammer (hoe ram)	20	90	90	212
Pavement scarifier	20	85	90	2
Paver	50	85	77	9
Pickup truck	40	55	75	1
Pneumatic tools	50	85	85	90
Pumps	50	77	81	17
Refrigerator unit	100	82	73	3
Rivet buster and chipping gun	20	85	79	19
Rock drill	20	85	81	3
Roller	20	85	80	16
Sand blasting (single nozzle)	20	85	96	9
Scraper	40	85	84	12
Shears (on backhoe)	40	85	96	5
Slurry plant	100	78	78	1
Slurry trenching machine	50	82	80	75
Soil mix drill rig	50	80	NA	0
Tractor	40	84	NA	0
Vacuum excavator (Vac-truck)	40	85	85	149
Vacuum street sweeper	10	80	82	19
Ventilation fan	100	85	79	13
Vibrating hopper	50	85	87	1
Vibratory concrete mixer	20	80	80	1
Vibratory pile driver	20	95	101	44
Warning horn	5	85	83	12
Welder or torch	40	73	74	5

Source: FHWA 2006

kVA = kilovolt(s)-ampere
Lmax = maximum sound level
NA = not applicable
VMS = variable message signs

Decibels cannot be directly added arithmetically (for example, 50 dBA plus 50 dBA does not equal 100 dBA). When two sound levels of equal level are added together, the result will always be 3 dB greater (for example, 50 dBA plus 50 dBA equals 53 dBA, and 70 dBA plus 70 dBA equals 73 dBA). If the difference between the two sources is 10 dBA, the level (when rounded to the nearest whole dB) will not increase (for example: 40 dBA plus 50 dBA equals 50 dBA, and 60 dBA plus 70 dBA equals 70 dBA) (Caltrans 2013).

The decrease in sound level caused by distance from any single sound source normally follows the inverse square law; that is, the sound pressure level changes in inverse proportion to the square of the distance from the sound source. In a large, open area without obstructive or reflective surfaces, a general rule is that at distances greater than approximately the largest dimension of the noise-emitting surface, the sound pressure level from a single source of sound drops off at a rate of 6 dB with each doubling of the distance from the source. Sound energy is absorbed in the air as a function of temperature, humidity, and sound frequency; this attenuation can be up to 2 dB over 1,000 feet (Caltrans 2013). The dropoff rate also will vary based on terrain conditions and the presence of obstructions in the sound's propagation path.

As described by FTA, the average noise level from each piece of equipment is determined by the following equation for geometric spreading:

$$\text{Typical Noise Level at 50 feet} + 10 \times \log(\text{Adjusage}) - 20 \times \log(\text{distance to receptor}/50) - 10 \times G \times \log(\text{distance to receptor}/50)$$

Because specific construction methods or daily schedules for the project have not been determined, and construction is, by its nature, a dynamic activity, the following typical values were used.

Where:

Usage factor (Adjusage) = 1 (such as equipment is operating continuously)

Ground effect factor (G) = 0, representing hard ground (such as a ground condition that does not result in additional attenuation)

The total noise level then becomes solely a function of the type of equipment operating and the distance from the equipment to the noise receptor.

A review of the equipment noise levels presented in Table 5.13-3 indicates that the loudest equipment generally emits noise in the range of 80 to 90 dBA at 50 feet. Noise at any specific receptor is dominated by the closest and loudest equipment. The types, numbers, and duration of equipment anticipated to be used near any specific receptor location will vary over time. Therefore, a typical noise estimate was developed based on the general assumption of multiple pieces of loud equipment operating near each other, with the exception of impact pile driving, which will not be done as part of construction. Specifically, the scenario evaluated uses five pieces of general construction equipment working near each other, as follows:

- One piece of equipment generating a reference noise level of 85 dBA at 50 feet at the edge of the construction or work area
- Two pieces of equipment generating 85 dBA reference noise levels located 50 feet farther away from the edge of construction or work area
- Two more pieces of equipment generating 85 dBA reference noise levels located 100 feet farther away from the edge of construction or work area

To estimate construction noise for this project, the resulting cumulative noise level was estimated from the five pieces of general construction equipment described above operating in general proximity to one another. Table 5.13-4 summarizes the expected average equipment noise levels at various distances from the construction location.

Table 5.13-4. Average Equipment Noise Levels Versus Distance

Distance from Activity (feet)	Average Noise Level (dBA)
50	87
100	83
200	78
400	73
800	67
1,600	62
3,200	56

Vibration

Generally speaking, vibration is energy transmitted in waves through the ground. Because energy is lost during the transfer of energy from one particle to another, vibratory energy is reduced with increasing distance from the source. Human perception of vibration varies with the individual and is a function of physical setting and the type of vibration. Those exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Caltrans has developed guidance on addressing vibration issues associated with construction, operation, and maintenance of transportation projects (Caltrans 2020). Table 5.13-5 outlines typical human response to short-term (transient) source of vibration.

Table 5.13-5. Human Response to Transient Vibration

Human Response	Peak Particle Velocity (inches/second)
Severe	2.0
Strongly Perceptible	0.9
Distinctly Perceptible	0.24
Barely Perceptible	0.035

Source: Caltrans 2020

Caltrans Transportation and Construction Vibration Guidance Manual (2020) notes, "There are no Caltrans or Federal Highway Administration standards for vibration and it is not the purpose of this manual to set standards." Rather, agencies such as Caltrans provide "… a synthesis of these criteria that can be used to evaluate the potential for damage and annoyance from vibration-generating activities." In addition, Caltrans (2020) also notes that, "in most cases, vibration induced by typical construction equipment does not result in adverse effects on people or structures. Noise from the equipment typically overshadows any meaningful ground vibration effects on people."

Construction activities have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude as distance increases. Table 5.13-6 displays vibration levels for typical construction equipment.

Table 5.13-6. Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity (PPV) at 25 feet (in/sec)
Large Bulldozer	0.089
Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: FTA 2018

Bulldozers and other construction equipment will be used in the construction of the project. In addition, heavy trucks will be used to deliver and remove material to and from the site.

5.13.1.2 Environmental Setting

The project area is in the Desert Region of San Bernardino County, north of the Mojave River and southwest of Mount General, approximately 1 mile south of SR 58. As described in Section 5.11, Land Use and Planning, the predominant existing surrounding land uses in these areas primarily are undeveloped open space and rural residential. There is some agricultural activity and crop production on the parcels of land to the north and east of the compressor station. Scattered rural residences in unincorporated San Bernardino County are to the west and northwest of the project site. The project area also includes roadways (including SR 58), a railroad (BNSF Railway), a utility corridor for a major natural gas pipeline, and limited businesses.

The community of Hinkley is approximately 2.5 miles to the northwest of the compressor station. The communities of Grandview and Lenwood are approximately 3 miles to the southeast of the compressor station. The City of Barstow is the closest city to the project, approximately 1 mile to the east.

5.13.1.3 Noise Sensitive Land Uses

No sensitive land uses were identified within 1,000 ft. Residences, schools, hospitals, places of worship, and recreational areas are potentially sensitive to noise and vibration. These locations are regarded as sensitive receptors because they are places where citizens engage in activities that are likely to be disturbed by noise. Commercial and industrial uses are not particularly sensitive to noise or vibration. Agricultural activity and crop production is present on the parcels of land to the north and east of the compressor station. The predominant surrounding land uses to the west and south are undeveloped open space and rural residential. Scattered residences are in the area surrounding the station (Figure 5.13-1). The closest residence to the work area is an isolated residence approximately 1,455 feet to the northwest (REC01). To the east, a residence is located approximately 1,600 feet from the work area and approximately 1,140 feet from the staging area (REC09). The Hinkley Community and Senior Center (REC18) is located approximately 2,700 feet to the west of the work area.

5.13.1.4 Noise Setting

The station is the dominate noise source in the project area because it is a large industrial facility that operates continuously in an area that is predominantly undeveloped open space and rural residential land use. Existing generators at the station are unenclosed and sheltered from the weather by standard (not acoustical) metal buildings, which have large roll up doors and other penetrations that are often left open. Sound measurements outside this building have exceeded 90 dBA.

The closest airport or airfield is Barstow Daggett Airport, located approximately 20 miles southeast of the compressor station, and the closest private airstrip is located approximately 6 miles to the west of the station.

Additional sources of noise in the area include the Barstow Gun Club located immediately south of the station and approximately 1,500 feet from REC09 (Figure 5.13-1). Agricultural activities, located predominantly east of the station, are an occasional source of noise, as are vehicles on SR 58, the closest major road, and trains on the BNSF Railway track. Both transportation corridors are located north of the work area at approximately 1 mile and approximately 1.6 miles, respectively.

Noise monitoring was conducted in the area to support the San Bernardino Countywide Plan update and reported in the San Bernardino Countywide Plan Draft Programmatic Environmental Impact Report (County of San Bernardino 2019). The closest noise monitoring to the project site was a short-term noise monitoring location in a rural residential area in the community of Lenwood, approximately 3 miles southeast of the station. Monitoring was conducted June 13, 2018, and reported as a 10-minute noise level. Resulting noise levels ranged from an Lmin of 37.2 dBA to an Lmax of 71.1 dBA, with an average Leq of 51.1 dBA.

On June 11,2024, PG&E Industrial Hygienist Scott Love conducted a sound level assessment within the station at the compressor building and the generator building. During the survey, two gas compressors and three generators were in operation. The compressors and the generators in operation on a given day vary based on operational needs for that day. Readings were collected outside of each of the two buildings to provide data or noise levels during equipment operation.

The weather was clear with an intermittent light breeze. A direct reading Type 2 Casella 24X Series sound level monitor (SLM), serial number 2901403, was used to evaluate sound levels. The SLM was field calibrated immediately before and after use with a 120 series field calibrator set at 114 dB, at the frequency of 1,000 Hertz (Hz). Both the pre- and post-calibration readings were 114.0 dBA. The SLM was operated in the slow-response, A-weighted mode, in accordance with CalOSHA approved methods. The results of these measurements are summarized in Table 5.13-7.

Table 5.13-7. Sound Level Assessment

Measurement Location	Sound Level (dBa)
Exterior of generator building	76 – 96
Exterior of gas compressor building	77 – 100

5.13.2 Regulatory Setting

This section identifies federal, state, and local laws, policies, and standards for noise.

5.13.2.1 Federal

There are no federal noise standards that are applicable to the proposed project.

5.13.2.2 State

There are no state noise standards that are applicable to the proposed project.

5.13.2.3 Local

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations, respectively. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process.

San Bernardino County Development Code

Daytime construction activities are exempt from the noise limits established in San Bernardino County Ordinance 83.01.080 (San Bernardino County 2014) if they occur between 7:00 a.m. and 7:00 p.m., except for Sundays and federal holidays. The noise standard for emanations from a stationary industrial source (Table 83-2 of Ordinance 83.01.080), as it affects adjacent properties, is 70 dBA Leq for both daytime and nighttime. The exterior noise standard for residential uses, as measured in private yards single-family residential land uses, is 60 dBA (refer to Table 83-3 of Ordinance 83.01/080).

San Bernardino Countywide Plan Hazards Element

The Hazards Element of the San Bernardino Countywide Plan (2022) provides direction to address risks to residents, business, workers, and visitors. Specific goals and policies that may be informative to the project include the following:

- Goal HZ-2 Human-Generated Hazards. People and the natural environment are protected from exposure to hazardous materials, excessive noise, and other human-generated hazards.
  - Policy HZ-2.7 Truck delivery areas. We encourage truck delivery areas to be located away from residential properties and require associated noise impacts to be mitigated.
  - Policy HZ-2.9 Control sound at the source. We prioritize noise mitigation measures that control sound at the source before buffers, soundwalls, and other perimeter measures.

5.13.3 Impact Questions

The project's potential noise-related effects were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.13-8 and discussed in more detail in Section 5.13.4.

Table 5.13-8. CEQA Checklist for Noise

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Generate 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) Generate excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒

Table 5.13-8. CEQA Checklist for Noise

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	☐	☐	☐	☒

5.13.3.1 Additional CEQA Impact Questions

None.

5.13.4 Potential Impact Analysis

Project impacts related to noise were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. The APMs discussed will further minimize potential less-than-significant impacts.

5.13.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to noise were evaluated for each of the criteria listed in Table 5.13-4, as discussed in Section 5.13.4.3.

5.13.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

APM NOI-1: General Construction Noise Management

PG&E will employ standard noise-reducing construction practices such as the following:

- Comply with manufacturer's muffler requirements on all construction equipment engines and ensure exhaust mufflers are in good condition.
- Turn off construction equipment when not in use, where applicable.
- Include noise control requirements for construction equipment and tools in specifications provided to construction contractors to the maximum extent practicable, including performing all work in a manner that minimizes noise.

APM NOI-2: Noise Minimization with Portable Barriers

Portable air compressors and other small stationary equipment used during construction of PG&E project components will be shielded with portable barriers if appropriate and in response to a noise complaint.

APM NOI-3: Noise Minimization with Quiet Equipment

Quiet equipment will be used during construction of PG&E project components whenever possible (for example, equipment that incorporates noise-control elements into the design, such as quiet model compressors or generators [75 dBA at 20 feet], can be specified).

APM NOI-4: Noise Minimization through Direction of Exhaust

When in proximity to noise-sensitive uses, equipment exhaust stacks and vents will be directed away from those noise-sensitive uses where feasible.

APM NOI-5: Nighttime Noise Disruption Minimization through Sensitive Receptor Notification

In the event that nighttime construction is necessary – for instance, if certain activities need to continue to completion and the noise of the construction equipment expected to be in use is audible at the station fenceline over the ambient noise of the station operation – sensitive receptors within 0.5 mile of the work area will be notified in advance by mail, personal visit, phone call, or door hanger and will be informed of the expected work schedule.

APM NOI-6: Noise Minimization Equipment Specification

PG&E will specify general construction noise reduction measures that require the contractor to ensure that all equipment is in good working order, adequately muffled, and maintained in accordance with the manufacturers' recommendations and that stationary equipment such as the temporary generators be in sound-reducing acoustic enclosures that limit noise, for example, to 75 dBA at 20 feet.

5.13.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. No new transformer banks or any other new noise-producing equipment will be included as part of the project. No changes to buildings, structures, or fencing will occur. As such, impacts related to noise resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) **Would the project generate 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? *Less-than-Significant Impact*.**

Daytime construction activities are exempt from the noise limits established in San Bernardino County Ordinance 83.01.080 if they occur between 7:00 a.m. and 7:00 p.m., from Monday through Saturday. The closest sensitive receptor to the work area is approximately 1,455 feet to the northwest. Based on typical construction sound levels described in Section 5.13.2.1, the estimated noise level for construction activities at this receptor will be approximately 63 dBA. To the east, a residence is located approximately 1,140 feet from the staging area. Using the noise level for typical construction activities, the estimated noise level at this receptor will be approximately 65 dBA. Impacts from construction noise will be less than significant. Implementation of APM NOI-1 through APM NOI-6 will further minimize construction noise impacts.

Existing operational sources of noise include 4 generators and 12 large compressors. Existing generators at the station are unenclosed and sheltered from the weather by standard (not acoustical) metal buildings, which have large roll up doors and other penetrations that are often left open. Sound measurements outside this building have exceeded 90 dBA. The compressors cannot operate independently of the generators. The compressors are expected to continue to be the dominant station noise source (the highest sound level around the generators was 99 dBA compared to 102 dBA by the compressors and there are more compressors (12) than existing permanent generators (4)).

When these existing permanent generators are turned off during certain construction activities, supplemental power will be provided by temporary portable generators. These temporary generators are housed within specially designed low-noise enclosures. The average sound level near the temporary generators is expected to be 81 dBA, which is less than the Occupational Safety and Health Administration action level for hearing protection (85 dBA) and the sound level will decrease to approximately 65 dBA at 60 feet (similar to the sound level of normal conversation). These acoustically enclosed temporary generators will be powering the existing noisy compressors, which are expected to remain the dominant sound source. While there are more acoustically enclosed temporary generators (up to 22) than existing generators (4), they are substantially quieter (81 dBA compared to as high as 99 dBA). The influence of the number of sources can be calculated by 10 × log (number of sources). There are 4 existing generators; thus, the factor for the existing number of generators would be 10 × log (4) = 6 dB. There are up to 22 temporary generators; thus, the factor for temporary generators would be 10 × log (22) = 13 dB. All things being equal (if the existing and temporary generators had the same sound level), the increase from 4 to 22 generators would be 7 dB (13 dB – 6 dB). In this case, the temporary generators are expected to be at least 10 dB quieter (81 dBA compared to up to 99 dBA). This means that, although there are more temporary generators, they are substantially quieter than the existing generators and the overall sound level from the generators during construction is not expected to increase.

As previously noted, the existing compressors will continue to operate and are expected to remain the loudest and dominant sound source. Therefore, the operation of the temporary generators while the existing generators are off is not expected to yield an increase in sound levels at noise sensitive receptors. As noted previously, daytime construction activities, which includes the temporary generator use, are expect from noise limits provided that they occur between 7:00 a.m. and 7:00 p.m., from Monday through Saturday. In addition, even if the temporary generators are used during nighttime hours or on Sundays, generator noise will be below the noise standard for emanations from a stationary industrial source of 70 dBA Leq. Refer to Figure 3.5-2 for expected locations of temporary generators within the project work area.

b) Would the project generate excessive groundborne vibration or groundborne noise levels? *No Impact*.

Project excavation and trenching activities will be conducted using handheld equipment and supported by a vacuum truck. The temporary construction activities associated with the project do not include pile driving or other substantial sources of vibration. Construction activities (for example, movement of heavy construction equipment or delivery trucks) may generate localized groundborne vibration and noise. The table presented in Section 5.13.1.1 shows that barely perceptible vibration will be limited to within 25 feet of the construction equipment. The nearest residential receptor is located 1,455 feet from the construction work area; therefore, project construction will result in no impact regarding the exposure of persons to, or generation of, excessive groundborne vibration.

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? *No Impact*.

Construction of the project will not occur within an airport land use plan area and will occur at a distance greater than 2 miles from a public airport or public use airport; therefore, the project will result in no impact under this criterion.

5.13.4.4 CPUC Draft Environmental Measures

None.

5.14 Population and Housing

This section describes existing conditions and potential impacts on population and housing associated with construction of the project. Operation and maintenance activities of the station will not change as a result of the project. The analysis concludes that the project will have no impact on population and housing. The project's potential effects on population and housing were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.14-1 and discussed in more detail in Section 5.14.4.

5.14.1 Methodology and Environmental Setting

To evaluate potential effects on population and housing resources, the housing elements of the San Bernardino County Policy Plan, associated environmental review documents, hotel vacancy data (AHLA 2023), and state and federal demographic data were reviewed. The data and project information were evaluated to assess impacts according to the CEQA significance criteria in Table 5.14-1. The population and growth data and the project purpose and need were reviewed for use in evaluating whether the project could indirectly induce growth or displace housing or people. This section evaluates potential project impacts from both the construction phase and the operation and maintenance phase.

5.14.1.1 Population Estimates

According to the U.S. Census Bureau (U.S. Census Bureau 2024), the population of San Bernardino County in July 2022 was 2,194,908, a 0.6 percent increase since 2020. Barstow, the nearest incorporated city, had a population of 25,231 in 2022, a decrease of 0.7 percent since 2020 (U.S. Census Bureau 2024). San Bernardino County projects a 16 percent growth in the population of the County between 2020 and 2045 (San Bernardino County 2024). According to the City of Barstow 2015–2020 General Plan (City of Barstow 2015), the population of Barstow was expected to grow by 2 percent annually through 2020. The Barstow General Plan has not been updated since 2015, although CEQA review for the proposed plan update was under way as of 2024.

5.14.1.2 Housing Estimates

There were 666,362 housing units in San Bernardino County in 2020, with the unincorporated area containing 98,783 households (San Bernardino County 2022). The County's Housing Element, adopted September 2022, projects the number of households in the County to increase to 749,286 households (a 12 percent growth), and 104,540 households (a 6 percent growth) for the unincorporated area of San Bernardino County (San Bernardino County 2022). In the unincorporated areas of the desert region, where the project site is located, 43,092 households were present in 2016 (San Bernardino County 2019).

The City of Barstow had 8,312 households in 2019 (City of Barstow 2024). Per the city's Housing Element, Barstow is projected to have 12,430 housing units by the year 2040 (City of Barstow 2019).

5.14.1.3 Approved Housing Developments

No proposed housing developments were identified within 1 mile of the project area.

5.14.2 Regulatory Setting

No regulatory background information is relevant to addressing potential project-related impacts on population and housing.

5.14.3 Impact Questions

The project's potential effects on population and housing were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.14-1 and discussed in more detail in Section 5.14.4.

Table 5.14-1. CEQA Checklist for Population and Housing

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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?	☐	☐	☐	☒

5.14.3.1 Additional CEQA Impact Questions

None.

5.14.4 Potential Impact Analysis

Project impacts related to population and housing were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. Because the project will have no impact on population and housing, APMs have not been included for this section.

5.14.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on population and housing were evaluated for each of the criteria listed in Table 5.14-1, as discussed in Section 5.14.4.3.

5.14.4.2 Applicant-Proposed Measures

The project will have no impact on population and housing, and no APMs are proposed.

5.14.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to population and housing resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) Would the project 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)? *No Impact*.

Upgrades to the compressor station will be within the boundaries of the existing facility. Up to approximately 18 construction workers will be required to complete construction. These construction workers will be hired from the local labor force and will commute to the project site daily.

When complete, the station will continue to be operated by existing staff. The upgrades to the compressor station are to replace aging infrastructure and address safety issues and system reliability and maintainability. All upgrades will be performed within the existing facility. The upgrades will not increase the supply of gas in the service area. The project will not result in any direct or indirect impact to population growth in the area surrounding the project.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? *No Impact*.

Upgrades to the compressor station will be within the boundaries of the existing facility. No person or housing will be displaced as a result of the project.

5.14.4.4 CPUC Draft Environmental Measures

None.

5.15 Public Services

This section describes existing conditions and potential impacts on public services associated with construction of the project. Operations and maintenance associated with the existing station will not change as a result of the project. The analysis concludes that the project will have no impact on public services. Public services include fire and emergency protection, police protection, and maintenance of public facilities such as schools and parks. Emergency access is discussed in Section 5.17, Transportation and Traffic. Temporary construction-related impacts on schools and parks, such as from dust and noise, are discussed in Sections 5.3, Air Quality, and 5.13, Noise, respectively. Potential impacts to parks and recreational facilities are discussed in Section 5.16, Recreation. The project's potential effects on public services were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.15-1 and discussed in more detail in Section 5.15.4.

5.15.1 Methodology and Environmental Setting

This section was prepared based on reviews of the *San Bernardino Countywide Plan* (San Bernardino County 2020) and the *City of Barstow General Plan* (Barstow 2015). Online maps and websites were reviewed to identify and collect information on police services, fire services, schools, and parks in the vicinity of the project.

5.15.1.1 Service Providers

The San Bernardino County Sheriff's Department (SBSD) provides law enforcement services to all unincorporated areas of the county, including the project site. Currently, the SBSD consists of 2,094 sworn personnel (SBSD 2024). The nearest sheriff's office to the project site is located at 225 East Mountain View Street in Barstow, approximately 11 miles east of the project site.

The City of Barstow Police Department provides law enforcement services in the City of Barstow and surrounding communities (Barstow 2024a). The police department employs 40 sworn officers. The station is at 220 East Mountain View Street in Barstow, approximately 11 miles east of the project site.

The San Bernardino County Fire Protection District (SBCFPD) is a full-service fire department providing emergency services to all areas of the county (SBCFPD 2024). SBCFPD employs 249 firefighters and 19 paid-call firefighters and has a fleet of 97 fire engine vehicles (SBCFPD 2022). The SBCFPD is divided into regional service zones. The project is within the North Desert Regional Service Zone. Approximately 88 percent of the population is within a 10-minute drive time of a fire station (LAFCO 2020). Station 56 is the nearest county fire station to the project site at 37284 Flower Road in Hinkley, approximately 3 miles from the project site.

The City of Barstow Fire Protection District (BFPD) provides fire, emergency medical, hazardous materials, technical rescue, community preparedness, public education, and fire prevention services in the City of Barstow (Barstow 2024b). As presented in its Strategic Operations Plan PowerPoint presentation, BFPD currently employees 18 staff and has two fire engines (BFPD 2019). Station 363 is the nearest BFPD fire station to the project site. It is at 2600 Main Street in Barstow, approximately 5 miles from the project site.

The school district nearest the project site is the Barstow Unified School District (BUSD), which has seven elementary schools, three schools serving middle-school level students, two high schools, and one adult school (BUSD 2024). In addition, several daycare facilities and several charter and private schools, including the Mojave River Academy and Concordia Christian School, are in Barstow. No schools are located within 0.25 mile of the project.

No parks are located within 1 mile of the project site. There are several federal and state park facilities within San Bernardino County, none of which are within the project area. The San Bernardino County Regional Parks District (SBCRPD) operates nine parks, one trail, and one preserve (SBCRPD 2024), none of which are within the project area. The City of Barstow owns and operates several parks and recreation facilities within city limits. The nearest of these is Jasper Park, approximately 3 miles from the project site.

The Barstow Community Hospital is located approximately 8 miles east of the project site and provides a 24-hour emergency room (Barstow Community Hospital 2024).

County and City of Barstow service providers and facilities near the project are shown on Figure 5.15-1.

5.15.2 Regulatory Setting

No regulatory background information relevant to the project was identified for public services.

5.15.3 Impact Questions

The project's potential effects on public services were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.15-1 and discussed in more detail in Section 5.15.4.

Table 5.15-1. CEQA Checklist for Public Services

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

5.15.3.1 Additional CEQA Impact Questions

None.

5.15.4 Potential Impact Analysis

Project impacts related to public services were evaluated against the CEQA significance criteria and are discussed in the following subsections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. Because the project will have no impact on public services, APMs have not been included for this section.

5.15.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on aesthetics was evaluated for each of the criteria listed in Table 5.12-1, as discussed in Section 5.12.4.3.

5.15.4.2 Applicant-Proposed Measures

The project will have no impact on public services resources, and no APMs are proposed.

5.15.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to public services resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) Would the project 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 following public services:

Project construction will result in a temporary, short-term increase of up to approximately 18 construction workers. Although construction workers traveling to the project area may use existing public services or amenities, this potential increase in demand will be minimal and temporary and will not require new or altered government facilities. The project is contained within the existing station facility, so there will be no displaced populations. The project will not close roads or otherwise impede ingress and egress of emergency vehicles. The project will not include development of new residential units that will directly or indirectly increase population; therefore, no increase in the demand for public services in the area will occur. The project will not directly or indirectly induce growth or create a need for additional public services. Furthermore, no new or altered public facilities are needed. Therefore, no impact will occur.

i) Fire protection. *No Impact*.

The project will not require road closures during construction and, therefore, will have no impact to fire response times. There will be no increase in the workforce or population that will trigger the need for new or altered fire protection facilities that could result in environmental impacts. No impact will occur.

ii) Police protection. *No Impact*.

The project will not require road closures during construction and, therefore, will have no impact to law enforcement response times. Therefore, there will be no increase in the workforce or population that will trigger the need for new or altered police protection facilities that could result in environmental impacts. No impact will occur.

iii) Schools. *No Impact*.

The project will not include development of new residential units or services. The project will not cause a demand for new or altered schools that will affect school enrollment or performance objectives. No impact will occur.

iv) Parks. *No Impact*.

The project will not directly affect parks because there are none on or near the project site. No new or altered park facilities will be required to serve workers during construction. No impact will occur.

v) Other public facilities. *No Impact*.

The project will not include development of new residential units or services. The project will not directly or indirectly induce growth or create need for additional public services, including hospitals. Therefore, no impact will occur.

5.15.4.4 CPUC Draft Environmental Measures

None.

5.16 Recreation

This section describes existing conditions and potential impacts on recreational resources associated with construction of the project. The project will not introduce new housing or a significant number of jobs into the area that could increase the use of existing parks and will not require the introduction of new park facilities. Operation and maintenance activities of the existing station will not change as a result of the project. This section concludes that no impacts will occur for recreational resources. The project's potential effects on recreational resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.16-1 and discussed in more detail in Section 5.16.4.

5.16.1 Methodology and Environmental Setting

5.16.1.1 Recreational Setting

Recreational resources include state, local, and regional parks. To identify parks and recreation facilities within 0.5 mile of the project, the following resources were reviewed: aerial maps, the City of Barstow Parks and Recreation Division website, San Bernardino Countywide Plan Draft Programmatic EIR, the LRWQCB EIR for Comprehensive Groundwater Cleanups, and the websites for the BLM and the County of San Bernardino.

Recreational opportunities in the county usually occur on open space lands and consist primarily of water sports, hiking, bicycling, equestrian activities, off-road vehicle recreation, fishing, camping, and hunting (LRWQCB 2013). The closest municipal parks are Jasper Park and Lenwood Park located approximately 3 miles southeast of the project in the City of Barstow, California (Google Earth 2024). Farther away are extensive federal lands under BLM jurisdiction that can be used for recreation (BLM 2024). These include Mojave National Preserve, approximately 50 miles from the project, which encompasses more than 1.5 million acres and includes opportunities for multiple recreational activities.

Recreation facilities within 1 mile of the project include the following (also refer to Figure 5.16-1):

- The Barstow Gun Club is approximately 800 feet from the compressor station. The gun club is a shooting range that is open to the public on Sundays by appointment (Barstow Gun Club Facebook page 2024). The gun club property is owned by PG&E and is approximately 5,000 square feet in size (San Bernardino County Assessor 2024).
- Hinkley Community and Senior Center, situated on a 7-acre property owned by the county, is approximately 0.5 mile to the west of the project site (San Bernardino County Assessor 2024). It is open to all citizens aged 18 and older and is a center for congregation, Meals on Wheels, and community activities (Senior Center Resources 2024).

5.16.2 Regulatory Setting

No federal or state regulations related to recreational resources are applicable to the project.

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process. No local regulations related to recreational resources are applicable to the project.

5.16.3 Impact Questions

The project's potential effects on recreational resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.16-1 and discussed in more detail in Section 5.16.4.

Table 5.16-1. CEQA Checklist for Recreation Resources

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

5.16.3.1 Additional CEQA Impact Questions

The project's potential effects on recreational resources also were evaluated using the CPUC's Additional CEQA Impact Questions for Recreation in the *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* (CPUC 2019). These additional impact questions are evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.16-2 and discussed in more detail in Section 5.16.4.2.

Table 5.16-2. Additional CEQA Impact Questions for Recreation Resources

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Reduce or prevent access to a designated recreation facility or area?	☐	☐	☐	☒
b) Substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?	☐	☐	☐	☒
c) Damage recreational trails or facilities?	☐	☐	☐	☒

5.16.4 Potential Impact Analysis

Project impacts related to recreational resources were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase because existing station operation and maintenance activities will not change. Because the project will have no impact on recreation facilities, APMs have not been included for this section.

5.16.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on recreation were evaluated for each of the criteria listed in Table 5.15-1, as discussed in Section 5.15.4.3.

5.16.4.2 Applicant-Proposed Measures

The project will have no impact on recreation facilities and no APMs are proposed.

5.16.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to recreational uses resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

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? *No Impact*.**

The project will not increase the use of existing neighborhood and regional parks or other recreational facilities. No population growth, either direct or indirect, that could increase demand for parks or recreational amenities is associated with construction or operation of the project (refer to Section 5.14). Construction and operation of the project will not impede access to or use of existing parks and recreational facilities.

b) **Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? *No Impact*.**

The project will not include recreational facilities or require the construction or expansion of recreational facilities. Implementation of the project includes improvements to an existing industrial facility and does not include the construction, expansion, or removal of a recreational facility.

5.16.4.4 Additional CEQA Impact Questions

a) **Would the project reduce or prevent access to a designated recreation facility or area? *No Impact*.**

All upgrades to the Hinkley Compressor Station will be conducted within the existing compressor station perimeter fenceline. Access to the recreational facilities near the project will remain open. Construction vehicles may temporarily affect traffic on nearby roads, but construction and operation will not require closure of lanes or roads. No impact will occur.

b) Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas? *No Impact*.

All upgrades to the Hinkley Compressor Station will be conducted within the existing compressor station facility. The station does not contribute to the value of any recreational facility. No changes to the scenic area of any recreational, biological, cultural, or geological area will occur.

c) Would the project damage recreational trails or facilities? *No Impact*.

All upgrades to the Hinkley Compressor Station will be conducted within the existing station boundaries. The nearest recreational facility is approximately 800 feet from the project site and although located on PG&E-owned property, the club is on the opposite side of Highcrest Road and outside the compressor station fenceline. No impact will occur to recreational trails or facilities.

5.16.4.5 CPUC Draft Environmental Measures

None.

5.17 Transportation

This section describes existing conditions and potential impacts on transportation from construction and operation of the project. The analysis concludes that, although traffic conditions will be temporarily affected by project construction, there will be less-than-significant impacts to transportation from project-related activities. The project's potential effects on transportation and traffic were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines.

5.17.1 Methodology and Environmental Setting

This section describes the vehicles that will be used during construction for worker commutes and to deliver equipment and materials. The existing network of paved public roads will be used to access the project site. Routes used will vary depending on the origin of the worker or truck and the type of activity.

Traffic data and other transportation system information were obtained from existing documentation including maps, a countywide traffic study, literature searches, local transit information, and aerial photographs. Annual average daily traffic (AADT) volumes for 2021 for state roadways in the study area were obtained from the Caltrans website (Caltrans 2021).

5.17.1.1 Circulation System

The project is within an unincorporated rural area of San Bernardino County. SR 58, also known as the Mojave-Barstow Highway or the Barstow-Bakersfield Highway, is the primary regional roadway in the project area. It originates east of the project in Barstow at I-15 and extends west to Mojave and Bakersfield. Regionally, SR 58 provides a connection between Barstow, Mojave, and Bakersfield. Locally, SR 58 is the main access route to the community of Hinkley from both the east and west. Local roadways near or connecting to the project include Community Boulevard, Hinkley Road, Lenwood Road, Aquarius Road, and Fairview Road.

5.17.1.2 Existing Roadways and Circulation

Local roadways and state highways are shown on Figure 5.17-1. Near the project, SR 58 is a four-lane state highway. The speed limit for the portion of the highway that runs closest to the project is 55 miles per hour (San Bernardino County 2007). SR 58 is approximately 1 mile north of the project. Table 5.17-1 shows AADT on SR 58 near the project area. AADT data for 2021 was the most recent available from the online Caltrans Traffic Census Program (Caltrans 2021). Data for 2018 also is shown in Table 5.17-1 to represent traffic before the COVID 19 pandemic, as traffic levels in 2021 still may have been impacted by the pandemic.

Table 5.17-1. Annual Average Daily Traffic on State Route 58 in the Project Area (Data for 2021 and 2018)

Highway	Count Location	Back AADT 2021	Back AADT 2018	Ahead AADT 2021	Ahead AADT 2018
SR 58[a]	Iron Wash Bridge west of Hinkley (postmile 20.635)	15,200	12,000	15,200	12,000
SR 58[a]	Lenwood Road near Barstow (postmile 30.387)	15,200	12,500	17,000	13,500
SR 58[a]	West Main Street, Barstow (postmile 33.652)	17,000	14,000	17,000	14,000

Table 5.17-1. Annual Average Daily Traffic on State Route 58 in the Project Area (Data for 2021 and 2018)

Highway	Count Location	Back AADT 2021	Back AADT 2018	Ahead AADT 2021	Ahead AADT 2018
SR 58[b]	West of Hinkley Road	13,111	NA[c]	NA[c]	NA[c]

[a] from Caltrans 2021. The 2021 data is the latest information available from Caltrans.

[b] from San Bernardino County 2019, Appendix L, Transportation Impact Analysis; data provided for average daily traffic

[c] Data unavailable

AADT = annual average daily traffic (total traffic volume for the year divided by 365 days)
Ahead AADT = traffic north or east of the count location
Back AADT = traffic south or west of the count location

Local roadways in the project area that are maintained by San Bernardino County and their descriptions include the following (San Bernardino County 2020, 2024):

- **Fairview Road:** a 21-foot-wide local street with no land markings that that runs north-south on the west side of the station; it is both paved (by the compressor station and to the north) and earth or stabilized earth to the south
- **Community Boulevard:** an east-west, two-lane, 22-foot-wide, paved local street, approximately 440 feet north of the station
- **Hinkley Road:** a north-south, two-lane, 22-foot-wide, secondary highway, approximately 1.5 miles west of the station
- **Lenwood Road:** a north-south, two-lane, 23-foot-wide, major highway, approximately 2.2 miles east of the station

As of 2017, all roads in the project area were performing at an acceptable level of service (LOS) (San Bernardino County 2019). The nearest road not performing at an acceptable level of service was the National Trails Highway (Historic Route 66) east of Barstow.

5.17.1.3 Transit and Rail Services

Victor Valley Transit Authority (VVTA) is a transit operator in San Bernardino County that provides bus services in the Victor Valley, including Barstow and Hinkley. VVTA Bus Route 28 (Barstow-Hinkley-Helendale) provides transit service to the area surrounding the compressor station approximately every three hours on weekdays and three times per day on weekends (VVTA 2024). Bus Stop 61079, at the intersection of Riverview Road and Hinkley Road, is the closest bus stop to the project (approximately 1.6 miles away) (VVTA 2024). The portion of Bus Route 28 in the project area. The nearest bus stops to the project are shown on Figure 5.17-1.

Paratransit services are offered in the project area but do not follow fixed routes or schedules. Paratransit services consist of vans or mini-buses that provide on-demand curb-to-curb service from any point of origin to any destination within the service's specified service area. Barstow Area Transit provides its Dial-A-Ride Paratransit, a shared-ride transportation service, within 0.75 mile of fixed-route bus service in the greater Barstow area. VVTA's Direct Access service requires a reservation 1 to 14 days in advance and charges fares based on zones (VVTA 2024).

The nearest rail line is located approximately 1.6 miles to the north of the project and runs parallel to Santa Fe Avenue. Another rail line is located approximately 2.8 miles to the southeast of the project.

BNSF Railway, Union Pacific Railroad, Trona Railway, and Arizona and California Railroad operate on the rail lines in the county (San Bernardino County 2019). The lines connect to the BNSF Railway Barstow Yard approximately 4.3 miles east of the project. Refer to Figure 5.17-1. No commuter rail lines are available in the vicinity of the project area.

5.17.1.4 Bicycle Facilities

No bicycle facilities are available in the vicinity of the project. The nearby roadways, although they may be used by bicyclists, do not include bicycle paths and are not designated as Class 1 to 3 bicycle routes by San Bernardino County (San Bernardino County 2019).

5.17.1.5 Pedestrian Facilities

Based on review of aerial imagery, no pedestrian sidewalks or facilities are near the project, including on local roads leading to the project site.

5.17.1.6 Vehicle Miles Traveled

Table 5.17-2 shows a summary of the 2019 VMT and VMT per capita in San Bernardino County (SCAG 2024). San Bernardino County daily VMT represents approximately 14 percent of the daily VMT in the six-county Southern California Association of Governments (SCAG) area.

Table 5.17-2. 2019 VMT Summary for San Bernardino County

A.M. Peak Period VMT	P.M. Peak Period VMT	Daily VMT	Per Capita Daily VMT[a]
11,945,291	16,680,845	62,790,479	28.87

Source: SCAG 2024

[a] Based on a 2019 county population of 2,175,000

5.17.2 Regulatory Setting

5.17.2.1 Federal

No federal regulations pertaining to transportation are applicable to the proposed project.

5.17.2.2 State

Caltrans owns the ROW for state facilities, including any on- and off-ramps that provide access to the project area. Any project-related work within state ROW requires an encroachment permit from Caltrans. Caltrans also is the administering agency for regulations related to traffic safety, including licensing drivers, limiting weights and loads, transporting hazardous and combustible materials, and safely operating vehicles.

Senate Bill 743

In December 2018, the CEQA Guidelines were updated to incorporate SB 743. As a result, the guidelines (Section 15064.3) shift the focus of a CEQA analysis of transportation impacts away from quantification of automobile delay to focus on VMT to determine significance. VMT refers to the amount and distance of automobile travel attributable to a project, sometimes expressed as an average per trip or per person. Subdivision (b)(3), Qualitative Analysis, recognizes that lead agencies may not be able to quantitatively estimate VMT for every project type and indicates that a qualitative analysis may be appropriate.

5.17.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and certified unified program agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process.

The San Bernardino Countywide Plan includes Goal TM-1 Roadway Capacity for unincorporated areas to be served by roads with capacity that is adequate for residents, businesses, tourists, and emergency services (San Bernardino County 2020). This goal includes Policy TM-1.1 regarding roadway LOS. The policy requires county roadways be built to achieve a minimum LOS C in the North and East Desert Regions.

5.17.3 Impact Questions

The project's potential effects on transportation were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.17-3 and discussed in more detail in Section 5.17.4.

Table 5.17-3. CEQA Checklist for Transportation

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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 Section 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?	☐	☐	☐	☒

5.17.3.1 Additional CEQA Impact Questions

The project's potential effects on transportation also were evaluated using the CPUC's Additional CEQA Impact Questions for Transportation in the *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* (CPUC 2019). These additional impact questions are evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.17-4 and discussed in more detail in Section 5.17.4.

Table 5.17-4. Additional CEQA Impact Questions for Transportation

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations?	☐	☐	☐	☒
b) Interfere with walking or bicycling accessibility?	☐	☐	☐	☒
c) Substantially delay public transit?	☐	☐	☐	☒

5.17.4 Potential Impact Analysis

Project impacts related to transportation were evaluated against the CEQA significance criteria and are discussed in the following sections. This section evaluates potential project impacts during the construction phase. The project will have less-than-significant impacts on transportation, and no APMs have been included for this section.

5.17.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to transportation were evaluated for each of the criteria listed in Tables 5.17-3 and 5.17-4, as discussed in Section 5.17.4.

5.17.4.2 Applicant-Proposed Measures

The project will have less-than-significant impacts to roadways or transportation facilities, and no APMs are proposed.

5.17.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to transportation resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? *No Impact*.

Project construction will last approximately 23 months and will result in a minor, temporary increase in local traffic because of construction-related workforce traffic and equipment and material deliveries. Up to approximately 18 construction workers and one vendor or delivery driver are expected to be accessing the site each day during construction. Construction traffic primarily is expected to use SR 58, Hinkley Road, and Community Boulevard for access to the project site. The nominal and temporary increase in traffic will be accommodated on existing roads and highways in the project area and will not interfere with the county's policies regarding LOS.

All project construction activity including staging will be within the boundaries of the existing compressor station. Access to the work area and staging area will be from the existing main station entrance on Fairview Road. No closure of roads or lanes is planned. No pedestrian, bicycle, or transit facilities are located on or near the project and none would be affected by the project. Therefore, the project will not conflict or be inconsistent with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? *Less-than-Significant Impact*.

In December 2018, the California Natural Resources Agency updated the CEQA Guidelines to incorporate Senate Bill 743. As a result, CEQA Guidelines Section 15064.3 shifts the focus of a CEQA analysis of transportation impacts away from quantification of automobile delay to focus on VMT to determine the significance. VMT refers to the amount and distance of automobile travel attributable to a project.

CEQA Guidelines Section 15064.3, subdivision (b) focuses on specific criteria (VMT) for determining the significance of transportation impacts. It is further divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology. The proposed project would be categorized under subdivision (b)(3), qualitative analysis, which recognizes that lead agencies may not be able to quantitatively estimate VMT for every project type and indicates that a qualitative analysis of construction traffic may be appropriate. Because the project will generate only temporary construction-related traffic, a qualitative analysis of transportation impacts related to VMT was used.

Construction of the project may result in a temporary increase in VMT as a result of construction-related workforce traffic and equipment and material deliveries. The VMT for the proposed project construction-related vehicle trips would depend on several factors, including the origin of construction worker commute trips (for example, distance from their homes or temporary lodging to the construction site), origin of materials and equipment deliveries to the construction site, and distance to landfills or other disposal sites from the construction site. The construction vehicle trips and associated VMT would be temporary. When construction is completed, construction-related traffic will cease and VMT levels will return to preexisting conditions. The project will not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Therefore, the impact will be less than significant.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? *No Impact*.

All construction activities and project upgrades will be within the boundaries of the existing compressor station. During construction, the project will not modify or close lanes on any roadways. The project does not include new design features, geometric alterations, or other road modifications. Construction vehicles will have similar movements and turning radii as existing operational equipment currently accessing the station; no impacts to traffic operations are expected. Therefore, the project will not increase hazards due to a geometric design feature or incompatible uses, and no impact will occur.

d) Would the project result in inadequate emergency access? *No Impact*.

All construction activities and project upgrades will be within the boundaries of the existing compressor station. Up to approximately 18 construction workers and one vendor or delivery driver are expected to be accessing the site each day during construction. No closure of roads or lanes is planned. The area is sparsely developed and the grid of roads in the area provides emergency access routes. No impact will occur.

5.17.4.4 Additional CEQA Impact Questions

a) Would the project create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations? *No Impact*.

There are no pedestrian walkways or bicycle paths and no transit facilities on or near the project. All construction activities and project upgrades will be conducted within the boundaries of the compressor station. The project will not modify any roadways and will not affect any pedestrian, bicycle, or transit facilities. No impact will occur.

b) Would the project interfere with walking or bicycling accessibility? *No Impact*.

All construction activities and project upgrades will be conducted within the boundaries of the compressor station. There are no pedestrian walkways or bicycle paths on or near the station and none will be affected by the project. No interference with walking or bicycling will occur. No impact will occur.

c) Would the project substantially delay public transit? *No Impact*.

Although construction traffic may use roads also used by local transit, the level of construction traffic is minimal and is not expected to increase congestion or otherwise delay public transit. Bus Route 28 uses Hinkley Road, which is also expected to be used by construction vehicles to access the project. No bus stops are located on Hinkley Road between SR 58 and Community Boulevard (refer to Figure 5.17-1) and the road has sufficient capacity for the minor and temporary amount of construction traffic. In addition, no lane or road closure is expected. No impact will occur.

5.17.4.5 CPUC Draft Environmental Measures

None.

5.18 Tribal Cultural Resources

This section describes existing conditions and potential impacts on tribal cultural resources associated with construction of the project. Operation and maintenance activities associated with the existing station will not change as a result of the project. The analysis concludes that impacts on tribal cultural resources will be less than significant; the APMs described in Section 5.18.4.2 will further reduce the project's less-than-significant impacts on tribal cultural resources. The project's potential effects on tribal cultural resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.18-3 (refer to Section 5.18.3) and are discussed in more detail in Section 5.18.4.

5.18.1 Methodology and Environmental Setting

Background and archival searches were completed using PG&E's CCRD of the California Historical Resources Information System, as well as additional sources described in the following sections. The NAHC and interested Native American individuals were contacted.

5.18.1.1 Outreach to Tribes

As part of project outreach efforts to Native American organizations and individuals, PG&E requested an SLF search by the NAHC on April 25, 2024, to determine if traditional cultural properties are located near the project area. NAHC responded on May 13, 2024, indicating there were no results from the SLF search and it forwarded a list of Native American tribes in the project area for consultation.

On behalf of PG&E, Jacobs sent out tribal outreach letters providing information about the project and soliciting input on the project from interested Native American groups and individuals on August 6, 2024. Hard copies were sent to the addresses provided by the NAHC, along with electronic copies sent via email. To date, two responses have been received; however, one response indicated that the tribe had no comments and deferred to other more-local tribes.

Coordination between PG&E and the other responding tribe regarding the project is currently under way and any formal comments or recommendations provided by the tribe will either be addressed by the PG&E cultural resources specialist or forwarded to the CPUC, as appropriate.

Additional information on tribal outreach completed in support of the project is provided in Table 5.18-1.

Table 5.18-1. Summary of the Native American Outreach Efforts

Native American Tribes Contacted	Contact	Date of Letter	Response/Date
Kern Valley Indian Community	Brandy Kendricks, Tribal Member Monitor	August 6, 2024	No response
Kern Valley Indian Community	Robert Robinson, Chairperson	August 6, 2024	No response
Morongo Band of Mission Indians	Ann Brierty, THPO	August 6, 2024	No response
Morongo Band of Mission Indians	Robert Martin, Chairperson	August 6, 2024	No response
Quechan Tribe of Fort Yuma Reservation	Manfred Scott, Acting Chairman, Kw'ts'an Cultural Committee	August 6, 2024	No response

Table 5.18-1. Summary of the Native American Outreach Efforts

Native American Tribes Contacted	Contact	Date of Letter	Response/Date
Quechan Tribe of Fort Yuma Reservation	Jill McCormick, Historic Preservation Officer	August 6, 2024	On October 3, 2024, the Fort Yuma Quechan Indian Tribe sent an email stating that they do not wish to comment on the project.
San Fernando Band of Mission Indians	Donna Yocum, Chairperson	August 6, 2024	No response
San Manuel Band of Mission Indians	Alexandra McCleary, Senior Manager of Cultural Resources Management	August 6, 2024	No response
Serrano Nation of Mission Indians	Mark Cochrane, Co-chairperson	August 6, 2024	No response
Serrano Nation of Mission Indians	Wayne Walker, Co-Chairperson	August 6, 2024	No response
Twenty-Nine Palms Band of Mission Indians	Sarah O'Brian, Tribal Archivist	August 6, 2024	Response for Tribe provided by Christopher Nicosia. On October 2, 2024, PG&E sent a followup email to Ms. O'Brian requesting information about the artifact scatter discussed in the following row. No additional response has been received to date.
Twenty-Nine Palms Band of Mission Indians	Christopher Nicosia, Cultural Resource Manager/THPO Manager	August 6, 2024	On September 2, 2024, the Twenty-Nine Palms Band of Mission Indians replied to PG&E's outreach letter. The Tribe stated that, based on the presence of a small surface scatter, there was a possibility of cultural resources being discovered below ground and requested a copy of the cultural resources report and the Phase II investigation. The Tribe additionally requested that PG&E reach out to other tribes with cultural affiliation with the project area. On September 3, 2024, PG&E replied that there is no precontact surface scatter previously recorded within the project area and requested clarification from the Tribe to determine if the Tribe has knowledge of a cultural resource not previously recorded within the project area. On October 1, 2024, and on October 2, 2024, PG&E sent additional emails to the Twenty-Nine Palms Band to request information about the artifact scatter. No additional response has been received to date.

Table 5.18-1. Summary of the Native American Outreach Efforts

Native American Tribes Contacted	Contact	Date of Letter	Response/Date
Twenty-Nine Palms Band of Mission Indians	Nicolas Garza, Cultural Resources Specialist	August 6, 2024	Response for Tribe provided by Christopher Nicosia. On October 2, 2024, PG&E sent a followup email to Mr. Garza requesting information about the artifact scatter discussed in the previous row. No additional response has been received to date.

5.18.1.2 Methodology

A Cultural Resources Assessment for the project was prepared by Jacobs in September 2024 (refer to Appendix C). Because the report contains confidential information about the locations and characteristics of cultural resources, the technical report is not included in this Proponent's Environmental Assessment for public review, but it can be made available to agencies and other professionals for review as necessary. The study included a cultural resources records search, outreach with Native American individuals and organizations, outreach with a local historical society, and buried site sensitivity analysis. The literature search results document that the project area has been subject to intensive archaeological pedestrian survey, so no archaeological pedestrian survey is necessary for this assessment. The following subsections summarize the results of this study and efforts to identify tribal cultural resources within the project area.

Records Search

Jacobs requested a literature search extract on June 14, 2024, from PG&E staff, who completed a search of the CCRD and provided the results to Jacobs. The records search included a review of all previously conducted cultural resources investigations and previously recorded cultural resources within the project area and a 0.5-mile buffer, identified as the study area. In addition, a review was completed to identify resources listed in the NRHP and the CRHR or listed as California Historical Landmarks and California Points of Historical Interest or listed in local registers of significant resources.

Buried Site Sensitivity

The potential of an area to contain buried resources can often be assessed by an examination of an area's topography, soil types, and proximity to water. Buried sites are found in many contexts, especially alluvial fans and stream terraces. Buried sites are more likely in certain locations near water courses where deposition is deep or where previous studies have shown there is a higher density of sites or where there is ongoing deposition. All these conditions were reviewed to assess the sensitivity for subsurface archaeological deposits in the project area. In addition, previous studies, particularly those including excavations or archaeological monitoring, and depositional information (Dibblee 1967; USGS 2020; and NRCS 2024) were reviewed.

5.18.1.3 Environmental Setting

Prehistory

Generally, cultural developments in southern California have occurred gradually and have shown long-term stability, making the synthesis of chronologies and their application to specific locales problematic. Of the many chronological sequences proposed for southern California, two primary regional syntheses have been commonly used for the southern California deserts, as put forth by William Wallace (1955, 1962, 1978) and Claude Warren (1968, 1984). Wallace first presented a chronology of southern California in 1955. By 1962, he had modified this chronology specifically for the high desert and, by 1978, the chronological syntheses for southern California were finalized. Wallace uses major cultural developments to define four cultural horizons, each with characteristic local variations: Early Period (Early Man Horizon), Millingstone, Intermediate, and Late Period. Warren first presented a chronological synthesis of southern California deserts in 1968 and had published a chronological synthesis for coastal southern California by 1984. Warren defines five periods in southern California prehistory: Lake Mojave, Pinto, Gypsum, Saratoga Springs, and Protohistoric.

Until recently, chronologies based on Warren and Wallace syntheses have been in use, and these chronologies are often still used by many archaeologists. However, in 2007, a synthesis of cultural prehistory in the Mojave was presented by Sutton et al. (2007), which includes results from 20 years of extensive fieldwork conducted in the Mojave Desert by various individuals and groups. Sutton et al. (2007) divides Mojave Desert prehistory into four periods: Pleistocene, Early Holocene, Middle Holocene, and Late Holocene. Each period is further subdivided into complexes that are based on the work from Warren and Wallace in conjunction with the region-specific results of more than 20 years of Mojave Desert archaeological analysis (Sutton et al. 2007).

Table 5.18-2 provides a brief comparison of these three chronologies. Neither the Warren nor Wallace chronologies begin before the Terminal Pleistocene, circa 12,000 years Before Current Era (BCE). No sites from the Pre-Clovis Complex are currently documented in the Mojave Desert.

Table 5.18-2. Cultural Chronologies Proposed for the Mojave Desert

<table>
<tr><th rowspan="2">Approximate Date</th><th colspan="2">Sutton et al. (2007)</th><th>Warren (1984)</th><th>Wallace (1962)</th><th rowspan="2">Associated Artifacts</th></tr>
<tr><th>Temporal Period</th><th>Cultural Complex</th><th>Cultural Period</th><th>Cultural Horizons</th></tr>
<tr><td>Up to 10,000 BCE</td><td rowspan="2">Pleistocene</td><td>Pre-Clovis (Hypothetical)</td><td>NA</td><td>NA</td><td>Unknown</td></tr>
<tr><td>10,000–8,000 BCE</td><td>Paleoindian</td><td>Clovis</td><td>Early Man</td><td>Fluted points</td></tr>
<tr><td>8,000–6,000 BCE</td><td>Early Holocene</td><td>Lake Mojave</td><td>Lake Mojave</td><td rowspan="3">Milling Stone</td><td>Stemmed points</td></tr>
<tr><td rowspan="2">7,000–3,000 BCE</td><td rowspan="2">Middle Holocene</td><td>Pinto</td><td rowspan="2">Pinto</td><td>Pinto points</td></tr>
<tr><td>Deadman Lake (currently Twentynine Palms only)</td><td>Contracting stem and leaf-shaped points</td></tr>
<tr><td>2,000 BCE to 200 CE</td><td rowspan="3">Late Holocene</td><td>Gypsum</td><td>Gypsum</td><td rowspan="2">Intermediate</td><td>Gypsum and Elko Series points</td></tr>
<tr><td>200 to 1,100 CE</td><td>Rose Spring</td><td>Saratoga Springs</td><td>Rose Spring and Eastgate Series points</td></tr>
<tr><td>1,100 to Contact CE</td><td>Late Prehistoric</td><td>Protohistoric</td><td>Late Prehistoric</td><td>Desert Series points, ceramics</td></tr>
</table>

NA = not applicable

Paleoindian Period (10,000 to 8,000 BCE)

The Paleoindian Period covers the interval from the first accepted presence of humans in southern California in the Late Pleistocene until approximately 8,000 calibrated years (cal) BCE. Artifacts and cultural activities from this period represent a predominantly big-game hunting culture. Diagnostic artifacts include extremely large, often fluted bifaces associated with use of the spear and the atlatl. Populations appeared to have been relatively small and highly mobile, living in temporary camps near readily available water. Evidence for Clovis occupation in the Mojave Desert is currently limited to scattered isolated points and a single site at Lake China that is presumed to be an occupation site (Sutton et al. 2007: p. 234). Additionally, a single Clovis-like point fragment was found in the Tehachapi Mountains and other points resembling Clovis have been found in the Tiefort Basin, Searles Lake, and other locations within the region (Moratto 2004: p. 87).

Lake Mojave Complex (8,000 to 6,000 BCE)

In the deserts of southern California, the earliest substantive remains of human occupation are found along the shoreline of ancient Lake Mojave in San Bernardino County, for which this period is named, and at ancient Lake Cahuilla in Riverside and Imperial counties. The Lake Mojave Period is associated with now-dry pluvial (also called paleo) lakes found throughout the Mojave Desert. Artifacts observed at Lake Mojave Period sites include stylized dart points of the Lake Mojave and Silver Lake series, well-made bifacial knives and other cutting tools, large-domed scrapers or scraping planes, crescents, occasional cobble core tools, and ground stone implements (Moratto 2004: p. 96; Wallace 1962; Sutton et al. 2007: p. 237). Flaked stone artifacts, which make up the largest part of the toolkit, are often formal tools made of non-local materials, while ground stone tools, present in far smaller numbers, generally show ephemeral wear, suggesting long-term curation of more easily ported items and less reliance on floral resources. Site types include extensive habitation sites, small camps, and workshops (Sutton et al. 2007).

In addition to sites known in the Lake Mojave and Lake Cahuilla area, there are sites with artifact assemblages from this period at Fort Irwin, Twentynine Palms, and China Lake. Archaeofaunal remains recovered from Lake Mojave sites at Fort Irwin indicate a higher reliance on smaller game, such as rabbits, rodents, and some reptiles, and less hunting of large game (Sutton et al. 2007). Rogers (1939) describes several sites of the same time period situated along desiccated lakes, or playas, from the Colorado Desert through inland San Diego County. The final lacustrine phase for the pluvial lakes, such as Lake Mojave and Lake Manix within this region of the Mojave Desert, occurred during this period.

Pinto Complex (7,000 to 3,000 BCE)

The Pinto Complex is the most widely distributed of the early complexes in the Mojave Desert and occurs in a wide variety of topographic and environmental zones, including near remnant pluvial lake basins, near fossil stream channels, near springs or seeps, and in upland areas. Large Pinto Complex sites with deep middens and a wide range of artifact types appear to correlate with stable water sources. In some parts of the Mojave Desert, a temporal overlap is noted between the Lake Mojave Complex and the Pinto Complex.

Radiocarbon dates from the Fort Irwin, Twentynine Palms, and the Garlock Fault site in Kern County, range from 8,340 BCE to 6,300 BCE, indicating the development of the Pinto Complex in the early Holocene and corresponding to the end of the Lake Mojave Complex. There appears to be good continuity of flaked stone technologies from one complex to the next, including the material selection of locally available stone, as well as use of bifacial and unifacial tool forms. The main distinction between the two periods appears to be the number of ground stone tools found at Pinto sites compared to the relative paucity of ground stone tools found at Lake Mojave sites. High levels of ground stone found at Pinto sites indicate that the emergence of intensive plant resource exploitation began by approximately 7,000 cal BCE, before the Altithermal dry climatic episode (Sutton et al. 2007: p. 238-239).

Pinto sites are found in a wide range of environments and the flourishing of new economies, including greater plant resource exploitation, is seen both in the desert and along the Pacific coast during the Pinto Complex. Olivella shell beads have been found with Pinto sites, potentially indicating the beginnings of trade with the coast. Diagnostic artifacts recovered from Pinto Period archaeological sites include heavy-keeled scrapers, flat millingstones, manos, and Pinto series projectile points, which are large, coarsely made points, indicating the continued use of darts and atlatls (Warren 1984). By the end of the Middle Holocene, conditions in the Mojave Desert became much warmer and much drier. Currently, few sites are known to date to the period between 3,000 and 2,000 cal BCE, and it appears that parts of the Mojave may have been abandoned (Sutton et al. 2007).

Gypsum Complex (2,000 BCE TO 200 CE)

The start of the Gypsum Complex coincides with the beginning of the Little Pluvial wetter climatic episode at approximately 2,000 BCE and continues into the drier period following the Little Pluvial. Despite the paucity of sites dating to this period in the Mojave Desert, the first reliable evidence for contact between the desert and the coast dates to the Gypsum Period, and southwestern influence in the California deserts is also observed (Warren 1984; Sutton et al. 2007).

Artifacts that offer strong evidence for the beginning of trade between the desert and the coast include Olivella shell beads and Haliotis rings from the coast and split twig figures from the southwest, which are found at Gypsum sites. Gypsum Complex toolkits include the diagnostic Elko and Elko-eared points, leaf-shaped points, rectangular-based knives, flake scrapers, T-shaped drills, the occasional large scraper plane, and hammerstones. Elko series points are associated by Moratto (2004) with the spread of Uto-Aztecan speakers throughout the Mojave during this period. A shift in food procurement strategies also marks this period when grinding implements, including manos and millingstones, became common and mortars and pestles were introduced (Warren 1984).

People living in the deserts had adapted to the more arid conditions of the southern California deserts by the end of the Gypsum Complex. New procurement strategies and regular trade contact with peoples living on the coast provided stability to desert dwellers and, despite the return to a warmer, drier climate at the end of the Little Pluvial, populations did not decrease in the deserts at the end of the Gypsum Complex as they had at the end of the Pinto Complex (Sutton et al. 2007).

Rose Spring Complex (200 TO 1,100 CE)

During this period, a strong coastal influence extended into the western Mojave Desert (Warren 1984) and the eastern Mojave experienced an influx from Colorado River groups. The bow and arrow moved into the Mojave Desert at this time. Evidence for a significant population increase and dramatic changes in artifact assemblages characterized the Rose Spring Complex in the eastern Mojave (Sutton et al. 2007). Generally, the Rose Spring Complex appears to be in strong continuity with the Gypsum Complex. Similar artifacts, including millingstones, manos, mortars, pestles, and incised stones, were still used. Desert populations continued a successful hunting and gathering adaptation to the desert environment through increasingly complex subsistence strategies, including the development of the bow and arrow. The sites from this period contain a variety of trade items, including southern California shell beads, steatite items, and other coastal artifacts. Eastgate and Rose Spring projectile points are the diagnostic artifacts (Sutton et al. 2007).

Rose Spring sites are found near springs, washes, and occasionally lakeshores. Architectural evidence of pit houses, wickiups, and other types of structures indicate an increase in sedentism during this period. The Medieval Climatic Anomaly began during the Rose Springs Complex and the resulting desiccation of existing lakes and other water sources in the Mojave Desert appears to have significantly changed settlement patterns, resulting in a shift in dependence upon permanent water sources to more ephemeral ones. The Rose Spring Complex ended by approximately 1,100 CE.

Late Prehistoric Complexes (1,100 CE to Historic Times)

During this period, there was a strong reliance on plant food gathering and hunting of small game, and a decreased reliance on large game (Warren 1984). Separate complexes emerged that appear to represent historically known Native American linguistic and cultural ethnic groups. Anasazi turquoise mining, Hakatayan influence from the Colorado River, and the spread of the Numic Paiute and Shoshone cultures east from the western Mojave Desert occurred during this period (Sutton et al. 2007: p. 242). Seasonal movement was common and resulted in a diverse array of site types. For the populations in the project region within the Mojave, large village sites remain marked by a paucity of pottery. Characteristic artifacts include Desert series and Cottonwood projectile points, buffware and brownware ceramics, shell and steatite beads, and milling tools. Trade continued to develop and expand with groups on the coast (Sutton et al. 2007: p. 242). At the end of the Late Prehistoric Complex, there appears to be an abandonment of village sites in the desert region (Moratto 2004: p. 391; Thomas 2011: p.17-18).

5.18.1.4 Ethnographic Context

The project area is located within the traditional territories of the Chemeheuvi – specifically, the Kawaiisu branch, and the Serrano – specifically, the Vanyume desert branch.

Precontact and Historic era trails are found throughout the Mojave Desert. Notably, a known precontact trail crosses within approximately 1.5 miles of the project area, along the Mojave River. This trail connects the Mohave villages at the Colorado River in modern day Needles, California, with the coast (Davis 1961).

Chemehuevi

The Chemehuevi belong to the Shoshonean language group, a Southern Numic branch of the Uto-Aztecan language family. The Kawaiisu, a relatively recent offshoot of the Chemehuevi (Kroeber 1925), likely entered the Tehachapi Mountains during the Late Prehistoric period (Moratto 1984). Spanish-period explorer Father Francisco Garcés wrote about Kawaiisu living in the areas of Walker Pass and Tehachapi in 1776. Harrington (1942) reported that according to a Kitanemuk consultant, Pedro Cuhueve, a Kawaiisu rancheria existed in the location of present-day Tehachapi.

Although the Kawaiisu lived primarily in the foothills and mountains, they would travel to lower elevations during the cooler seasons. The Kawaiisu lived in chieftanships, which generally were based on familial ties. Kawaiisu chiefs did not inherit the role of chief; rather, any wealthy Kawaiisu man might become a village chief. A son might succeed his father as chief, if he gained enough property on his own, because a man's property was destroyed at his funeral. Jimson weed was employed as a hallucinogenic for religious and shamanistic purposes as well as puberty rites among the Kawaiisu, much as it was throughout southern California. The Kawaiisu shamans practiced rain magic and rain doctors would minister to the sick as well as summon the rain.

Kawaiisu subsistence was based on hunting, fishing, and gathering. Acorns were one of their staple crops. Piñon nuts could be gathered at higher elevations of Kawaiisu territory. Seeds, shoots, leaves, bulbs, tubers, and berries were collected, as well. Large game, including deer, bear, mountain sheep, and antelope, was hunted, as was smaller game such as squirrels, mice, and rabbits. The Kawaiisu would join the nearby Tubatulabal and Yokuts in communal antelope drives in the San Joaquin Valley (Smith 1978).

The Chemehuevi were strongly influenced culturally by the Mojave, who lived to the east across the Colorado River (Kelly and Fowler 1986: p. 368). The 19th century territories of the Southern Paiute and

Chemehuevi groups reflect the adaptation of each to their unique physical and political environments subsequent to the apparent entry of Numic speakers into the region in approximately 1,200 CE. Overall, the Chemehuevi territory was one of the largest areas in California with a uniform dialect (Kroeber 1925).

The Chemehuevi appeared to be in the process of moving or expanding their territory in the early Historic period. This process apparently happened without the influence or pressure from white incursions (Kroeber 1925: p. 594), which is not surprising considering the great expanse and inhospitality of the territory attributed to them.

Chemehuevi beliefs were closer to those of groups found east of Chemehuevi territory, rather than those of the geographically closer southern or central California groups. Many Chemehuevi songs are similar, if not the same, as Mojave songs, including their Shaman and Doctoring songs (Kroeber 1925).

The Chemehuevi had external relationships with the Mojave, Navajo, and Utes that were sometimes friendly and sometimes hostile. The Southern Paiutes often accused the Ute and Navajo of kidnapping raids. Relations with the Western Shoshone to the north and northwest were generally friendly and often involved intermarriage. The Chemehuevi also had generally amicable relations with other Mojave Desert groups, including the Serrano and Vanyume, Cahuilla, and Diegueño. Although the Chemehuevi borrowed heavily from Mojave culture (Kelly and Fowler 1986: p. 369-370), Kroeber (1925: p. 596) asserts that the Chemehuevi generally tried to avoid the frequent warfare that involved many of their more powerful and populous regional neighbors to the east.

Serrano

The Vanyume, a desert subdivision of the Serrano, are classified as belonging to the Takic linguistic branch, a subdivision of the Uto-Aztecan language family, and are considered a part of the Shoshonean or Takic migration into California (Byrd 1996; Moratto 2004; Sutton 2005). Other Takic groups are the Kitanemuk, Gabrieleño, Luiseño, Cahuilla, Chemehuevi, and Cupeño. Reliable data are sparse for the Vanyume because they are often categorized as a desert-dwelling branch of the Serrano. The Vanyume were a small cultural group whose territory was along the Mojave River. By the time of the Spanish exploration, the entire population of the Vanyume may have ranged from 500 to 1,000 members. In addition to its occupation of the upper Mojave River drainage, the Vanyume, or Desert branch of the Serrano, appears to have occupied a substantial area within the western Mojave region. Vanyume territory extended from the eastern Mojave Desert through modern day Victorville and as far west as the city of Palmdale in the Antelope Valley (Bean and Smith 1978; Earle et al. 1998; Earle 2012; O'Rourke 2005).

The subsistence practices of the Serrano were primarily hunting and gathering within diverse ecological zones. The Vanyume practiced the same subsistence strategies as the Serrano and exploited the same resources; foods consumed included acorns and piñon nuts and other seeds from the foothills of the San Bernardino Mountains, yucca, mesquite, and cactus from desert environs, game (deer, rabbit, antelope, and other small mammals), and fish. The primarily desert-dwelling Vanyume had resources available to them from outside of their territories through trade and networking with other Serrano groups who occupied areas in both the San Gabriel and San Bernardino Mountains (Bean and Smith 1978).

Settlement locations were dictated by water resources and villages tended to be based near streams, springs, and rivers, with village sizes ranging from 50 up to 100 people (Earle et al. 1998). Family dwellings were of the style encountered with many groups in southern California, constructed in a circular-domed fashion made of willow and tule. Each dwelling had a central fire for heat and minor cooking, although most domestic activities occurred outdoors. Other structures found in a Vanyume village would be composed of armadas, an unenclosed structure roofed with brush, and a ceremonial house occupied by a village leader (Bean and Smith 1978).

The annual cycle of social, ceremonial, and economic activities of all Serranos was dictated by the seasonal availability of important subsistence resources (Earle et al. 1998; Earle, 2012). They engaged particularly in hunting, craft activities, and visiting during the winter months after the fall piñon and acorn harvests. Early spring was the period of greatest food scarcity during the year.

By the 1920s, the largest presence of the region's Native American inhabitants consisted of a small village near Victorville within traditional Vanyume territory. Census records indicate that most individuals in this village identified themselves as "Pi Ute," while the remainder identified themselves as "Chimawaya" or not at all. Many Native Americans living in the vicinity of the village were not included in the census (Bloomberg 1987). In 2004, excavations at a village site near Palmdale unearthed several graves. Mitochondrial DNA matching established a direct link between one of these individuals to present day Vanyume still living in the Antelope Valley (O'Rourke 2005). Neighboring groups of the Vanyume were the Tataviam in the Santa Clarita Valley to the southwest, the Kitanemuk and Kawaiisu to the northwest near the Tehachapi Mountains, the Chemehuevi to the east, the Cahuilla to the south, other Serrano groups to the south-southwest, and the Gabrieliños to the west.

5.18.1.5 Record Search Results

The records search identified 16 cultural resources studies conducted within the project area. Two cultural resources investigations included the entire project area. Both studies included intensive pedestrian surveys completed within the last 10 years. One previous study reports the results of an archaeological monitoring program that included a portion of the project area in 2021. Sixteen additional studies covered portions of the 0.5-mile buffer.

The records search did not identify any previously recorded resources within the project area. A total of 29 previously recorded cultural resources finds were identified within the 0.5-mile buffer, including 3 isolated finds, 3 Precontact era lithic scatters, 16 Historic era archaeological sites, and 7 Historic era features, such as roads and water conveyance features.

A complete listing of all reports and previously recorded sites are included in Section 5.5, Cultural Resources.

5.18.1.6 Results of Native American Outreach

On May 13, 2024, Jacobs received a response from the NAHC reporting a negative result for sacred sites located within the project area. Additionally, the NAHC provided a list of 14 individuals and groups to contact for consultation.

On September 2, 2024, the Twenty-Nine Palms Band of Mission Indians replied to PG&E's outreach letter. The Tribe stated that, because of the presence of a small surface scatter, there was a possibility of cultural resources being discovered below ground and requested a copy of the cultural resources report and the Phase II investigation. The Tribe additionally requested that PG&E reach out to other tribes with cultural affiliation with the project area. On September 3, 2024, PG&E replied that there is no precontact surface scatter previously recorded within the project area and requested clarification from the Tribe to determine if the Tribe has knowledge of a cultural resource not previously recorded within the project area. No response was received, and on October 1, 2024, PG&E sent another email to the Twenty-Nine Palms Band to request information about the artifact scatter. PG&E also sent an email to additional contacts within the Twenty-Nine Palms Band on October 2, 2024. To date, no additional response has been received from the Twenty-Nine Palms Band. On October 3, 2024, the Fort Yuma Quechan Indian Tribe sent an email stating that they do not wish to comment on the project. To date, no other responses have been received from the tribal outreach letters sent on August 6, 2024.

PG&E has provided support to the lead agency for the effort to identify Tribal Cultural Resources through requesting and providing results for the Sacred Lands File Search and outreach to tribes. PG&E will forward Native American tribe project correspondence received to the CPUC cultural project lead after the project application is filed with the CPUC.

5.18.2 Regulatory Setting

5.18.2.1 Federal

No federal regulations related to cultural resources are applicable to the project.

5.18.2.2 State

Assembly Bill 52

AB 52 established that tribal cultural resources must be considered by the lead agency under CEQA. AB 52 provides for additional Native American consultation requirements to be undertaken by the lead agency. A tribal cultural resource is a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe, and that is:

- Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k)
- 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

California Health and Safety Code and Public Resources Code

Broad provisions for the protection of Native American cultural resources are contained in the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010 through 8030).

Several provisions of the PRC also govern archaeological finds of human remains and associated objects. Procedures are detailed under PRC Section 5097.98 through 5097.996 for actions to be taken whenever Native American remains are discovered. Furthermore, Section 7050.5 of the California Health and Safety Code states that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under PRC Section 7100 has committed a public offense that is punishable by imprisonment.

PRC Chapter 1.7, Section 5097.5/5097.9 (Stats. 1965, c. 1136, p. 2792), entitled Archaeological, Paleontological, and Historical Sites, defines any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources.

5.18.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and certified unified program agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process.

Background research finds that no tribal cultural resources designated for local listing are located in the project area.

5.18.3 Impact Questions

The project's potential effects on tribal cultural resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.18-3 and discussed in more detail in Section 5.18.4.

Table 5.18-3. CEQA Checklist for Tribal Cultural Resources

[Checklist determination by CPUC during tribal consultation.]

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) 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.	☐	☐	☐	☐

5.18.3.1 Additional CEQA Impact Questions

None.

5.18.4 Potential Impact Analysis

Project impacts related to tribal cultural resources were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase.

5.18.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. In accordance with Appendix G of the CEQA Guidelines, the potential significance of project impacts on tribal cultural resources were evaluated for each of the criteria listed in Table 5.18-3, as discussed in Section 5.18.4.3.

5.18.4.2 Applicant-Proposed Measures

PG&E will implement the following APM:

APM TCR-1: Undiscovered Potential Tribal Cultural Resources. After stopping work and following the procedure for determining eligibility in APM CUL-2, if a prehistoric or protohistoric site is identified and cannot be avoided, PG&E will contact the CPUC and NAHC to identify an appropriate tribe with whom to consult on treatment.

If no agreement can be reached for mitigation after discussions with the California Native American Tribe(s) or it is determined that the tribe(s)' preferred mitigation is not feasible, PG&E will implement one of the example mitigation measures listed in PRC Section 21084.3(b), or other feasible mitigation.

5.18.4.3 Impact Analysis

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to cultural resources resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

All work will be conducted within the station footprint. As part of the project, the station's existing electrical power switchgear, MCCs, and load center will be replaced or modified and connecting conduit and new or replacement cable will be installed between the switchgear and MCC locations. PG&E's existing gas transmission system, including pipe, valves, or other gas measurement assets, will not be modified beyond upgrading the station's electrical distribution equipment.

Temporary generators, fueled by natural gas from the station, will be brought to the project work area to power the station during construction when electric equipment connecting with the permanent generators is deenergized during specific construction activities. After the upgrade is complete, all temporary generator equipment and associated existing gas fuel lines will be removed. Ground disturbance is expected to take place for the following components:

- Trenching for conduit (approximately 200 feet total in length and up to approximately 5 feet in depth in approximately four locations)
- Excavating for equipment foundation removal and replacement (an area up to approximately 5 feet deep by 11 feet wide by 29 feet long at approximately five locations).

Project impacts on cultural resources are defined by CEQA as a change in the characteristics of a resource that convey its significance or justify its eligibility for inclusion in the NRHP, CRHR, or local register. Direct impacts may occur by (1) physically damaging, destroying, or altering all or part of a resource, (2) altering characteristics of the surrounding environmental setting that contribute to the significance of a resource, (3) allowing a resource to deteriorate through neglect, or (4) incidental discovery of archaeological resources without proper notification. Direct impacts can be assessed by determining the exact location of historical resources and assessing their significance under NRHP and CEQA criteria, identifying the types and extent of the proposed impacts and their effect on significant resources, and determining appropriate measures to reduce impacts to less-than-significant levels. Indirect impacts may include changes to the viewshed of a significant resource through introduction of a new project element.

CEQA recommends avoidance or preservation in place as the preferred treatment for eligible properties and unique or significant archaeological or historical resources (PRC 21083.2). If avoidance is not a feasible option, data recovery is a common treatment.

The project's potential effects on tribal cultural resources will be evaluated by the CPUC during the AB 52 process using the significance criteria set forth in Appendix G of the CEQA Guidelines.

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 section5020.1(k).

Impact Determination to be provided by CPUC.

The project's potential effects on tribal cultural resources will be evaluated by the CPUC during the AB 52 process.

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.

Impact Determination to be provided by CPUC.

The project's potential effects on tribal cultural resources will be evaluated by the CPUC during the AB 52 process.

5.18.4.4 CPUC Draft Environmental Measures

None.

5.19 Utilities and Service Systems

This section describes existing conditions and potential impacts on utilities and service systems from construction of the project. Operation and maintenance activities of the existing station are not changed as a result of the project. The analysis concludes that the project will have a temporary and less-than-significant impact on solid waste disposal; otherwise, the project will have no impact to utilities and service systems. Under the CEQA, utilities and service systems include water, wastewater, and solid waste collection and treatment. This section also addresses potential impacts on power, natural gas, and telecommunication facilities. The project's potential effects on utilities were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.19-2 and Table 5.19-3 and discussed in more detail in Section 5.19.4.

5.19.1 Methodology and Environmental Setting

San Bernardino County plans and utility providers websites were reviewed for information on wastewater collection and treatment, water supply, stormwater drainage, solid waste disposal, telecommunications, electricity, and natural gas service providers within the project area.

5.19.1.1 Utility Providers

The following subsections identify existing utility providers and the associated infrastructure that serves the project area in San Bernardino County.

Natural Gas and Electricity

The service area around Hinkley Compressor Station is supplied natural gas by Southwest Gas Corporation. Southwest Gas Corporation serves over 2 million customers throughout Arizona, Nevada, and portions of California including the project area in San Bernardino County (Southwest Gas 2024). Southwest Gas Corporation does not serve Hinkley Compressor Station.

Hinkley Compressor Station is on the PG&E Baja Path gas transmission system, which transports natural gas to millions of customers within California with interconnections to other utilities (refer to Figure 3.2-1). The station receives natural gas from Topock Compressor Station (approximately 152 miles east at the state border between California and Arizona). Hinkley Compressor Station compresses gas from Topock Compressor Station to transport it through the Tehachapi Mountains to Kettleman Compressor Station (approximately 200 miles northwest).

Hinkley Compressor Station uses four natural gas engine-driven generators using gas from the PG&E gas transmission system to supply electric power for the majority of station operation including the natural gas compression at the station. Utility agreements prevent PG&E from using the power generated at the station outside the immediate area of the station.

Southern California Edison provides electricity to the project area and vicinity (San Bernardino County 2019). Southern California Edison has a service territory of approximately 50,000 square miles and serves approximately 15 million people in central, coastal and southern California (SCE 2024). The fire pump and technical shop building at the compressor station, as well as areas around the station, are supplied electricity by Southern California Edison (LRWQCB 2013).

Telecommunications

Cell phone infrastructure and service are provided in the Barstow area by Verizon, T-Mobile, and AT&T Wireless; other companies that use their networks to provide service include Mint Mobile, Cricket, Boost, and Visible (bestneighborhood.org 2024). Internet providers (both cable and satellite) include Spectrum, Frontier, Verizon, T-Mobile 5G Home Internet, LV.Net, Dish, DirecTV, and Viasat (bestneighborhood.org 2024).

Water Supply

Domestic water sources for the unincorporated areas of San Bernardino County generally are supplied through local and imported water, with approximately 85 percent of the domestic water supplied by local groundwater sources and the remaining 15 percent supplied by imported purchased water (LRWQCB 2013). Imported water is purchased primarily by several regional water wholesalers from the Metropolitan Water District through the State Water Project as a supplemental source to local groundwater supplies. Multiple retail and private water purveyors manage most of the groundwater pumping and distribution.

The water purveyor for the City of Barstow and some surrounding communities is the Golden State Water Company (GSWC) (San Bernardino County 2019, Table 5.18-5). GSWC has served Barstow since 1929 and currently serves approximately 8,800 customers (GSWC 2024).

The station is outside the GSWC service area. Water at the station is obtained from offsite wells that supply water for domestic (such as sinks and toilets) and industrial (primarily operation of cooling towers to cool compressed natural gas heated by friction) uses.

Stormwater Drainage

The project site is in the San Bernardino County Flood Control District (Flood District) Zone 4, which includes the Mojave River (San Bernardino County 2020). The Flood District was established in 1939 in response to severe flooding in 1938. The Flood District has developed an extensive system of facilities, including dams, conservation basins, channels, and storm drains, to intercept and convey flood flows through and away from the major developed areas of the county to protect property and ensure public safety.

No existing stormwater facilities were identified on or near the project site. Because the project is in a flat area, most of the stormwater drainage would likely percolate into underlying groundwater aquifers rather than being transported as sheet flow (LRWQCB 2013).

Wastewater Treatment

The City of Barstow provides domestic and industrial wastewater collection and treatment for the City of Barstow and a portion of its sphere of influence. The city owns and operates the Barstow Wastewater Treatment Plant (Barstow WWTP), located just north of Interstate 40 on the eastern edge of the city. As of 2015, the Barstow WWTP had a capacity of 4.5 million gallons per day (mgd), with an average daily flow of 2.2 mgd (San Bernardino County 2019). The Barstow WWTP facilities include eight percolation ponds along the south side of the Mojave River to dispose of secondary treated effluent (LRWQCB 2019). The project site is outside the Barstow WWTP service area and is on a private septic system to manage wastewater.

5.19.1.2 Utility Lines

An overhead Southern California Edison power line from Fairview Road connects to the station's fire pump and technical shop building which is north of the project work area. The station contains telecommunications lines in unspecified locations. The station also contains water lines that carry water from nearby wells (refer to Section 5.19.1.4) and lines that carry wastewater to the station septic system.

5.19.1.3 Approved Utility Projects

There are no known additional approved utility projects within the station work area other than the utility upgrades described in Chapter 3.

5.19.1.4 Water Supplies

Water is supplied to the station from four PG&E wells in the vicinity of the station. The wells are operated by a private system operator, Sonny Gowan of ECS Company Inc. This water supplies domestic and industrial (primarily cooling) needs at the facility as well as fire hydrants that are used on an as-needed basis. The wells also supply ongoing groundwater remediation efforts for the station as well as the nearby Gun Club and Desert View Dairy. The capacities of the four wells range from 40 to 400 gallons per minute, which was sufficient to meet the 2023 demand of approximately 88 million gallons (Hirst 2024). Refer to Section 5.10, Hydrology and Water Quality, for more information on groundwater in the project area.

5.19.1.5 Landfills and Recycling

San Bernardino County Public Works holds franchise agreements with private trash hauling companies to collect solid waste from unincorporated areas of the county (San Bernardino County 2019). Burrtec Waste Industries provides waste collection and recycling in the area around the project site, including the City of Barstow, the community of Hinkley, and surrounding unincorporated San Bernardino County (San Bernardino County 2019).

San Bernardino County Public Works includes the Solid Waste Management Division (SWMD), which is responsible for the management and operation of the county's solid waste disposal system. This system consists of five regional landfills and nine transfer stations (SWMD 2024). These five landfills can accept waste from the project; they are listed with their capacities and estimated closure dates in Table 5.19-1.

San Bernardino County Public Works publishes the *Construction & Demolition Waste Recycling Guide* (2024). The guide includes a list of recycling facilities in the county that accept construction and demolition waste for recycling. Examples are included in Table 5.19-1.

Contaminated soil or hazardous materials are expected to be taken to the Kettleman Hills facility, as listed in Table 5.19-1.

Table 5.19-1. Landfills and Recycling Facilities

Landfill Name	Remaining Total Landfill Capacity (cubic yards)	Landfill Average Daily Volume or Capacity	Estimated Closure Date	Takes Construction Waste?
Barstow Landfill	71,481,660	1,500	2071	Yes
Landers Landfill	11,148,100	1,200	2072	Yes
Victorville Landfill	79,400,000	3,000	2047	Yes
Mid-Valley Landfill	54,219,377	7,500	2045	Yes

Table 5.19-1. Landfills and Recycling Facilities

Landfill Name	Remaining Total Landfill Capacity (cubic yards)	Landfill Average Daily Volume or Capacity	Estimated Closure Date	Takes Construction Waste?
San Timoteo Landfill	12,360,396	2,000	2039	Yes
Emery Materials (recycling)	NA	NA	NA	Yes (asphalt and concrete)
Vulcan Materials Company (recycling)	NA	NA	NA	Yes (asphalt and concrete)
SA Recycling	NA	NA	NA	Yes (metals)
Kettleman Hills Industrial Waste Codisposal Facility	15,600,000	9,000	2040	Yes (Class I hazardous and Class II designated waste)

Source for landfills: California Department of Resources Recycling and Recovery 2024. SWIS Facility/Site search.

NA = Not available.

5.19.2 Regulatory Setting

The following subsections identify any applicable federal, state, or local laws or regulations for utilities that apply to the project.

5.19.2.1 Federal

No federal regulations pertaining to utilities and service systems are applicable to the proposed project.

5.19.2.2 State

California Government Code

Section 4216 of the California Government Code protects underground structures during excavation. Under this law, excavators must contact a regional notification center at least 2 days before excavation of any subsurface installations. In the project area, USA is the regional notification center. USA notifies utility providers with buried lines within 1,000 feet of the excavation, and those providers must mark the specific location of their facilities before excavation. The code also requires excavators to probe for and expose existing utilities, in accordance with state law, before using power equipment.

California Water Code

California Water Code Division 6, Part 2.10, Sections 10910 to 10915 requires that a city or county undertaking CEQA review for a project identify public water systems that may supply water to the project. If such a public water system is not identified, the city or county must complete a water supply assessment. Per Section 10912, this requirement applies to residential and commercial projects larger than a certain size and to proposed industrial, manufacturing, or processing plants or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area. The requirement also applies to other projects that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project. If the city or county does not have an adopted urban water management plan, the water supply assessment must analyze whether the public water system's total projected water supplies available for normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

California Water Code Division 7 lays out the requirements for a statewide program for the control of the quality of all the waters of the state. Section 13140 of Division 7 states that the California State Water Resources Control Board will formulate and adopt state policy for water quality control. Section 13172 of Division 7 includes requirements for waste management facilities, both hazardous and nonhazardous, as defined in Section 13173, to protect water quality.

California Hazardous Waste Fee Health and Safety Code

The Hazardous Waste Fee Health and Safety Code (CA HSC Chapter 6.5, Section 25143 et seq.) provides definition and guidance on wood waste and its disposal. Wood waste is defined in part as poles, crossarms, pilings, and fence posts that have been previously treated with a preservative. Wood waste materials removed from electric, gas, or telephone service are exempt from the requirements for disposal provided certain conditions are met, including the following:

- If the wood waste is not subject to regulation as a hazardous waste under a federal act and it is disposed of in a composite-lined portion of a municipal solid waste landfill that meets any requirements imposed by the state policy adopted pursuant to Section 13140 of the Water Code and regulations adopted pursuant to Sections 13172 and 13173 of the Water Code.
- If the solid waste landfill used for disposal is authorized to accept the wood waste under waste discharge requirements issued by the regional water quality control board pursuant to Division 7 (commencing with Section 13000) of the Water Code.

5.19.2.3 Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local (city and county) discretionary regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process.

The *San Bernardino Countywide Plan* includes policies for efficient waste diversion and collection for unincorporated areas (San Bernardino County 2020). These policies include the following:

- Policy IU-4.3 Waste diversion. We shall meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce greenhouse gas emissions and use of natural resources through the reduction, reuse, or recycling of solid waste.
- Policy IU-4.4 Landfill funding. We require sufficient fees for use of County landfills to cover capital costs; ongoing operation, maintenance, and closure costs of existing landfills; and the costs and liabilities associated with closed landfills.

5.19.3 Impact Questions

The project's potential effects on utilities and service systems were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.19-2 and discussed in more detail in Section 5.19.4.

Table 5.19-2. CEQA Checklist for Utilities and Service Systems

Would the Project	Potentially Significant Impact	Less-than-Significant Impact 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 stormwater 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?	☐	☐	☐	☒

5.19.3.1 Additional CEQA Impact Questions

The project's potential effects on utilities and service systems also were evaluated using the CPUC's Additional CEQA Impact Questions for Utilities and Service Systems in the *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* (CPUC 2019). These additional impact questions are evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.19-3 and discussed in more detail in Section 5.19.4.

Table 5.19-3. Additional CEQA Impact Questions for Utilities and Service Systems

Would the Project	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Would the project increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?	☐	☐	☐	☒

5.19.4 Potential Impact Analysis

Project impacts related to utilities and service systems were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase.

5.19.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. In accordance with Appendix G of the CEQA Guidelines, the potential significance of project impacts on utilities and service systems were evaluated for each of the criteria listed in Table 5.2-1, as discussed in Section 5.2.4.3.

5.19.4.2 Applicant-Proposed Measures

The project will have no impact on utilities and service systems, so no APMs are included.

5.19.4.3 Potential Impacts

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than electrical distribution equipment upgrades will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to utilities and service systems resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

b) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? *No Impact*.

The upgrades to the compressor station are to replace aging infrastructure and address safety issues and system reliability and maintainability. The upgrades will not increase the supply of gas in the service area. The temporary generators will use natural gas from existing PG&E gas system within the station to generate electricity, similar to existing station generators. Up to approximately 18 construction workers will be required to complete construction. These construction workers would be hired from the local labor force. Project operation will be done by existing staff. Therefore, the project will not directly or indirectly induce demand for new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities.

All upgrades will be performed within the existing facility and will not require relocation of utilities or facilities outside the station. PG&E's engineering team has taken into consideration the location of other underground and overhead utilities in designing the project. Prior to construction, PG&E will obtain emergency contact information for utilities that may be in close proximity or require monitoring during construction of the project. In case of accidental service interruption to another utility, PG&E will immediately contact the affected utility to coordinate actions to restore service in a safe and timely manner. As required by state law, PG&E will notify other utility companies (via USA) to locate and mark existing underground structures prior to any excavation or trenching activities. In addition, PG&E will use hand tools during excavation or trenching activities and to avoid impact to existing utilities, in accordance with state law equipment. Where soil is disturbed, the ground will be returned to pre-construction grades, and project construction will not affect existing stormwater drainage.

PG&E has designed the project to have no negative impact on power, natural gas, communications systems, or any other utilities that are specifically documented within the station. The project's upgrades will modernize the station's and the connecting gas system's safety and increase reliability and maintainability.

The project will not require the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities. No impact will occur.

c) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years? *No Impact*.

The project does not require a water supply assessment as defined in California Water Code Section 10912. As noted in Section 5.19.2.2, industrial projects are required to prepare a water supply assessment if the project site is planned to house more than 1,000 persons, occupy more than 40 acres of land, or have more than 650,000 square feet of floor area or otherwise demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project. The project does not house any new employees or residents or include any building floor area. The project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. The project will not change existing gas transmission capacities or modify station operation function and will not change operational water use.

The primary need for water will be for construction-related dust control activities and potential fire suppression. A water truck, typically with a capacity of up to approximately 3,000 gallons, will support project construction activities. However, the total volume available within the truck onsite is not expected to be used daily. Water required for construction will come from the existing onsite water system or hydrants. The minimal water needed for dust control and construction crew consumption will not exceed available supplies. Existing onsite water supplies will be sufficient to accommodate the project's minor temporary and short-term water needs and small number of construction workers. No impact will occur.

d) Would the project 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? *No Impact*.

Up to approximately 18 construction workers will be onsite at peak construction periods. Construction workers will use existing onsite toilets and sinks that discharge to the existing wastewater treatment system. This temporary and short-term use will not require expansion of existing wastewater treatment facilities or construction of new facilities. Therefore, no impact will occur.

e) Would the project 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? *Less-than-Significant Impact*.

Solid waste generation is estimated to be approximately 35 tons with approximately 75 percent being metal. The project also will generate minimal solid waste from the food, glass, paper, plastic, and packing materials consumed by the up to approximately 18 construction workers who will be onsite at peak construction periods. Waste materials generated during construction will be reused, recycled, or salvaged where reasonably feasible. Removed electrical equipment will be managed as e-waste, with metal components sorted for recycling or disposal. Concrete debris from the MCC foundation removal will be gathered for recycling. Construction debris will be picked up regularly from the work area and stored in approved onsite containers. At the construction staging area, crews will gather and sort recyclable and salvageable materials into bins for recycling, e-waste, or disposal. Debris will be hauled away for recycling or disposal periodically during construction. Salvageable items (such as wire or metal that can be reused) will be taken to recycling facilities or sold through available markets. Some examples of items that may be recycled include copper wire or metal equipment housing, cable reels, pallets, and broken hardware. Materials, including clean soil, will be taken to facilities such as those in Table 5.19-1 for recycling or disposal. The facilities listed in Table 5.19-1 have sufficient capacity for the amount of waste that will be generated by project construction. Impacts will be less than significant.

f) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? *No Impact*.

PG&E will manage solid waste generated during construction and maintenance and operation by hauling to appropriate landfills with sufficient capacity as described previously. PG&E will reuse and recycle to divert debris from landfill disposal where reasonably feasible. PG&E or its designated and licensed hauler will apply for an Industrial Waste Hauler Permit as needed. PG&E will comply with all applicable federal, state, and local statutes and regulations related to solid waste. Therefore, no impact will occur.

5.19.4.4 Additional CEQA Impact Questions

a) Would the project increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts? *No Impact*.

The upgraded electrical equipment will be connected to the existing station grounding grid. There are no known adjacent utility lines to which the project would contribute an increased rate of corrosion as a result of alternating currents. No impact will occur.

5.19.4.5 CPUC Draft Environmental Measures

Refer to Section 3.5.4.2 for discussion of notification of utilities as identified in CPUC Draft Environmental Measure, *Notify Utilities with Facilities Above and Below Ground*.

5.20 Wildfire

This section describes existing conditions and potential impacts related to wildfire as a result of construction of the project. Operation and maintenance activities of the existing station will not change as a result of the project. The analysis concludes that the proposed project will have no impact related to wildfire. The project's potential effects associated with wildfire were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 5.20-1 and discussed in more detail in Section 5.20.4.

5.20.1 Methodology and Environmental Setting

The potential for project construction to pose wildfire hazards was evaluated by reviewing the following:

- Fire hazard maps, fire occurrence maps, and geographic information systems data from CAL FIRE and the CPUC
- CPUC and PG&E fire hazard rules and policies, including the current Wildfire Mitigation Plan (WMP)
- Information provided in the Hazards Element of the *San Bernardino Countywide Plan*
- Wildfire hazard analysis in the San Bernardino Countywide Plan Draft Programmatic Environmental Impact Report

5.20.1.1 High Fire Risk Areas and State Responsibility Areas

The CAL FIRE FHSZ maps identify locations that are within an FRA, SRA, or LRA for preventing or suppressing fires. Within SRAs, the Director of CAL FIRE has designated areas as moderate, high, and very high FHSZs based on factors such as potential fuel sources, terrain, weather, fire behavior characteristics, burn probabilities, and the likelihood of vegetation exposure. Within LRAs, CAL FIRE has recommended areas that should be considered as very high FHSZs; these recommendations may or may not be adopted by local governing agencies.

According to the CAL FIRE SRA Viewer (2024a), the project site is located within an LRA, although FRAs are located nearby. No SRAs are on or near the project site. San Bernardino County FHSZ mapping (CAL FIRE 2007) shows that the compressor station is in an unzoned area. Areas immediately south and west of the station are identified as being in a moderate hazard LRA.

The CPUC adopted fire hazard mapping in 2021 with its High Fire-Threat Map, which designates fire-threat areas that require enhanced fire safety (CPUC 2024a). CPUC defines Zone 1 as the Tier 1 high-hazard zones from the U.S. Forest Service and CAL FIRE joint map of tree mortality. Tier 2 identifies areas with an elevated risk of wildfire associated with overhead utility power lines or overhead utility power line facilities also supporting communication facilities. Tier 3 identifies areas where there is an extreme risk of wildfires associated with overhead utility power lines or overhead utility power line facilities also supporting communication facilities. The project site is located outside of the CPUC high fire hazard threat district (CPUC 2024b).

The Wildland Urban Interface (WUI) is the zone of transition between unoccupied land and human development. It is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Communities adjacent to and surrounded by wildland are at varying degrees of risk from wildfires (U.S. Fire Administration 2022). A major contribution to the severity and devastating outcomes of many WUI fires stems from the domino effect of fires spreading from the wildlands to deeper within the built community. Within a built community, fires can spread from structure to structure.

WUI definitions may include reference to one or more housing density classes, as follows (CAL FIRE 2019):

- Class 1 – Less than 1 house per 20 acres
- Class 2 – 1 house per 20 acres to 1 house per 5 acres
- Class 3 – More than 1 house per 5 acres to 1 house per acre
- Class 4 – More than 1 house per acre

Three types of WUI are identified by CAL FIRE: Urban Interface, Urban Intermix, and Wildfire Influence Zone (CAL FIRE 2019). Urban Interface is defined as dense housing adjacent to vegetation that can burn in a wildfire; it must meet the following landscape criteria identified by CAL FIRE:

- Housing density Class 2, 3, or 4
- In moderate, high, or very high FHSZ
- Not dominated by wildland vegetation (lifeforms not herbaceous, hardwood, conifer, or shrub)

Urban Intermix is defined as housing development interspersed in an area dominated by wildland vegetation subject to wildfire; it must meet the following landscape criteria identified by CAL FIRE:

- Not in Urban Interface
- Housing density Class 2
- Housing density Class 3 or 4 dominated by wildland vegetation
- In moderate, high, or very-high FHSZ
- Improved parcels only

Wildfire Influence Zone is defined as wildfire-susceptible vegetation; it must meet this criterion identified by CAL FIRE:

- Wildland vegetation up to 1.5 miles from Urban Interface or Urban Intermix

The U.S Forest Service – Geospatial Data Discover Wildland Urban Interface mapping (2023) identifies the compressor station as being in a non-WUI vegetated area with very low housing density.

5.20.1.2 Fire Occurrence

The *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*, published by the CPUC, request projects identify large fires that have occurred within the project vicinity during the last 10 years. The "project vicinity" for this project is 5 miles from the project site, given the setting of LRAs and not being located within a very high FHSZ. The National Wildfire Coordinating Group (NWCG), a federal government working group that coordinates wildfire term standardization, provides the following definition of a "large fire": (1) for statistical purposes, a fire burning more than a specified area of land, for example 300 acres, and (2) a fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface (NWCG 2024). PG&E's 2023-2025 WMP (2024) defines a "large fire" as "[a] fire that burns 300 or more acres but does not meet the definition of a Destructive or Catastrophic fire." A "destructive fire" is defined by PG&E as "[a] fire that destroys 100 or more structures but does not result in a serious injury or fatality." A "catastrophic fire" is defined by PG&E as a fire "that caused at least one death, damaged over 500 structures, or burned over 5,000 acres."

CAL FIRE's incident reports were reviewed for the most recent 10-year period (2015 to 2024) (CAL FIRE 2024b). According to CAL FIRE incident reporting, within the past 10 years, no wildfire incidents greater than 300 acres were reported within 5 miles of the project.

5.20.1.3 Fire Risk

Fuel modeling and digital elevation models were not prepared because the project is not located in a high fire risk area and is in a non-WUI vegetated area with very low housing density in the surrounding area. The station is surrounded by agricultural fields and areas of sparse desert vegetation. In addition, all project construction will occur within the developed station.

Information on temperature, precipitation, and wind speed in the Barstow area was obtain from the *Final Environmental Impact Report for the Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station* (LRWQCB 2013). The average January temperatures are 35°F (low) and 61°F (high), and the average July temperatures are 69°F (low) and 102°F (high). Annual temperatures vary greatly, with maximum temperatures 22 equaling or exceeding 90°F an average of 131 times per year, and minimum temperatures equaling or dropping below 32°F an average of 38 times per year. The annual average precipitation is 5.1 inches. The predominant wind direction at the Barstow-Daggett Airport, approximately 21 miles east–southeast of the compressor station, is from the west at approximately 11.3 miles per hour.

5.20.1.4 Values at Risk

The *San Bernardino Countywide Plan Draft Safety Background Report* (San Bernardino County 2018) summarizes values at risk from fire hazards. Values at risk in the desert areas of the county include air quality, especially from ozone and particulate matter; biological resources; housing, especially in areas of low-density, high-cost, larger homes with restricted access; utilities, including transmission lines and pipelines; and water quality, including the Mojave River watershed, due to increased deposits of ash and debris in waterways. A full list of potential values at risk is presented in Table 5-2 of the *Draft Safety Background Report*. Barstow and Hinkley, approximately 1 mile and 2.5 miles, respectively, from the project site, are not included in the list of communities at risk from wildfire in Table 5-3 of the *Draft Safety Background Report.*

The area surrounding the station is primarily farmland and sparsely vegetated open space with scattered rural residences. The nearest residences are approximately 1,455 and 1,600 feet from the project work area. The Barstow Gun Club is located approximately 800 feet south of the work area. The Hinkley Community and Senior Center is located approximately 2,700 feet to the west of the work area. Based on aerial imagery, these buildings appear to have been constructed with a mix of wooden and metal material.

5.20.1.5 Evacuation Routes

Larger roadways often serve as evacuation routes because they have multiple entry and exit points. Cul-de-sacs and deadend streets that would restrict traffic to one entry or exit point generally do not serve as evacuation routes. Access to the site will be via Fairview Drive (public paved road), which connects to Community Boulevard (public paved road) to the north and to Riverview Road (private dirt road) to the south. Both Community Boulevard and Riverview Road connect to multiple other roadways, including Hinkley Road, a paved road to the west of the project site that leads to SR 58. Community Boulevard also extends east from Fairview Drive to Lenwood Road, which provides access to both SR 58 and I-15. In addition, the station has secondary access via a dirt road located on the northeastern corner of the property that connects to Community Boulevard and Sommerset Road.

San Bernadino County's *Multi-Jurisdictional Hazard Mitigation Plan* (refer to Section 5.20.2.3) includes information on emergency evacuation (San Bernardino County 2022a). The MJHMP does not identify specific evacuation routes but does note that interstates would serve as major emergency response and evacuation routes. The plan also encourages residences to use a new mobile phone application, Ready SB, that provides residents with multiple resources to assist them in preparing for a disaster. Ready SB is available as a free download. The application features include: "My Plan," an individual emergency plan and/or a family or group plan. The person that downloads the application will receive county wide alerts and notifications of emergency situations in that person's area. The application also includes information about areas that need to be evacuated, where to go, what routes are open, and what resources are available during that emergency.

The *San Bernardino Countywide Plan* Policy Maps include map PP-2 Evacuation Routes (San Bernardino County 2020). Near the project site, this map shows SR 58, SR 247 (Barstow Road), I-15, and I-40 as evacuation routes.

5.20.1.6 PG&&E Wildfire Mitigation Plan

PG&E developed a WMP that is designed to reduce wildfire ignition potential, enhance wildfire situational awareness, and reduce impacts of public safety power shutoff (PSPS) events. An annual implementation report and an annual plan update are submitted to the CPUC. The 2023-2025 Wildfire Mitigation Plan (Revision 6) continues many of the actions undertaken in the 2019, 2020, 2021, and 2022 plans and introduces and updates initiatives to advance wildfire mitigation (PG&E 2024a).

PG&E implements its plan through standards and requirements that are communicated internally to employees and to its suppliers, contractors, and third-party employees to follow when traveling to, performing work at, or operating outdoors on any forest, brush, or grass-covered land. PG&E's Wildfire Prevention Contract Requirements are based on its Utility Standard *Preventing and Mitigating Fires While Performing PG&E Work* (PG&E 2024b) that complies with California PRC Sections 4427, 4428 and 4431. PG&E's current wildfire prevention standards and requirements may be superseded in the future following revisions to published standards and requirements.

5.20.2 Regulatory Setting

This section identifies applicable federal, state, and local laws, policies, and standards for wildfire.

5.20.2.1 Federal

Uniform Building Code and Uniform Fire Code

The Uniform Building Code (UBC) and the Uniform Fire Code (UFC) provide codes for fire protection at the federal level. To minimize potential fire risk and damage to structures, the UBC provides requirements to which building construction, materials, and other elements or construction practices must adhere. The UFC provides design measures for installation of fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards and safety measures, hazardous material storage and use, and other general and specialized requirements pertaining to fire safety and prevention.

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995 and updated in 2001 by the NWCG, which establishes consistent and coordinated fire management policy across multiple federal jurisdictions (National Interagency Fire Center 2009). An important component of the Federal Wildland Fire Management Policy is the acknowledgment of the essential role of fire in maintaining natural ecosystems. The Federal Wildland Fire Management Policy and its implementation include the following guiding principles: risk management is a foundation for all fire management activities; fire management plans and activities are based upon the best available science; and standardization of policies and procedures among federal agencies is an ongoing objective.

5.20.2.2 State

California Department of Forestry and Fire Protection

Pursuant to California PRC Sections 4201 to 4204 and Government Code (GC) Sections 51175 to 51189, CAL FIRE created FHSZ maps for the state that identify areas for preventing or suppressing fires that are within SRAs or LRAs. These maps identify areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. The FHSZ zones then define the application of various mitigation strategies to reduce risks associated with wildland fires. The financial responsibility of preventing and suppressing fires in SRAs has been determined to be primarily on the state (PRC Section 4201), and the financial responsibility of preventing and suppressing fires in LRAs is primarily on local agencies, including cities and counties (GC Sections 51175-51189). SRAs were originally mapped by CAL FIRE in 1985 and LRAs in 1996.

Within SRAs, the Director of CAL FIRE has designated areas as moderate, high, and very high fire hazard severity zones (PRC Section 4202.) Within LRAs, the Director of CAL FIRE was charged with recommending the locations of very high FHSZs (GC Section 51178.) These recommendations were to be reviewed and adopted in ordinances by local agencies (GC Section 51179), although not all local agencies have complied. All designations are mapped on the CAL FIRE website.

Fire Prevention and Firefighting Equipment

California PRC Sections 4427, 4428 and 4431 stipulate requisite firefighting equipment and flammable material clearance distances for activities that may create a spark, fire or flame when burn permits are required and where the activity is located on or near any forest-covered land, brush-covered land, or grass-covered land, or within 25 feet of any flammable material.

5.20.2.3 Local

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local (city and county) regulations except for air districts and Certified Unified Program Agencies with respect to air quality and hazardous waste regulations. However, local plans and policies are considered for informational purposes and to assist with the CEQA review process.

San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan

San Bernadino County adopted its *Multi-Jurisdictional Hazard Mitigation Plan* in December 2022 (San Bernardino County 2022a). The MJHMP presents updated information regarding hazards being faced by the County, the San Bernardino County Fire Protection District, the San Bernardino County Flood Control District, and Board-governed Special Districts administered by the San Bernardino County Special Districts Department. It is a "living document" that should be reviewed, monitored, and updated every 5 years to reflect changing conditions and new information. The goal of the MJHMP is to reduce or eliminate long-term risks to people and property from natural and man-made hazards including flooding, wildfire, and earthquakes. It includes a risk assessment to identify and analyze potential hazards; mitigation strategies to reduce effects of hazards; and an implementation approach to carry out and maintain mitigation strategies.

San Bernardino Countywide Plan Hazard Element

The Hazard Element of the *San Bernardino Countywide Plan* (San Bernardino County 2022b) includes policies to address risk from hazards, including wildland fires:

Policy HZ-1.14 Long-term fire hazard reduction and abatement: This policy requires proactive vegetation management/hazard abatement to reduce fire hazards on existing private properties, along roadsides of evacuation routes out of wildfire prone areas, and other private/public land where applicable.

Policy HZ-1.15 Evacuation route adequacy: This policy calls for coordination with CAL FIRE, California's Office of Emergency Services, and other local fire districts to identify strategies to ensure the maintenance and reliability of evacuation routes potentially compromised by wildfire, including emergency evacuation and supply transportation routes.

5.20.2.4 CPUC Standards

No CPUC standards for natural gas compressor stations applicable to wildfire management were identified.

5.20.3 Impact Questions

The project's potential effects associated with wildfire were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The criteria and conclusions are summarized in Table 5.20-1 and discussed in more detail in Section 5.20.4.

Table 5.20-1. CEQA Checklist for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less-than-Significant Impact 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 downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

5.20.3.1 Additional CEQA Impact Questions

None.

5.20.4 Potential Impacts

Project impacts related to wildfire were evaluated against the CEQA significance criteria and are discussed in the following sections. The impact analysis evaluates potential project impacts during the construction phase only because existing station operation and maintenance activities will not change.

5.20.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts associated with wildfire was evaluated for each of the criteria listed in Table 5.20-1, as discussed in Section 5.20.4.

5.20.4.2 Applicant-Proposed Measures

The project will have no impact related to wildfire and no APMs are proposed.

5.20.4.3 Impact Analysis

As described in Chapter 3, Project Description, the project will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. No gas transmission system or station features other than the electrical distribution equipment will be added, modified, removed, disconnected, or retired in place as part of this project. The project will not change existing gas transmission capacities or modify station operation function. The proposed project is not phased and does not include future plans. The project will not change the gas transmission system layout, the users, or the area served. PG&E will follow its Utility Standard *Preventing and Mitigating Fires While Performing PG&E Work* to implement construction fire prevention and response procedures during the project.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to wildfire resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. Therefore, the following impact analysis is limited to construction impacts.

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan? *No Impact*.

The station is not located in or near an SRA and is not on land classified as a very high FHSZ. In addition, project construction will not require closure of lanes or roads and, therefore, will not impair the implementation of or physically interfere with an adopted emergency response plan or evacuation plan. No impact will occur.

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, 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? *No Impact*.

The station is not located in or near an SRA and is not on land classified as a very high FHSZ. Furthermore, the project site is generally flat and the work area is unvegetated. Therefore, the project will not exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. No impact will occur.

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project 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? *No Impact*.

The station is not located in or near an SRA and is not on land classified as a very high FHSZ. Furthermore, project construction, including staging, will take place entirely within the existing compressor station and will use existing infrastructure such as roads and fire hydrants. Electric power will be supplied by onsite temporary generators that will be removed when construction is complete. The project will not require the installation or maintenance of associated infrastructure that may exacerbate fire risk. No impacts will occur.

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project 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? *No Impact*.

The station is not located in or near an SRA and is not on land classified as a very high FHSZ. Furthermore, the project will not include new structures. The project site is generally flat and the work area is unvegetated. The project will upgrade electrical and control systems within an existing compressor station and will not change the drainage or topography of the site. No impacts will occur.

5.20.4.4 CPUC Draft Environmental Measures

Refer to Section 3.5.12 for discussion of fire prevention practices as identified in CPUC Draft Environmental Measures, *Construction Fire Prevention Plan and Fire Prevention Practices*.

5.21 Mandatory Findings of Significance

Section 15065 of the CEQA Guidelines requires that a lead agency find that a project may have a significant effect on the environment where there is substantial evidence, in light of the whole record, that any of several conditions may occur. These conditions are included in Appendix G of the CEQA Guidelines and are listed in Table 5.21-1, which also lists the impact conclusion for each criterion. Additional discussion is provided following the table.

Table 5.21-1 CEQA Checklist for Mandatory Findings of Significance

Criterion	Impact Assessment
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?	Less-than-Significant Impact
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.)	Less-than-Significant Impact
Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Less-than-Significant Impact

5.21.1 Impact Assessment: Potential to Substantially Degrade the Quality of the Environment

5.21.1.1 Biological Resources

As discussed in Section 5.4, the proposed project will not result in any significant impacts to biological resources.

The project site does not contain habitat for any species identified as a candidate, sensitive, or special-status species. The project site is entirely within the existing compressor station, which is developed and has regular human activity. Two special-status wildlife species were determined to have some potential to occur in the project site, desert tortoise and Mojave ground squirrel. Occurrences of desert tortoise have been identified within 5 miles of the project site, and the southwest corner of the station is within the Fremont-Kramer to Ord-Rodman Desert Tortoise Linkage. However, the desert tortoise is determined to be absent from the project site because the station is completely enclosed by a chain link fence. Because of the lack of suitable habitat and reported absence during the trapping effort, Mohave ground squirrel is not expected to occur within the project site. No candidate, sensitive, or special-status plant or wildlife species, including Barstow woolly sunflower, desert tortoise, Mohave ground squirrel, and burrowing owl, have been identified in the station in the past, and none were observed during field surveys. These species are not expected to be present on the project site. The project does not include removal of any vegetation; all construction activities are in unvegetated areas. Nevertheless, in an abundance of caution, PG&E will implement APM BIO-2, APM BIO-3, and APM BIO-4, and APM BIO-5 to further ensure that the project does not affect wildlife.

No bats and no evidence of bat roosting were identified during surveys of the project site. Migratory birds may move through the BSA during construction activities; however, no foraging habitat for birds was identified on the project site. Birds such as golden eagle may nest in landscape trees at the compressor station and in the BSA. However, trees will not be trimmed or removed as part of project construction. The only construction activity that will be occurring with 200 feet of the trees is construction staging. The project staging area is within a larger active compressor station staging area. No suitable nesting habitat within the station was identified for ground-nesting birds, including burrowing owl, mountain plover, loggerhead shrike, and LeConte's thrasher. The project is not expected to substantially interfere with nesting birds and impacts will be less than significant. Implementation of APM BIO-1, APM BIO-3, and APM BIO-4 will further minimize any potential effects to nesting birds.

The compressor station, including the project site, does not contain riparian vegetation or other sensitive natural community. The project site does not contain aquatic resources. All project construction work will be completed within the compressor station and no riparian or other sensitive natural community will be affected by the project. The project will be consistent with local policies and ordinances protecting biological resources. No trees or other vegetation will be trimmed or removed as part of the project.

The project will replace existing electrical equipment infrastructure (for example, switchgear, MCCs, conduits and cable) at ground level, belowground, or in existing buildings or structures where there is no potential for collision or electrocution hazards. The project's replaced outdoor MCCs will be a similar height to the existing MCCs and will not change the collision risk for birds or bats. Therefore, the project does not create a substantial collision or electrocution risk for birds or bats and no impact will occur.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to biological resources resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur.

Therefore, the project does not 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, or substantially reduce the number or restrict the range of a rare or endangered plant or animal.

5.21.1.2 Cultural Resources

As discussed in Section 5.5, the proposed project will not result in any significant impacts to cultural or tribal resources. No resources eligible for listing in the CRHR were identified within the station. The pedestrian survey and records searches did not identify any archaeological sites within the work area. The only ground disturbance is a small amount (approximately 0.06 acre and up to 5 feet deep) of excavation or trenching for MCC foundations and electric conduit. The ground disturbance will occur in already-disturbed areas within the station. Although the potential for encountering subsurface cultural resources is low, there remains potential for cultural resources to be found in excavations during construction. In the unlikely event that archaeological resources are discovered, APM CUL-1 to develop and implement a worker environmental awareness program prior to construction and APM CUL-2 to address inadvertent cultural resource discoveries will be implemented to avoid significant impacts to archaeological resources. The project will not eliminate important examples of the major periods of California history or prehistory.

No known burial sites are located in the project area and the proposed project will not impact any known graves. Project impacts on human remains are not anticipated. If human remains are discovered, PG&E will implement APM CUL-3, which requires protocols for the unanticipated discovery of human remains.

5.21.2 Impact Assessment: Potential for Impacts that are Cumulatively Considerable

Chapter 7 identifies potential cumulative projects in the vicinity of the proposed project. Chapter 7 also provides an analysis of potential cumulative impacts from the project. For all resource areas, either the project has no impacts, or the impacts are so minor they will not contribute to cumulative impacts in the area. As discussed in Chapter 7, the proposed project does not have impacts that are individually limited but cumulatively considerable.

5.21.3 Impact Assessment: Potential for Substantial Adverse Effects on Human Beings

5.21.3.1 Air Quality

As discussed in Section 5.3, the proposed project will not result in any significant impacts to air quality.

Construction activities will cause temporary air pollutant emissions, which will be less than MDAQMD thresholds for all pollutants analyzed, including DPM emissions (conservatively represented by PM_{10} emissions). Incorporation of APMs will further reduce project construction emissions. The project will not expose sensitive receptors to substantial criteria pollutant concentrations or toxic air contaminants. Construction of the project will not result in a cumulatively considerable net increase of any pollutants for which the region is in nonattainment, including PM_{10}, $PM_{2.5}$, and ozone because the emissions will be temporary and below significance thresholds.

Operation and maintenance activities for the station upgrades will not change from current practices. While operation emissions will not change as a result of this project from the existing situation, temporary PERP generators will be used when the stationary generators are not operating. Emissions have been conservatively estimated from the use of PERP generators and do not include the reduction of emissions from when the stationary generators are offline. As such, impacts related to air quality resulting from the electrical upgrades project will not change from existing conditions and no operation-related impacts will occur. With no change in operational air emissions, operation and maintenance of the project will not conflict with or obstruct implementation of the applicable air quality plan and thus will have no impact.

5.21.3.2 Hazards

As discussed in Section 5.9, the proposed project will not create a significant hazard to the public or environment and will not result in any significant impacts associated with hazards, hazardous materials, or public safety.

No schools are within 0.25 mile of the project. No acutely hazardous materials or waste will be used or will be generated by the project. Construction impacts will be associated with the use of equipment with hydraulic fluids and fuels that could create a hazard in the event of a spill. However, implementation of APMs will reduce that potential impact to less than significant.

Hinkley Compressor Station is under an active Cleanup and Abatement Order with the State Water Resources Control Board, and therefore the project is located on a site listed pursuant to Section 65962.5. The depth of groundwater at the station is approximately 80 feet below ground surface; groundwater will not be encountered during the project. Because there is known soil contamination at the station from historic practices, implementation of APM HAZ-4 and APM HAZ-5 will ensure that human health and the environment are protected.

No project components will be located within any airport land use plan or within 2 miles of a public airport or public use airport. No safety hazards that will affect people residing or working in the project area will result from the project.

The proposed project will not conflict with an adopted emergency response plan or evacuation plan. All project activities will occur within the existing station fenceline and no lane or road closures are required for construction access.

Project construction will require the use of equipment that requires the use of hazardous materials, such as gasoline, diesel, and hydraulic fluid, these materials will be transported to the work sites according to USDOT standards and used in designated construction staging areas or other suitable locations identified prior to the onset of construction. PG&E will implement APM HAZ-2 and APM HAZ-4, which require construction crews to be trained in safe handling of hazardous materials prior to the initiation of construction to further reduce the small risk of minor exposure of the environment, the public, or site workers to potentially hazardous materials during construction. PG&E will follow its existing worker training programs.

The project is not expected to use or store large quantities of hazardous materials during construction. Natural gas used to fuel temporary PERP generators will replace the use of natural gas used to fuel the permanent station generators during the electrical equipment replacement and modification portion of construction. The temporary PERP generators will connect to existing natural gas fuel lines in the station. When not in use, hazardous materials will be properly stored as instructed by SDSs to prevent drainage or accidents. SDSs will be provided to onsite personnel for training purposes in case of emergency.

There is no known soil contamination in the project area; however, there is potential for unknown contaminated soils to be encountered during construction. However, contaminated soils are not known to occur at the surface of the project site and are unlikely to occur at the expected depth of excavation, approximately 5 feet below ground surface. In the unlikely event contaminated soils are encountered during construction, APM HAZ-5 will be implemented. Potentially contaminated soil that has not been precharacterized will be stockpiled separately to be tested, managed, and transported for disposal as appropriate. If suspected hazardous substances or waste are unexpectedly encountered during trenching activities (using indicators such as sheen, odor, and soil discoloration), work will be stopped at the trenching activity when safe to do so until the material is properly characterized and appropriate measures are taken to protect human health and the environment. Appropriate personal protective equipment will be used, and waste management will be performed in accordance with applicable regulations. If excavation of hazardous materials is required, the materials will be disposed of in accordance with applicable regulations.

As discussed in Section 5.9.1.4, the project is not located in a CAL FIRE designated FHSZ or CPUC designated fire threat district. The site is located within the San Bernardino County LRA. The primary risk for potential fire hazards will be associated with the use of vehicles and equipment during construction that could generate heat or sparks that could ignite dry vegetation and cause a fire. During construction, PG&E will follow its Utility Standard for *Preventing and Mitigating Fires While Performing PG&E Work*, which require workers to be trained in fire prevention practices and carry emergency fire suppression equipment that will reduce the wildland fire risk. PG&E will continue to comply with its current Wildfire Mitigation Plan. There will be no construction impacts to people and structures from wildland fires; no impact will occur.

Operation and maintenance activities for the station upgrades will not change from current practices. As such, impacts related to hazards and hazardous materials resulting from the electrical upgrades will not change from existing conditions and no operation-related impacts will occur.

The project will not result in environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

6. Comparison of Alternatives

The proposed project does not have any potentially significant impacts. As discussed in Chapter 5, all resource areas were determined to have less than significant impacts or no impacts. Therefore, the following qualitative comparison is limited to those environmental resources that may distinguish between the proposed project and the No Project Alternative, which is the only alternative from Chapter 4 carried forward for consideration.

6.1 Alternatives Summary

Table 6-1 summarizes the comparison of the proposed project and the No Project Alternative. The No Project Alternative would avoid the short-term and less-than-significant impacts associated with project. However, the No Project Alternative would have greater long-term impacts to some resources, including air quality, cultural resources, energy, paleontological resources, hazards and hazardous materials, and utilities. The No Project Alternative would not meet the project purpose and objectives.

Table 6-1. Comparison of Impacts by Alternative

Resource Topics	Project	No Project Alternative
Air Quality	Less-than-Significant	▪ Short-term: Less ▪ Long-term: Greater
Cultural Resources	Less-than-Significant	▪ Short-term: Less ▪ Long-term: Similar
Energy	Less-than-Significant	▪ Short-term: Less ▪ Long-term: Greater
Paleontological Resources	Less-than-Significant	▪ Short-term: Less ▪ Long-term: Similar
Hazards and Hazardous Materials	Less-than-Significant	▪ Short-term: Less ▪ Long-term: Greater
Utilities	Less-than-Significant	▪ Short-term: Less ▪ Long-term: Greater

6.2 No Project Alternative

This section provides a qualitative summary of potential impacts from the No Project Alternative. Potential impacts of the proposed project are described in Chapter 5 of this PEA.

6.2.1 Air Quality

Under the No Project Alternative, the temporary emissions of pollutants, including particulate matter, nitrous oxides, and sulfur dioxide, from project construction would not occur. Short-term air emissions would be less than the project.

During operation of the No Project Alternative, when repairs cannot be made as the station continues to age, or when spare parts cannot be obtained, the station would need to use emergency diesel generators to power the station over increasingly long periods. These generators may be powered by diesel or natural gas and likely would result in greater operational air emissions than the project. In addition, the risk of station failure or shutdown would increase, disrupting transmission of gas to customers who may use more polluting energy sources as a replacement when the station is not functioning. Long-term air emissions are likely to be greater than the project.

6.2.2 Cultural Resources

The No Project Alternative would avoid the potential for encountering subsurface cultural resources during the excavation activities that would occur during project construction, although that potential is low. Short-term impacts would be less than the project.

Current operation and maintenance activities for the station would continue with the No Project Alternative. As such, impacts related to cultural resources from the No Project Alternative would not change from existing conditions and no operation-related impacts would occur. Long-term impacts would be similar to the project.

6.2.3 Energy

Under the No Project Alternative, the temporary consumption of nonrenewable resources to fuel construction vehicles and equipment during project construction would not occur. Short-term energy impacts would be less than the project.

During operation of the No Project Alternative, when repairs cannot be made as the station continues to age, or when spare parts cannot be obtained, the station may need to use emergency generators that are less efficient than the permanent generators to power the station over increasingly long periods. This would result in an increased use of a nonrenewable resources compared to the project. In addition, the risk of station failure or shutdown would increase, disrupting transmission of gas to customers who may use more polluting energy sources as a replacement when the station is not functioning. Long-term energy use is likely to be greater than the project, and the No Project Alternative could result in wasteful, inefficient, or unnecessary consumption of energy resources.

6.2.4 Paleontological Resources

The No Project Alternative would avoid the potential for encountering paleontological resources during project excavation activities that would occur in geologic unit of moderate to high sensitivity for paleontological resources. Short-term impacts would be less than the project.

Current operation and maintenance activities for the station would continue with the No Project Alternative. As such, impacts related to paleontological resources from the No Project Alternative would not change from existing conditions and no operation-related impacts would occur. Long-term impacts would be similar to the project.

6.2.5 Hazards and Hazardous Materials

Under the No Project Alternative, the temporary use of hazardous materials, gasoline, diesel fuel, oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and cleaning solvents, during project construction would not occur. Although contaminated soils are not expected to occur at the excavation depths of the proposed project, the No Project Alternative would avoid any potential impacts associated with contaminated soils. Short-term impacts from hazardous materials would be less than the project.

Under the No Project Alternative, the station would continue to operate under current conditions. The existing electrical system would continue to require repairs using non-standard operating and safety procedures, and such repairs would be likely to increase in frequency. The aging infrastructure would continue to be a safety hazard to workers. In addition, the risk of station failure or shutdown would increase and would disrupt transmission of gas to customers, which could affect public safety. Long-term hazards of the No Project Alternative are likely to be greater than the project.

6.2.6 Utilities

Under the No Project Alternative, the small amount of waste, including concrete debris and electronic components, generated during project construction would not occur. Short-term impacts from waste disposal would be less than the project.

During operation of the No Project Alternative, the station would continue to operate under current conditions. The existing electrical system would continue to require repairs using non-standard operating and safety procedures, and such repairs would be likely to increase in frequency. The aging infrastructure would continue to be a safety hazard to workers. Spare parts for obsolete equipment may no longer be available. The risk of station failure or shutdown would increase, leading to disruption in the transmission of gas to customers. This disruption could result in construction or implementation of new or expanded electric or other energy facilities that could result in significant effects on the environment. Long-term impacts to utilities of the No Project Alternative would be greater than the project.

7. Cumulative Impacts and Other CEQA Considerations

While no cumulative impacts or growth-inducing impacts were identified for the project, this chapter discusses the potential for cumulative impacts or growth-inducing impacts related to the S-238 Hinkley Compressor Station Electrical Upgrades Project. Cumulative impacts, as defined in Section 15355 of the CEQA Guidelines, refer to two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. A cumulative impact is the change in the environment that results from the incremental impact of a project when added to other closely related past, present, or reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant impacts occurring over time.

7.1 Cumulative Impacts

Potential projects to be included in the cumulative impact assessment were sought using a list approach (CEQA Guidelines Section 15130(b)(1)(A)), included review of all pending development projects within an approximately 2-mile radius of the project area. This area includes unincorporated San Bernardino County and the City of Barstow. Websites reviewed for proposed development projects in the area include San Bernardino County Land Use Services and Public Works; San Bernardino Planning Commission; San Bernardino County Transportation Authority; City of Barstow; and the CEQAnet web portal.

No planned or proposed development projects within 2 miles of the project were identified. The nearest identified proposed project, approximately 5 miles south-southwest of the project site, is the Barstow International Gateway (BIG) project (City of Barstow 2024). BIG is a project proposed by BNSF Railway for a master-planned 4,500-acre integrated rail facility along the BNSF mainline rail southwest of Barstow. The City of Barstow released the Notice of Preparation in February 2024 for its General Plan Update and the BIG Specific Plan Environmental Impact Report. Although the BIG schedule is unknown, it is early in the environmental review stage. Therefore, it appears unlikely that BIG will be in construction before the construction of the proposed project is completed. The proposed project at the station is anticipated to have only temporary less-than-significant construction impacts. Operation and maintenance of the replaced electrical system following project construction are expected to be the same as existing operation and maintenance activities by the existing staff, with added efficiency using upgraded equipment and improved safety. With the distance between the two projects and lack of construction schedule overlap, no cumulative impacts will occur.

Therefore, no other projects that could result in potential cumulative impacts when combined with the proposed project were identified. In addition, all proposed project impacts will be less than significant. Implementation of APMs will further reduce any impacts. No cumulative impacts would occur.

Ongoing standard O&M activities at Hinkley Compressor Station, which are part of the baseline condition and are not cumulative projects, will be conducted while project construction is underway. As appropriate, these O&M activities will implement APMs similar to the proposed project's.

7.2 Growth-Inducing Impacts

The following criteria, derived from CEQA Guidelines Section 15126.2(d), are used to evaluate whether the project will result in potential individual or cumulative growth-inducing impacts:

- Any economic or population growth in the surrounding environment that will directly or indirectly result from the proposed project
- Any increase in population that could further tax existing community service facilities (schools, hospitals, fire, police), which will directly or indirectly result from the proposed project
- Any obstacles to population growth that the proposed project would remove
- Any other activities, directly or indirectly encouraged or facilitated by the proposed project, that would cause population growth that could significantly affect the environment, either individually or cumulatively

The project will not, either directly or indirectly, foster economic or population growth. The proposed project is a maintenance project and replaces aging infrastructure. The station's operation does not include gas storage, nor will the project modify the gas storage capacity elsewhere on PG&E's gas system. In addition, the project will not modify existing gas transmission pipelines connected to the station or add new pipelines. No changes in pipe, operating pressure, or other related gas system operational aspects are part of the project. Replacing the existing electrical distribution system will not generate new development and the project does not propose new housing, businesses, or other land use changes that will induce economic or population growth in the area. Therefore, no project-related or cumulative growth-inducing impacts are expected.

Operation and maintenance of the replaced electrical system will be performed by existing staffing. Maintenance activities following project construction are expected to be the same as existing maintenance activities with added efficiency using upgraded equipment and improved safety. Because construction will be temporary and operation and maintenance will not create new jobs, any changes to economic and population growth will be less than significant.

The project will not place a higher demand on existing community services. Water needed during project construction will be obtained from existing resources; water use for project operations will be similar to current use. As discussed in Section 5.14, Population and Housing, and Section 5.15, Public Services, existing community services are sufficient to serve the project, and no new housing will be required for construction. Operation and maintenance will be provided by existing staffing.

The project will not remove any obstacles to growth in the area. As noted previously, the station's operation does not modify the gas storage capacity in PG&E's gas system and will not modify existing or add new gas transmission lines. The project will not extend infrastructure into areas not already served.

8. List of Preparers

8.1 List of Preparers

Many PG&E employees and representatives contributed to the preparation of, or reviewed and commented on drafts of, this PEA. In addition, the consultants listed in Table 8-1 provided support to PG&E in preparing this document.

Table 8-1. Contributor Section and Qualifications

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4 Description of Alternatives 6 Comparison of Alternatives 5.1 Aesthetics 5.2 Agriculture and Forestry 5.10 Hydrology and Water Quality 5.11 Land Use and Planning 5.12 Mineral Resources 5.14 Population and Housing 5.15 Public Services 5.16 Recreation 5.19 Utilities and Service Systems 5.20 Wildfire 5.21 Mandatory Findings of Significance 7 Cumulative Impacts and Other CEQA Considerations	Andrea Gardner	Senior Environmental Planner, Jacobs ▪ M.A. Urban Planning and Environmental Policy, University of California, Los Angeles ▪ B.S. Mathematics, Stanford University
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Table 8-1. Contributor Section and Qualifications

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5.5 Cultural Resources 5.18 Tribal Cultural Resources	Natalie Lawson	Principal Archaeologist, Jacobs ▪ M.A. Anthropology, California State University, Fullerton ▪ B.S. Chemistry, Arizona State University
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5.7 Geology, Soils, and Paleontological Resources	Matthew Steinkamp	Senior Geoarchaeologist/Paleontologist, Jacobs ▪ M.S. Geology, Oregon State University ▪ B.A. Anthropology, University of Cincinnati
5.9 Hazards, Hazardous Materials, and Public Safety	Sarah Madams	Senior Project Manager, Jacobs ▪ B.S., Environmental Toxicology, University of California, Davis
5.13 Noise	Mark Bastasch, P.E.	Principal Acoustical Engineer, Jacobs ▪ M.S. Environmental Engineering, Rice University ▪ B.S. Environmental Engineering, California Polytechnic State University, San Luis Obispo
	Gretchen Gee	Environmental Engineer, Jacobs ▪ M.S. Environmental Science and Engineering, Colorado School of Mines ▪ B.S. Geology, Western Washington University
5.17 Transportation	Raizalyn Chau, P.E.	Transportation/Traffic Engineer, Jacobs ▪ B.S. Civil Engineering, University of California, Irvine

B.A. = bachelor of arts degree
B.S. = bachelor of science degree
M.A. = master of arts degree
M.S. = master of science degree

9. References

9.1 Chapter 1. Executive Summary

Not included yet.

9.2 Chapter 2. Introduction

Pacific Gas and Electric Company (PG&E). 2023. *First Amended Annual Report of Planned Gas Investments*. June 27. https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M512/K514/512514064.PDF.

Mojave Desert Air Quality Management District (MDAQMD). 2024. Letter: Approval of the Temporary Use of PERP Registered NG ICE for Electrical Upgrade. Sent by Pacific Gas and Electric Company, August 14, 2024, for S-238 Hinkley Compressor Station Electrical Upgrades Project. Approved August 19.

9.3 Chapter 3. Proposed Project Description

None.

9.4 Chapter 4. Description of Alternatives

None.

9.5 Chapter 5. Environmental Analysis

None.

9.5.1 Section 5.1. Aesthetics

California Department of Transportation (Caltrans). 2024. Website of Scenic Highways. Accessed July 31, 2024. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

Federal Highway Administration (FHWA). 2024a. National Scenic Byways & All-American Roads. Historic Route 66. Accessed July 31, 2024. https://fhwaapps.fhwa.dot.gov/bywaysp/StateMaps/Show/byway/2489.

Federal Highway Administration (FHWA). 2024b. National Scenic Byways & All-American Roads. About America's Byways. Accessed July 31, 2024. https://fhwaapps.fhwa.dot.gov/bywaysp/About.

Lahontan Regional Water Quality Control Board (LRWQCB). 2013. *Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County, Final Environmental Impact Report Volume II*. May. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/feir.html

San Bernardino County. 2020. *San Bernardino Countywide Plan*. Accessed July 2, 2024. https://countywideplan.com/.

San Bernardino County. 2019. *San Bernardino Countywide Plan Draft Environmental Impact Report.* June. https://countywideplan.com/resources/document-download/.

San Bernardino County Assessor. 2024. San Bernardino County Assessor – Recorder – County Clerk. Accessed July 2, 2024. https://arcpropertyinfo.sbcounty.gov/.

U.S. Department of Transportation (USDOT). 2015. *Guidelines for the Visual Impact Assessment of Highway Projects*. https://www.environment.fhwa.dot.gov/env_topics/other_topics/VIA_Guidelines_for_Highway_Projects.pdf.

9.5.2 Section 5.2. Agriculture and Forestry Resources

California Department of Conservation (DOC). 2018. 2016-2018 Farmland Conversion Report, Appendix E: Farmland of Local Importance. Accessed August 13, 2024. https://www.conservation.ca.gov/dlrp/fmmp/Documents/Farmland_of_Local_Importance_2018.pdf.

California Department of Conservation (DOC). 2023. California Williamson Act Enrollment. Accessed August 8, 2024. https://maps.conservation.ca.gov/dlrp/WilliamsonAct/.

California Department of Conservation (DOC). 2024. Farmland Mapping and Monitoring Program. Accessed August 8, 2024. https://www.conservation.ca.gov/dlrp/fmmp.

Lahontan Regional Water Quality Control Board (LRWQCB). 2013. Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County, Final Environmental Impact Report Volume II. May. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/feir.html.

San Bernardino County. 2020. Online Land Use Map showing Land Use Districts and Zoning. Part of the *San Bernardino Countywide Plan*. October. https://www.arcgis.com/apps/webappviewer/index.html?id=f23f04b0f7ac42e987099444b2f46bc2.

9.5.3 Section 5.3. Air Quality

California Air Resources Board (CARB). 1998. *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas*. June. https://ww2.arb.ca.gov/resources/documents/final-carbon-monoxide-redesignation-request-and-maintenance-plan-ten-federal.

California Air Resources Board (CARB). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. September. https://ww2.arb.ca.gov/resources/documents/guidance-documents.

California Air Resources Board (CARB). 2016. *Ambient Air Quality Standards*. May. https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf.

California Air Resources Board (CARB). 2024a. "EMFAC." Accessed June 10, 2024. https://arb.ca.gov/emfac/.

California Air Resources Board (CARB). 2024b. "Maps of State and Federal Area Designations." Accessed June 10, 2024. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

California Air Resources Board (CARB). 2024c. "Top 4 Summary: Select Pollutant, Years, & Area." Accessed June 10, 2024. https://www.arb.ca.gov/adam/topfour/topfour1.php.

Churchill, Ronald K., and Robert L. Hill. 2000. *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*. August.

ICF. 2022. *CalEEMod User's Guide, Version 2022.1*. April.

Mojave Desert Air Quality Management District (MDAQMD). 1995. *Mojave Desert Planning Area Federal Particulate Matter (PM_{10}) Attainment Plan*. July 31. https://www.mdaqmd.ca.gov/home/showpublisheddocument/176/636305689057870000.

Mojave Desert Air Quality Management District (MDAQMD). 2015. *8-Hour Reasonably Available Control Technology – State Implementation Plan Analysis*. February. https://www.mdaqmd.ca.gov/home/showpublisheddocument/196/636305687462070000.

Mojave Desert Air Quality Management District (MDAQMD). 2020. *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*. February. https://www.mdaqmd.ca.gov/home/showpublisheddocument/8510/638126583450266235.

Mojave Desert Air Quality Management District (MDAQMD). 2023. *Federal 70 ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)*. January 23. https://www.mdaqmd.ca.gov/home/showpublisheddocument/9693/638131029372000000.

Mojave Desert Air Quality Management District (MDAQMD). 2024a. "Asbestos." Accessed July 2, 2024. https://www.mdaqmd.ca.gov/permitting/asbestos-information.

Mojave Desert Air Quality Management District (MDAQMD). 2024b. Letter: Approval of the Temporary Use of PERP Registered NG ICE for Electrical Upgrade. Sent by Pacific Gas and Electric Company, August 14, 2024, for S238 Hinkley Compressor Station Electrical Upgrades Project. Approved August 19.

San Bernardino Associated Governments (SANBAG). 2016. *San Bernardino County Congestion Management Program*. June. https://www.gosbcta.com/wp-content/uploads/2019/10/2016-Congestion-Management-Plan-.pdf.

San Bernardino County. 2014. *County of San Bernardino 2007 Development Code*. Amended April 24. https://www.sbcounty.gov/uploads/lus/DevelopmentCode/2007_Development_Code_14-04-24.pdf.

San Bernardino County. 2022. *County Policy Plan*. September. https://countywideplan.com/wp-content/uploads/sites/68/2021/01/CWP_PolicyPlan_HardCopy_MainText_Tables_2022_Sept_Adopted.pdf?x23421.

Supreme Court of California. 2018. *Sierra Club et al. v. County of Fresno et al. and Friant Ranch, L.P. 6 Cal 5th 502*. December 24. https://cases.justia.com/california/supreme-court/2018-s219783a.pdf?ts=1545687370.

U.S. Environmental Protection Agency (EPA). 2024a. "California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants." Accessed June 10, 2024. https://www3.epa.gov/airquality/greenbook/anayo_ca.html.

U.S. Environmental Protection Agency (EPA). 2024b. "Monitor Values Report." Accessed June 10, 2024. https://www.epa.gov/outdoor-air-quality-data/monitor-values-report.

U.S. Geological Survey (USGS). 2011. *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California*.

9.5.4 Section 5.4. Biological Resources

California Department of Fish and Wildlife (CDFW). 2024. *CNDDB Maps and Data.* California Natural Diversity Database. Accessed May 2024. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

California Department of Fish and Wildlife (CDFW). 2024a. VegCamp. Vegetation Database (GIS). Available online at: https://wildlife.ca.gov/Data/GIS/Vegetation-Data. Accessed June 2024.

California Native Plant Society (CNPS). 2024. Inventory of Rare and Endangered Plants (online edition, 8 v7-11). Sacramento, CA. Accessed July 2024. http://www.cnps.org/inventory.

California Public Utilities Commission (CPUC). 2010. Staff Assessment. Abengoa Mojave Solar 11 Application for Certification (09-AFC-5). San Bernardino County. March

California Public Utility Commission (CPUC). 2019. Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments. November. https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/c/6442463239-ceqa-pre-filing-guidelines-pea-checklist-nov-2019.pdf.

Consortium of California Herbaria (CCH). 2024. Accession Results for *Abronia villosa var. aurita, Astragalus jaegerianus, Astragalus preussii var. laxiflorus, Chorizanthe spinosa, Cryptantha clokeyi, Cymopterus deserticola, Eriophyllum mohavense, Menodora spinescens var. mohavensis, Mentzelia tridentata, Mimulus mohavensis, Pediomelum castoreum, Phacelia parishii, Sarcocornia utahensis and Wislizenia refracta ssp. palmeri*. Accessed June 2024. https://ucjeps.berkeley.edu/consortium.

Greenhouse, Jeffrey, et al. 2012. *The Digital Jepson Manual: Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded.* Baldwin, Bruce G., et al., editors. University of California Press. Accessed June 2024. https://ucjeps.berkeley.edu/eflora/.

National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries). 2024a. Research of the West Coast Region Protected Resource App mapping tool for threatened and endangered species range and critical habitat Accessed May 2024. https://www.fisheries.noaa.gov/resource/map/protected-resources-app.

National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries). 2024b. Research of the Essential Fish Habitat Mapper. Accessed May 2024. https://www.habitat.noaa.gov/apps/efhmapper/?page=page_4.

Natural Resources Conservation Service (NRCS). 2024. Web Soil Survey. Soil Survey of San Joaquin County, California. U.S. Department of Agriculture. Accessed June 2024. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

Pacific Gas and Electric Company (PG&E). 2017. *Hinkley Groundwater Remediation Project Habitat Conservation Plan, San Bernardino County, California.* Report prepared for Pacific Gas and Electric Company. https://hinkleygroundwater.com/wp-content/themes/hinkleygw/documents/hcp/Hinkley_PublicDraft_HCP.pdf

Sawyer, J. O., T. Keeler-Wolf, J. Evens. 2009. *A Manual of California Vegetation*. Second Edition. California Native Plant Society. Sacramento, CA.

Strohl. 2024. Personal communication between Marjorie Eisert, Jacobs Senior Biologist, and Virginia Strohl, PG&E Senior Biologist.

U.S. Bureau of Land Management (BLM). 2006. *Final Environmental Impact Report and Statement for the West Mojave Plan*. Report prepared by BLM California Desert District, 22835 Calle San Juan De Los Lagos, Moreno Valley, CA. January. May 2024. http://www.blm.gov/ca/pdfs/cdd_pdfs/wemo_pdfs/plan/wemo/Vol-1- Chapter1_Bookmarks.pdf.

U.S. Bureau of Land Management (BLM). 2016. *Desert Renewable Energy Conservation Plan*. Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan. BLM/CA/PL-2016/03+1793+8321. September.

U.S. Bureau of Land Management, County of San Bernardino, and City of Barstow (BLM et al.). 2005. Final Environmental Impact Report and Statement for the West Mojave Plan, a Habitat Conservation Plan and California Desert Conservation Area Plan Amendment. Bureau of Land Management, California Desert District, Moreno Valley, California. Vol 1. BLM/CA/ES-2004-005 + 1790 -1600. January.

U.S. Fish and Wildlife Service (USFWS). 1990. *Determination of Threatened Status for the Mojave Population of the Desert Tortoise*. U.S. Fish and Wildlife Service. April.

U.S. Fish and Wildlife Service (USFWS). 2010. Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to List the Mohave Ground Squirrel as Endangered with Critical Habitat. *Federal Register* 75(80): 22063–22070.

U.S. Fish and Wildlife Service (USFWS). 2011a. Revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). Region 8, Pacific Southwest Region. U.S. Fish and Wildlife Service, Sacramento, California. May 6.

U.S. Fish and Wildlife Service (USFWS). 2011b. Endangered and threatened wildlife and plants; 12-month finding on a petition to list the Mohave ground squirrel as endangered or threatened. *Federal Register* 76: 62214-62258. Department of the Interior, Fish and Wildlife Service, 50 CFR Part 17. Proposed Rule.

U.S. Fish and Wildlife Service (USFWS). 2024a. *Information for Planning and Consultation*. Accessed May 2024. http://ecos.fws.gov/ipac/.

U.S. Fish and Wildlife Service (USFWS). 2024b. National Wetland Inventory – Wetlands Mapper. Accessed May 2024. https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper.

Western Bat Working Group (WBWG). 2024. The Western Bat Species Regional Priority Matrix. Accessed May 2024. https://wbwg.org/matrices/.

Western Regional Climate Center (WRCC). 2024. Climate summary for Barstow, California from 1971-2000. Accessed June 2024. www.wrcc.dri.edu.

Yosef, R. 1996. "Loggerhead Shrike (*Lanius ludovicianus*)." In: A. Poole and F. Gill (eds.), *The Birds of North America*, No. 231. The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, D.C.

9.5.5 Section 5.5. Cultural Resources

Bean, Lowell John, and Charles R. Smith. 1978. "Serrano." In *Handbook of North American Indians, Vol. 8 California.* Edited by Robert F. Heizer. Smithsonian Institute, Washington.

Bryant, K. 1974. *History of the Atchison, Topeka, and Santa Fe Railway*. MacMillan Publishing Co., Inc. Woodland Hills, California.

Byrd, Brian F. 1996. *Camping in the Dunes: Archaeological and Geomorphological Investigations of Late Holocene Settlements West of Rogers Dry Lake*. Prepared by ASM Affiliates, Encinitas, California. Prepared for USACE, Los Angeles District, Los Angeles, California.

Cataldo, Nick. 2023. "How the Lugo family, owners of Rancho San Bernardino, rose to prominence." In *The Sun.* Accessed on August 6, 2024. https://www.sbsun.com/2023/06/26/how-the-lugo-family-owners-of-rancho-san-bernardino-rose-to-prominence/.

Dibblee, T. W., Jr. 1967. *Areal Geology of the Western Mojave Desert*. U. S. Geological Survey Professional Paper 522. Denver, CO.

Earle, D. D., B. Boyer, R. A. Bryson, R. U. Bryson, M. M. Campbell, J. J. Johannesmeyer, K. A. Lark, C. J. Parker, M. D. Pittman, L. M. Ramirez, M. R. Ronning, and J. Underwood. 1998. *Cultural Resources Overview and Management Plan for Edwards AFB, California, Volume 1: Overview of Prehistoric Cultural Resources*. Computer Sciences Corporation, Edwards Air Force Base, California. Submitted to the Air Force Flight Test Center, Base Historic Preservation Office, Edwards Air Force Base, California, Contract No. F04611-92-C-0045. On file at the Base Historic Preservation Office, Edwards Air Force Base, California.

Earle, David D. 2012. "Native Occupation and Use of the Central Mojave River Region and Places of Significance to the Mojave." Manuscript on file, PG&E.

Edwards Air Force Base (Edwards AFB). 1998. Cultural Resources Overview and Management Plan for Edwards Air Force Base, California: Volume 2 Overview of Historic Cultural Resources. Edwards AFB, California, Environmental Management Office.

Gudde, Erwin, and William Bright. 1998. *California Place Names*. The Regents of California Press, 4th edition (London, England).

Gutiérrez, R. A., and R. J. Orsi. 1998. *Contested Eden: California before the Gold Rush*. Berkeley, California: University of California Press.

General Land Office (GLO). 1855. Plat Map for Township 9N, Range 3W, San Bernardino Meridian. Accessed June 11, 2024. https://glorecords.blm.gov/search/default.aspx.

Kelly, Isabel T., and Catherine Fowler. 1986. "Southern Piute." In *Handbook of North American Indians, Vol. 11 Great Basin*. Edited by Warren L. D'Azevedo. Smithsonian Institute, Washington.

Kroeber, A. L. 1925. *Handbook of the Indians of California*. Reprinted 1976. Dover Publications, Inc. New York, New York.

Moratto, M. J. 2004. *California Archaeology*. Second Edition. Academic Press, San Diego

National Park Service (NPS). 1997. *How to Apply the National Register Criteria for Evaluation Bulletin 15.* Accessed July 2024. https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf.

Nationwide Environmental Title Research (NETR). 2024. 1952 Historical Aerial of Hinkley, California. Accessed July 2024. https://www.historicaerials.com/viewer.

Natural Resources Conservation Service (NRCS). 2024. Web Soil Survey. Accessed on July 16, 2024. https://websoilsurvey.nrcs.usda.gov/app/.

O'Rourke, Judy. 2005. "DNA Links Ancient, Modern Indians." *The Signal*. May 22.

Parcel Quest. 2024. 35863 Fairview Road. Accessed July 2024. https://mil.library.ucsb.edu/ap_indexes/FrameFinder/.

Pacific Gas and Electric Company (PG&E). 2024. Compressor Stations: Overview of Our Cleanup Efforts at Topock and Hinkley. Accessed June 2024. https://www.pge.com/en/about/corporate-responsibility-and-sustainability/taking-responsibility/compressor-stations.html#accordion-d2181a3515-item-1da39c128f.

Roberson, Joanna. 2021. Letter Report for the Completion of Archaeological Monitoring for Hydrotest 2020 Segment T-1486 (Line 300B), San Bernardino County, California. On file with PG&E, Oakland, California.

Smith, Charles R. 1978. "Tubatulabal." In *Handbook of North American Indians, Volume 8, California*. Edited by Robert F. Heizer. Smithsonian Institution, Washington, D.C. Pp. 437-445.

Sutton, Mark Q. 2005. People and Language: Defining the Takic Expansion into Southern California. AltaMira Press. Lanham.

Sutton, Mark Q., Mark E. Basgall, Jill K. Gardner, and Mark W. Allen. 2007. "Advances in Understanding Mojave Desert Prehistory." In *California Prehistory, Colonization, Culture, and Complexity*. Edited by Terry L. Jones and Kathryn A. Klar. AltaMira Press. Lanham. Pp. 229-246.

Thomas, Tiffany Ann. 2011. A Landscape Approach to Late Prehistoric Settlement and Subsistence Patterns in the Mojave Sink. Master's Thesis, University of Nevada, Las Vegas.

U.S. Geological Survey (USGS). 1932. Hinkley, California. Accessed July 2024. https://ngmdb.usgs.gov/topoview/viewer.

U.S. Geological Survey (USGS). 1956. Hinkley, California. Accessed July 2024. https://ngmdb.usgs.gov/topoview/viewer.

U.S. Geological Survey (USGS). 1966. Hinkley, California" Accessed July 2024. https://ngmdb.usgs.gov/topoview/viewer.

U.S. Geological Survey (USGS). 1971. Hinkley, California" Accessed July 2024. https://ngmdb.usgs.gov/topoview/viewer.

U.S. Geological Survey (USGS). 2020. Geologic map and borehole stratigraphy of Hinkley Valley and vicinity, San Bernardino County, California. Accessed July 17, 2020. https://pubs.usgs.gov/sim/3458/sim3458_ sheet1.pdf.

Wallace, William J. 1962. "Prehistoric Cultural Development in the Southern California Deserts." *American Antiquity* 28(2): 172-180.

9.5.6 Section 5.6. Energy

California Air Resources Board (CARB). 2022. *2022 Scoping Plan for Achieving Carbon Neutrality*. November 16. https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf.

California Air Resources Board (CARB). 2024a. "EMFAC." Accessed June 20, 2024. https://arb.ca.gov/emfac/.

California Air Resources Board (CARB). 2024b. "OFFROAD." Accessed June 20, 2024. https://arb.ca.gov/emfac/offroad/.

California Energy Commission (CEC). 2024a. *2023 Integrated Energy Policy Report Update*. January. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report.

California Energy Commission (CEC). 2024b. "Annual Power Content Labels for 2022." Accessed June 20, 2024. https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure-program/power-content-label/annual-power-3.

California Energy Commission (CEC). 2024c. "Electricity Consumption by County." Accessed June 20, 2024. https://ecdms.energy.ca.gov/elecbycounty.aspx.

California Energy Commission (CEC). 2024d. "Gas Consumption by County." Accessed June 27, 2024. https://ecdms.energy.ca.gov/gasbycounty.aspx.

California Energy Commission (CEC). 2024e. "Refinery Inputs and Production." Accessed June 20, 2024. https://www.energy.ca.gov/data-reports/reports/weekly-fuels-watch/refinery-inputs-and-production.

California Public Utilities Commission (CPUC). 2019. *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*. November.

Find Energy. 2024. "San Bernardino County, California Electricity Rates & Statistics." Accessed June 20, 2024. https://findenergy.com/ca/san-bernardino-county-electricity/#san-bernardino.

Mojave Desert Air Quality Management District (MDAQMD). 2020. *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*. February. https://www.mdaqmd.ca.gov/home/show publisheddocument/8510/638126583450266235.

Office of the Governor. 2005. "Executive Order S-3-05." June. https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/5129-5130.pdf.

San Bernardino Council of Governments (SBCOG). 2021. *San Bernardino County Regional Greenhouse Gas Reduction Plan*. March. https://www.gosbcta.com/wp-content/uploads/2019/09/San_Bernardino_Regional_GHG_Reduction_Plan_Main_Text_Mar_2021.pdf.

San Bernardino County. 2019. *San Bernardino Countywide Plan Draft Environmental Impact Report*. June. https://countywideplan.com/resources/document-download/.

San Bernardino County. 2022. *County Policy Plan*. Part of the *San Bernardino Countywide Plan*. September. https://countywideplan.com/wp-content/uploads/sites/68/2021/01/CWP_PolicyPlan_HardCopy_MainText_Tables_2022_Sept_Adopted.pdf?x23421.

U.S. Environmental Protection Agency (EPA). 2024a. "Summary of the Energy Independence and Security Act." Accessed June 20, 2024. https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act#:~:text=Public%20Law%20110%2D140%20(2007)&text=protect%20consumers%3B,of%20the%20Federal%20Government%3B%20and.

U.S. Environmental Protection Agency (EPA). 2024b. "EO 14008: Tackling the Climate Crisis at Home and Abroad." Accessed June 20, 2024. https://www.epa.gov/greeningepa/eo-14008-tackling-climate-crisis-home-and-abroad.

9.5.7 Section 5.7. Geology, Soils, and Paleontological Resources

Bryant, W. A., and E. W. Hart. 2007. Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps. Special Publication 42. California Geologic Survey.

California Department of Conservation (DOC). 2024. Reported California Landslides Map. Reported California Landslides (arcgis.com).

Dibblee Geological Foundation. 2008. Geologic map of the Barstow & Daggett 15 minute quadrangles, San Bernardino County, California. https://ngmdb.usgs.gov/Prodesc/proddesc_86300.htm.

Lahontan Regional Water Quality Control Board (LRWQCB). 2012. *Initial Study/Mitigated Negative Declaration, Class II Surface Impoundments 6R and 7R, PG&E Hinkley Compressor Station, Hinkley, CA.* Prepared by ICF International and Cardno ENTRIX. November. https://www.waterboards.ca.gov/lahontan/board_info/agenda/2013/jan/pge_ceqa110912.pdf.

Lahontan Regional Water Quality Control Board (LRWQCB). 2013. *Final Environmental Impact Report: Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County*. Prepared by ICF International. May. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/docs/feir/ch3_2to3_4.pdf.

Natural Resources Conservation Service (NRCS). 2024. Web Soil Survey Interactive Map https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

Pacific Gas and Electric Company (PG&E). 2014. *Cultural and Paleontological Resource Studies for the Pacific Gas & Electric Groundwater Remediation Project, Hinkley Compressor Station, San Bernardino County, Volume 3, Paleontological Evaluation Report*. CONFIDENTIAL. Provided separately to the CPUC.

San Bernardino County. 2020. San Bernardino Countywide Plan Hazards Element maps. https://countywide.sbcounty.gov/policy-plan/hazards/.

U.S. Geological Survey (USGS). 2024. Earthquake Hazards Program. Alquist-Priolo Faults web page. https://earthquake.usgs.gov/education/geologicmaps/apfaults.php.

9.5.8 Section 5.8. Greenhouse Gas Emissions

California Air Resources Board (CARB). 2008. Climate Change Scoping Plan: A Framework for Change. December.

California Air Resources Board (CARB). 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. November 16. https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf.

California Air Resources Board (CARB). 2024a. "Current California GHG Emission Inventory Data." Accessed June 10, 2024. https://ww2.arb.ca.gov/ghg-inventory-data.

California Air Resources Board (CARB). 2024b. "EMFAC". Accessed June 10, 2024. https://arb.ca.gov/emfac/.

California Air Resources Board (CARB). 2024c. "GHG 1990 Emissions Level & 2020 Limit." Accessed June 10, 2024. https://ww2.arb.ca.gov/ghg-2020-limit#:%7E:text=This%20limit%20is%20an%20aggregated,equivalent%20(MMTCO2e).

California Air Resources Board (CARB). 2024d. "Short-Lived Climate Pollutants." Accessed June 10, 2024. https://ww2.arb.ca.gov/our-work/programs/slcp/about#:%7E:text=Short%2Dlived%20climate%20pollutants%20(SLCP,)%2C%20and%20anthropogenic%20black%20carbon.

Intergovernmental Panel on Climate Change (IPCC). 2023. AR6 Synthesis Report: Climate Change 2023. March. https://www.ipcc.ch/report/sixth-assessment-report-cycle/.

ICF. 2022. CalEEMod User's Guide, Version 2022.1. April.

Mojave Desert Air Quality Management District (MDAQMD). 2020. *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*. February. https://www.mdaqmd.ca.gov/home/showpublisheddocument/8510/638126583450266235.

Mojave Desert Air Quality Management District (MDAQMD). 2023. Federal 70 ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Area). January. https://www.mdaqmd.ca.gov/home/showpublisheddocument/9693/638131029372000000.

Office of the Governor. 2005. "Executive Order S-3-05." June. https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/5129-5130.pdf.

San Bernardino Council of Governments (SBCOG). 2021. San Bernardino County Regional Greenhouse Gas Reduction Plan. March. https://www.gosbcta.com/wp-content/uploads/2019/09/San_Bernardino_Regional_GHG_Reduction_Plan_Main_Text_Mar_2021.pdf.

San Bernardino County. 2022. County Policy Plan. September. https://countywideplan.com/wp-content/uploads/sites/68/2021/01/CWP_PolicyPlan_HardCopy_MainText_Tables_2022_Sept_Adopted.pdf?x23421.

U.S. Environmental Protection Agency (EPA). 2024. "Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act." Accessed June 10, 2024. https://www.epa.gov/climate-change/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a.

9.5.9 Section 5.9. Hazards, Hazardous Materials and Public Safety

California Department of Forestry and Fire Protection (CAL FIRE). 2024. Fire Hazard Severity Zone Viewer: Fire Hazard Severity Zones in State Responsibility Area. Accessed August 8, 2024. https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008.

California Department of Resources Recycling and Recovery (CalRecycle). 2024. Solid Waste Information System (SWIS) Facility/Site Summary for Barstow Sanitary Landfill. Accessed August 15, 2024. https://www2.calrecycle.ca.gov/SolidWaste/Site/Summary/2653.

California Department of Toxic Substances Control (DTSC). 2024. EnviroStor. Sacramento, California. Accessed August 15, 2024. http://www.envirostor.dtsc.ca.gov/public/.

California Environmental Protection Agency (CalEPA). 2024. Cortese List Data Resources. Accessed August 15, 2024. http://calepa.ca.gov/SiteCleanup/CorteseList/.

California Public Utilities Commission (CPUC). 2024a. Fire-Threat Maps and Fire-Safety Rulemaking website. https://www.cpuc.ca.gov/industries-and-topics/wildfires/fire-threat-maps-and-fire-safety-rulemaking.

California Public Utilities Commission (CPUC). 2024b. CPUC Fire Map GIS. Accessed August 8, 2024. https://capuc.maps.arcgis.com/apps/webappviewer/index.html?id=5bdb921d747a46929d9f00dbdb6d0fa2.

San Bernardino County. 1992. *Airport Comprehensive Land Use Plan, Barstow-Daggett Airport*. May. https://www.sbcounty.gov/uploads/lus/airports/barstowdagget.pdf.

San Bernardino County. 2019. Emergency Operations Plan. Accessed on August 15, 2024. https://oes.sbcounty.gov/wp-content/uploads/sites/110/2024/06/Final-2019-EOP.pdf?x93072.

San Bernardino County. 2022. Multi-Jurisdictional Hazard Mitigation Plan. Accessed on August 15, 2024. https://oes.sbcounty.gov/wp-content/uploads/sites/110/2024/06/HMP-2022.pdf?x93072.

San Bernardino County Department of Public Works. 2024. Waste Disposal Sites. Accessed on June 18, 2024. https://dpw.sbcounty.gov/solid-waste-management/waste-disposal-sites/.

State Water Resources Control Board (SWRCB). 2013. *Final Environmental Impact Report for Comprehensive Groundwater Cleanup Strategy.* Accessed August 15, 2024. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/feir.html.

State Water Resources Control Board (SWRCB). 2024a. Site Cleanup Cortese List. Accessed August 15, 2024. https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CDOCAOList.xlsx.

State Water Resources Control Board (SWRCB). 2024b. GeoTracker. Sacramento, California. Accessed August 15, 2024. http://geotracker.waterboards.ca.gov/.

State of California Office of the Governor. 2024. California Military Installations and Operational Areas. https://militarycouncil.ca.gov/s_californiamilitarybases/.

U.S. Geological Survey. 2024. Mineral Resources Data System (MRDS). Accessed on August 15, 2024. https://mrdata.usgs.gov/.

9.5.10 Section 5.10. Hydrology and Water Quality

Alisto Engineering Group. 2014. Geotechnical Investigation Report, Hinkley Compressor Station. October 21. Prepared for Pacific Gas & Electric.

Arrowhead Lake Association (ALA). 2024. ALA webpage "A History of Lake Arrowhead." Accessed August 30, 2024. https://www.ala-ca.org/ala_history.php.

California Department of Water Resources (DWR). 2024a. Web page about Silverwood Lake Recreation. Accessed September 3, 2024. https://water.ca.gov/What-We-Do/Recreation/Silverwood-Lake-Recreation.

California Department of Water Resources (DWR). 2024b. Groundwater Basin Boundary Assessment Tool. Accessed September 3, 2024. https://gis.water.ca.gov/app/bbat/.

California State Water Resources Control Board (SWRCB). 2023. Groundwater Ambient Monitoring and Assessment (GAMA) Program Online Database. Last updated May 31, 2023. https://www.waterboards.ca.gov/gama/gama-gis.html.

California State Water Resources Control Board (SWRCB). 2024. Final California 2024 Integrated Report 303(d) List/305(b) Report for Mojave River. https://www.waterboards.ca.gov/water_issues/programs/tmdl/2023_2024state_ir_reports/apx-b-factsheets/01998.shtml.

Dams of the World. 2024. Dams of the World website, California dams. Accessed August 30, 2024. https://damsoftheworld.com/usa/california/.

Federal Emergency Management Agency (FEMA). 2024. FEMA's National Flood Hazard Layer (NFHL) Viewer. June. https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd.

Hirst, Valeri. 2024. PG&E Senior Environmental Field Specialist. Personal communication with Colleen Taylor, Jacobs. August 13.

Lahontan Regional Water Quality Control Board (LRWQCB). 2013. *Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County, Final Environmental Impact Report Volume II*. May. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/feir.html.

Lahontan Regional Water Quality Control Board (LRWQCB). 2021. *Water Quality Control Plan for the Lahontan Region, North and South Basins*. Plan effective as of March 31, 1995, and amended through September 22, 2021. https://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/docs/2022/preface-contents.pdf.

Lake Arrowhead Community Services District (LACSD). 2024. Webpage for LACSD. Accessed August 30, 2024. https://www.lakearrowheadcsd.com/index.php.

Mojave Desert Air Quality Management District (MDAQMD). 2020. *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*. February. https://www.mdaqmd.ca.gov/home/show publisheddocument/8510/638126583450266235.

Mojave Water Agency (MWA). 2021. *2020 Urban Water Management Plan*. Adopted May 27, 2021. https://www.mojavewater.org/wp-content/uploads/2022/06/MWA2020UWMPFinal061621.pdf.

Mojave Water Agency (MWA). 2024. MWA agency website. Accessed September 3, 2024. https://www.mojavewater.org/.

San Bernardino County. 2011. *Multi-Jurisdictional Hazard Mitigation Plan Update*. October 11. https://www.sbcounty.gov/uploads/sbcfire/content/oes/pdf/hazard-mitigation-plan.pdf.

San Bernardino County. 2019. *San Bernardino Countywide Plan Draft Programmatic Environmental Impact Report.* June. https://countywideplan.com/resources/document-download/.

San Bernardino County. 2020a. *San Bernardino Countywide Plan HZ-4 Flood Hazards Policy Map*. October. https://www.arcgis.com/apps/webappviewer/index.html?id=d276e645a4ae4e2bb95694ff06b4f0be.

San Bernardino County. 2020b. *San Bernardino Countywide Plan, Infrastructure and Utilities Element*. October 27. https://countywide.sbcounty.gov/policy-plan/infrastructure-utilities/.

San Bernardino County. 2022. *2022 San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan*. https://www.sbcounty.gov/uploads/SBCFire/documents/EmergencyServices/Hazard-Mitigation-Plan-202212.pdf.

United States Army Corps of Engineers (USACE). 2019. USACE News Release "Army Corps reclassifies Mojave River Dam risk characterization." November 1. https://www.spl.usace.army.mil/Media/News-Releases/Article/2006597/army-corps-reclassifies-mojave-river-dam-risk-characterization/#:~:text=This%20could%20potentially%20result%20in,miles%20downstream%20of%20the%20dam.

United States Army Corps of Engineers (USACE). 2023. *Mojave River Dam Draft Master Plan*. January. https://usace.contentdm.oclc.org/digital/collection/p16021coll7/id/23165.

United States Geological Survey (USGS). 2023. National Hydrography Dataset. National Hydrography Dataset | U.S. Geological Survey (usgs.gov).

United States Geological Survey (USGS). 2024. Web page "Water-Level, Water Quality, and Land Subsidence Studies in the Mojave River and Morongo Groundwater Basins." https://ca.water.usgs.gov/mojave/.

9.5.11 Section 5.11. Land Use and Planning

Bureau of Land Management. 2004. West Mojave Plan. Accessed June 18, 2024. https://eplanning.blm.gov/public_projects/lup/72544/97517/117675/wemo_plan_vol-1_2004.pdf.

City of Barstow Planning Department, 2015. 201-2020 Land Use Element. Accessed July 15, 2024. https://www.barstowca.org/home/showpublisheddocument/5361/636607004813770000.

Lahontan Regional Water Quality Control Board, 2013. Final Environmental Impact Report: Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino. Accessed June 19, 2024. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/feir.html.

San Bernardino County, 2019. Countywide Plan. Accessed July 23, 2024. https://countywideplan.com/.

San Bernardino County, 2020. Land Use Element. Accessed July 1, 2024. https://countywideplan.com/policy-plan/land-use/.

San Bernardino County, 2022. County Policy Plan. Accessed May 8, 2024. https://countywideplan.com/wp-content/uploads/sites/68/2021/01/CWP_PolicyPlan_HardCopy_MainText_Tables_2022_Sept_Adopted.pdf?x23421.

San Bernardino County, 2024. Code of Ordinances – Residential Land Use Zoning Districts. Accessed June 18, 2024. https://codelibrary.amlegal.com/codes/sanbernardino/latest/sanberncty_ca/0-0-0-167976.

9.5.12 Section 5.12. Mineral Resources

California Department of Conservation (DOC). 2024. Division of Mine Reclamation, Mines Online, an interactive web map showing the commodities produced by California's mines and their status. California Department of Conservation. https://maps.conservation.ca.gov/mol/index.html.

Miller, R.V. 1993. *DMG Open-File Report 92-06, Mineral Land Classification of Concrete Aggregate Resources in the Barstow-Victorville Area*. Prepared for California Department of Conservation, Division of Mines and Geology. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc.

San Bernardino County. 2020. *San Bernardino Countywide Plan*. https://countywideplan.com/.

9.5.13 Section 5.13. Noise

California Department of Transportation (Caltrans). 2013. Technical Noise Supplement. September. Sacramento, CA: Environmental Program, Noise, Air Quality, and Hazardous Waste Management Office. Accessed July 10, 2024. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf.

California Department of Transportation (Caltrans). 2015. Noise Study Report Annotated Outline. April. Sacramento, CA: Environmental Program, Noise, Air Quality, and Hazardous Waste Management Office. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/noise-study-report-annotated-outline.docx.

California Department of Transportation (Caltrans). 2020. Accessed July 10, 2024.Transportation and Construction Vibration Guidance Manual. April. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf.

Federal Highway Administration (FHWA). 2006. FHWA Roadway Construction Noise Model User's Guide. January.

Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. Accessed July 10, 2024. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

San Bernardino County, 2022. Hazards Element. Accessed July 10, 2024. https://countywideplan.com/policy-plan/hazards/?expand_all=true.

San Bernardino County, 2014. Code of Ordinances – Noise. Accessed June 28, 2024. https://codelibrary.amlegal.com/codes/sanbernardino/latest/sanberncty_ca/0-0-0-169172.

9.5.14 Section 5.14. Population and Housing

American Hotel and Lodging Association. 2023. Hotel Occupancy, 2019 performance vs. 2023 projections by state. Accessed July 23, 2024. https://www.ahla.com/sites/default/files/SOTI_report_Oxford_Data_Occupancy.pdf.

City of Barstow. 2015. *2015-2020 General Plan and Master Environmental Impact Report*. Accessed May 9, 2024. https://www.barstowca.org/departments/community-development-department/planning/general-plan-and-master-environmental-impact-report/-fsiteid-1.

San Bernardino County. 2019. Countywide Plan. Accessed June 18, 2024. https://countywideplan.com/.

San Bernardino County. 2022. County Policy Plan – Housing element. Accessed May 9, 2024. https://www.sbcounty.gov/uploads/LUS/HousingPlans/CWP_PolicyPlan_HousingElement_2021-2029_Adopted.pdf.

San Bernardino County. 2024. Community Indicators: County Profile. Accessed May 9, 2024. https://indicators.sbcounty.gov/county-profile/.

United States Census Bureau. 2024. Quick Facts: Barstow City, California; San Bernardino County, California. Accessed May 9, 2024. https://www.census.gov/quickfacts/fact/table/barstowcitycalifornia,sanbernardinocountycalifornia/AFN120217.

9.5.15 Section 5.15. Public Services

Barstow Community Hospital 2024. About Barstow Community Hospital webpage. Accessed August 1, 2024. https://barstowhospital.com/.

Barstow Fire Protection District (BFPD). 2019. *BFPD Strategic Operations Plan*. Accessed August 1, 2024. https://www.barstowca.org/departments/fire-protection-district/bfpd-strategic-plan.

Barstow Unified School District (BUSD). 2024. BUSD webpage. Accessed August 1, 2024. https://www.busdk12.com/.

City of Barstow. 2015. *City of Barstow General Plan*. Accessed July 25, 2024. 2015 - 2020 General Plan and Master Environmental Impact Report | City of Barstow (barstowca.org).

City of Barstow. 2024a. Police Department webpage. Accessed July 25, 2024. https://www.barstowca.org/departments/police.

City of Barstow. 2024b. Fire Protection District webpage. Accessed July 25, 2024. Fire Protection District | City of Barstow (barstowca.org).

Local Agency Formation Commission for San Bernardino County (LAFCO). 2020. San Bernardino Countywide Service Review. February 19. Accessed July 25, 2024. https://www.sbcounty.gov/uploads/LAFCO//Downloads/Service_Review_Fire/Report/Fire_Service_Review.pdf.

San Bernardino County. 2020. *San Bernardino Countywide Plan*. Accessed July 25, 2024. https://countywideplan.com/.

San Bernardino County Fire Protection District (SBCFPD). 2022. Annual Report, Fiscal Year 21-22. Accessed August 12, 2024. https://sbcfire.org/annualreports/fy-21-22/.

San Bernardino County Fire Protection District (SBCFPD). 2024. SBCFPD web page. Accessed August 12, 2024. https://sbcfire.org/.

San Bernardino County Regional Parks District (SBCRPD). 2024. About Us webpage. Accessed August 1, 2024. https://parks.sbcounty.gov/about-us/.

San Bernardino County Sheriff Department (SBSD). 2024. About Us webpage. Accessed July 25, 2024. San Bernardino County Sheriff's Department – Sheriff's Department (sbcounty.gov).

9.5.16 Section 5.16. Recreation

Bureau of Land Management. 2024. California Maps. Accessed May 23, 2023. https://www.blm.gov/maps/frequently-requested/california.

Facebook, 2024. Barstow Gun Club. Accessed July 2, 2024. https://www.facebook.com/barstow.gun.club/about_contact_and_basic_info.

Lahontan Regional Water Quality Control Board, 2013. Final Environmental Impact Report: Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino. Accessed June 19, 2024. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/feir.html.

San Bernardino County, 2019. Countywide Plan. Accessed June 18, 2024. https://countywideplan.com/.

San Bernardino County, 2024. San Bernardino County Assessor – Recorder_ county Clerk. Accessed on July 2, 2024. https://arcpropertyinfo.sbcounty.gov/.

Senior center resources for seniors, 2024. Hinkley Community And Senior Center. Accessed July 2, 2024. https://seniorcenter.us/sc/hinkley_community_and_senior_center_hinkley_ca.

9.5.17 Section 5.17. Transportation

Caltrans. 2024. *California Manual on Uniform Traffic Control Devices for Streets and Highways, 2014 Edition, Revision 8*. January. https://dot.ca.gov/programs/safety-programs/camutcd.

Caltrans. 2021. Annual Average Daily Traffic (AADT) for All Vehicles on California State Highways. From the Caltrans Traffic Census Program. Accessed May 28, 2024. https://dot.ca.gov/programs/traffic-operations/census.

San Bernardino County. 2024. Online ArcGIS of County Maintained Roads. Accessed July 3, 2024. https://sbcountydpw.maps.arcgis.com/apps/mapviewer/index.html?webmap=5061d5716d534bf592e14afbaaf68a7a#!

San Bernardino County. 2020. *San Bernardino Countywide Plan*. Accessed June 18, 2024. https://countywideplan.com/.

San Bernardino County, 2019. *Countywide Plan Draft Programmatic Environmental Impact Report*. https://countywideplan.com/resources/document-download/. Accessed June 28, 2024.

Southern California Association of Governments. 2024. *Connect SoCal Final Program Environmental Impact Report*. Appendix I Update Tables for the 2024 Final PEIR. April. Accessed August 14, 2024. https://scag.ca.gov/sites/main/files/file-attachments/appendix_i_updated_tables_508_final.pdf?1711077390https://scag.ca.gov/connect-socal.

Victor Valley Transit Authority (VVTA). 2024. VVTA website, including system map and schedules. Accessed July 3, 2024. https://vvta.org/.

9.5.18 Section 5.18. Tribal Cultural Resources

Bean, Lowell John, and Charles R. Smith. 1978. "Serrano." In *Handbook of North American Indians, Vol. 8 California*. Edited by Robert F. Heizer. Smithsonian Institute, Washington.

Bloomberg, Nancy J. 1987. "A Historic Indian Community at Victorville, California." In *Journal of California and Great Basin Anthropology* 9(1), pp. 35-45.

Byrd, Brian F. 1996. Camping in the Dunes: Archaeological and Geomorphological Investigations of Late Holocene Settlements West of Rogers Dry Lake. Prepared by ASM Affiliates, Encinitas, California. Prepared for USACE, Los Angeles District, Los Angeles, California.

Davis, James T. "Trade Routes and Economic Exchange Among the Indians of California." University of California Archeological Survey No. 54, 1961. University of California, Berkeley Library: http://digitalassets.lib.berkeley.edu/anthpubs/ucb/proof/pdfs/ucas054-001.pdf (JTD1961).

Dibblee, T. W., Jr. 1967. Areal Geology of the Western Mojave Desert. U. S. Geological Survey Professional Paper 522. Denver, CO.

Earle, D. D., B. Boyer, R. A. Bryson, R. U. Bryson, M. M. Campbell, J. J. Johannesmeyer, K. A. Lark, C. J. Parker, M. D. Pittman, L. M. Ramirez, M. R. Ronning, and J. Underwood. 1998. *Cultural Resources Overview and Management Plan for Edwards AFB, California, Volume 1: Overview of Prehistoric Cultural Resources.* Computer Sciences Corporation, Edwards Air Force Base, California. Submitted to the Air Force Flight Test Center, Base Historic Preservation Office, Edwards Air Force Base, California, Contract No. F04611-92-C-0045. On file at the Base Historic Preservation Office, Edwards Air Force Base, California.

Earle, David D. 2012. "Native Occupation and Use of the Central Mojave River Region and Places of Significance to the Mojave." Manuscript on file, PG&E.

Harrington, John Peabody. 1942. Culture element distributions: XIX. Central California Coast. University of California, Berkeley.

Kelly, Isabel T., and Catherine Fowler. 1986. "Southern Piute." In *Handbook of North American Indians, Vol. 11 Great Basin*. Edited by Warren L. D'Azevedo. Smithsonian Institute, Washington.

Kroeber, A. L. 1925. Handbook of the Indians of California. Reprinted 1976. Dover Publications, Inc. New York, New York.

Moratto, M. J. 2004. California Archaeology. Second Edition. Academic Press, San Diego

Natural Resources Conservation Service (NRCS). 2024. Web Soil Survey. Accessed July 16, 2024. https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

O'Rourke, Judy. 2005. "DNA Links Ancient, Modern Indians." The Signal. May 22.

Rogers, Malcolm J. 1939. Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Area. San Diego Museum Papers,3. San Diego: San Diego Museum.

Smith, Charles R. 1978. "Tubatulabal." In *Handbook of North American Indians, Volume 8, California*. Edited by Robert F. Heizer. Smithsonian Institution, Washington, D.C. Pp. 437-445.

Sutton, Mark Q. 2005. People and Language: Defining the Takic Expansion into Southern California. AltaMira Press. Lanham.

Sutton, Mark Q., Mark E. Basgall, Jill K. Gardner, and Mark W. Allen. 2007. "Advances in Understanding Mojave Desert Prehistory." In California Prehistory, Colonization, Culture, and Complexity. Edited by Terry L. Jones and Kathryn A. Klar. AltaMira Press. Lanham. Pp. 229-246.

Thomas, Tiffany Ann. 2011. A Landscape Approach to Late Prehistoric Settlement and Subsistence Patterns in the Mojave Sink. Master's Thesis, University of Nevada, Las Vegas.

U.S. Geological Survey (USGS). 2020. Geologic map and borehole stratigraphy of Hinkley Valley and vicinity, San Bernardino County, California. Accessed July 17, 2020. https://pubs.usgs.gov/sim/3458/sim3458_sheet1.pdf.

Wallace, William J. 1955. "A Suggested Chronology for Southern California Coastal Archaeology." Southwestern Journal of Anthropology 11(3): 214-230.

Wallace, William J. 1962. "Prehistoric Cultural Development in the Southern California Deserts." American Antiquity 28(2): 172-180.

Wallace, William J. 1978. "Post-Pleistocene Archaeology, 9000 to 2000 B.C." In Handbook of North American Indians, Volume 8 California. R. F. Heizer (ed.): 25-36. Washington, D.C.: Smithsonian Institute.

Warren, Claude N. 1968. "Cultural Tradition and Ecological Adaptation on the Southern California Coast." In Archaic Prehistory in the Western United States, Symposium of the Society for American Archaeology, Santa Fe. In Eastern New Mexico University Contributions in Anthropology. C. Irwin-Williams (ed.): 1(3)

Warren, Claude N. 1984. "The Desert Region." In California Archaeology. Academic Press, Inc. San Diego. pp. 339-430.

9.5.19 Section 5.19. Utilities and Service Systems

Bestneighborhood.org. 2024. Website of Local Services in Zip Code 92347. https://bestneighborhood.org/best-neighborhoods-hinkley-ca/.

California Department of Resources Recycling and Recovery (CalRecycle). 2024. Solid Waste Information System (SWIS) database. https://www2.calrecycle.ca.gov/SolidWaste/Site/Search.

Golden State Water Company (GSWC). 2024. Company website. https://www.gswater.com/.

Hirst, Valeri. 2024. Senior Environmental Field Specialist, PG&E. Personal communication with Colleen Taylor. August 13.

Lahontan Regional Water Quality Control Board (LRWQCB). 2013. *Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County, Final Environmental Impact Report Volume II*. May. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/feir.html.

Lahontan Regional Water Quality Control Board (LRWQCB). 2019. *Agenda Report for Item 10, Revised Waste Discharge Requirements and Water Reclamation Requirements for the City of Barstow, Barstow Wastewater Treatment Plant, San Bernardino County*. July 10, 2019, Board Meeting. https://www.waterboards.ca.gov/lahontan/board_info/agenda/2019/jul/item_10_barstow_wdr.pdf.

San Bernardino County. 2019. *San Bernardino Countywide Plan Draft Environmental Impact Report*. June. https://countywideplan.com/resources/document-download/.

San Bernardino County. 2020. *San Bernardino Countywide Plan*. https://countywideplan.com/.

San Bernardino County Public Works. 2024. Construction & Demolition Waste Recycling Guide. https://www.sbcounty.gov/uploads/DPW/docs/RecyclingGuide-2021.pdf.

San Bernardino County Public Works, Solid Waste Management Division (SWMD). 2024. Web map of SWMD Solid Waste Disposal Sites. https://dpw.sbcounty.gov/solid-waste-management/waste-disposal-sites/.

Southern California Edison. 2024. About Us. https://www.sce.com/about-us.

Southwest Gas. 2024. About Us. https://www.swgas.com/en/about-us

9.5.20 Section 5.20. Wildfire

California Department of Forestry and Fire Protection (CAL FIRE). 2024a. State Responsibility Area (SRA) Viewer online tool. Accessed May 14, 2024. https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=468717e399fa4238ad86861638765ce1.

California Department of Forestry and Fire Protection (CAL FIRE). 2024b. Incident Archive. Accessed August 21, 2024.

Archive for 2015: https://www.fire.ca.gov/incidents/2015.

Archive for 2016: https://www.fire.ca.gov/incidents/2016.

Archive for 2017: https://www.fire.ca.gov/incidents/2017.

Archive for 2018: https://www.fire.ca.gov/incidents/2018.

Archive for 2019: https://www.fire.ca.gov/incidents/2019.

Archive for 2020: https://www.fire.ca.gov/incidents/2020.

Archive for 2021: https://www.fire.ca.gov/incidents/2021.

Archive for 2022: https://www.fire.ca.gov/incidents/2022.

Archive for 2023: https://www.fire.ca.gov/incidents/2023.

Archive for 2024: https://www.fire.ca.gov/incidents/2024.

California Department of Forestry and Fire Protection (CAL FIRE). 2019. Fire and Resource Assessment Program (FRAP) Wildland Urban Interface (WUI) map. December. https://cdnverify.frap.fire.ca.gov/media/10300/wui_19_ada.pdf.

California Department of Forestry and Fire Protection (CAL FIRE). 2007. Draft Fire Hazard Severity Zones in LRA, NW San Bernardino County. October 4. Accessed May 14, 2024. https://34c031f8-c9fd-4018-8c5a-4159cdff6b0d-cdn-endpoint.azureedge.net/-/media/osfm-website/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones/fire-hazard-severity-zones-map/upload-2/fhszl06_1_map64.pdf.

California Public Utilities Commission (CPUC). 2024a. Fire-Threat Maps and Fire-Safety Rulemaking website. https://www.cpuc.ca.gov/industries-and-topics/wildfires/fire-threat-maps-and-fire-safety-rulemaking.

California Public Utilities Commission (CPUC). 2024b. CPUC Fire Map GIS. Accessed August 8, 2024. https://capuc.maps.arcgis.com/apps/webappviewer/index.html?id=5bdb921d747a46929d9f00dbdb6d0fa2.

Lahontan Regional Water Quality Control Board (LRWQCB). 2013. *Final Environmental Impact Report: Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino*. May. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/feir.html.

National Interagency Fire Center. 2009. *Guidance for Implementation of Federal Wildland Fire Management Policy*. February 13. https://www.doi.gov/sites/default/files/uploads/2009-wfm-guidance-for-implementation.pdf.

National Wildfire Coordinating Group (NWCG). 2024. NWCG Glossary of Wildland Fire, PMS 205. Web page last modified/reviewed April 16, 2024. https://www.nwcg.gov/publications/pms205/nwcg-glossary-of-wildland-fire-pms-205.

Pacific Gas and Electric Company (PG&E). 2024a. *2023 – 2025 Wildfire Mitigation Plan R6 Version*. July 5. https://www.pge.com/en/outages-and-safety/safety/community-wildfire-safety-program.html.

Pacific Gas and Electric Company (PG&E). 2024b. *Utility Standard: EMER-4102S. Preventing and Mitigating Fires While Performing PG&E Work*. March 6. http://www.pge.com/wildfireprevention.

San Bernardino County. 2018. *San Bernardino Countywide Plan Draft Safety Background Report*. Data and analysis prepared November 2016, updated with outreach in November 2018. Prepared by PlaceWorks in collaboration with Dudek. https://countywideplan.com/wp-content/uploads/sites/68/2021/02/Safety_CWP_221-223_BackgroundReport_FinalDraft_20181128.pdf.

San Bernardino County. 2019. *Countywide Plan Draft Programmatic Environmental Impact Report*. Accessed June 28, 2024. https://countywideplan.com/resources/document-download/.

San Bernardino County. 2020. *San Bernardino Countywide Plan Policy Map PP-2 Evacuation Routes*. October. https://www.arcgis.com/apps/webappviewer/index.html?id=f54aff8f279449b8a6591ed4a8b1198c.

San Bernardino County. 2022a. *Multi-Jurisdictional Hazard Mitigation Plan.* December. https://oes.sbcounty.gov/wp-content/uploads/sites/110/2024/06/HMP-2022.pdf?x93072.

San Bernardino County. 2022b. Hazards Element of the *San Bernardino Countywide Plan*. September 27. Accessed July 10, 2024. https://countywideplan.com/policy-plan/hazards/?expand_all=true.

U.S. Fire Administration. 2022. *Wildfire and the Wildland Urban Interface (WUI)* website. Accessed June 22, 2024. https://www.usfa.fema.gov/wui/.

U.S. Forest Service. 2023. Wildland Urban Interface Online Map. Updated October 2. Accessed May 14, 2024. https://data-usfs.hub.arcgis.com/documents/usfs:wildland-urban-interface-2020-map-service/explore.

9.5.21 Section 5.21. Mandatory Findings of Significance

None.

9.6 Chapter 6. Comparison of Alternatives

None.

9.7 Chapter 7. Cumulative and Other CEQA Considerations

City of Barstow. 2024. General Plan Update. *City of Barstow General Plan Update and Barstow International Gateway Specific Plan Notice of Preparation of Draft Environmental Impact Report (DEIR) Notice of Preparation.* Accessed on October 7, 2024. https://www.barstowca.org/departments/community-development-department/planning/general-plan-update

9.8 Chapter 8. List of Preparers

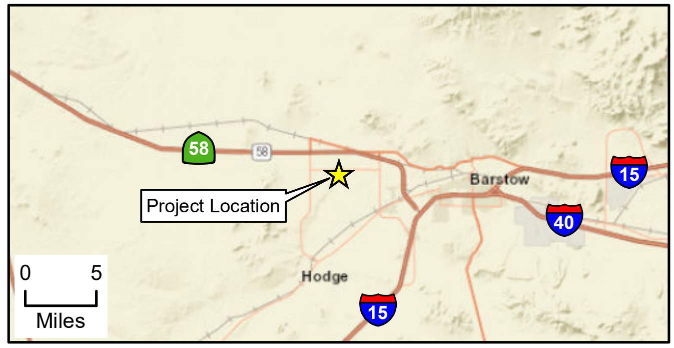
None.

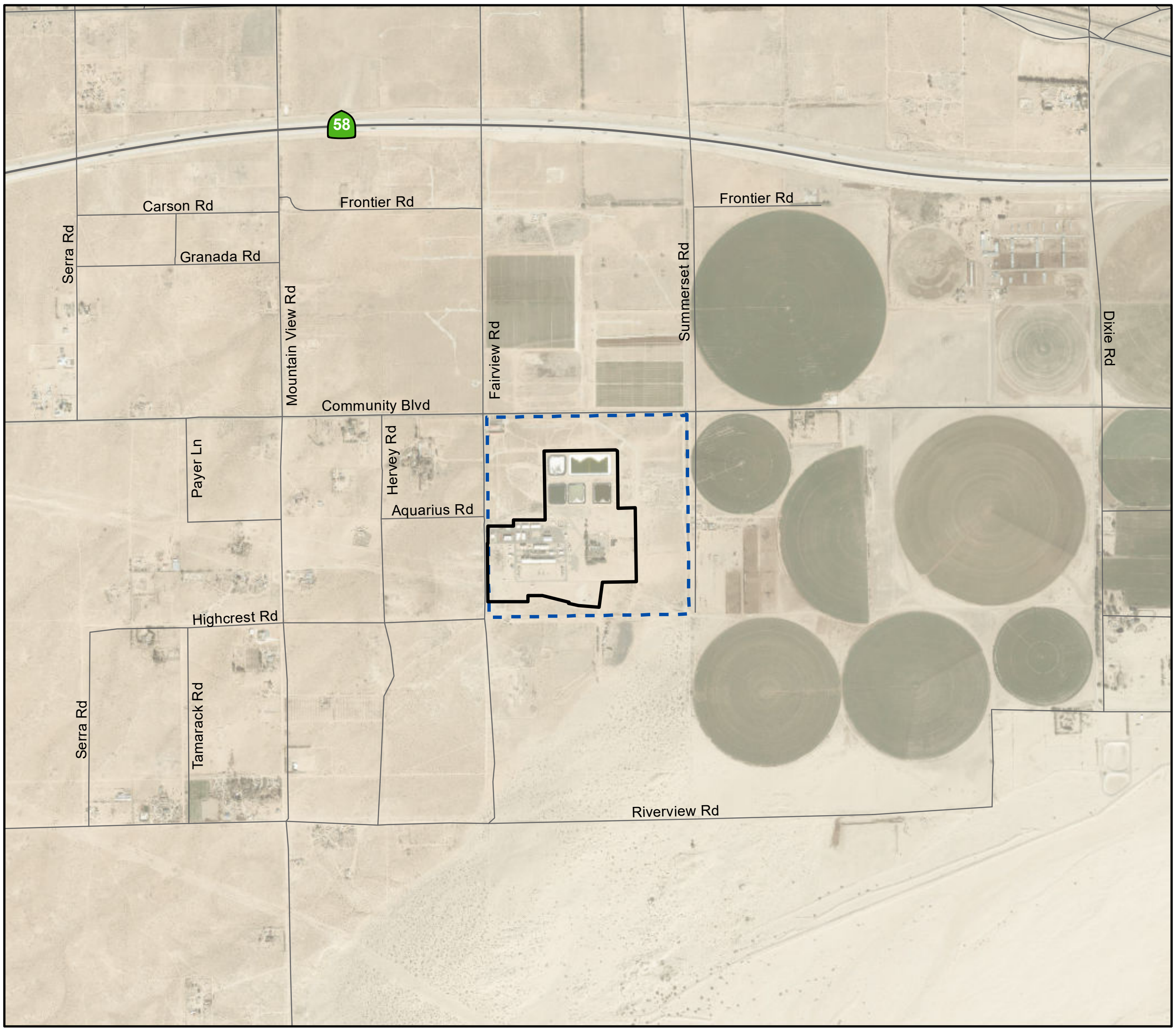
Figures

The following figures contain confidential information pursuant to the Confidentiality Declaration dated March 4, 2025:

- Figure 1a
- Figure 1b
- Figure 3
- Figure 4
- Figure 9
- Figure 10

Confidential figures are provided under separate cover to the CPUC.





Version: 8/7/2024

Legend

Hinkley Compressor Station Perimeter Fence Line

Property Boundary

Note: No settled areas, parks, recreational areas, scenic areas, or existing electrical transmission lines are within one mile of the property boundary of the facility.

N

0 0.25 0.5
Miles

Figure 3.1-1
Project Overview
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Figure 3.2-1
California Existing Natural Gas Transmission System Overview
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

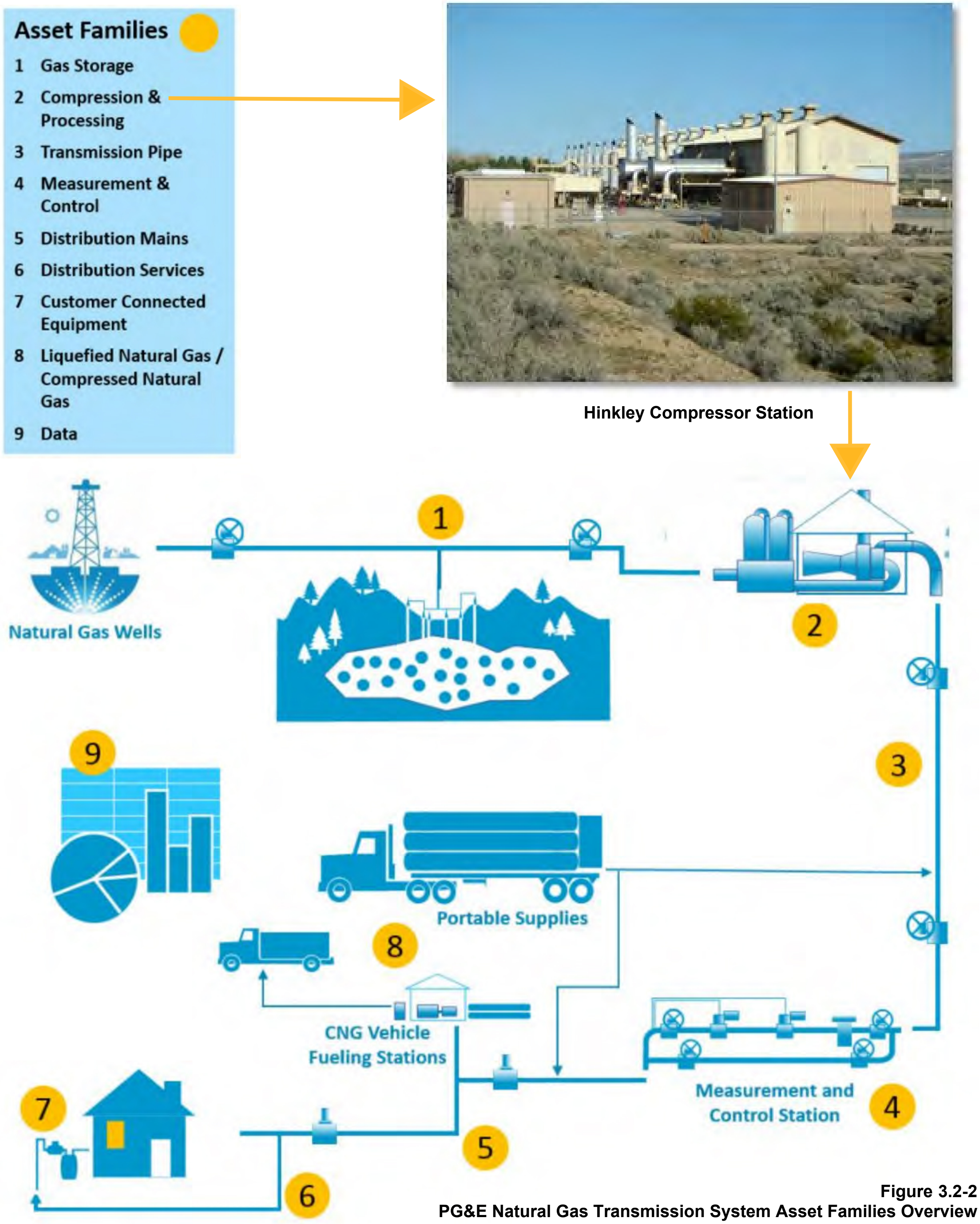
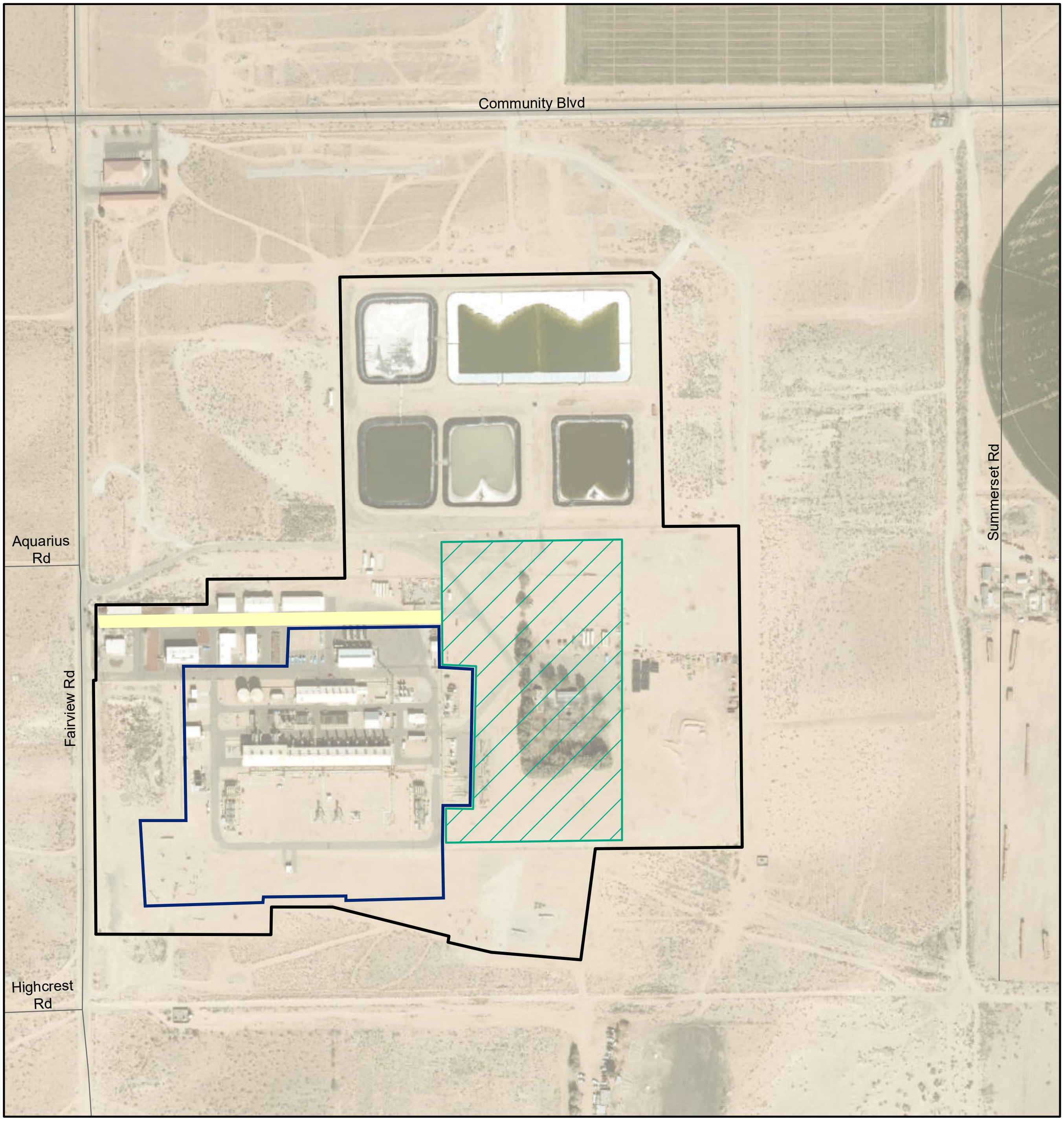


Figure 3.2-2
PG&E Natural Gas Transmission System Asset Families Overview
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Figure 3.3-2
Existing Switchgear in Auxiliary Building and
Outdoor Motor Control Center (MCC) Examples
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Figure 3.3-3
Upgraded Outdoor Motor Control Center (MCC) Examples
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company



Version: 7/31/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Existing Access Road (Paved)
- Staging Area
- Work Area

N

0 225 450
Feet

Figure 3.5-1
Proposed Project Work Area, Staging, and Access
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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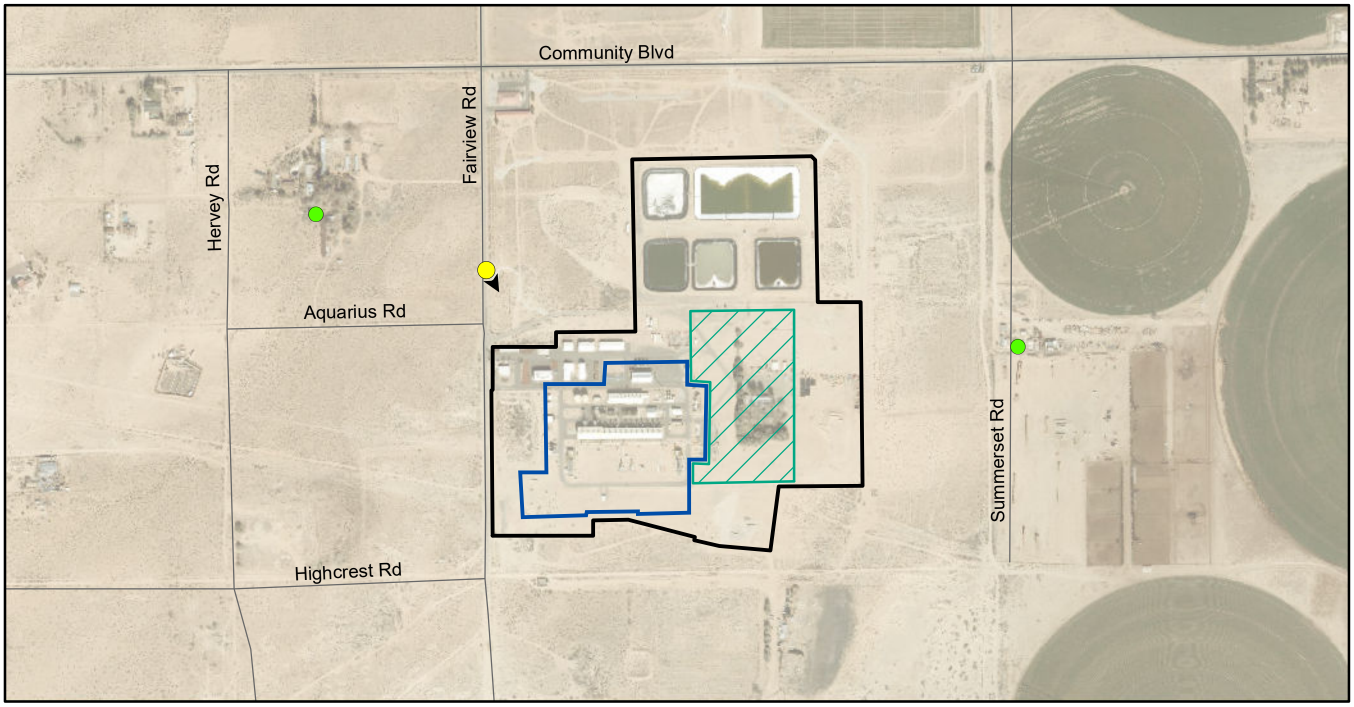

Version: 8/7/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Staging Area
- Work Area
- Representative Viewpoint
- Residence

N

0 500 1,000

Feet

Figure 5.1-1
Representative Viewpoint and Photograph
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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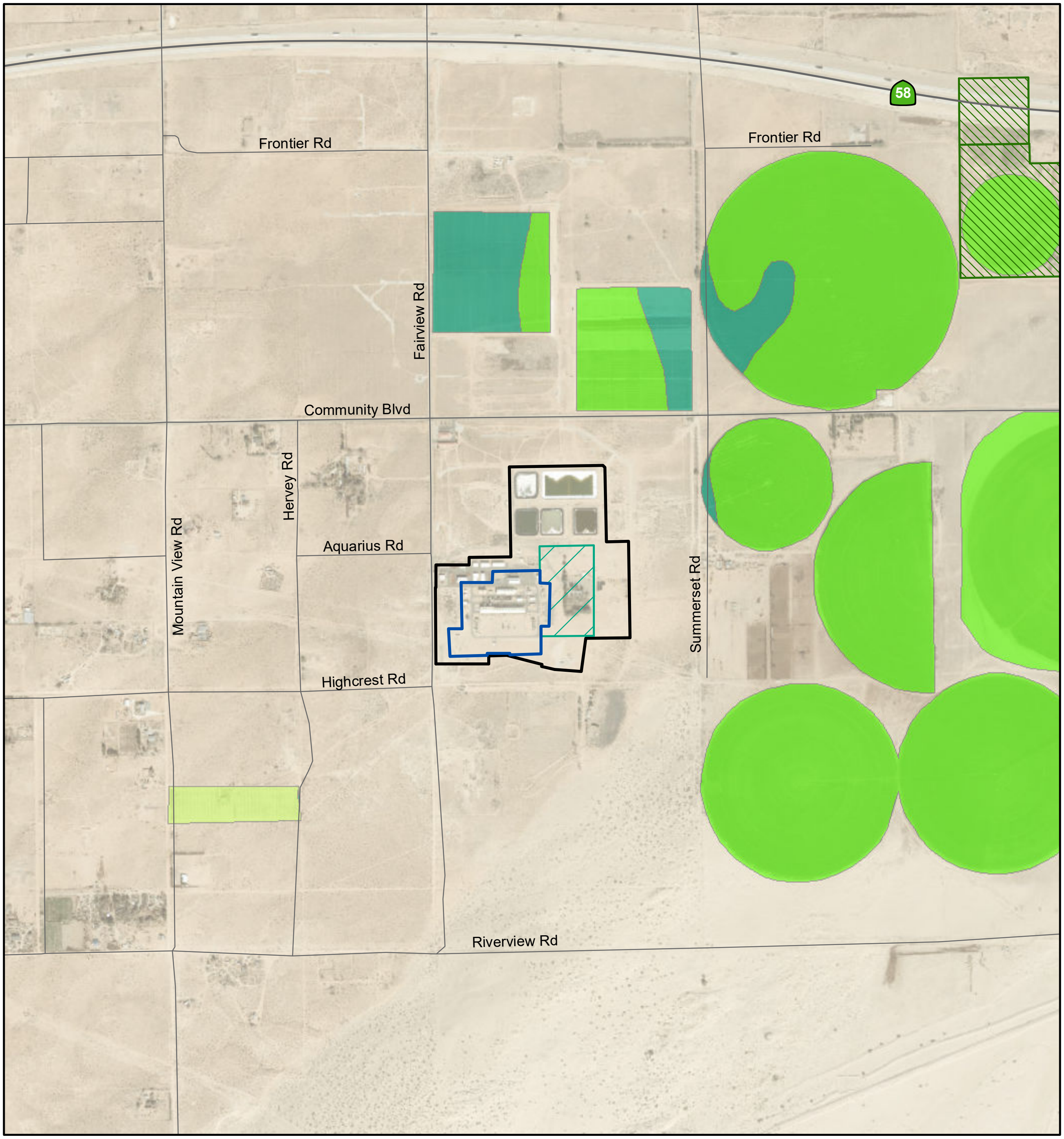

Version: 8/11/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Project Work Area
- Staging Area
- Williamson Act Parcel (2023)

California Important Farmland (2020)

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland

N

0 0.25 0.5
Miles

Figure 5.2-1
Important Farmland
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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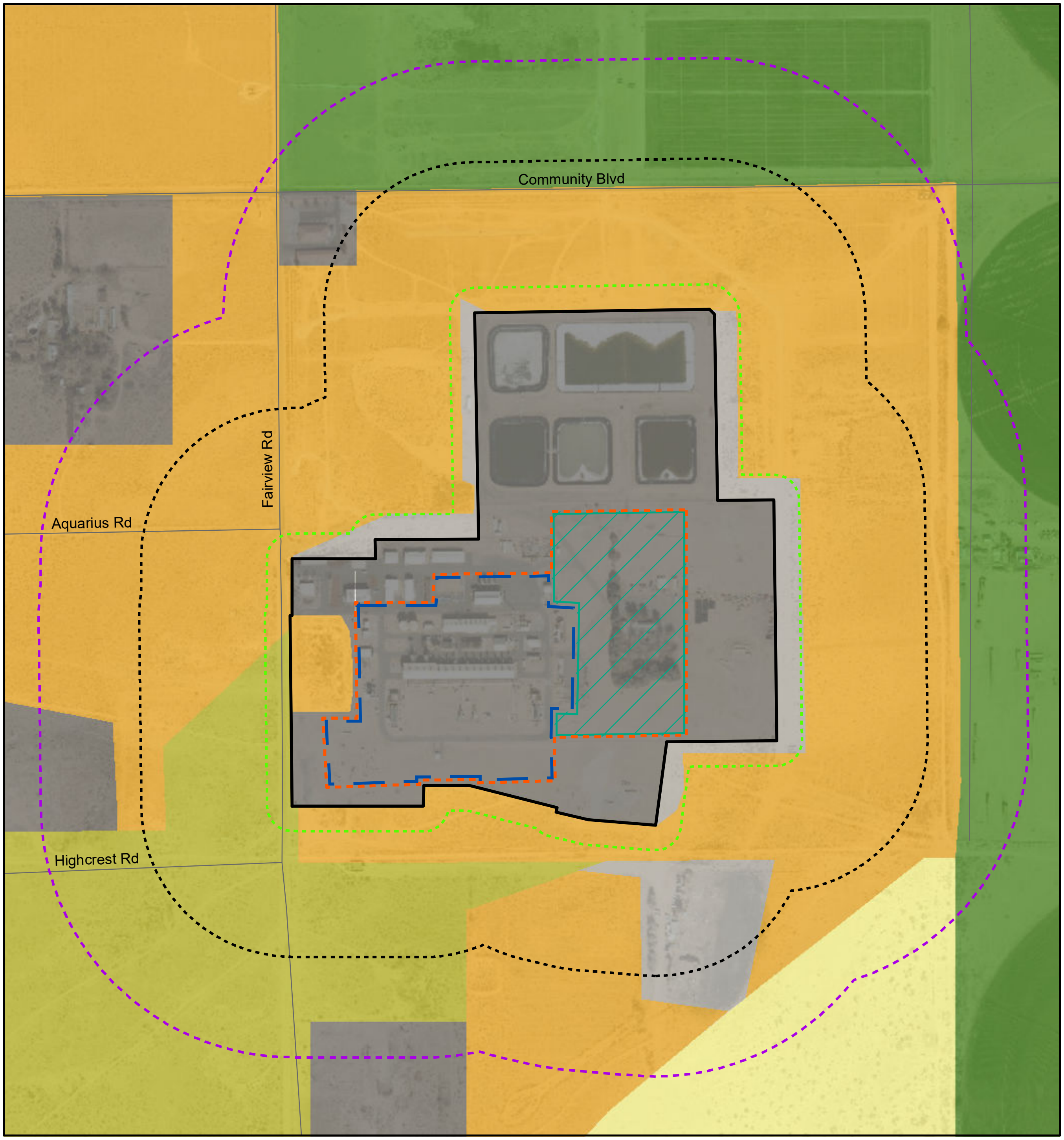

Version: 10/2/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Botanical Survey Limit
- Biological Survey Area (BSA)
- Area Analyzed for Vegetation and Land Cover Types
- Staging Area
- Work Area
- Project Area

Land Cover Types

- Active Agriculture
- Allscale Scrub
- Creosote Brush Scrub
- Desert Dunes
- Disturbed
- Urban/Developed

0 600
Feet

N

Figure 5.4-2
Vegetation and Land Cover Types
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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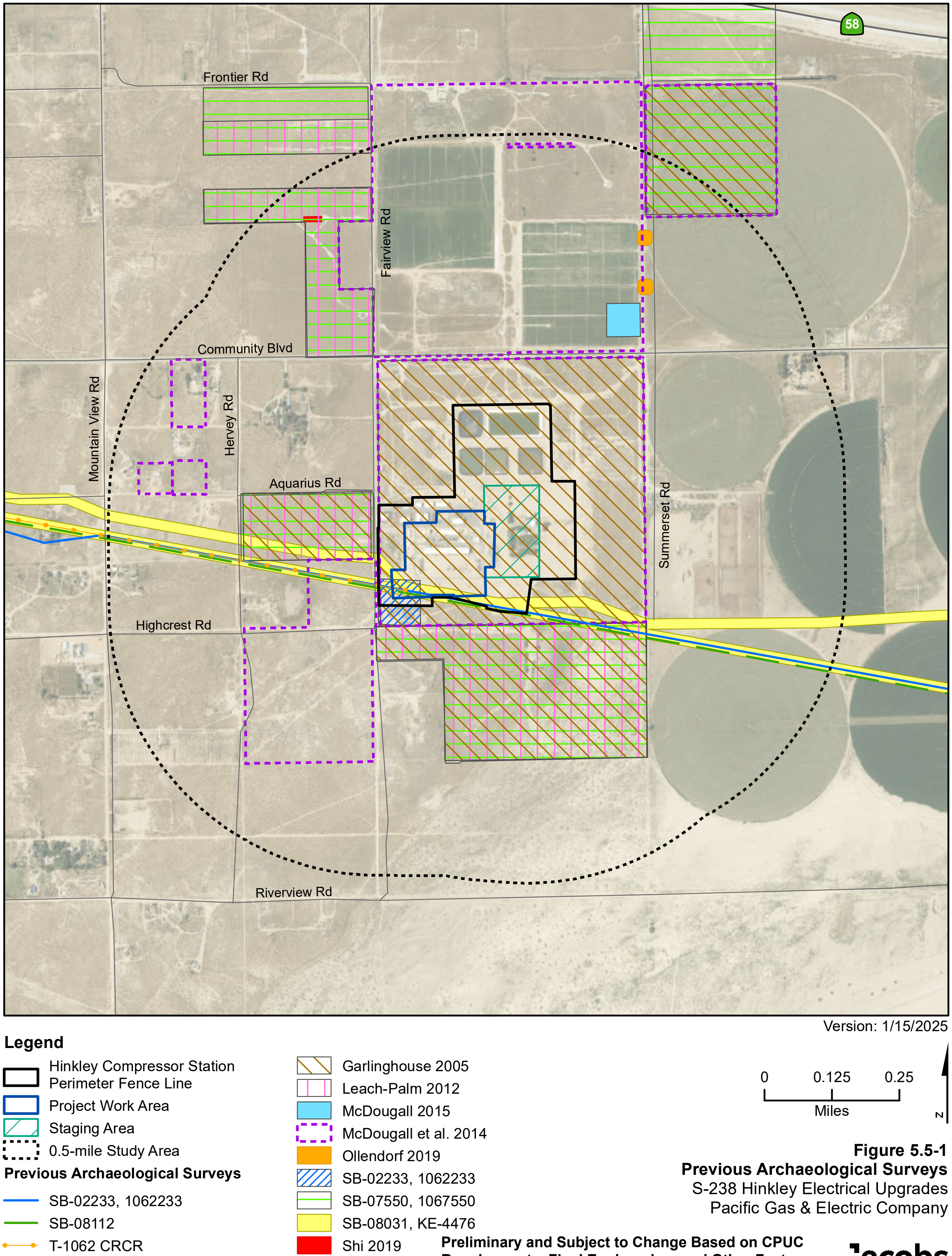

Figure 5.5-1
Previous Archaeological Surveys
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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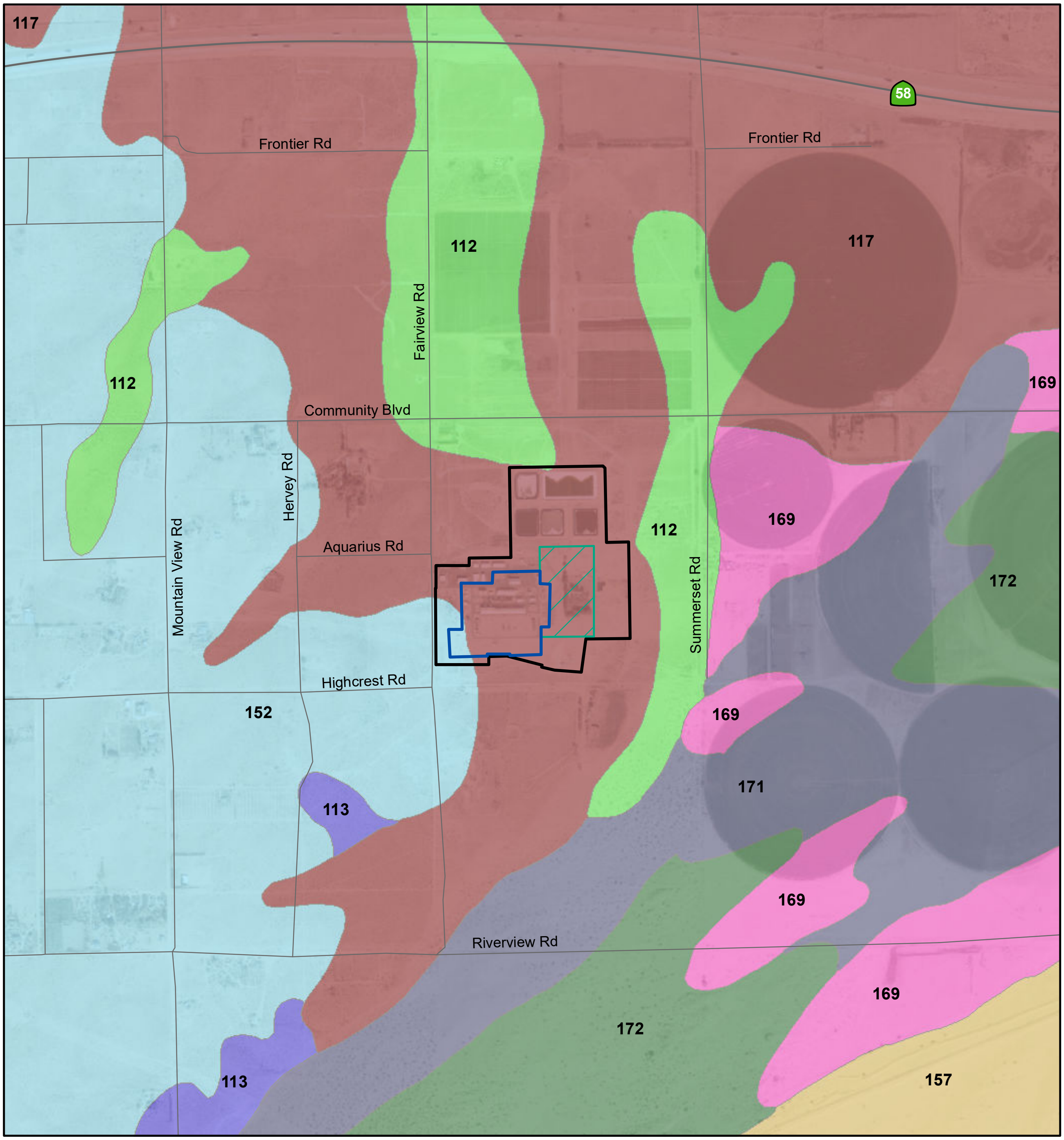


Version: 8/29/2024

Legend

Hinkley Compressor Station Perimeter Fence Line

Project Work Area

Staging Area

Soils

112: Cajon Sand, 0 to 2 percent slopes

113: Cajon Sand, 2 to 9 percent slopes

117: Cajon Loamy Sand, Loamy Substratum, 0 to 2 percent slopes

152: Norob-Halloran Complex, 0 to 5 percent slopes

157: Riverwash

169: Victorville Sandy Loam

171: Villa Loamy Sand

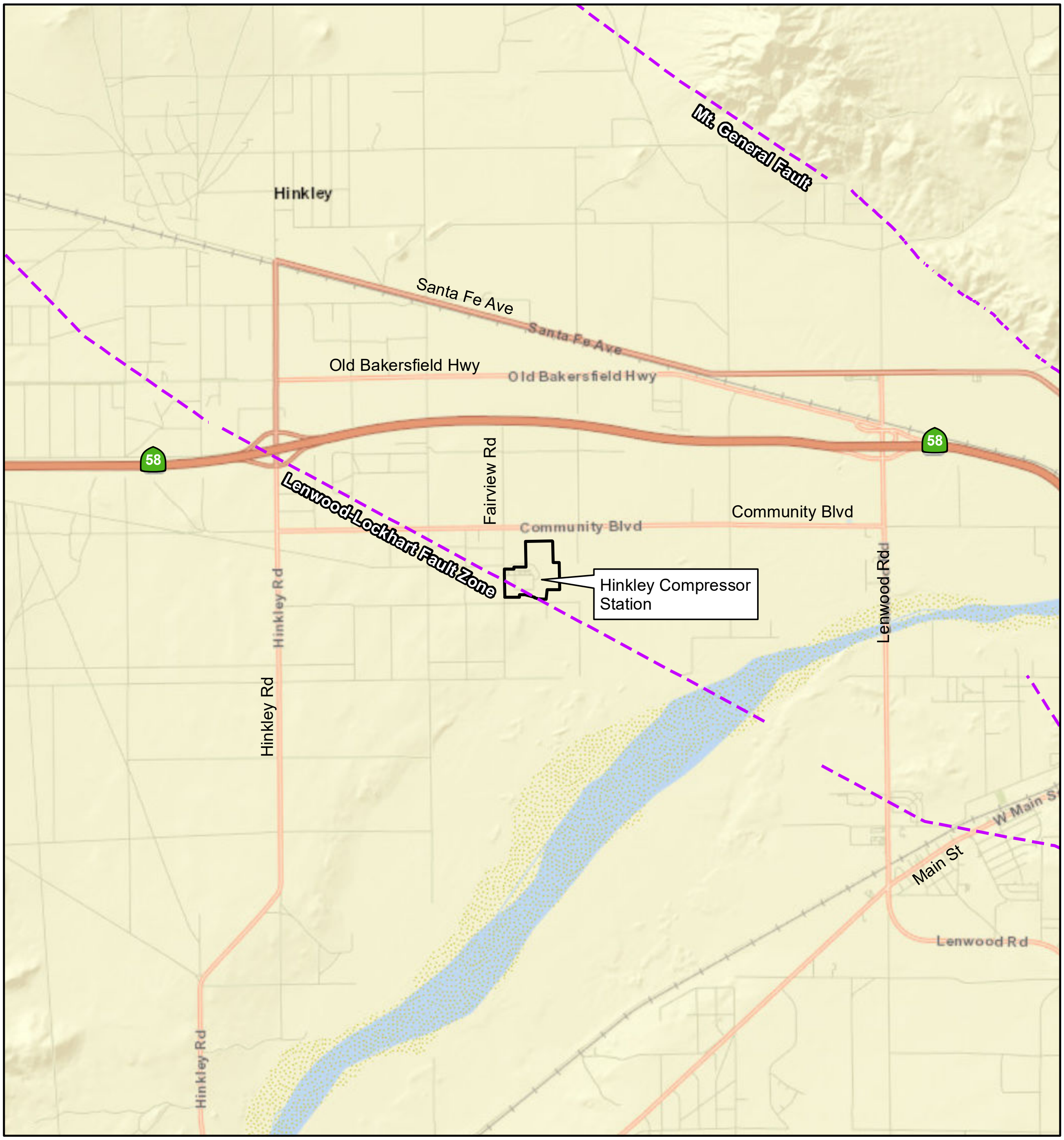
172: Villa Loamy Sand, Hummocky

0 0.25

Miles

N

Figure 5.7-1
Soils
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company



Version: 8/29/2024

Legend

Hinkley Compressor Station Perimeter Fence Line

Approximate Fault Location

N

0 1 2

Miles

Figure 5.7-2
Faults
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors Jacobs

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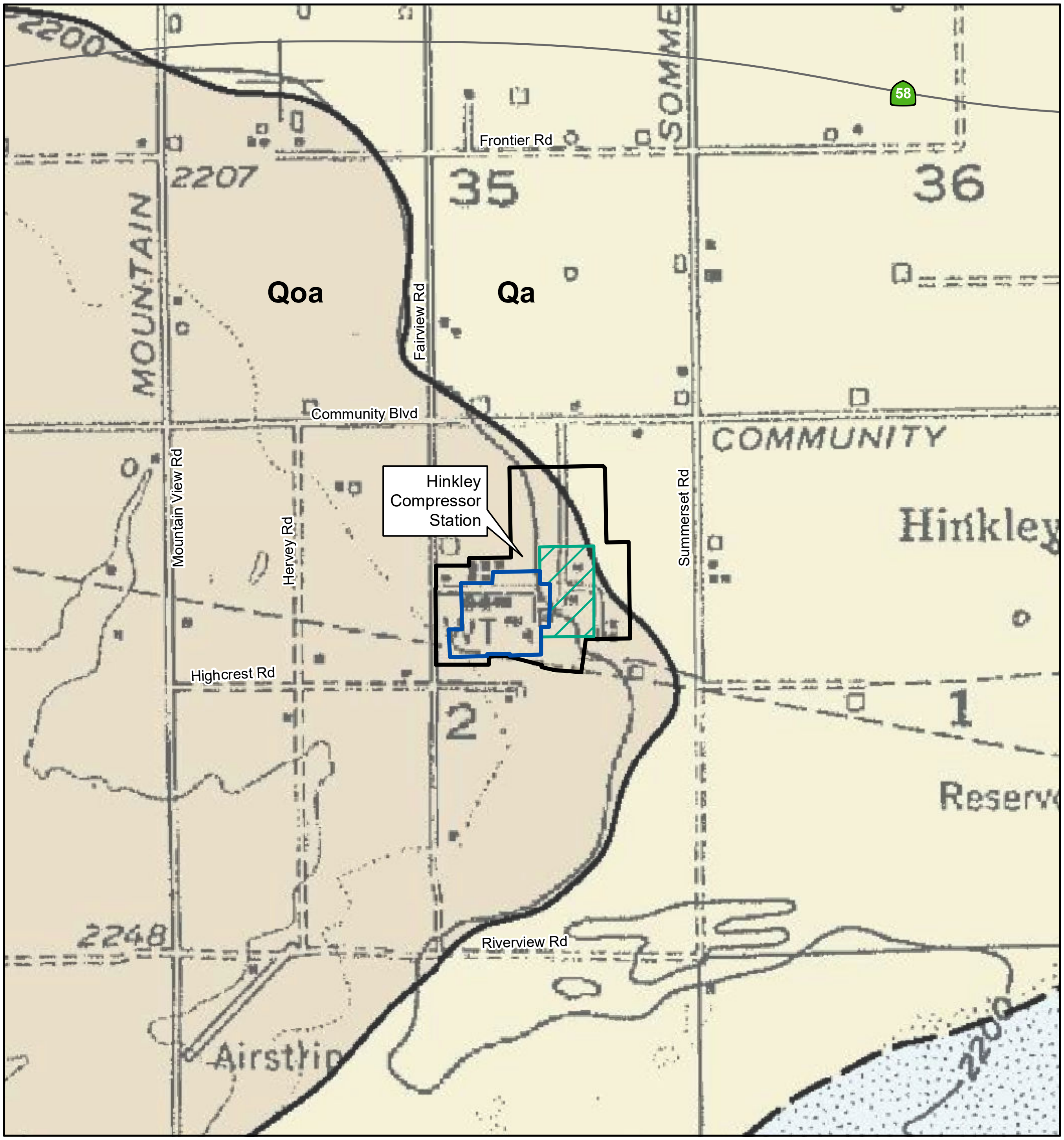


Version: 8/29/2024

Legend

Hinkley Compressor Station Perimeter Fence Line
Project Work Area
Staging Area

Geologic Units:
Qa = Alluvial sand of valley areas, arkosic, coarse to fine, light gray, grades to mostly gravel and sand near hills
Qoa = Older alluvial gravel, sand, and silt, light gray, poorly bedded, undeformed

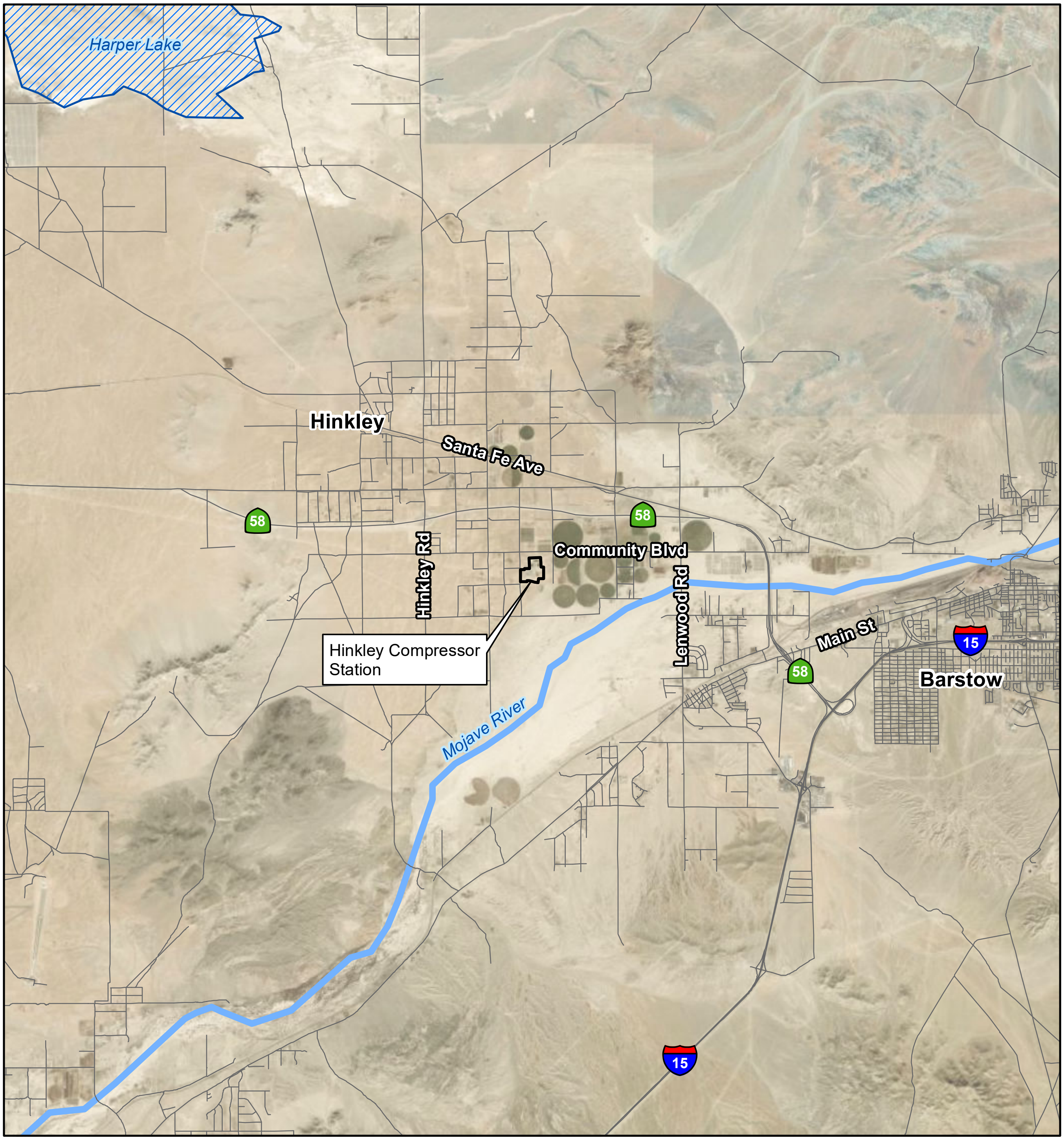
Geologic Basemap:
Geologic map of the Barstow & Daggett 15 minute quadrangles, San Bernardino County, California. Dibblee, T.W., and Minch, J.A. 2008.

0 0.25
Miles

N

Figure 5.7-3
Geologic Units
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors



Version: 9/7/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Mojave River
- Harper Lake

N

0 1.5 3
Miles

Figure 5.10-1
Waterbodies
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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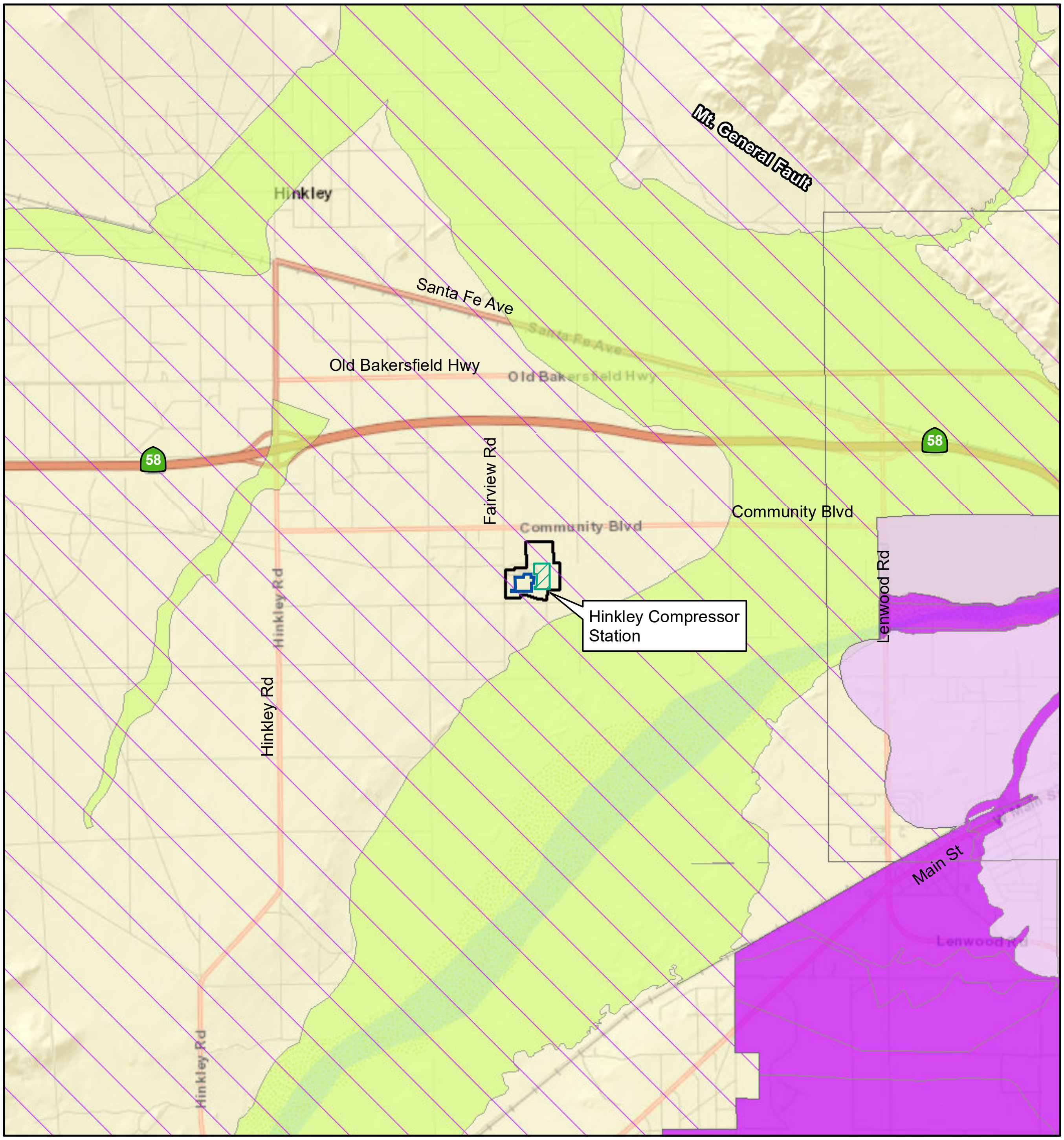

Version: 9/7/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Staging Area
- Work Area
- DWR 100-Year Flood Hazard Area

FEMA Flood Zones

- 1% Annual Chance Flood Hazard Area
- 0.2% Annual Chance Flood Hazard Area
- Area in Which Flood Hazards are Undetermined, but Possible

N

0 0.5 1
Miles

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Figure 5.10-2
Flood Zones
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Jacobs

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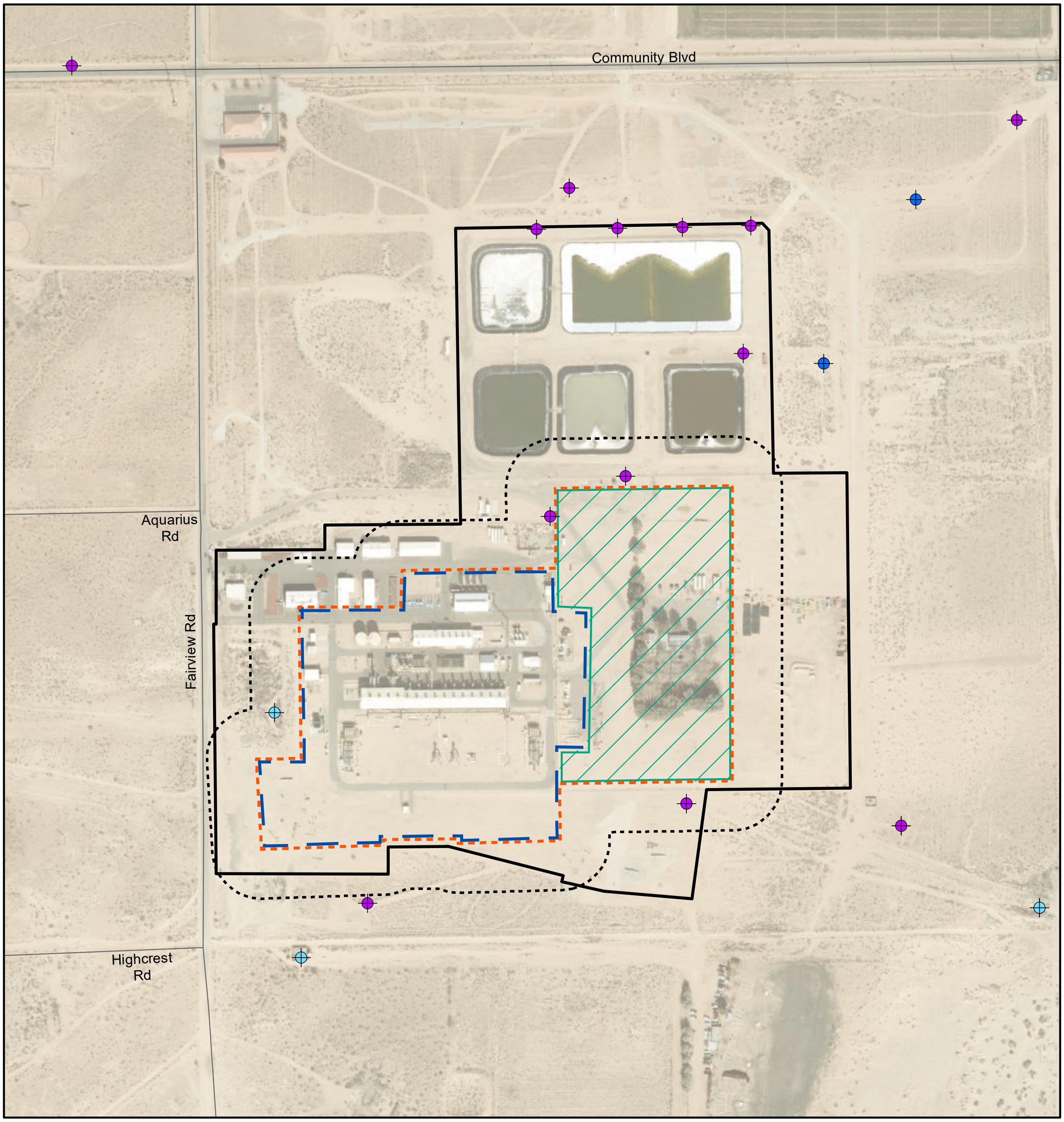

Version: 9/9/2024

Legend

Hinkley Compressor Station Perimeter Fence Line

150-foot Project Area Buffer

Project Area

Well Locations

Monitoring

Municipal

Water Supply, Other

*The Mojave River Groundwater Basin-Centro Subarea covers the entire map extent.

0 225 450

Feet

N

Figure 5.10-3
Groundwater Basin and Wells
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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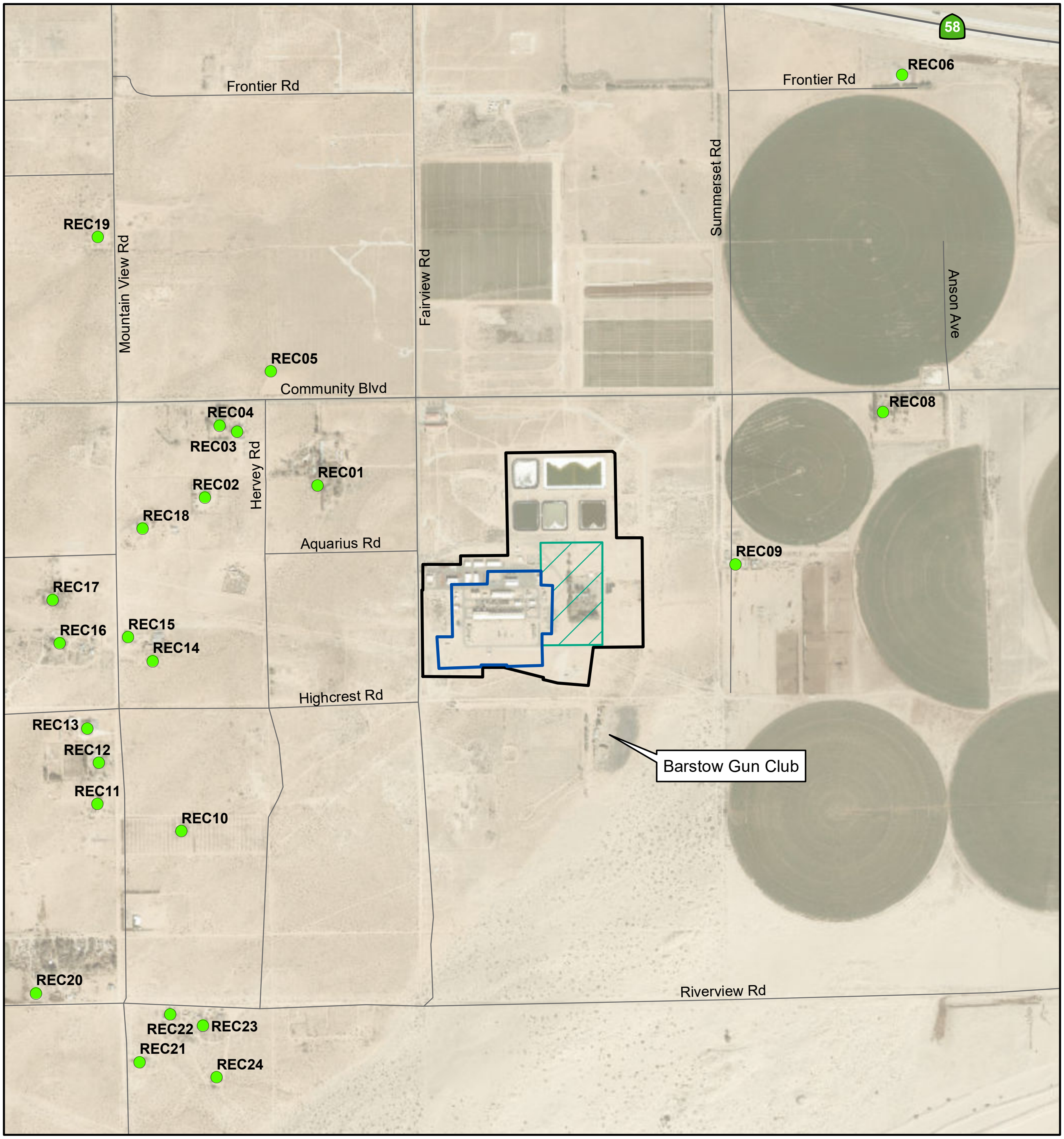

Version: 8/7/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Project Work Area
- Staging Area
- Noise Sensitive Receptor

N

0 0.25 0.5
Miles

Figure 5.13-1
Noise Sensitive Receptors
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Version: 8/11/2024

Legend

Hinkley Compressor Station Perimeter Fence Line

Service Provider

N

0 1.5 3

Miles

Figure 5.15-1
Service Providers and Facilities
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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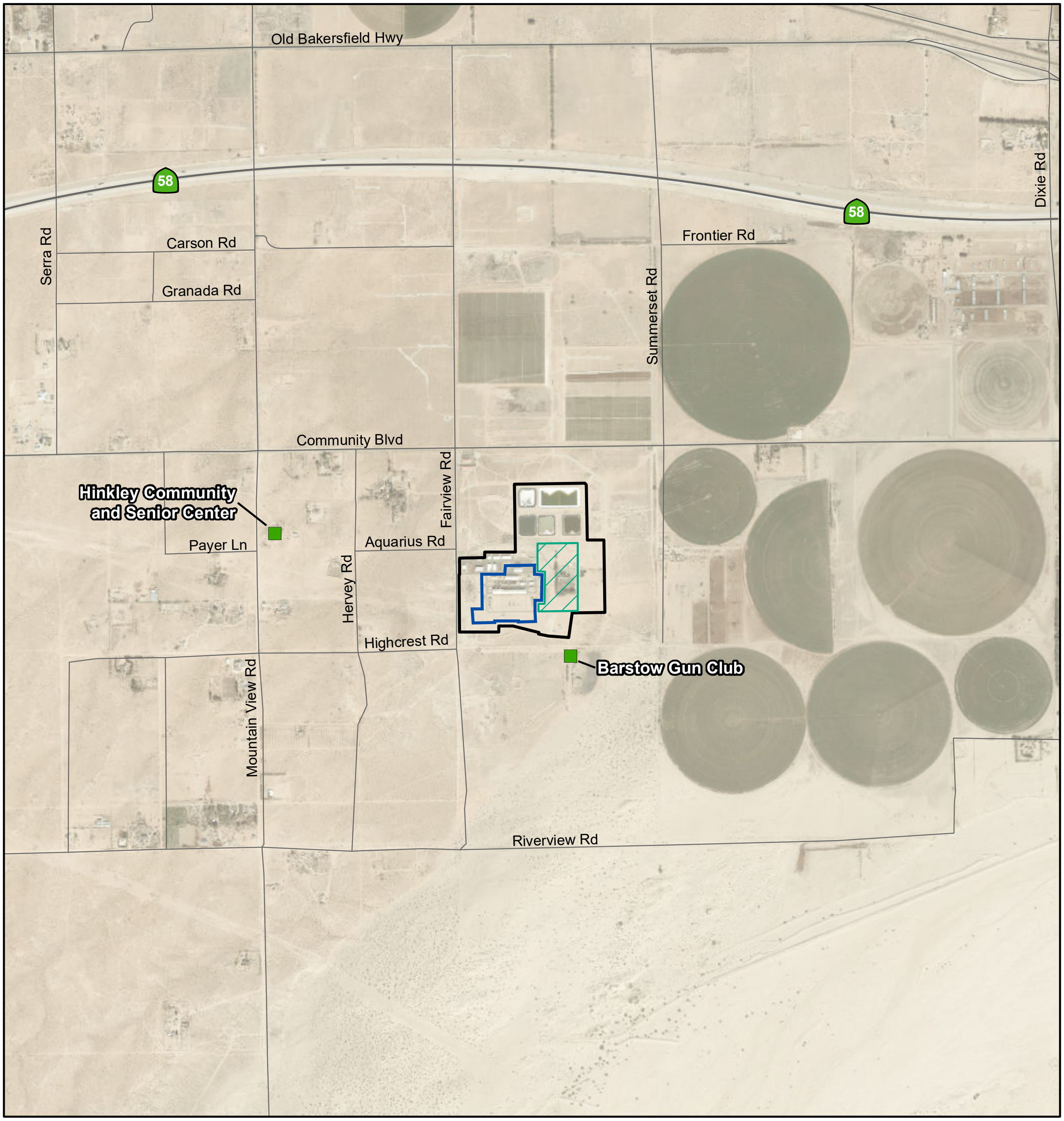

Version: 8/7/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Staging Area
- Work Area
- Recreational Facility

N

0 0.25 0.5

Miles

Figure 5.16-1
Recreational Facilities Within 1-Mile
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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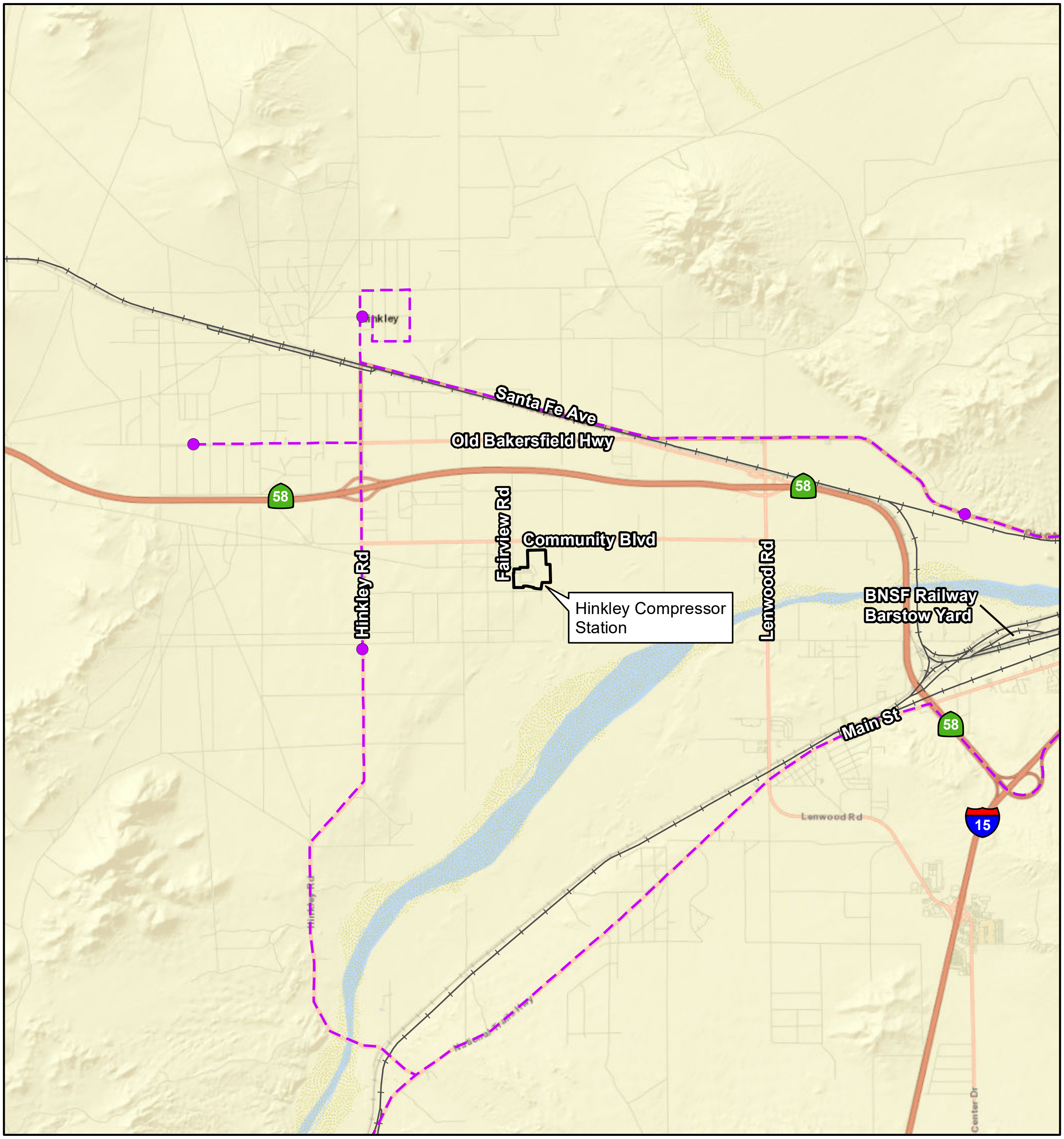

Version: 8/15/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Rail Line
- Victor Valley Transit Authority (VVTA) Bus Route 28
- Nearest VVTA Bus Stops

N

0 1.5 3

Miles

Figure 5.17-1
Transportation Facilities
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors Jacobs

\\dc1vs01\GISProj\P\PGE\Hinkley_PEA\MapFiles\Figure_5.17-1_240811.mxd kgrant1 8/15/2024 4:14:44 PM

Appendix 1
Notification List

Appendix 1

List of Parcels within 300 Feet of Project

APN	Site Address	Site City	Site State	Site Zip Code	Mailing Addresses	Mailing City	Mailing State	Mailing Zip Code
0488-121-20	35957 SUMMERSET RD	HINKLEY	CA	92347	PO BOX 217	UPLAND	CA	91785-0217
0488-121-20	35957 SUMMERSET RD	HINKLEY	CA	92347	25684 Community Blvd	BARSTOW	CA	92311
0488-121-20	35957 SUMMERSET RD	HINKLEY	CA	92347	611 Anton Boulevard #1400	COSTA MESA	CA	92626
0494-021-08	23532 COMMUNITY BLVD	HINKLEY	CA	92347	PO BOX 217	UPLAND	CA	91785-0217
0494-021-08	23532 COMMUNITY BLVD	HINKLEY	CA	92347	25684 Community Blvd	BARSTOW	CA	92311
0494-021-08	23532 COMMUNITY BLVD	HINKLEY	CA	92347	611 Anton Boulevard #1400	COSTA MESA	CA	92626
0488-112-56	COMMUNITY BLVD	HINKLEY	CA	92347	23579 OSAGE ST	BARSTOW	CA	92311-9653
0488-112-58					23579 OSAGE ST	BARSTOW	CA	92311-9653
0488-112-17	HIGHCREST RD	HINKLEY	CA	92347	10826 7TH AVE	HESPERIA	CA	92345-2358
0488-121-19					PO BOX 217	UPLAND	CA	91785-0217
0488-121-19					25684 Community Blvd	BARSTOW	CA	92311
0488-121-19					611 Anton Boulevard #1400	COSTA MESA	CA	92626

Appendix 2
Index to CPUC PEA Guidelines Requirements

Order	The format of the PEA is organized as follows:	PEA Section and Page	Applicant Notes, Comments
--	Cover	Cover Page	
--	Table of Contents, List of Tables, List of Figures, List of Appendices	i-xxv	
1	Executive Summary	1, page 1-1	
2	Introduction	2, page 2-1	
3	Proposed Project Description	3, page 3-1	
4	Description of Alternatives	4, page 4-1	
5	Environmental Analysis	5, page 5.1-1	
5.1	Aesthetics	5.1, page 5.1-1	
5.2	Agriculture and Forestry	5.2, page 5.2-1	
5.3	Air Quality	5.3, page 5.3-1	
5.4	Biological Resources	5.4, page 5.4-1	
5.5	Cultural Resources	5.5, page 5.5-1	
5.6	Energy	5.6, page 5.6-1	
5.7	Geology, Soils, and Paleontological Resources	5.7, page 5.7-1	
5.8	Greenhouse Gas Emissions	5.8, page 5.8-1	
5.9	Hazards, Hazardous Materials, and Public Safety	5.9, page 5.9-1	
5.10	Hydrology and Water Quality	5.10, page 5.10-1	
5.11	Land Use and Planning	5.11, page 5.11-1	
5.12	Mineral Resources	5.12, page 5.12-1	
5.13	Noise	5.13, page 5.13-1	
5.14	Population and Housing	5.14, page 5.14-1	
5.15	Public Services	5.15, page 5.15-1	
5.16	Recreation	5.16, page 5.16-1	
5.17	Transportation	5.17, page 5.17-1	

Order	The format of the PEA is organized as follows:	PEA Section and Page	Applicant Notes, Comments
5.18	Tribal Cultural Resources	5.18, page 5.18-1	
5.19	Utilities and Service Systems	5.19, page 5.19-1	
5.20	Wildfire	5.20, page 5.20-1	
5.21	Mandatory Findings of Significance	5.21, page 5.21-1	
6	Comparison of Alternatives	6, page 6-1	
7	Cumulative Impacts and Other CEQA Considerations	7, page 7-1	
8	List of Preparers	8, page 8-1	
9	References	9, page 9-1	
Order	**Title (As Provided in CPUC Pre-filing Guidelines PEA Checklist)**	**PEA Section and Page**	**Applicant Notes, Comments**
Appendix A	Detailed Maps and Design Drawings	Refer to Figures which follows Chapter 9	CONFIDENTIAL figures are provided under separate cover
Appendix B	Emissions Calculations, and Screening-level Health Risk Assessment	Appendix A. Emissions Calculations Appendix D. Energy Calculations	Screening-level HRA not needed for this PEA. Work is not near sensitive receptors.
Appendix C	Biological Resources Technical Reports	Appendix B1. Biological Resources Technical Report Appendix B2. PG&E Nesting Bird Management Plan	CONFIDENTIAL Appendix B1 figures provided under separate cover to CPUC
Appendix D	Cultural Resources Studies	Appendix C. Cultural Assessment Report is CONFIDENTIAL	CONFIDENTIAL Appendix C provided under separate cover to CPUC
Appendix E	Detailed Tribal Consultation Report	Refer to Appendix C	CONFIDENTIAL Appendix C provided under separate cover to CPUC
Appendix F	Environmental Data Resources Report, Phase I Environmental Site Assessment, or similar hazardous materials report	N/A	Existing reports and database searches were conducted. Refer to Appendix F.
Appendix G	Agency Consultation and Public Outreach Report and Records of Correspondence	Refer to Chapter 2	
Appendix H	Construction Fire Prevention Plan	N/A	PG&E standard to prevent construction fire is sufficient.
Appendix I	Noise Technical Studies	N/A	Not needed for this PEA given existing setting.
Appendix J	Traffic Studies	N/A	Not needed; no traffic impact.

Order	The format of the PEA is organized as follows:	PEA Section and Page	Applicant Notes, Comments
Appendix K	Geotechnical Investigations (may preliminary at time of PEA filing)	N/A Appendix E. Paleontological Evaluation.	CONFIDENTIAL Appendix E provided under separate cover to CPUC.
Appendix L	Hazardous Substance Control and Emergency Response Plan / Hazardous Waste and Spill Prevention Plan	N/A	PG&E standards complying with regulations for minimal amount of hazardous substance, waste and spill potential are sufficient.
Appendix M	Erosion and Sedimentation Control Best Management Practice Plan / Draft Storm Water Pollution Prevention Plan	Refer to Chapter 3 for best management practices	Minimal ground disturbance is less than 1 acre and in flat terrain.
Appendix N	FAA Notice and Criteria Tool Results	N/A	Project components do not require FAA notification.
Appendix O	Revegetation or Site Restoration Plan	N/A	Project area is not vegetated. Site restoration will be backfilling /compacting after excavation/ trenching in station.
Appendix P	Health and Safety Plan	N/A	Project does not include modification to station natural gas components, and the station does not store gas.
Appendix Q	Existing Easements	N/A	Project is within PG&E property owned in fee.
Appendix R	Blasting Plan (may be preliminary at time of PEA filing)	N/A	Project does not include blasting.
Appendix S	Traffic Control/Management Plan	N/A	Not needed; no traffic or transportation impact.
Appendix T	Worker Environmental Awareness Program	To be provided pre-construction, post CPCN	PEA APMs address worker environmental awareness program content.
Appendix U	Helicopter Use and Safety Plan	N/A	No helicopter use.
Appendix V	Electric and Magnetic Fields Management Plan	N/A	Project does not include high-voltage electric power or transmission lines.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
1. Executive Summary		
1.1 Proposed Project Summary Provide a summary of the proposed project and its underlying purpose and basic objectives.	1.1 Page 1-1	
1.2 Land Ownership and Right-of-Way Requirements Provide a summary of the existing and proposed land ownership and rights-of-way for the proposed project.	1.2 Page 1-1	Refer to PEA Appendix 1.
1.3 Areas of Controversy Identify areas of anticipated controversy and public concern regarding the project.	1.3 Page 1-1	
1.4 Summary of Impacts a) Identify all impacts expected by the Applicant to be potentially significant. Identify and discuss Applicant Proposed Measures here and provide a reference to the full listing of Applicant Proposed Measures provided in the table described in Section 3.11 of this PEA Checklist. b) Identify any significant and unavoidable impacts that may occur.	1.4 Page 1-1	
1.5 Summary of Alternatives Summarize alternatives that were considered by the Applicant and the process and criteria that were used to select the proposed project.	1.5 Page 1-1	
1.6 Pre-filing Consultation and Public Outreach Summary Briefly summarize Pre-filing consultation and public outreach efforts that occurred and identify any significant outcomes that were incorporated into the proposed project.	1.6 Page 1-2	
1.7 Conclusions Provide a summary of the major PEA conclusions.	1.7 Page 1-2	
1.8 Remaining Issues Describe any major issues that must still be resolved.	1.8 Page 1-2	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
2. Introduction		
2.1 Project Background		
2.1.1 Purpose and Need a) Explain why the proposed project is needed. b) Describe localities the proposed project would serve and how the project would fit into the local and regional utility system. c) If the proposed project was identified by the California Independent System Operator (CAISO), thoroughly describe the CAISO's consideration of the proposed project and provide the following information: i. Include references to all CAISO Transmission Planning Processes that considered the proposed project. ii. Explain if the proposed project is considered an economic, reliability, or policy-driven project or a combination thereof. iii. Identify whether and how the Participating Transmission Owner recommended the project in response to a CAISO identified need, if applicable. iv. Identify if the CAISO approved the original scope of the project or an alternative and the rationale for their approval either for the original scope or an alternative. v. Identify how and whether the proposed project would exceed, combine, or modify in any way the CAISO identified project need. vi. If the Applicant was selected as part of a competitive bid process, identify the factors that contributed to the selection and CAISO's requirements for in-service date. d) If the project was not considered by the CAISO, explain why.	2.1 Page 2-1 Figure 3.2-1 Figure 3.2-2	a) Provided b) Provided c) Project was not identified by CAISO. d) CAISO manages the flow of electricity across high-voltage, long-distance power lines. The project does not include high-voltage, long-distance power lines.
(Natural Gas Storage Only)		
e) Provide storage capacity or storage capacity increase in billion cubic feet. If the project does not increase capacity, make this statement. f) Describe how existing storage facilities will work in conjunction with the proposed project. Describe the purchasing process (injection, etc.) and transportation arrangements this facility will have with its customers.	N/A	Project does not include natural gas storage.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
2.1.2 Project Objectives a) Identify and describe the basic project objectives. The objectives will include reasons for constructing the project based on its purpose and need (i.e., address a specific reliability issue). The description of the project objectives will be sufficiently detailed to permit CPUC to independently evaluate the project need and benefits to accurately consider them in light of the potential environmental impacts. The basic project objectives will be used to guide the alternatives screening process, when applicable. b) Explain how implementing the project will achieve the basic project objectives and underlying purpose and need. c) Discuss the reasons why attainment of each basic objective is necessary or desirable.	2.1.2 Page 2-3	
2.1.3 Project Applicant(s) Identify the project Applicant(s) and ownership of each component of the proposed project. Describe each Applicant's utility services and their local and regional service territories.	2.1.3 Page 2-3	
2.2 Pre-filing Consultation and Public Outreach		
2.2.1 Pre-filing Consultation and Public Outreach a) Describe all Pre-filing consultation and public outreach that occurred, such as, but not limited to: i. CAISO ii. Public agencies with jurisdiction over project areas or resources that may occur in the project area iii. Native American tribes affiliated with the project area iv. Private landowners and homeowner associations v. Developers for large housing or commercial projects near the project area vi. Other utility owners and operators vii. Federal, state, and local fire management agencies b) Provide meeting dates, attendees, and discussion summaries, including any preliminary concerns and how they were addressed and any project alternatives that were suggested. c) Clearly identify any significant outcomes of consultation that were incorporated into the proposed project. d) Clearly identify any developments that could coincide or conflict with project activities (i.e., developments within or adjacent to a proposed ROW).	2.2 Page 2-3	The project will not impact other utility owners or operators and advance project notice is not needed. The project is located on PG&E property and private landowners within 300 feet will be notified with the CPCN filing. There is no homeowner association within 300 feet of the project. There are no large housing or commercial project near the project area.
2.2.2 Records of Consultation and Public Outreach Provide contact information, notification materials, meeting dates and materials, meeting notes, and records of communication organized by entity as an Appendix to the PEA (Appendix G).	2.2.8 Page 2-5	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
2.3 Environmental Review Process		
2.3.1 Environmental Review Process Provide a summary of the anticipated environmental review process and schedule.	2.3.1 Page 2-6	
2.3.2 CEQA Review a) Explain why CPUC is the appropriate CEQA Lead agency. b) Identify other state agencies and any federal agencies that may have discretionary permitting authority over any aspect of the proposed project. c) Identify all potential involvement by federal, state, and local agencies not expected to have discretionary permitting authority (i.e., ministerial actions). d) Summarize the results of any preliminary outreach with these agencies as well as future plans for outreach.	2.3.2 Page 2-6	
2.3.3 NEPA Review (if applicable) If review according to the National Environmental Policy Act (NEPA) is expected, explain the portions of the project that will require the NEPA review process. Discuss which agency is anticipated to be the NEPA Lead agency if discretionary approval by more than one federal agency is required.	2.3.3 Page 2-6	NEPA review not expected to be applicable to the proposed project
2.3.4 Pre-filing CEQA and NEPA Coordination Describe the results of Pre-filing coordination with CEQA and NEPA review agencies (refer to CPUC's Pre-Filing Consultation Guidelines). Identify major outcomes of the Pre-filing coordination process and how the information was incorporated into the PEA, including suggestions on the type of environmental documents and joint or separate processes based on discussions with agency staff.	2.3.4 Page 2-7	See Section 2.2.
2.4 Document Organization		
2.4 PEA Organization Summarize the contents of the PEA and provide an annotated list of its sections.	2.4 Page 2-7	
3. Proposed Project Description		
3.1 Project Overview		
3.1.1 Project Overview a) Provide a concise summary of the proposed project and components in a few paragraphs. b) Described the geographical location of the proposed project (i.e., county, city, etc.). c) Provide an overview map of the proposed project location.	3.1 Page 3-1 Figure 3.1-1	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.2 Existing and Proposed System		
3.2.1 Existing System a) Identify and describe the existing utility system that would be modified by the proposed project, including connected facilities to provide context. Include detailed information about substations, transmission lines, distribution lines, compressor stations, metering stations, valve stations, nearby renewable generation and energy storage facilities, telecommunications facilities, control systems, SCADA systems, etc. b) Provide information on users and the area served by the existing system features. c) Explain how the proposed project would fit into the existing local and regional systems. d) Provide a schematic diagram of the existing system features. e) Provide detailed maps and associated GIS data for existing facilities that would be modified by the proposed project.	3.2.1 Page 3-1 Figure 3.1-1 Figure 3.1-2	
3.2.2 Proposed Project System a) Describe the whole of the proposed project by component, including all new facilities and any modifications, upgrades, or expansions to existing facilities and any interrelated activities that are part of the whole of the action. b) Clearly identify system features that would be added, modified, removed, disconnected and left in place, etc. c) Identify the expected capacities of the proposed facilities, highlighting any changes from the existing system. If the project would not change existing capacities, make this statement. For electrical projects, provide the anticipated capacity increase in amps or megawatts or in the typical units for the types of facilities proposed. For gas projects, provide the total volume of gas to be delivered by the proposed facilities, anticipated system capacity increase (typically in million cubic feet per day), expected customers, delivery points and corresponding volumes, and the anticipated maximum allowable operating pressure(s). d) Describe the initial buildout and eventual full buildout of the proposed project facilities. For example, if an electrical substation or gas compressor station would be installed to accommodate additional demand in the future, then include the designs for both the initial construction based on current demand and the design for all infrastructure that could ultimately be installed within the planned footprint of an electric substation or compressor station. e) Explain whether the electric line or gas pipeline will create a second system tie or loop for reliability. f) Provide information on users and the area served by the proposed system features, highlighting any differences from the existing system. g) Provide a schematic diagram of the proposed system features. h) Provide detailed maps and associated GIS data for proposed facilities that would be installed, modified, or relocated by the proposed project.	3.2.2 Page 3-2 Figure 3.1-1 Figure 3.1-2	PG&E's existing gas transmission system will not be modified other than the electrical distribution equipment upgrade within Hinkley Compressor Station.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.2.3 System Reliability Explain whether the electric line or gas pipeline will create a second system tie or loop for reliability. Clearly explain and show how the proposed project relates to and supports the existing utility systems.	3.2.3 Page 3-3	There will be no gas pipeline second system tie or loop for reliability. The project will address aging infrastructure, safety issues, system reliability, and maintainability within the station's electrical equipment.
3.2.4 Planning Area Describe the system planning area served or to be served by the project. Clearly define the Applicant's term for the planning area (e.g., Electrical Needs Area or Distribution Planning Area).	3.2.4 Page 3-3	
3.3 Project Components		
Required for all Project Types		
3.3.1 Preliminary Design and Engineering a) Provide preliminary design and engineering information for all above-ground and below-ground facilities for the proposed project. The approximate locations, maximum dimensions of facilities, and limits of areas that would be needed to construct and operate the facilities should be clearly defined. b) Provide preliminary design drawings for project features and explain the level of completeness (i.e., percentage). c) Provide detailed project maps (approximately 1:3,000 scale) and associated GIS data of all facility locations and boundaries with attributes and spatial geometry that corresponds to information in the Project Description.	3.3.1 Page 3-3	
3.3.2 Segments, Components, and Phases a) Define all project segments, components, and phases for the proposed project. b) Provide the length/area of each segment or component, and the timing of each development phase. c) Provide an overview map showing each segment and provide associated GIS data (may be combined with other mapping efforts).	3.3.2 Page 3-3 Table 3-1	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.3.3 Existing Facilities a) Identify the types of existing facilities that would be removed or modified by the proposed project (i.e., conductor/cable, poles/towers, substations, switching stations, gas storage facilities, gas pipelines, service buildings, communication systems, etc.). b) Describe the existing facilities by project segment and/or component, and provide information regarding existing dimensions, areas/footprints, quantities, locations, spans, etc. c) Distinguish between above-ground and below-ground facilities and provide both depth and height ranges for each type of facility. For poles/towers, provide the installation method (i.e., foundation type or direct bury), and maximum above-ground heights and below-ground depths. d) Explain what would happen to the existing facilities. Would they be replaced, completely removed, modified, or abandoned? Explain why. e) Identify the names, types, materials, and capacity/volumes ranges (i.e., minimum and maximum) of existing facilities that would be installed or modified by the proposed project. f) Provide diagrams with dimensions representing existing facilities to provide context on how the proposed facilities would be different. g) Briefly describe the surface colors, textures, light reflectivity, and any lighting of existing facilities.	3.3.3 Page 3-3 Table 3-1 Figure 3.3-2	
3.3.4 Proposed Facilities a) Identify the types of proposed facilities to be installed or modified by the proposed project (e.g., conductor/cable, poles/towers, substations, switching stations, gas storage facilities, gas pipelines, service buildings, communication systems). b) Describe the proposed facilities by project segment and/or component, and provide information regarding maximum dimensions, areas/footprints, quantities, locations, spans, etc. c) Distinguish between above-ground and below-ground facilities and provide both depth and height ranges for each type of facility. For poles/towers, provide the installation method (i.e., foundation type or direct bury), and maximum above-ground heights and below-ground depths. d) Identify where facilities would be different (e.g., where unique or larger poles would be located, large guy supports or snub poles). e) Provide details about civil engineering requirements (i.e., permanent roads, foundations, pads, drainage systems, detention basins, spill containment, etc.). f) Distinguish between permanent facilities and any temporary facilities (i.e., poles, shoo-fly lines, mobile substations, mobile compressors, transformers, capacitors, switch racks, compressors, valves, driveways, and lighting). g) Identify the names, types, materials, and capacity/volumes ranges (i.e., minimum and maximum) of proposed facilities that would be installed or modified by the proposed project. h) Provide diagrams with dimensions representing existing facilities. i) Briefly describe the surface colors, textures, light reflectivity, and any lighting of proposed facilities.	3.3.4 Page 3-6	No new facilities are proposed. Components of an existing facilities are proposed to be upgraded.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.3.5 Other Potentially Required Facilities a) Identify and describe in detail any other actions or facilities that may be required to complete the project. For example, consider the following questions: i. Could the project require the relocation (temporary or permanent), modification, or replacement of unconnected utilities or other types of infrastructure by the Applicant or any other entity? ii. Could the project require aviation lighting and/or marking? iii. Could the project require additional civil engineering requirements to address site conditions or slope stabilization issues, such as pads and retaining walls, etc.? b) Provide the location of each facility and a description of the facility.	3.3.5 Page 3-6	None are anticipated.
3.3.6 Future Expansions and Equipment Lifespans a) Provide detailed information about the current and reasonably foreseeable plans for expansion and future phases of development. b) Provide the expected usable life of all facilities. c) Describe all reasonably foreseeable consequences of the proposed project (e.g., future ability to upgrade gas compressor station to match added pipeline capacity).	3.3.6 Page 3-6	No current or reasonably foreseeable plans.
Required for Certain Project Types		
3.3.7 Below-ground Conductor/Cable Installations (as Applicable) a) Describe the type of line to be installed (e.g., single circuit cross-linked polyethylene-insulated solid-dielectric, copper-conductor cables). b) Describe the type of casing the cable would be installed in (e.g., concrete-encased duct bank system) and provide the dimensions of the casing. c) Describe the types of infrastructure would likely be installed within the duct bank (e.g., transmission, fiber optics, etc.).	N/A	Refer to 3.3.3. for replacement cable that will be installed underground.
3.3.8 Electric Substations and Switching Stations (as Applicable) a) Provide the number of transformer banks that will be added at initial and full buildout of the substation. Identify the transformer voltage and number of each transformer type. b) Identify any gas insulated switchgear that will be installed within the substation. c) Describe any operation and maintenance facilities, telecommunications equipment, and SCADA equipment that would be installed within the substation.	N/A	Electric substations and switching stations are not part of the proposed project.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.3.9 Gas Pipelines (as Applicable) For each segment: a) Identify pipe diameter, number and length of exposed sections, classes and types of pipe to be installed, pressure of pipe, and cathodic protection for each linear segment. b) Describe new and existing inspection facilities (e.g., pig launcher sites). c) Describe system cross ties and laterals/taps. d) Identify the spacing between each valve station. e) Describe the compressor station, if needed, for any new or existing pipeline. f) Describe all pipelines and interconnections with existing and proposed facilities: i. Number of interconnections and locations and sizes ii. All below-ground and above-ground installations iii. All remote facility locations for metering, telemetry, control	N/A	Gas pipelines are not part of the proposed project.
3.3.10 Gas Storage Facilities – Background and Resource Information (as Applicable) a) Provide detailed background information on the natural gas formation contributing to the existing or proposed natural gas facility, including the following: i. Description of overlying stratigraphy, especially caps ii. Description of production, injection, and intervening strata iii. Types of rock iv. Description of types of rocks in formation, including permeability or fractures v. Thickness of strata b) Provide a graphic and/or table showing formation thicknesses. c) Identify and describe any potential gas migration pathways, such as faults, permeable contacts, abandoned wells, underground water or other pipelines. d) Provide a summary and detailed cross-section diagrams of the geologic formations and structures of the oil/gas field or area. e) Provide the first well drilling and production history, abandonment procedures, inspections, etc. f) Describe production zones, including depth, types of formations, and characteristics of field/area. g) Describe the existing and proposed storage capacity and limiting factors, such as injection or withdrawal capacities. h) Describe existing simulation studies that were used to predict the reservoir pressure response under gas injection and withdrawal operations, and simulation studies for how the system would change as proposed. Provide the studies as a PEA Appendix. i) Provide the history of the oil/gas field or area.	N/A	Gas storage facilities are not part of the proposed project.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.3.11 Gas Storage Facilities – Well-Head Sites (as Applicable) Describe the location, depth, size and completion information for all existing, abandoned, proposed production and injection, monitoring, and test wells.	N/A	Gas storage facilities are not part of the proposed project.
3.3.12 Gas Storage Facilities – Production and Injection (as Applicable) a) Provide the proposed storage capacity of production and injection wells. b) Provide production and injection pressures, depths, and rates. c) Provide production and injection cycles by day, week, and year. d) Describe existing and proposed withdrawal/production wells (i.e., size, depth, formations, etc.). e) Describe existing and proposed cushion gas requirements. f) Describe any cushion gas injection—formation the well is completed in (cushion gas formation), and injection information.	N/A	Gas storage facilities are not part of the proposed project.
3.3.13 Gas Storage Facilities – Electrical Energy (as Applicable) Describe all existing and proposed electric lines, telecommunications facilities, and other utilities/facilities (e.g., administrative offices, service buildings, and non-hazardous storage), and chemical storage associated with the proposed project.	N/A	Gas storage facilities are not part of the proposed project.
3.3.14 Telecommunication Lines (as Applicable) a) Identify the type of cable that is proposed and length in linear miles by segment. b) Identify any antenna and node facilities that are part of the project. c) For below-ground telecommunication lines, provide the depth of cable and type of conduit. d) For above-ground telecommunication lines, provide: i. Types of poles that will be installed (if new poles are required) ii. Where existing poles will be used iii. Any additional infrastructure (e.g., guy wires) or pole changes required to support the additional cable on existing poles	N/A	Telecommunication lines are not part of the proposed project.
3.4 Land Ownership, Rights-of-Way, and Easements		
3.4.1 Land Ownership Describe existing land ownership where each project component would be located. State whether the proposed project would be located on property(ies) owned by the Applicant or if additional property would be required.	3.4.1 Page 3-6	
3.4.2 Existing Rights-of-Way or Easements a) Identify and describe existing rights-of-way (ROWs) or easements where project components would be located. Provide the approximately lengths and widths in each project area. b) Clearly state if project facilities would be replaced, modified, or relocated within existing ROWs or easements.	3.4.2 Page 3-6	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.4.3 New or Modified Rights-of-Way or Easements a) Describe new permanent or modified ROWs or easements that would be required. Provide the approximately lengths and widths in each project area. b) Describe how any new permanent or modified ROWs or easements would be acquired. c) Provide site plans identifying all properties/parcels and partial properties/parcels that may require acquisition and the anticipated ROWs or easements. Provide associated GIS data. d) Describe any development restrictions within new ROWs or easements, e.g., building clearances and height restrictions, etc. e) Describe any relocation or demolition of commercial or residential property/structures that may be necessary.	3.4.3 Page 3-6	
3.4.4 Temporary Rights-of-Way or Easements f) Describe temporary ROWs or easements that would be required to access project areas, including ROWs or easements for temporary construction areas (i.e., staging areas or landing zones). g) Explain where temporary construction areas would be located with existing ROWs or easements for the project or otherwise available to the Applicant without a temporary ROW or easement. h) Describe how any temporary ROWs or easements would be acquired.	3.4.4 Page 3-6	
3.5 Construction		
3.5.1 Construction Access (All Projects)		
3.5.1.1 Existing Access Roads a) Provide the lengths, widths, ownership details (both public and private roads), and surface characteristics (i.e., paved, graveled, bare soil) of existing access roads that would be used during construction. Provide the area of existing roads that would be used. b) Describe any road modifications or stabilization that would be required prior to construction, including on the adjacent road shoulders or slopes. Identify any roads that would be expanded and provide the proposed width increases. c) Describe any procedures to address incidental road damage cause by project activities following construction. d) Provide detailed maps and associated GIS data for all existing access roads.	3.5.1.1 Page 3-7	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.1.2 New Access Roads a) Identify any new access roads that would be developed for project construction purposes, such as where any blading, grading, or gravel placement could occur to provide equipment access outside of a designated workspace. b) Provide lengths, widths, and development methods for new access roads. c) Identify any temporary or permanent gates that would be installed. d) Clearly identify any roads that would be temporary and fully restored following construction. Otherwise it will be assumed the new access road is a permanent feature. e) Provide detailed maps and associated GIS data for all new access roads.	3.5.1.2 Page 3-7	No new access roads are planned.
3.5.1.3 Overland Access Routes a) Identify any overland access routes that would be used during construction, such as where vehicles and equipment would travel over existing vegetation and where blading, grading, or gravel placement would occur. b) Provide lengths and widths for new access roads. c) Provide detailed maps and associated GIS data for all overland access routes.	3.5.1.3 Page 3-7	No overland access routes are planned.
3.5.1.4 Watercourse Crossings a) Identify all temporary watercourse crossings that would be required during construction. Provide specific methods and procedures for temporary watercourse crossings. b) Describe any bridges or culverts that replacement or installation of would be required for construction access. c) Provide details about the location, design and construction methods.	3.5.1.4 Page 3-7	No watercourse crossings are required as part of the proposed project.
3.5.1.5 Helicopter Access If helicopters would be used during construction: a) Describe the types and quantities of helicopters that would be used during construction (e.g., light, medium, heavy, or sky crane), and a description of the activities that each helicopter would be used for. b) Identify areas for helicopter takeoff and landing. c) Describe helicopter refueling procedures and locations. d) Describe flight paths, payloads, and expected hours and durations of helicopter operation. e) Describe any safety procedures or requirements unique to helicopter operations, such as but not limited to obtaining a Congested Area Plan from the Federal Aviation Administration (FAA).	3.5.1.5 Page 3-7	No helicopter use is needed for the proposed project.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.2 Staging Areas (All Projects)		
3.5.2.1 Staging Area Locations a) Identify the locations of all staging area(s). Provide a map and GIS data for each. b) Provide the size (in acres) for each staging area and the total staging area requirements for the project.	3.5.2.1 Page 3-7 Figure 3.5-1	
3.5.2.2 Staging Area Preparation a) Describe any site preparation required, if known, or generally describe what might be required (i.e., vegetation removal, new access road, installation of rock base, etc.). b) Describe what the staging area would be used for (i.e., material and equipment storage, field office, reporting location for workers, parking area for vehicles and equipment, etc.). c) Describe how the staging area would be secured. Would a fence be installed? If so, describe the type and extent of the fencing. d) Describe how power to the site would be provided if required (i.e., tap into existing distribution, use of diesel generators, etc.). e) Describe any temporary lightning facilities for the site. f) Describe any grading activities and/or slope stabilization issues.	3.5.2.2 Page 3-7	
3.5.3 Construction Work Areas (All Projects)		
3.5.3.1 Construction Work Areas a) Describe known work areas that may be required for specific construction activities (e.g., pole assembly, hillside construction) b) Describe the types of activities that would be performed at each work area. Work areas may include but are not necessarily limited to: i. Helicopter landing zones and touchdown areas ii. Vehicle and equipment parking, passing, or turnaround areas iii. Railroad, bridge, or watercourse crossings iv. Temporary work pads for facility installation, modification, or removal v. Excavations and associated equipment work areas vi. Temporary guard structures vii. Pull-and-tension/stringing sites viii. Jack and bore pits, drilling areas and pull-back areas for horizontal directional drills ix. Retaining walls	3.5.3.1 Page 3-8 Figure 3.5-2	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.3.2 Work Area Disturbance a) Provide the dimensions of each work area including the maximum area that would be disturbed during construction (e.g., 100 feet by 200 feet). b) Provide a table with temporary and permanent disturbance at each work area (in square feet or acres), and the total area of temporary and permanent disturbance for the entire project (in acres).	3.5.3.2 Page 3-8 Table 3-2	
3.5.3.3 Temporary Power Identify how power would be provided at work area (i.e., tap into existing distribution, use of diesel generators, etc.). Provide the disturbance area for any temporary power lines.	3.5.3.3 Page 3-9	
3.5.4 Site Preparation (All Projects)		
3.5.4.1 Surveying and Staking Describe initial surveying and staking procedures for site preparation and access.	3.5.4.1 Page 3-9	
3.5.4.2 Utilities a) Describe the process for identifying any underground utilities prior to construction (i.e., underground service alerts, etc.). b) Describe the process for relocating any existing overhead or underground utilities that aren't directly connected to the project system. c) Describe the process for installing any temporary power or other utility lines for construction.	3.5.4.2 Page 3-9	
3.5.4.3 Vegetation Clearing a) Describe what types of vegetation clearing may be required (e.g., tree removal, brush removal, flammable fuels removal) and why (e.g., to provide access, etc.). b) Provide calculations of temporary and permanent disturbance of each vegetation community and include all areas of vegetation removal in the GIS database. Distinguish between disturbance that would occur in previously developed areas (i.e., paved, graveled, or otherwise urbanized), and naturally vegetated areas. c) Describe how each type of vegetation removal would be accomplished. d) Describe the types of equipment that would be used for vegetation removal.	3.5.4.3 Page 3-10	None
3.5.4.4 Tree Trimming Removal a) For electrical projects, distinguish between tree trimming as required under CPUC General Order 95-D and tree removal. b) Identify the types, locations, approximate numbers, and sizes of trees that may need to be removed or trimmed substantially. c) Identify potentially protected trees that may be removed or substantially trimmed, such as but not limited to riparian trees, oaks trees, Joshua trees, or palm trees. d) Describe the types of equipment that would typically be used for tree removal.	3.5.4.4 Page 3-10	None

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.4.5 Work Area Stabilization Describe the processes to stabilize temporary work areas and access roads including the materials that would be used (e.g., gravel).	3.5.4.5 Page 3-10	
3.5.4.6 Grading a) Describe any earth moving or substantial grading activities (i.e., grading below a 6-inch depth) that would be required and identify locations where it would occur. b) Provide estimated volumes of grading (in cubic yards) including total cut, total fill, cut that would be reused, cut that would be hauled away, and clean fill that would be hauled to the site.	3.5.4.6 Page 3-10	
3.5.5 Transmission Line Construction (Above Ground)		
3.5.5.1 Poles/Towers a) Describe the process and equipment for removing poles, towers, and associated foundations for the proposed project (where applicable). Describe how they would be disconnected, demolished, and removed from the site. Describe backfilling procedures and where the material would be obtained. b) Describe the process and equipment for installing or otherwise modifying poles and towers for the proposed project. Describe how they would be put into place and connected to the system. Identify any special construction methods (e.g., helicopter installation) at specific locations or specific types of poles/towers. c) Describe how foundations, if any, would be installed. Provide a description of the construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc. for foundations. Describe what would be done with soil removed from a hole/foundation site. d) Describe how the poles/towers and associated hardware would be delivered to the site and assembled. e) Describe any pole topping procedures that would occur, identify specific locations and reasons, and describe how each facility would be modified. Describe any special methods that would be required to top poles that may be difficult to access.	3.5.5.1 Page 3-40	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.5.2 Aboveground and Underground Conductor/Cable a) Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable. b) Identify where conductor/cable stringing/installation activities would occur. c) Provide a diagram of the general sequencing and equipment that would be used. d) Describe the conductor/cable splicing process. e) Provide the general or average distance between pull-and-tension sites. Describe the approximate dimensions and where pull-and-tension sites would generally be required (as indicated by the designated work areas), such as the approximate distance to pole/tower height ratio, at set distances, or at significant direction changes. Describe the equipment that would be required at these sites. f) For underground conductor/cable installations, describe all specialized construction methods that would be used for installing underground conductor or cable. If vaults are required, provide their dimensions and location/spacing along the alignment. Provide a detailed description for how the vaults would be delivered to the site and installed. g) Describe any safety precautions or areas where special methodology would be required (e.g., crossing roadways, stream crossing).	N/A	Transmission line construction is not part of the proposed project.
3.5.5.3 Telecommunications Identify the procedures for installation of proposed telecommunication cables and associated infrastructure.	N/A	Telecommunications are not part of the proposed project.
3.5.5.4 Guard Structures Identify the types of guard structures that would be used at crossings of utility lines, roads, railroads, highways, etc. Describe the different types of guard structures or methods that may be used (i.e., buried poles and netting, poles secured to a weighted object, bucket trucks, etc.). Describe any pole installation and removal procedures associated with guard structures. Describe guard structure installation and removal process and duration that guard structures would remain in place.	N/A	Guard structures are not part of the proposed project.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.5.5 Blasting a) Describe any blasting that may be required to construct the project. b) If blasting may be required, provide a Blasting Plan that identifies the blasting locations; types and amounts of blasting agent to be used at each location; estimated impact radii; and, noise estimates. The Blasting Plan should be provided as an Appendix to the PEA. c) Provide a map identifying the locations where blasting may be required with estimated impact radii. Provide associated GIS data.	N/A	Blasting is not a construction method.
3.5.6 Transmission Line Construction (Below Ground)		
3.5.6.1 Trenching a) Describe the approximate dimensions of the trench (e.g., depth, width). b) Provide the total approximate volume of material to be removed from the trench, the amount to be used as backfill, and any amount to subsequently be removed/disposed of offsite in cubic yards. c) Describe the methods used for making the trench (e.g., saw cutter to cut the pavement, backhoe to remove, etc.). d) Provide off-site disposal location, if known, or describe possible option(s). e) Describe if dewatering would be anticipated and if so, how the trench would be dewatered, the anticipated flows of the water, whether there would be treatment, and how the water would be disposed of. f) Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants that could be exposed from trenching operations. g) If a pre-existing hazardous waste were encountered, describe the process of removal and disposal. h) Describe the state of the ground surface after backfilling the trench. i) Describe standard Best Management Practices to be implemented.	N/A	Transmission line construction is not part of the proposed project. Refer to Section 3.5.5.1 for a discussion of trenching associated with conduit installation.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.6.2 Trenchless Techniques (Microtunnel, Jack and Bore, Horizontal Directional Drilling) a) Identify any locations/features for which the Applicant expects to use a trenchless (i.e., microtunneling, jack and bore, horizontal directional drilling) crossing method and which method is planned for each crossing. b) Describe the methodology of the trenchless technique. c) Provide the approximate location and dimensions of the sending and receiving pits. d) Describe the methodology of excavating and shoring the pits. e) Provide the total volume of material to be removed from the pits, the amount to be used as backfill, and the amount subsequently to be removed/disposed of offsite in cubic yards. f) Describe process for safe handling of drilling mud and bore lubricants. g) Describe the process for detecting and avoiding "fracturing-out" during horizontal directional drilling operations. h) Describe the process for avoiding contact between drilling mud/lubricants and stream beds. i) If engineered fill would be used as backfill, indicate the type of engineered backfill and the amount that would be typically used (e.g., the top 2 feet would be filled with thermal-select backfill). j) Describe if dewatering is anticipated and, if so, how the pits would be dewatered, the anticipated flows of the water, whether there would there be treatment, and how the water would be disposed of. k) Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants. Describe the process of disposing of any pre-existing hazardous waste that is encountered during excavation. l) Describe any standard BMPs that would be implemented for trenchless construction.	N/A	None
3.5.7 Substation, Switching Stations, Gas Compressor Stations		
3.5.7.1 Installation or Facility Modification Describe the process and equipment for removing, installing, or modifying any substations, switching stations, or compressor stations including: a) Transformers/ electric components b) Gas components c) Control and operation buildings d) Driveways e) Fences f) Gates g) Communication systems (SCADA) h) Grounding systems	3.5.5.1 Page 3-10	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.7.2 Civil Works Describe the process and equipment required to construct any slope stabilization, drainage, retention basins, and spill containment required for the facility.	N/A	No civil work such as installation or modification to slope, drainage, retention basins, or spill containment is required for the project.
3.5.8 Gas Pipelines		
3.5.8.1 Gas Pipeline Construction Describe the process for proposed pipeline construction including site development, trenching and trenchless techniques, pipe installation, and backfilling.	3.5.6 Page 3-12	Gas pipelines are not part of the proposed project. Existing temporary gas fuel lines are discussed in Section 3.5.6.
3.5.8.2 Water Crossings Describe water feature crossings that will occur during trenching, the method of trenching through stream crossings, and the process for avoiding impacts to the water features required for pipeline construction. Identify all locations where the pipeline will cross water features. Cite to any associated geotechnical or hydrological investigations completed and provide a full copy of each report as an Appendix to the PEA.	N/A	There are no gas pipelines or watercourse crossings associated with the proposed project and no watercourse crossings will be affected by construction activities.
3.5.8.3 Gas Pipeline Other Requirements a) Describe hydrostatic testing process including pressures, timing, source of flushing water, discharge of water. b) Describe energy dissipation basin, and the size and length of segments to be tested. c) Describe pig launching locations and any inline inspection techniques used during or immediately post construction.	N/A	Gas pipelines are not part of the proposed project. Gas pipeline hydrostatic testing, energy dissipation, or inline inspection will not occur as part of compressor station upgrade activities.
3.5.9 Gas Storage Facilities		
3.5.9.1 Gas Storage Construction a) Describe the process for constructing the gas storage facility including constructing well pads and drilling wells. b) Describe the specific construction equipment that would be used, such as the type of drill rig (i.e., size, diesel, electric, etc.), depth of drilling, well-drilling schedule and equipment.	N/A	Gas storage facilities are not part of the proposed project
3.5.9.2 Drilling Muds and Fluids Describe the use of any drilling muds, fluids, and other drilling materials. Provided estimated types and quantities.	N/A	Gas storage facilities are not part of the proposed project

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.10 Public Safety and Traffic Control (All Projects)		
3.5.10.1 Public Safety a) Describe specific public safety considerations during construction and best management practices to appropriately manage public safety. Clearly state when and where they each safety measure would be applied. b) Identify procedures for managing work sites in urban areas, covering open excavations securely, installing barriers, installing guard structures, etc. c) Identify specific project areas where public access may be restricted for safety purposes and provide the approximate durations and timing of restricted access at each location.	3.5.7.1 Page 3-12	
3.5.10.2 Traffic Control a) Describe traffic control procedures that would be implemented during construction. b) Identify the locations, process, and timing for closing any sidewalks, lanes, roads, trails, paths, or driveways to manage public access. c) Identify temporary detour routes and locations. d) Provide a preliminary Traffic Control Plan(s) for the project.	3.5.7.2 Page 3-12	
3.5.10.3 Security Describe any security measures, such as fencing, lighting, alarms, etc. that may be required. State if security personnel will be stationed at project areas and anticipated duration of security.	3.5.7.3 Page 3-13	
3.5.10.4 Livestock Describe any livestock fencing or guards that may be necessary to prevent livestock from entering project areas. State if the fencing would be electrified and if so, how it would be powered.	3.5.7.4 Page 3-13	
3.5.11 Dust, Erosion, and Runoff Controls (All Projects)		
3.5.11.1 Dust Describe specific best management practices that would be implemented to manage fugitive dust.	3.5.8.1 Page 3-13	
3.5.11.2 Erosion Describe specific best management practices that would be implemented to manage erosion.	3.5.8.1 Page 3-13	
3.5.11.3 Runoff Describe specific best management practices that would be implemented to manage stormwater runoff and sediment.	3.5.8.1 Page 3-13	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.12 Water Use and Dewatering (All Projects)		
3.5.12.1 Water Use Describe the estimated volumes of water that would be used by construction activity (e.g., dust control, compaction, etc.). State if recycled or reclaimed water would be used and provide estimated volumes. Identify the anticipated sources where the water would be acquired or purchased. Identify if the source of water is groundwater and the quantity of groundwater that could be used.	3.5.9.1 Page 3-14	
3.5.12.2 Dewatering a) Describe dewatering procedures during construction, including pumping, storing, testing, permitted discharging, and disposal requirements that would be followed. b) Describe the types of equipment and workspace considerations to be used to dewater, store, transport, or discharge extracted water.	3.5.9.2 Page 3-14	
3.5.13 Hazardous Materials and Management (All Projects)		
3.5.13.1 Hazardous Materials a) Describe the types, uses, and volumes of all hazardous materials that would be used during construction. b) State if herbicides or pesticides may be used during construction. c) If a pre-existing hazardous waste were encountered, describe the process of removal and disposal.	3.5.10.1 Page 3-14 Table 3-5	
3.5.13.2 Hazardous Materials Management a) Identify specific best management practices that would be followed for transporting, storing, and handling hazardous materials. b) Identify specific best management practices that would be followed in the event of an incidental leak or spill of hazardous materials. c) Provide a Hazardous Substance Control and Emergency Response Plan / Hazardous Waste and Spill Prevention Plan as an Appendix to the PEA, if appropriate.	3.5.10.2 Page 3-15	Hazardous materials are discussed in further detail in Section 5.9, Hazards, Hazardous Waste, and Public Safety. Typical best practices, such as the hazardous materials APMs and BMPs are included in the PEA and a plan is not needed for the hazards materials management for the proposed project.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.5.14 Waste Generation and Management (All Projects)		
3.5.14.1 Solid Waste a) Describe solid waste streams from existing and proposed facilities during construction. b) Identify procedures to be implemented to manage solid waste, including collection, containment, storage, treatment, and disposal. c) Provide estimated total volumes of solid waste by construction activity or project component. d) Describe the recycling potential of solid waste materials and provide estimated volumes of recyclable materials by construction activity or project component. e) Identify the locations of appropriate disposal and recycling facilities where solid wastes would be transported.	3.5.11.1 Page 3-15	
3.5.14.2 Liquid Waste a) Describe liquid waste streams during construction (i.e., sanitary waste, drilling fluids, contaminated water, etc.) b) Describe procedures to be implemented to manage liquid waste, including collection, containment, storage, treatment, and disposal. c) Provide estimated volumes of liquid waste generated by construction activity or project component. d) Identify the locations of appropriate disposal facilities where liquid wastes would be transported.	3.5.11.2 Page 3-16	
3.5.14.3 Hazardous Waste a) Describe potentially hazardous waste streams during construction and procedures to be implemented to manage hazardous wastes, including collection, containment, storage, treatment, and disposal. b) If large volumes of hazardous waste are anticipated, such as from a pre-existing contaminant in the soil that must be collected and disposed of, provide estimated volumes of hazardous waste that would be generated by construction activity or project component. c) Identify the locations of appropriate disposal facilities where hazardous wastes would be transported.	3.5.11.3 Page 3-17	
3.5.15 Fire Prevention and Response (All Projects)		
3.5.15.1 Fire Prevention and Response Procedures Describe fire prevention and response procedures that would be implemented during construction. Provide a Construction Fire Prevention Plan or specific procedures as an Appendix to the PEA.	3.5.12.1 Page 3-17	
3.5.15.2 Fire Breaks Identify any fire breaks (i.e., vegetation clearance) requirements around specific project activities (i.e., hot work). Ensure that such clearance buffers are included in the limits of the defined work areas, and the vegetation removal in that area is attributed to Fire Prevention and Response (refer to 3.5.4.3: Vegetation Clearing).	3.5.12.2 Page 3-17	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.6 Construction Workforce, Equipment, Traffic, and Schedule		
3.6.1 Construction Workforce a) Provide the estimated number of construction crew members. In the absence of project-specific data, provide estimates based on past projects of a similar size and type. b) Describe the crew deployment. Would crews work concurrently (i.e., multiple crews at different sites); would they be phased? How many crews could be working at the same time and where? c) Describe the different types of activities to be undertaken during construction, the number of crew members for each activity (i.e. trenching, grading, etc.), and number and types of equipment expected to be used for the activity. Include a written description of the activity.	3.6.1 Page 3-17 Table 3-6	
3.6.2 Construction Equipment Provide a tabular list of the types of equipment expected to be used during construction of the proposed project including the horsepower. Define the equipment that would be used by each phase.	3.6.2 Page 3-17 Table 3-6	
3.6.3 Construction Traffic a) Describe how the construction crews and their equipment would be transported to and from the proposed project site. b) Provide vehicle type, number of vehicles, and estimated hours of operation per day, week, and month for each construction activity and phase. c) Provide estimated vehicle trips and vehicles miles traveled (VMT) for each construction activity and phase. Provide separate values for construction crews commuting, haul trips, and other types of construction traffic.	3.6.3 Page 3-20	
3.6.4 Construction Schedule a) Provide the proposed construction schedule (e.g., month and year) for each segment or project component, and for each construction activity and phase. b) Provide and explain the sequencing of construction activities, and if they would or would not occur concurrently. c) Provide the total duration of each construction activity and phase in days or weeks. d) Identify seasonal considerations that may affect the construction schedule, such as weather or anticipated wildlife restrictions, etc. The proposed construction should account for such factors.	3.6.4 Page 3-20 Table 3-7	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.6.5 Work Schedule a) Describe the anticipated work schedule, including the days of the week and hours of the day when work would occur. Clearly state if work would occur at night or on weekends and identify when and where this could occur. b) Provide the estimated number of days or weeks that construction activities would occur at each type of work area. For example, construction at a stationary facility or staging area may occur for the entire duration of construction, but construction at individual work areas along a linear project would be limited to a few hours, days or weeks, and only a fraction of the total construction period.	3.6.5 Page 3-20 Table 3.6-4	
3.7 Post-Construction		
3.7.1 Configuring and Testing Describe the process and duration for post-construction configuring and testing of facilities. Describe the number of personnel and types of equipment that would be involved.	3.7.1 Page 3-20	
3.7.2 Landscaping Describe any landscaping that would be installed. Provide a conceptual landscape plan that identifies the locations and types of plantings that will be used. Identify whether plantings will include container plants or seeds. Include any water required for landscaping in the description of water use above.	3.7.2 Page 3-21	
3.7.3 Demobilization and Site Restoration		
3.7.3.1 Demobilization Describe the process for demobilization after construction activities, but prior to leaving the work site. For example, describe final processes for removing stationary equipment and materials, etc.	3.7.3.1 Page 3-21	
3.7.3.2 Site Restoration Describe how cleanup and post-construction restoration would be performed (i.e., personnel, equipment, and methods) on all project ROWs, sites, and extra work areas. Things to consider include, but are not limited to, restoration of the following: a) Restoring natural drainage patterns b) Recontouring disturbed soil c) Removing construction debris d) Vegetation e) Permanent and semi-permanent erosion control measures f) Restoration of all disturbed areas and access roads, including restoration of any public trails that are used as access, as well as any damaged sidewalks, agricultural infrastructure, or landscaping, etc. g) Road repaving and striping, including proposed timing of road restoration for underground construction within public roadways	3.7.3.2 Page 3-21	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.8 Operation and Maintenance		
3.8.1 Regulations and Standards a) Identify and describe all regulations and standards applicable to operation and maintenance of project facilities. b) Provide a copy of any applicable Wildfire Management Plan and describe any special procedures for wildfire management.	3.8.1 Page 3-21	
3.8.2 System Controls and Operation Staff a) Describe the systems and methods that the Applicant would use for monitoring and control of project facilities (e.g., on-site control rooms, remote facilities, standard monitoring and protection equipment, pressure sensors, automatic shut-off valves, and site and equipment specific for monitoring and control such as at natural gas well pads). b) If new full-time staff would be required for operation and/or maintenance, provide the number of positions and purpose.	3.8.2 Page 3-21	
3.8.3 Inspection Programs a) Describe the existing and proposed inspection programs for each project component, including the type, frequency, and timing of scheduled inspections (i.e., aerial inspection, ground inspection, pipeline inline inspections). b) Describe any enhanced inspections, such as within any High Fire Threat Districts consistent with applicable Wildfire Management Plan requirements. c) Describe the inspection processes, such as the methods, number of crew members, and how access would occur (i.e., walk, vehicle, all-terrain vehicle, helicopter, drone, etc.). If new access would be required, describe any restoration that would be provided for the access roads.	3.8.3 Page 3-21	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.8.4 Maintenance Programs a) Describe the existing and proposed maintenance programs for each project component. b) Describe scheduled maintenance or facility replacement after the designated lifespan of the equipment. c) Identify typical parts and materials that require regular maintenance and describe the repair procedures. d) Describe any access road maintenance that would occur. e) Describe maintenance for surface or color treatment. f) Describe cathodic protection maintenance that would occur. g) Describe ongoing landscaping maintenance that would occur.	3.8.4 Page 3-22	No access road maintenance is needed for the project. There is no cathodic protection associated with the compressor station; therefore, no cathodic maintenance would be required.
3.8.5 Vegetation Management Programs a) Describe vegetation management programs within and surrounding project facilities. Distinguish between any different types of vegetation management. b) Describe any enhanced vegetation management, such as within any High Fire Threat Districts consistent with any applicable Wildfire Management Plan requirements. Identify the areas where enhanced vegetation management would be conducted.	3.8.5 Page 3-22	None
3.9 Decommissioning		
3.9.1 Decommissioning Provide detailed information about the current and reasonably foreseeable plans for the disposal, recycling, or future abandonment of all project facilities.	3.9 Page 3-22	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.10 Anticipated Permits and Approvals		
3.10.1 Anticipated Permits and Approvals Identify all necessary federal, state, regional, and local permits that may be required for the project. For each permit, list the responsible agency and district/office representative with contact information, type of permit or approval, and status of each permit with date filed or planned to file. For example: a) Federal Permits and Approvals i. U.S. Fish and Wildlife Service ii. U.S. Army Corps of Engineers iii. Federal Aviation Administration iv. U.S. Forest Service v. U.S. Department of Transportation – Office of Pipeline Safety vi. U.S. Environmental Protection Agency (Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation, and Liability Act) b) State and Regional Permits i. California Department of Fish and Wildlife ii. California Department of Transportation iii. California State Lands Commission iv. California Coastal Commission v. State Historic Preservation Office, Native American Heritage Commission vi. State Water Resources Control Board vii. California Division of Oil, Gas and Geothermal Resources viii. Regional Air Quality Management District ix. Regional Water Quality Control Board (National Pollutant Discharge Elimination System General Industrial Storm Water Discharge Permit) x. Habitat Conservation Plan Authority (if applicable) See also Table 6 of example permitting requirements and processes.	3.10.1 Page 3-22	
3.10.2 Rights-of-Way or Easement Applications Demonstrate that applications for ROWs or other proposed land use have been or soon will be filed with federal, state, or other land-managing agencies that have jurisdiction over land that would be affected by the project (if any). Discuss permitting plans and timeframes and provide the contact information at the federal agency(ies) approached.	3.10.2 Page 3-22	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.11 Applicant Proposed Measures		
3.11 Applicant Proposed Measures a) Provide a table with the full text of any Applicant Proposed Measure. Where applicable, provide a copy of Applicant procedures, plans, and standards referenced in the Applicant Proposed Measures. b) Within Chapter 5, describe the basis for selecting a particular Applicant Proposed Measure and how the Applicant Proposed Measure would reduce the impacts of the project.	3.11 Page 3-23 Table 3-8 Chapter 5 sections	
3.12 Project Description Graphics, Mapbook, and GIS Requirements		
3.12.1 Graphics Provide diagrams of the following as applicable: a) All pole, tower, pipe, vault, conduit, and retaining wall types b) For poles, provide typical drawings with approximate diameter at the base and tip; for towers, estimate the width at base and top. c) A typical detail for any proposed underground duct banks and vaults d) All substation, switchyard, building, and facility layouts e) Trenching, drilling, pole installation, pipe installation, vault installation, roadway construction, facility removal, helicopter uses, conductor installation, traffic control, and other construction activities where a diagram would assist the reader in visualizing the work area and construction approach f) Typical profile views of proposed aboveground facilities and existing facilities to be modified within the existing and proposed ROW (e.g., typical cross-section of existing and proposed facilities by project segment). g) Photos of representative existing and proposed structures	Appendix	See separate files with Chapter or Section

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
3.12.2 Mapbook Provide a detailed mapbook on an aerial imagery basemap at a scale between 1:3000 and 1:6000 (or as appropriate and legible) that show mileposts, roadways, and all project components and work areas including: a) All proposed above-ground and underground structure/facility locations (e.g., poles, conductor, substations, compressor stations, telecommunication lines, vaults, duct bank, lighting, markers, etc.) b) All existing structures/facilities that would be modified or removed c) Identify by milepost where existing ROW will be used and where new ROW or land acquisition will be required. d) All permanent work areas including permanent facility access e) All access roads including existing, temporary, and new permanent access f) All temporary work areas including staging, material storage, field offices, material laydown, temporary work areas for above ground (e.g., pole installation) and underground facility construction (e.g., trenching and duct banks), helicopter landing zones, pull and tension sites, guard structures, shoo flys etc. g) Areas where special construction methods (e.g., jack and bore, HDD, blasting, retaining walls etc.) may need to be employed h) Areas where vegetation removal may occur i) Areas to be heavily graded and where slope stabilization measures would be employed including any retaining walls	Figures with PEA files	
3.12.3 GIS Data Provide GIS data for all features and ROW shown on the detailed mapbook.	Separate GIS submittal	
3.12.4 GIS Requirements Provide the following information for each pole/tower that would be installed and for each pole/tower that would be removed: a) Unique ID number and type of pole (e.g., wood, steel, etc.) or tower (e.g., self-supporting lattice) both in a table and in the attributes of the GIS data provided b) Identify pole/tower heights and conductor sizes in the attributes of the GIS data provided.	Separate GIS submittal	
3.12.5 Natural Gas Facilities GIS Data For natural gas facilities, provide GIS data for system cross ties and all laterals/taps, valve stations, and new and existing inspection facilities (e.g., pig launcher sites).	N/A	System cross ties and all laterals/taps, valve stations, and new and existing inspection facilities (e.g., pig launcher sites) are not part of natural gas facility components included in the proposed project.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
4. Description of Alternatives		
4.1 Alternatives Considered Identify alternatives to the proposed project. Include the following: a) All alternatives to the proposed project that were suggested, considered, or studied by the CAISO or by CAISO stakeholders b) Alternatives suggested by the public or agencies during public outreach efforts conducted by the Applicant c) Reduced footprint alternatives, including, e.g., smaller diameter pipelines and space for fewer electric transformers d) Project phasing options (e.g., evaluate the full build out for environmental clearance but consider an initial, smaller buildout that would only be expanded [in phases] if needed) e) Alternative facility and construction activity sites (e.g., substation, compressor station, drilling sites, well-head sites, staging areas) f) Renewable, energy conservation, energy efficiency, demand response, distributed energy resources, and energy storage alternatives g) Alternatives that would avoid or limit the construction of new transmission-voltage facilities or new gas transmission pipelines h) Other technological alternatives (e.g., conductor type) i) Route alternatives and route variations j) Alternative engineering or technological approaches (e.g., alternative types of facilities, or materials, or configurations) k) Assign an identification label and brief, descriptive title to each alternative described in this PEA chapter (e.g., Alternative A: No Project; Alterative B: Reduced Footprint 500/115-kV Substation; Alternative C: Ringo Hills 16-inch Pipeline Alignment; Alternative D1: Lincoln Street Route Variation; etc.). Each alternative will be easily identifiable by reading the brief title. Provide a description of each alternative. The description of each alternative will discuss to what extent it would be potentially feasible, meet the project's underlying purpose, meet most of the basic project objectives, and avoid or reduce one or more potentially significant impacts. If the Applicant believes that an alternative is infeasible or the implementation is remote and speculative (CEQA Guidelines Section 15126.6(f)(3), clearly explain why. If significant environmental effects are possible without mitigation, alternatives will be provided in the PEA that are capable of avoiding or reducing any potentially significant environmental effects, even if the alternative(s) substantially impede the attainment of some project objectives or are costlier.	4.2 Page 4-3	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
4.2 No Project Alternative Include a thorough description of the No Project Alternative. The No Project Alternative needs to describe the range of actions that are reasonably foreseeable if the proposed project is not approved. The No Project Alternative will be described to meet the requirements of CEQA Guidelines Section15126.6(e).	4.3 Page 4-5	
4.3 Rejected Alternatives Provide a detailed discussion of all alternatives considered by the Applicant that were not selected by the Applicant for a full description in the PEA and analysis in PEA Chapter 5. The detailed discussion will include the following: a) Description of the alternative and its components b) Map of any alternative sites or routes c) Discussion about the extent to which the alternative would meet the underlying purpose of the project and its basic objectives d) Discussion about the feasibility of implementing the alternative e) Discussion of whether the alternative would reduce or avoid any significant environmental impacts of the proposed project f) Discussion of any new significant impacts that could occur from implementation of the alternative g) Description of why the alternative was rejected h) Any comments from the public or agencies about the alternative during PEA preparation	4.4 Page 4-5	
For Natural Gas Storage Projects:		
4.4 Natural Gas Storage Alternatives In addition to the requirements included above, alternatives to be considered for proposed natural gas storage projects include the following, where applicable: a) Alternative reservoir locations considered for gas storage including other field locations and other potential storage areas b) Alternative pipelines, road, and utility siting c) Alternative suction gas requirements, and injection/withdrawal options	N/A	Natural gas storage facilities are not part of the proposed project
5. Environmental Analysis		
5.1 Aesthetics		
5.1.1 Environmental Setting		
5.1.1.1 Landscape Setting Briefly described the regional and local landscape setting.	5.1.1.1 Page 5.1-1	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.1.1.2 Scenic Resources Identify and describe any vistas, scenic highways, national scenic areas, or other scenic resources within and surrounding the project area (approximately 5-mile buffer but may be greater if necessary). Scenic resources may also include but are not limited to historic structures, trees, or other resources that contribute to the scenic values where the project would be located.	5.1.1.2 Page 5.1-1	
5.1.1.3 Viewshed Analysis a) Conduct a viewshed analysis for the project area (approximately 5-mile buffer but may be greater if necessary). b) Describe the project viewshed, including important visibility characteristics for the project site, such as viewing distance, viewing angle, and intervening topography, vegetation, or structures. c) Provide a supporting map (or maps) showing project area, landscape units, topography (i.e., hillshade), and the results of the viewshed analysis. Provide associated GIS data.	5.1.1.3 Page 5.1-2	A viewshed analysis is not necessary because the upgrades will be internal to the station. The station modifications will not change the public's distant views of mountains, ridgelines, hills, trees, agricultural land, or undeveloped land with undisturbed native vegetation.
5.1.1.4 Landscape Units Identify and describe landscape units (geographic zones) within and surrounding the project area (approximately 5-mile buffer but may be greater if necessary) that categorizes different landscape types and visual characteristics, with consideration to topography, vegetation, and existing land uses. Landscape units should be developed based on the existing landscape characteristics rather than the project's features or segments.	5.1.1.4 Page 5.1-2	
5.1.1.5 Viewers and Viewer Sensitivity Identify and describe the types of viewers expected within the viewshed and landscape units. Describe visual sensitivity to general visual change based on viewing conditions, use of the area, feedback from the public about the project, and landscape characteristics.	5.1.1.5 Page 5.1-3	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.1.1.6 Representative Viewpoints a) Identify representative viewpoints from publicly accessible locations (up to approximately 5-mile buffer but may be greater if appropriate). The number and location of the viewpoints must represent a range of views of the project site from major roads, highways, trails, parks, vistas, landmarks, and other scenic resources near the project site. Multiple viewpoints should be included where the project site would be visible from sensitive scenic resources to provide context on different viewing distances, perspectives, and directions. b) Provide the following information for each viewpoint: i. Number, title, and brief description of the location ii. Types of viewers iii. Viewing direction(s) and distance(s) to the nearest proposed project features iv. Description of the existing visual conditions and visibility of the project site as seen from the viewpoint and shown in the representative photographs c) Provide a supporting map (or maps) showing project features and representative viewpoints with arrows indicating the viewing direction(s). Provide associated GIS data (may be combined with GIS data request below for representative photographs).	5.1.1.6 Page 5.1-4 Figure 5.1-1	Because of the limited public views of the project site and the lack of scenic resources near the project site, one representative viewpoint from an adjacent public road was selected but no visual simulations were completed.
5.1.1.7 5.1.1.7: Representative Photographs a) Provide high resolution photographs taken from the representative viewpoints in the directions of all proposed project features. Multiple photographs should be provided where project features may be visible in different viewing directions from the same location. b) Provide the following information for each photograph: i. Capture time and date viii. Camera body and lens model ix. Lens focal length and camera height when taken c) Provide GIS data associated with each photograph location that includes coordinates (<1 meter resolution), elevations, and viewing directions, as well as the associated viewpoint.	5.1.1.7 Page 5.1-4 Figure 5.1-1	
5.1.1.8 Visual Resource Management Areas a) Identify any visual resource management areas within and surrounding the project area (approximately 5-mile buffer). b) Describe any project areas within visual resource management areas. c) Provide a supporting map (or maps) showing project features and visual resource management areas. Provide associated GIS data.	5.1.1.8 Page 5.1-4	No areas.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.1.2 Regulatory Setting		
5.1.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards regarding aesthetics and visual resource management.	5.1.2 Page 5-1.4	
5.1.3 Impact Questions		
5.1.3.1 Impact Questions The impact questions include all aesthetic impact questions in the current version of CEQA Guidelines, Appendix G. **5.1.3.2 Additional CEQA Impact Questions** None.	5.1.3 Page 5.1-5	
5.1.4 Impact Analysis		
5.1.4.1 Visual Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.1.4.3 Page 5.1-6	Refer to Section 5.1.4.3 to potential impacts a) through d).
The following information will be included in the PEA or a technical Appendix to support the aesthetic impact analysis:		
5.1.4.2 Analysis of Selected Viewpoints Identify the methodology and assumptions that were applied in selecting key observation points for visual simulation. It is recommended that viewpoints are selected where viewers may be sensitive to visual change (public views) and in areas that are visually sensitive, or heavily trafficked or visited.	5.1.4.3 Page 5.1-6 Figure 5.1-1	
5.1.4.3 Visual Simulation a) Identify methodology and assumptions for completing the visual simulations. The simulations should include photorealistic 3-D models of project features and any land changes within the KOP view. The visual simulations should depict conditions: i. Immediately following construction ii. After vegetation establishment in all areas of temporary impact to illustrate the visual impact from vegetation removal. b) Provide high resolution images for the visual simulations.	N/A	All upgrades will be contained within the existing facility and will not alter the overall appearance of equipment within the station.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.1.4.4 Analysis of Visual Change a) Identify the methodology and assumptions for completing the visual change analysis. The methodology should be consistent with applicable visual resource management criteria. b) Provide a description of the visual change for each selected viewpoint. Describe any conditions that would change over time, such as vegetation growth. c) Describe the effects of visual change that would result in the entire project area, as indicated by the selected viewpoints that were simulated and analyzed.	5.1.4.6 Page 5.1-7	Refer to responses to impact analysis questions c) and d) and note that all upgrades will be contained within the existing facility and will not alter the overall appearance of equipment within the station, so there is no visual change to analyze.
5.1.4.5 Lighting and Marking Identify all new sources of permanent lighting. Identify any proposed structures or lines that could require FAA notification. Identify any structures or line segments that could require lighting and marking based on flight patterns and FAA or military requirements. Provide supporting documentation in an Appendix (e.g., FAA notice and criteria tool results).	5.1.4.6 Page 5.1-7	No new sources of lighting nor structures that will require Federal Aviation Administration notification.
5.2 Agriculture and Forestry Resources		
5.2.1 Environmental Setting		
5.2.1.1 Agricultural Resources and GIS a) Identify all agricultural resources that occur within the project area including: i. Areas designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance ii. Areas under Williamson Act contracts and provide information on the status of the Williamson Act contract iii. Any areas zoned for agricultural use in local plans iv. Areas subject to active agricultural use b) Provide GIS data for agricultural resources within the proposed project area.	5.2.1.1 Page 5.2-1	
5.2.1.2 Forestry Resources and GIS a) Identify all forestry resources within the project area including: i. Forest land as defined in Public Resources Code 12220(g) ii. Timberland as defined in Public Resource Code Section 4526 iii. Timberland zoned Timberland Production as defined in Government Code section 51104(g) b) Provide GIS data for all forestry resources within the proposed project area.	5.2.1.2 Page 5.2-1	
5.2.2 Regulatory Setting		
5.2.2.1 Agriculture and Forestry Regulations Identify all federal, state, and local policies for protection of agricultural and forestry resources that apply to the proposed project.	5.2.2 Page 5.2-2	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.2.3 Impact Questions		
5.2.3.1 Agriculture and Forestry Impact Questions The impact questions include all agriculture and forestry impact questions in the current version of CEQA Guidelines, Appendix G. **5.2.3.2 Additional CEQA Impact Questions** None.	5.2.3 Page 5.2-3	
5.2.4 Impact Analysis		
5.2.4.1 Agriculture and Forestry Impacts Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.2.4.3 Page 5.2-4	
Incorporate the following discussions into the analysis of impacts:		
5.2.4.2 Prime Farmland Soil Impacts Calculate the acreage of Prime Farmland soils that would be affected by construction and operation and maintenance.	5.2.4.3 Page 5.2-4	
5.2.4.3 Williamson Act Impacts Describe the approach to resolve potential conflicts with Williamson Act contract (if applicable).	5.2.4.3 Page 5.2-4	
5.3 Air Quality		
5.3.1 Environmental Setting		
5.3.1.1 Air Quality Plans Identify and describe all applicable air quality plans and attainment areas. Identify the air basin(s) for the project area. If the project is located in more than one attainment area and/or air basin, provide the extent in each attainment area and air basin.	5.3.2.3 Page 5.3-9	
5.3.1.2 Air Quality Describe existing air quality in the project area. a) Identify existing air quality exceedance of National Ambient Air Quality Standards and California Ambient Air Quality Standards in the air basin. b) Provide the number of days that air quality in the area exceeds state and federal air standards for each criteria pollutant that where air quality standards are exceeded. c) Provide air quality data from the nearest representative air monitoring station(s).	5.3.1.3 Page 5.3-2 Table 5.3-1 Table 5.3-2	
5.3.1.3 Sensitive Receptor Locations Identify the location and types of each sensitive receptor locations within 1,000 feet of the project area. Provide GIS data for sensitive receptor locations.	5.3.1.4 Page 5.3-4	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.3.2 Regulatory Setting		
5.3.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards regarding air quality	5.3.2 Page 5.3-4	
5.3.2.2 Air Permits Identify and list all necessary air permits.	5.3.2.2 Page 5.3-8	
5.3.3 Impact Questions		
5.3.3.1 Impact Questions The impact questions include all air quality impact questions in the current version of CEQA Guidelines, Appendix G. **5.3.3.2 Additional CEQA Impact Questions** None.	5.3.3 Page 5.3-11	Discussion with District's approval of temporary generators use under Section 2453(m)(4)(E)(2) of the California Air Resources Board Portable Equipment Registration Program regulation.
5.3.4 Impact Analysis		
5.3.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.3.4 Page 5.3-12	
5.3.4.2 Air Quality Emissions Modeling Model project emissions using the most recent version of CalEEMod and/or a current version of other applicable modeling program. Provide all model input and output data sheets in Microsoft Excel format to allow CPUC to evaluate whether project data was entered into the modeling program accurately. The assumptions used in the air quality modeling must be consistent with all PEA information about the project's schedule, workforce, and equipment. The following information will be addressed in the emissions modeling, Air Quality Appendix, and PEA: a) Quantify the expected emissions of criteria pollutants from all project-related sources. Quantify emissions for both construction and operation (e.g., compressor equipment). b) Identify manufacturer's specifications for all proposed new emission sources. For proposed new, additional, or modified compressor units, include the horsepower, type, and energy source. c) Describe any emission control systems that are included in the air quality analysis (e.g., installation of filters, use of EPA Tier II, III, or IV equipment, use of electric engines, etc.). d) When multiple air basins may be affected by the project, model air emissions within each air basin and provide a narrative (supported by calculations) that clearly describes the assumptions around the project activities considered for each air basin. Provide modeled emissions by attainment area or air basin (supported by calculations).	5.3.4 Page 5.3-14 Table 5.3-6 Appendix A	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.3.4.3 Air Quality Emissions Summary Provide a table summarizing the air quality emissions for the project and applicable thresholds for each applicable attainment area. Include a summary of uncontrolled emissions (prior to application of any APMs) and controlled emissions (after application of APMs). Clearly identify the assumptions that were applied in the controlled emissions estimates.	5.3.4.4 Page 5.3-14	
5.3.4.4 Health Risk Assessment Complete a Health Risk Assessment when air quality emissions have the potential to lead to human health impacts. If health impacts are not anticipated from project emissions, the analysis should clearly describe why emissions would not lead to health impacts.	5.3.4.3 Page 5.3-15	The generation of TACs will be temporary because of the variable nature of construction activities, particularly considering the short amount of time equipment will be within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities.
5.4 Biological Resources		
5.4.1 Environmental Setting		
5.4.1.1 Biological Resources Technical Report Provide a Biological Resources Technical Report as an Appendix to the PEA that includes all information specified in Attachment 2.	Appendix B1. Appendix B2.	Appendix B1. Biological Resources Technical Report CONFIDENTIAL Appendix B1 figures provided under separate cover Appendix B2. PG&E Nesting Bird Management Plan
The following information will be presented in the PEA:		
5.4.1.2 Survey Area (Local Setting) Identify and describe the biological resources survey area as documented in the Biological Resources Technical Report. All temporary and permanent project areas must be within the survey area.	5.4.1.3 Page 5.4-5 Figure 5.4-1	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.4.1.3 Vegetation Communities and Land Cover a) Identify, describe, and quantify vegetation communities and land cover types within the biological resources survey area. b) Clearly identify any sensitive natural vegetation communities that meet the definition of a biological resource under CEQA (i.e., rare, designated, or otherwise protected), such as, but not limited to, riparian habitat. c) Provide a supporting map (or maps) showing project features and vegetation communities and land cover type.	5.4.1.4 Page 5.4-5 Figure 5.4-2 Table 5.4-1	
5.4.1.4 Aquatic Features a) Identify, describe, and quantify aquatic features within the biological resources survey area that may provide potentially suitable aquatic habitat for rare and special-status species. b) Identify and quantify potentially jurisdictional aquatic features and delineated wetlands, according to the Wetland Delineation Report and Biological Resources Technical Report. c) Provide a supporting map (or maps) showing project features and aquatic resources.	5.4.1.6 Page 5.4-8	There are no wetlands or aquatic resources present within the BSA.
5.4.1.5 Habitat Assessment Identify rare and special-status species with potential to occur in the project region (approximately a 5-mile buffer but may be larger if necessary). For each species, provide the following information: a) Common and scientific name b) Status and/or rank c) Habitat characteristics (i.e., vegetation communities, elevations, seasonal changes, etc.) d) Blooming characteristics for plants e) Breeding and other dispersal (range) behavior for wildlife f) Potential to occur within the survey area (i.e., Present, High Potential, Moderate Potential, Low Potential, or Not Expected), with justification based on the results of the records search, survey findings, and presence of potentially suitable habitat g) Specific types and locations of potentially suitable habitat that correspond to the vegetation communities and land cover and aquatic features	5.4.1.7 Page 5.4-3 Figure 5.4-4 Figure 5.4-5	CONFIDENTIAL Section 5.4 figures and Appendix B1 figures provided under separate cover. Protocol level surveys not required so no avian point count locations were collected.
5.4.1.6 Critical Habitat a) Identify and describe any critical habitat for rare or special-status species within and surrounding the project area (approximately a 5-mile buffer). b) Provide a supporting map (or maps) showing project features and critical habitat.	5.4.1.8 Page 5.4-14 Figure 5.4-3 Figure 5.4-4	CONFIDENTIAL Section 5.4 figures provided under separate cover

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.4.1.7 Native Wildlife Corridors and Nursery Sites a) Identify and describe regional and local wildlife corridors within and surrounding the project area (approximately a 5-mile buffer), including but not limited to, landscape and aquatic features that connect suitable habitat in regions otherwise fragmented by terrain, changes in vegetation, or human development. b) Identify and describe regional and local native wildlife nursery sites within and surrounding the project area (approximately a 5-mile buffer), as identified through the records search, surveys, and habitat assessment. c) Provide a supporting map (or maps) showing project features, native wildlife corridors, and native nursery sites.	5.4.1.9 Page 5.4-15 Figure 5.4-4	
5.4.1.8 Biological Resource Management Areas a) Identify any biological resource management areas (i.e., conservation or mitigation areas, HCP or NCCP boundaries, etc.) within and surrounding the project area (approximately 5-mile buffer). b) Identify and quantify any project areas within biological resource management areas. c) Provide a supporting map (or maps) showing project features and biological resource management areas.	5.4.1.10 Page 5.4-15 Figure 5.4-4	
5.4.2 Regulatory Setting		
5.4.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards regarding biological resources.	5.4.2 Page 5.4-15	
5.4.2.2 Habitat Conservation Plan Provide a copy of any relevant Habitat Conservation Plan.	5.4.1.10 Page 5.4-15	https://hinkleygroundwater.com/hinkley-groundwater-remediation-project-habitat-conservation-plan-and-draft-environmental-assessment/
5.4.3 Impact Questions		
5.4.3.1 Impact Questions The impact questions include all biological resource impact questions in the current version of CEQA Guidelines, Appendix G. **5.4.3.2 Additional CEQA Impact Question** Would the project create a substantial collision or electrocution risk for birds or bats?	5.4.3 Page 5.4-22	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.4.4 Impact Analysis		
5.4.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for Biological Resources and any additional impact questions listed above.	5.4.4 Page 5.4-22	
The following information will be included in the impact analysis:		
5.4.4.2 Quantify Habitat Impacts Provide the area of impact in acres by each habitat type. Quantify temporary and permanent impacts. For all temporary impacts provide the following: a) Description of the restoration and revegetation approach b) Vegetation species that would be planted within the area of temporary disturbance c) Procedures to reduce invasive weed encroachment within areas of temporary disturbance d) Expected timeframe for restoration of the site	5.4.4.3 Response to a) Page 5.4-24	All staging and construction-related activities will be within the existing station. Based on the developed and disturbed nature of the project area, there will be no impact to natural habitat. Vegetation removal is not required for the project. Access will use existing roads. All project-related impacts are temporary; following the completion of the project, all temporarily impacted areas will be returned to preconstruction conditions and armored as needed to prevent erosion.
5.4.4.3 Special-Status Species Impacts Identify anticipated impacts on special-status species. Identify any take permits that are anticipated for the project. If an existing habitat conservation plan (HCP) or natural communities conservation plan (NCCP) would be used for the project, provide current accounting of take coverage included in the HCP/NCCP to demonstrate that there is sufficient habitat coverage remaining under the existing permit.	5.4.4.3 Response to a) Page 5.4-24	The project will have no impacts to special-status species. There are no take permits anticipated for the project.
5.4.4.4 Wetland Impacts Quantify the area (in acres) of temporary and permanent impacts on wetlands. Include the following details: a) Provide a table identifying all wetlands, by milepost and length, crossed by the project and the total acreage of each wetland type that would be affected by construction. b) Discuss construction and restoration methods proposed for crossing wetlands. c) If wetlands would be filled or permanently lost, describe proposed measures to compensate for permanent wetland losses. d) If forested wetlands would be affected, describe proposed measures to restore forested wetlands following construction.	5.4.4.3 Response to c) Page 5.4-25	The project will have no impacts to wetlands. There are no wetlands present within the BSA.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.4.4.5 Avian Impacts Describe avian obstructions and risk of electrocution from the project. Describe any standards that will be implemented as part of the project to reduce the risk of collision and electrocution.	5.4.4.4 Page 5.4-26	The project will not result in the addition of structures that result in avian obstructions or risk of electrocution.
5.5 Cultural Resources		
5.5.1 Environmental Setting		
5.5.1.1 Cultural Resource Reports Provide a cultural resource inventory and evaluation report that addresses the technical requirement provided in Attachment 3.	Appendix C	Appendix C, Cultural Assessment Report, is CONFIDENTIAL and provided under separate cover to the CPUC.
5.5.1.2 Cultural Resources Summary Summarize cultural resource survey and inventory results and survey methods. Do not provide any confidential cultural resource information within the PEA chapter.	5.5.1 Page 5.5-1	
5.5.1.3 Cultural Resource Survey Boundaries Provide a map with mileposts showing the boundaries of all survey areas in the report. Provide the GIS data for the survey area. Provide confidential GIS data for the resource locations and boundaries separately under confidential cover.	5.5.1 Page 5.5-2 Figure 5.5-1 Appendix C	Appendix C, Cultural Assessment Report, is CONFIDENTIAL and provided under separate cover to the CPUC.
5.5.2 Regulatory Setting		
5.5.2.1 Regulatory Setting Identify applicable federal and state regulations for protection of cultural resources.	5.5.2 Page 5.5-12	
5.5.3 Impact Questions		
5.5.3.1 Impact Questions The impact questions include all cultural resource impact questions in the current version of CEQA Guidelines, Appendix G. **5.5.3.2 Additional CEQA Impact Questions** None.	5.5.3 Page 5.5-14	
5.5.4 Impact Analysis		
5.5.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.5.4.3 Page 5.5-16	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
Include the following information in the impact analysis:		
5.5.4.2 Human Remains Describe the potential for encountering human remains or grave goods during the trenching or any other phase of construction. Describe the procedures that would be used if human remains are encountered.	5.5.4.4 Response to c Page 5.5-17 APM CUL-3	
5.5.4.3 Resource Avoidance Describe avoidance procedures that would be implemented to avoid known resources.	APM CUL-1 APM CUL-2	
5.6 Energy		
5.6.1 Environmental Setting		
5.6.1.1 Existing Energy Use Identify energy use of existing infrastructure if the proposed project would replace or upgrade an existing facility.	5.6.1.4 Page 5.6-3	
5.6.2 Regulatory Setting		
5.6.2.1 Regulatory Setting Identify applicable federal, state, or local regulations or policies applicable to energy use for the proposed project.	5.6.2 Page 5.6-3	
5.6.3 Impact Questions		
5.6.3.1 Impact Questions The impact questions include all energy impact questions in the current version of CEQA Guidelines, Appendix G. **5.6.3.2 Additional CEQA Impact Question** Would the project add capacity for the purpose of serving a non-renewable energy resource?	5.6.3 Page 5.6-7	
5.6.4 Impact Analysis		
5.6.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.6.4.3 Page 5.6-8	
Include the following information in the impact analysis:		
5.6.4.2 Nonrenewable Energy Identify renewable and non-renewable energy projects that may interconnected to or be supplied by the proposed project.	5.6.4.4 Page 5.6-10	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.6.4.3 Fuels and Energy Use a) Provide an estimation of the amount of fuels (gasoline, diesel, helicopter fuel, etc.) that would be used during construction and operation and maintenance of the project. Fuel estimates should be consistent with Air Quality calculations supporting the PEA. b) Provide the following information on energy use: i. Total energy requirements of the project by fuel type and end use ii. Energy conservation equipment and design features iii. Identification of energy supplies that would serve the project	5.6.4.3 Page 5.6-9 Table 5.6-1 Table 5.6-4 Table 5.6-5 Attachment D	
5.7 Geology, Soils, and Paleontological Resources		
5.7.1 Environmental Setting		
5.7.1.1 Regional and Local Geologic Setting Briefly describe the regional and local physiography, topography, and geologic setting in the project area.	5.7.1.2 Page 5.7-1 Figure 5.7-1	
5.7.1.2 Seismic Hazards a) Provide the following information on potential seismic hazards in the project area: i. Identify and describe regional and local seismic risk including any active faults within and surrounding the project area (will be a 10-mile buffer unless otherwise instructed in writing by CEQA Unit Staff during Pre-filing) ii. Identify any areas that are prone to seismic-induced landslides iii. Provide the liquefaction potential for the project area b) Provide a supporting map (or maps) showing project features and major faults, areas of landslide risk, and areas at high risk of liquefaction. Provide GIS data for all faults, landslides, and areas of high liquefaction potential.	5.7.1.3 Page 5.7-2 Figure 5.7-2	
5.7.1.3 Geologic Units Identify and describe the types of geologic units in the project area. Include the following information for each geologic unit: a) Summarize the geologic units within the project area. b) Identify any previous landslides in the area and any areas that are at risk of landslide. c) Identify any unstable geologic units. d) Provide a supporting map (or maps) showing project features and geologic units. Clearly identify any areas with potentially hazardous geologic conditions. Provide associated GIS data.	5.7.1.4 Page 5.7-3 Figure 5.7-3	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.7.1.4 Soils Identify and describe the types of soils in the project area. a) Summarize the soils within the project area. b) Clearly identify any soils types that could be unstable (e.g., at risk of lateral spreading, subsidence, liquefaction, or collapse). c) Provide information on erosion susceptibility for each soil type that occurs in the project area. d) Provide a supporting map (or maps) showing project features and soils. Provide associated GIS data.	5.7.1.5 Page 5.7-4 Table 5.7-2 Figure 5.7-1 Refer to GIS file	
5.7.1.5 Paleontological Report Provide a paleontological report that includes the following: a) Information on any documented fossil collection localities within the project area and a 500-foot buffer. b) A paleontological resource sensitivity analysis based on published geological mapping and the resource sensitivity of each rock type. c) Supporting maps and GIS data.	Refer to Paleontological Report	CONFIDENTIAL – provided separately to the CPUC.
5.7.2 Regulatory Setting		
5.7.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards regarding geology, soils, and paleontological resources.	5.7.2 Page 5.7-5	
5.7.3 Impact Questions		
5.7.3.1 Impact Questions The impact questions include all geology, soils, and paleontological resource impact questions in the current version of CEQA Guidelines, Appendix G. **5.7.3.2 Additional CEQA Impact Questions** None.	5.7.3 Page 5.7-7	
5.7.4 Impact Analysis		
5.7.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.7.4 Page 5.7-8	
Include the following information in the impact analysis:		
5.7.4.2 Geotechnical Requirements Identify any geotechnical requirements that would be implemented to address effects from unstable geologic units or soils. Describe how the recommendation would be applied (i.e., when and where).	5.7.1.4 5.7.1.5 5.7.4.3	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.7.4.3 Paleontological Resources Identify the potential to disturb paleontological resources based on the depth of proposed excavation and paleontological sensitivity of geologic units within the project area.	5.7.1.6 5.7.4.3	
5.8 Greenhouse Gas Emissions		
5.8.1 Environmental Setting		
5.8.1.1 GHG Setting Provide a description of the setting for greenhouse gases (GHGs). The setting should consider any GHG emissions from existing infrastructure that would be upgraded or replaced by the proposed project.	5.8.1.3 Page 5.8-2	
5.8.2 Regulatory Setting		
5.8.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards for greenhouse gases.	5.8.2 Page 5.8-3	
5.8.3 Impact Questions		
5.8.3.1 Impact Questions The impact questions include all greenhouse gas impact questions in the current version of CEQA Guidelines, Appendix G. **5.8.3.2 Additional CEQA Impact Questions** None.	5.8.3 Page 5.8-7	
5.8.4 Impact Analysis		
5.8.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.8.5 Page 5.8-8	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
Include the following information in the impact analysis:		
5.8.4.2 GHG Emissions Provide a quantitative assessment of GHG emissions for construction and operation and maintenance of the proposed project. Provide model results and all model files. Modeling will be conducted using the latest version of the emissions model at the time of application filing (e.g., most recent version of CalEEMod). GHG emissions will be provided for the following conditions: a) Uncontrolled emissions (before APMs are applied) b) Controlled emissions considering application of APMs i. Based on the modeled GHG emissions, quantify the project's contribution to and analyze the project's effect on climate change. Identify and provide justification for the timeframe considered in the analysis. ii. Discuss any programs already in place to reduce GHG emissions on a system-wide level. This includes the Applicant's voluntary compliance with the EPA SF6 reduction program, reductions from energy efficiency, demand response, LTPP, etc. iii. For any significant impacts, identify potential strategies that could be employed by the project to reduce GHGs during construction or operation and maintenance consistent with OPR Advisory on CEQA and Climate Change.	5.8.4.3 Page 5.8-8 Table 5.8-3 Appendix A	
Natural Gas Storage		
5.8.4.3 Natural Gas Storage Accident Conditions In addition to the requirements above, identify the potential GHG emissions that could result in the event of a gas leak.	N/A	The project does not involve changes to station's gas system and the station does not store gas.
5.8.4.4 Monitoring and Contingency Plan Provide a comprehensive monitoring plan that would be implemented during project operation to monitor for gas leaks. The plan should identify a monitoring schedule, description of monitoring activities, and actions to be implemented if gas leaks are observed.	N/A	This project does not require a comprehensive monitoring plan for gas leaks.
5.9 Hazards, Hazardous Materials, and Public Safety		
5.9.1 Environmental Setting		
5.9.1.1 Hazardous Materials Report Provide a Phase I Environmental Site Assessment or similar hazards report for the proposed project area. Describe any known hazardous materials locations within the project area and the status of the site.	5.9.1.8 Page 5.9-3	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.9.1.2 Airport Land Use Plan Identify any airport land use plan(s) within the project area.	5.9.1.3 Page 5.9-2	
5.9.1.3 Fire Hazard Identify if the project occurs within federal, state, or local fire responsibility areas and identify the fire hazard severity rating for all project areas, including temporary work areas and access roads.	5.9.1.4 Page 5.9-2	
5.9.1.4 Metallic Objects For electrical projects, identify any metallic pipelines or cables within 25 feet of the project.	5.9.1.5 Page 5.9-2	
5.9.1.5 Pipeline History (for Natural Gas Projects) Provide a narrative describing the history of the pipeline system(s) to which the project would connect, list of previous owner and operators, and detailed summary of the pipeline systems' safety and inspection history.	5.9.1.6 Page 5.9-2	
5.9.2 Regulatory Setting		
5.9.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards for hazards, hazardous materials, and public safety.	5.9.2 Page 5.9-5	
5.9.2.2 Touch Thresholds Identify applicable standards for protection of workers and the public from shock hazards.	5.9.2.4 Page 5.9-9	
5.9.3 Impact Questions		
5.9.3.1 Impact Questions The impact questions include all hazards and hazardous materials impact questions in the current version of CEQA Guidelines, Appendix G. **5.9.3.2 Additional CEQA Impact Questions** a) Would the project create a significant hazard to air traffic from the installation of new power lines and structures? b) Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters? c) Would the project expose people to a significant risk of injury or death involving unexploded ordnance? d) Would the project expose workers or the public to excessive shock hazards?	5.9.3 Page 5.9-9	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.9.4 Impact Analysis		
5.9.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.	5.9.4 Page 5.9-11	
Include the following information in the impact analysis:		
5.9.4.2 Hazardous Materials Identify the hazardous materials (i.e., chemicals, solvents, lubricants, and fuels) that would be used during construction and operation of the project. Estimate the quantity of each hazardous material that would be stored on site during construction and operation.	5.9.1.9 Page 5.9-4 5.9.4.3 Page 5.9-12	
5.9.4.3 Air Traffic Hazards If the project involves construction of above-ground structures (including structure replacement) within the airport land use plan area, provide a discussion of how the project would or would not conflict with height restrictions identified in the airport land use plan and how the project would comply with any FAA or military requirements for the above ground facilities.	5.9.1.3 Page 5.9-3 5.9.4.4 Page 5.9-12	
5.9.4.4 Accident or Upset Conditions Describe how the project facilities would be designed, constructed, operated, and maintained to minimize potential hazard to the public from the failure of project components as a result of accidents or natural catastrophes.	5.9.1.9 Page 5.9-4 5.9.4.3 Page 5.9-12 5.9.4.4 Page 5.9-16	
5.9.4.5 Shock Hazard For electricity projects, identify infrastructure that may be susceptible to induced current from the proposed project. Describe strategies (e.g., cathodic protection) that the project would employ to reduce shock hazards and avoid electrocution of workers or the public.	5.9.4.4 Page 5.9-16	
For Natural Gas and Gas Storage:		
5.9.4.6 Health and Safety Plan Include in the Health and Safety Plan, plans for addressing gas leaks, fires, etc. Identify sensitive receptors, methods of evacuation, and protection measures. The Plan will be provided as an Appendix to the PEA.	N/A	The project does not involve changes to station's gas system and the station does not store gas as such this Health and Safety Plan is not applicable.
5.9.4.7 Health Risk Assessment Provide a Health Risk Assessment including risk from potential gas leaks, fires, etc. Identify sensitive receptors that would be affected and potential impacts on them if there is a gas release.	N/A	Project does not involve changes to gas system.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.9.4.8 Gas Migration Describe potential for and effects of gas migration through natural and manmade pathways. a) Provide Applicant Proposed Measures for avoiding gas emissions at the surface from gas migration pathways. b) Provide Applicant Proposed Measures for avoiding emissions of mercaptan and/or other odorizing agents.	N/A	Station is not a gas storage facility nor does the project involve changes to gas system at the station. No description or APMs are needed.
5.10 Hydrology and Water Quality		
5.10.1 Environmental Setting		
5.10.1.1 Waterbodies Identify by milepost all ephemeral, intermittent, and perennial surface waterbodies crossed by the project. For each, list its water quality classification, if applicable.	5.10.1.4 Page 5.10-1 Figure 5.10-2	
5.10.1.2 Water Quality Identify any downstream waters that are on the state 303(d) list and identify whether a total maximum daily load (TMDL) has been adopted or the date for adoption of a TMDL. Identify existing sources of impairment for downstream waters. Describe any management plans that are in place for downstream waters.	5.10.1.6 Page 5.10-3	
5.10.1.3 Groundwater Basin Identify all known EPA and state groundwater basins and aquifers crossed by the project.	5.10.1.7 Page 5.10-3 Figure 5.10-1	
5.10.1.4 Groundwater Wells and Springs Identify the locations of all known public and private groundwater supply wells and springs within 150 feet of the project area.	5.10.1.8 Page 5.10-4 Figure 5.10-3	
5.10.1.5 Groundwater Management Identify the groundwater management status of any groundwater resources in the project area and any groundwater resources that may be used by the project. Describe if groundwater resources in the basin have been adjudicated. Identify any sustainable groundwater management plan that has been adopted for groundwater resources in the project area or describe the status of groundwater management planning in the area.	5.10.1.8 Page 5.10-4	
5.10.2 Regulatory Setting		
5.10.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards regarding hydrologic and water quality.	5.10.2 Page 5.10-5	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.10.3 Impact Questions		
5.10.3.1 Impact Questions The impact questions include all hydrology and water quality impact questions in the current version of CEQA Guidelines, Appendix G. **5.10.3.2 Additional CEQA Impact Questions** None.	5.10.3 Page 5.10-7	
5.10.4 Impact Analysis		
5.10.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in the current version of CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.10.4 Page 5.10-8	
Include the following information in the impact analysis:		
5.10.4.2 Hydrostatic Testing Identify all potential sources of hydrostatic test water, quantity of water required, withdrawal methods, treatment of discharge, and any waste products generated.	N/A	There is no hydrostatic testing.
5.10.4.3 Water Quality Impacts Describe impacts to surface water quality, including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality.	5.10.4.3 Page 5.10-9	
5.10.4.4 Impermeable Surfaces Describe increased run-off and impacts on groundwater recharge due to construction of impermeable surfaces. Provide the acreage of new impermeable surfaces that will be created as a result of the project.	5.10.4.3 Page 5.10-10	
5.10.4.5 Waterbody Crossings Identify by milepost all waterbody crossings. Provide the following information for crossing: a) Identify whether the waterbody has contaminated waters or sediments. b) Describe the waterbody crossing method and any approaches to avoid the waterbody. c) Describe typical additional work area and staging area requirements at waterbody and wetland crossings. d) Describe any dewatering or water diversion that will be required during construction near the waterbody. Identify treatment methods for any dewatering. e) Describe any proposed restoration methods for work near or within the waterbody.	N/A	There are no waterbody crossings.
5.10.4.6 Groundwater Impacts If water would be obtained from groundwater supplies, evaluate the project's consistency with any applicable sustainable groundwater management plan.	5.10.4.3 Page 5.10-10	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.11 Land Use and Planning		
5.11.1 Environmental Setting		
5.11.1.1 Land Use Provide a description of land uses within the area traversed by the project route as designated in the local General Plan (e.g., residential, commercial, agricultural, open space, etc.).	5.11.1.1 Page 5.11-1 Figure 3.1-1	
5.11.1.2 Special Land Uses Identify by milepost and segment all special land uses within the project area including: a) All land administered by federal, state, or local agencies, or private conservation organizations b) Any designated coastal zone management areas c) Any designated or proposed candidate National or State Wild and Scenic Rivers crossed by the project d) Any national landmarks	5.11.1.2 Page 5.11-2	
5.11.1.3 Habitat Conservation Plan Provide a copy of any Habitat Conservation Plan applicable to the project area or proposed project. Also required for Section 5.4, Biological Resources.	5.11.1.3 Page 5.11-2	
5.11.2 Regulatory Setting		
5.11.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards for land use and planning.	5.11.2 Page 5.11-2	
5.11.3 Impact Questions		
5.11.3.1 Impact Questions The impact questions include all land use questions in the current version of CEQA Guidelines, Appendix G. **5.11.3.2 Additional CEQA Impact Questions** None.	5.11.3 Page 5.11-2	
5.11.4 Impact Analysis		
5.11.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.11.4 Page 5.11-3	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.12 Mineral Resources		
5.12.1 Environmental Setting		
5.12.1.1 Mineral Resources Provide information on the following mineral resources within 0.5 mile of the proposed project area: a) Known mineral resources b) Active mining claims c) Active mines d) Resource recovery sites	5.12.1 Page 5.12-1	
5.12.2 Regulatory Setting		
5.12.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards for minerals.	5.12.2 Page 5.12-1	
5.12.3 Impact Questions		
5.12.3.1 Impact Questions The impact questions include all mineral resource impact questions in the current version of CEQA Guidelines, Appendix G. **5.12.3.2 Additional CEQA Impact Questions** None.	5.12.3 Page 5.12-2	
5.12.4 Impact Analysis		
5.12.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.12.4 Page 5.12-2	
5.13 Noise		
5.13.1 Environmental Setting		
5.13.1.1 Noise Sensitive Land Uses Identify all noise sensitive land uses within 1,000 feet of the proposed project. Provide GIS data for sensitive receptors within 1,000 feet of the project.	5.13.1.3 Page 5.13-8	
5.13.1.2 Noise Setting Provide the existing noise levels (Lmax, Lmin, Leq, and Ldn sound level and other applicable noise parameters) at noise sensitive areas near the proposed project. All noise measurement data and the methodology for collecting the data will be provided in a noise study as an Appendix to the PEA.	5.13.1.4 Page 5.13-8	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.13.2 Regulatory Setting		
5.13.2.1 Regulatory Setting Identify applicable state, and local laws, policies, and standards for noise.	5.13.2 Page 5.13-9	
5.13.3 Impact Questions		
5.13.3.1 Impact Questions The impact questions include all noise questions in the current version of CEQA Guidelines, Appendix G. **5.13.3.2 Additional CEQA Impact Questions** None.	5.13.3 Page 5.13-10	
5.13.4 Impact Analysis		
5.13.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.13.4 Page 5.13-11	
Include the following information in the impact analysis:		
5.13.4.2 Noise Levels a) Identify noise levels for each piece of equipment that could be used during construction. b) Provide a table that identifies each phase of construction, the equipment used in each construction phase, and the length of each phase at any single location. c) Estimate cumulative equipment noise levels for each phase of construction. d) Include phases of operation if noise levels during operation have the potential to frequently exceed pre-project existing conditions. e) Identify manufacturer's specifications for equipment and describe approaches to reduce impacts from noise.	5.13.1.1 Page 5.13-4 Table 5.13-3 Table 5.13-4	
For Natural Gas:		
5.13.4.3 Compressor Station Noise Provide site plans of compressor stations or other noisy, permanent equipment, showing the location of the nearest noise sensitive areas within 1 mile of the proposed ROW. If new compressor station sites are proposed, measure or estimate the existing ambient sound environment based on current land uses and activities. For existing compressor stations (operated at full load), include the results of a sound level survey at the site property line and nearby noise-sensitive areas. Include a plot plan that identifies the locations and duration of noise measurements.	N/A	No changes are proposed to the existing station compressors.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.14 Population and Housing		
5.14.1 Environmental Setting		
5.14.1.1 Population Estimates Identify population trends for the areas (county, city, town, census designated place) where the project would take place.	5.14.1 Page 5.14-1	
5.14.1.2 Housing Estimates Identify housing estimates and projections in areas where the project would take place.	5.14.1.2 Page 5.14-1	
5.14.1.3 Approved Housing Developments a) Provide the following information for all housing development projects within 1 mile of the proposed project that have been recently approved or may be approved around the PEA and application filing date: i. Project name ii. Location iii. Number of units and estimated population increase iv. Approval date and construction status v. Contact information for developer (provided in the public outreach Appendix) b) Ensure that the project information provided above is consistent with the PEA analysis of cumulative project impacts.	5.14.1.3 Page 5.14-1	
5.14.2 Regulatory Setting		
5.14.2.1 Regulatory Setting Identify any applicable federal, state or local laws or regulations that apply to the project.	5.14.2 Page 5.14-1	
5.14.3 Impact Questions		
5.14.3.1 Impact Questions The impact questions include all population and housing impact questions in the current version of CEQA Guidelines, Appendix G. **5.14.3.2 Additional CEQA Impact Questions** None.	5.14.3 Page 5.14-3	
5.14.4 Impact Analysis		
5.14.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.14.4 Page 5.14-2	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
Include the following information in the impact analysis:		
5.14.4.2 Impacts to Housing Identify if any existing or proposed homes occur within the footprint of any proposed project elements or right-of-way. Describe housing impacts (e.g., demolition and relocation of residents) that may occur as a result of the proposed project.	5.14.4.3 Page 5.14-3	
5.14.4.3 Workforce Impacts Describe on-site manpower requirements, including the number of construction personnel who currently reside within the impact area, who would commute daily to the site from outside the impact area or would relocate temporarily within the impact area. Chapter 4 of this document can be referenced as applicable. Identify any permanent employment opportunities that would be create by the project and the workforce conditions in the area that the jobs would be created.	5.14.4.3 Page 5.14-3	
5.14.4.4 Population Growth Inducing Provide information on the project's growth inducing impacts, if any. The information will include, but is not necessarily limited to, the following: a) Any economic or population growth in the surrounding environment that will directly or indirectly result from the project b) Any obstacles to population growth that the project would remove c) Any other activities directly or indirectly encouraged or facilitated by the project that would cause population growth leading to a significant effect on the environment, either individually or cumulatively	5.14.4.4 Page 5.14-3	
5.15 Public Services		
5.15.1 Environmental Setting		
5.15.1.1 Service Providers a) Identify the following service providers that serve the project area and provide a map showing the service facilities that could serve the project: i. Police ii. Fire (identify service providers within local and state responsibility areas) iii. Schools iv. Parks v. Hospitals b) Provide the documented performance objectives and data on existing emergency response times for service providers in the area (e.g., police or fire department response times).	5.15.1.1 Page 5.15-1 Figure 5.15-1	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.15.2 Regulatory Setting		
5.15.2.1 Regulatory Setting Identify any applicable federal, state or local laws or regulations for public services that apply to the project.	5.15.2 Page 5.15-2	
5.15.3 Impact Questions		
5.15.3.1 Impact Questions The impact questions include all public services impact questions in the current version of CEQA Guidelines, Appendix G. **5.15.3.2 Additional CEQA Impact Questions** None.	5.15.3 Page 5.15-2	
5.15.4 Impact Analysis		
5.15.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.15.4 Page 5.15-2	
Include the following information in the impact analysis:		
5.15.4.2 Emergency Response Times a) Describe whether the project would impede ingress and egress of emergency vehicles during construction and operation. b) Include an analysis of impacts on emergency response times during project construction and operation, including impacts during any temporary road closures. Describe approaches to address impacts on emergency response times.	5.15.1.1 Page 5.15-1	
5.15.4.3 Displaced Population If the project would create permanent employment or displace people, evaluate the impact of the new employment or relocated people on governmental facilities and services and describe plans to reduce the impact on public services.	N/A	This project will not create any displaced populations.

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.16 Recreation		
5.16.1 Environmental Setting		
5.16.1.1 Recreational Setting a) Describe the regional and local recreation setting in the project area including: i. Any recreational facilities or areas within and surrounding the project area (approximately 0.5-mile buffer) including the recreational uses of each facility or area ii. Any available data on use of the recreational facilities including volume of use b) Provide a map (or maps) showing project features and recreational facilities and provide associated GIS data.	5.16.1 Page 5.16-1 Figure 5.16-1	
5.16.2 Regulatory Setting		
5.16.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards regarding recreation.	5.16.2 Page 5.16-1	
5.16.3 Impact Questions		
5.16.3.1 Impact Questions The impact questions include all recreation impact questions in the current version of CEQA Guidelines, Appendix G. **5.16.3.2 Additional CEQA Impact Questions:** a) Would the project reduce or prevent access to a designated recreation facility or area? b) Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas? c) Would the project damage recreational trails or facilities?	5.16.3 Page 5.16-2	
5.16.4 Impact Analysis		
5.16.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.16.4 Page 5.16-2	
5.16.4.2 Impact Details Clearly identify the maximum extent of each impact, and when and where the impacts would or would not occur. Organize the impact assessment by project phase, project component, and/or geographic area, as necessary.	5.16.4.3 Page 5.16-3	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.17 Transportation		
5.17.1 Environmental Setting		
5.17.1.1 Circulation System Briefly describe the regional and local circulation system in the project area, including modes of transportation, types of roadways, and other facilities that contribute to the circulation system.	5.17.1.1 Page 5.17-1	
5.17.1.2 5.17.1.2: Existing Roadways and Circulation a) Identify and describe existing roadways that may be used to access the project site and transport materials during construction or are otherwise adjacent to or crossed by linear project features. Provide the following information for each road: i. Name of the road ii. Jurisdiction or ownership (i.e., State, County, City, private, etc.) iii. Number of lanes in both directions of travel iv. Existing traffic volume (if publicly available data is unavailable or significantly outdated, then it may be necessary to collect existing traffic counts for road segments where large volumes of construction traffic would be routed or where lane or road closures would occur) v. Closest project feature name and distance Provide a supporting map (or maps) showing project features and the existing roadway network identifying each road described above. Provide associated GIS data. The GIS data should include all connected road segments within at least 5 miles of the project.	5.17.1.2 Page 5.17-1 Figure 5.17-1 Table 5.17-1	
5.17.1.3 5.17.1.3: Transit and Rail Services a) Identify and describe transit and rail service providers in the region. b) Identify any rail or transit lines within 1,000 feet of the project area. c) Identify specific transit stops, and stations within 0.5 mile of the project. Provide the frequency of transit service. Provide a supporting map (or maps) showing project features and transit and rail services within 0.5 mile of the project area. Provide associated GIS data.	5.17.1.3 Page 5.17-2 Figure 5.17-1	
5.17.1.4 5.17.1.4: Bicycle Facilities a) Identify and describe any bicycle plans for the region. b) Identify specific bicycle facilities within 1,000 feet of the project area. Provide a supporting map (or maps) showing project features and bicycle facilities. Provide associated GIS data.	5.17.1.4 Page 5.17-3	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.17.1.5 Pedestrian Facilities a) Identify and describe important pedestrian facilities near the project area that contribute to the circulation system, such as important walkways. b) Identify specific pedestrian facilities that would be near the project, including on the road segments identified per 5.17.1.2. Provide a supporting map (or maps) showing project features and important pedestrian facilities. Provide associated GIS data.	5.17.1.4 Page 5.17-3	
5.17.1.6 Vehicle Miles Traveled (VMT) Provide the average VMT for the county(s) where the project is located.	5.17.1.6 Page 5.17-3	
5.17.2 Regulatory Setting		
5.17.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards regarding transportation.	5.17.2 Page 5.17-3	
5.17.3 Impact Questions		
5.17.3.1 Impact Questions All impact questions for this resource area in the current version of CEQA Guidelines, Appendix G. **5.17.3.2 Additional CEQA Impact Questions** a) Would the project create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations? b) Would the project interfere with walking or bicycling accessibility? Would the project substantially delay public transit?	5.17.3 Page 5.17-4	
5.17.4 Impact Analysis		
5.17.4.1 Impact Analysis Provide an impact analysis for each significance criteria identified in Appendix G of the CEQA Guidelines for transportation and any additional impact questions listed above.	5.17.4 Page 5.17-5	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
Include the following information in the impact analysis:		
5.17.4.2: Vehicle Miles Traveled (VMT) a) Identify whether the project is within 0.5 mile of a major transit stop or a high-quality transit corridor. b) Identify the number of vehicle daily trips that would be generated by the project during construction and operation by light duty (e.g., worker vehicles) and heavy-duty vehicles (e.g., trucks). Provide the frequency of trip generation during operation. c) Quantify VMT generation for both project construction and operation. d) Provide an excel file with the VMT assumptions and model calculations, including all formulas and values. e) Evaluate the project VMT relative to the average VMT for the area in which the project is located.	5.17.4.3 Page 5.17-6	
5.17.4.3: Traffic Impact Analysis Provide a traffic impact study. The traffic impact study should be prepared in accordance with guidance from the relevant local jurisdiction or Caltrans, where appropriate.	5.17.4.3 Page 5.17-6	
5.17.4.4: Hazards Identify any traffic hazards that could result from construction and operation of the project. Identify any lane closures and traffic management that would be required to construct the project.	5.17.4.3 Page 5.17-6	
5.17.4.5: Accessibility Identify any closures of bicycle lanes, pedestrian walkways, or transit stops during construction or operation of the project.	5.17.4.4 Page 5.17-6	
5.17.4.6: Transit Delay Identify any transit lines that could be delayed by construction and operation of the project. Provide the maximum extent of the delay in minutes and the duration of the delay.	5.17.4.4 Page 5.17-6	
5.18 Tribal Cultural Resources		
5.18.1 Environmental Setting		
5.18.1.1 Outreach to Tribes Provide a list of all tribes that are on the Native American Heritage Commission (NAHC) list of tribes that are affiliated with the project area. Provide a discussion of outreach to Native American tribes, including tribes notified, responses received from tribes, and information of potential tribal cultural resources provided by tribes. Any information of potential locations of tribal cultural resources should be submitted in an Appendix under clearly marked confidential cover. Provide copies of all correspondence with tribes in an Appendix.	5.18.1.1 Page 5.18-1 Table 5.18-1 Appendix C	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.18.1.2 Tribal Cultural Resources Describe tribal cultural resources (TCRs) that are within the project area. a) Summarize the results of attempts to identify possible TCRs using publicly available documentary resources. The identification of TCRs using documentary sources should include review of archaeological site records and should begin during the preparation of the records search report (see Attachment 3). During the inventory phase, a formal site record would be prepared for any resource identified unless tribes object. b) Summarize attempts to identify TCRs by speaking directly with tribal representatives.	5.18.1.2 Page 5.18-2 Table 5.18-1	
5.18.1.3 Ethnographic Study The ethnographic study should document the history of Native American use of the area and oral history of the area.	5.18.1.4 Page 5.18-7	
5.18.2 Regulatory Setting		
5.18.2.1 Regulatory Setting Identify any applicable federal, state or local laws or regulations for tribal cultural resources that apply to the project.	5.18.2 Page 5.18-10	
5.18.3 Impact Questions		
5.18.3.1 Impact Questions The impact questions include all tribal cultural resources impact questions in the current version of CEQA Guidelines, Appendix G. **5.18.3.2 Additional CEQA Impact Questions** None.	5.18.3 Page 5.18-11	
5.18.4 Impact Analysis		
5.18.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.18.4.3 Page 5.18-12 To be determined.	
Include the following information in the impact analysis:		
5.18.4.2 Information Provided by Tribes Include an analysis of any impacts that were identified by the tribes during the Applicant's outreach.	To be determined.	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.19 Utilities and Service Systems		
5.19.1 Environmental Setting		
5.19.1.1 Utility Providers Identify existing utility providers and the associated infrastructure that serves the project area.	5.19.1.1 Page 5.19-1	
5.19.1.2 Utility Lines Describe existing utility infrastructure (e.g., water, gas, sewer, electrical, stormwater, telecommunications, etc.) that occurs in the project ROW. Provide GIS data and/or as-built engineering drawings to support the description of existing utilities and their locations.	5.19.1.2 Page 5.19-3	
5.19.1.3 Approved Utility Projects Identify utility projects that have been approved for construction within the project ROW but that have not yet been constructed.	5.19.1.3 Page 5.19-3	
5.19.1.4 Water Supplies Identify water suppliers and the water source (e.g., aqueduct, well, recycled water, etc.). For each potential water supplier, provide data on the existing water capacity, supply, and demand.	5.19.1.4 Page 5.19-3	
5.19.1.5 Landfills and Recycling Identify local landfills that can accept construction waste and may service the project. Provide documentation of landfill capacity and estimated closure date. Identify any recycling centers in the area and opportunities for construction and demolition waste recycling.	5.19.1.5 Page 5.19-3 Table 5.19-1	
5.19.2 Regulatory Setting		
5.19.2.1 Regulatory Setting Identify any applicable federal, state or local laws or regulations for utilities that apply to the project.	5.19.2 Page 5.19-4	
5.19.3 Impact Questions		
5.19.3.1 Impact Questions All impact questions for this resource area in the current version of CEQA Guidelines, Appendix G. **5.19.3.2 Additional CEQA Impact Question** Would the project increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?	5.19.3 Page 5.19-5	
5.19.4 Impact Analysis		
5.19.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.19.4 Page 5.19-7	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
Include the following information in the impact analysis:		
5.19.4.2 Utility Relocation Identify any project conflicts with existing utility lines. If the project may require relocation of existing utilities, identify potential relocation areas and analyze the impacts of relocating the utilities. Provide a map showing the relocated utility lines and GIS data for all relocations.	5.19.4.3 Page 5.19-7	
5.19.4.3 Waste a) Identify the waste generated by construction, operation, and demolition of the project. b) Describe how treated wood poles would be disposed of after removal, if applicable. c) Provide estimates for the total amount of waste materials to be generated by waste type and how much of it would be disposed of, reused, or recycled.	5.19.4.3 Page 5.19-9	
5.19.4.4 Water Supply a) Estimate the amount of water required for project construction and operation. Provide the potential water supply source(s). b) Evaluate the ability of the water supplier to meet the project demand under a multiple dry year scenario. c) Provide a discussion as to whether the proposed project meets the criteria for consideration as a project subject to Water Supply Assessment Requirements under Water Code Section 10912. d) If determined to be necessary under Water Code Section 10912, submit a Water Supply Assessment to support conclusions that the proposed water source can meet the project's anticipated water demand, even in multiple dry year scenarios. Water Supply Assessments should be approved by the water supplier and consider normal, single-dry, and multiple-dry year conditions.	5.19.4.3 Page 5.19-9	
5.19.4.5 Cathodic Protection Analyze the potential for existing utilities to experience corrosion due to proximity to the proposed project. Identify cathodic protection measures that could be implemented to reduce corrosion issues and where the measures may be applied.	5.19.4.4 Page 5.19-9	
5.20 Wildfire		
5.20.1 Environmental Setting		
5.20.1.1 High Fire Risk Areas and State Responsibility Areas a) Identify areas of high fire risk or State Responsibility Areas (SRAs) within the project area. Provide GIS data for the Wildland Urban Interface (WUI) and Fire Hazard Severity Zones (FHSZ) mapping along the project alignment. Include areas mapped by CPUC as moderate and high fire threat districts as well as areas mapped by CalFire. b) Identify any areas the utility has independently identified as High FHSZ known to occur within the proposed project vicinity.	5.20.1.1 Page 5.20-1	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.20.1.2 Fire Occurrence Identify all recent (within the last 10 years) large fires that have occurred within the project vicinity. For each fire, identify the following: a) Name of the fire b) Location of fire c) Ignition source and location of ignition d) Amount of land burned Boundary of fire area in GIS	5.20.1.2 Page 5.20-2	
5.20.1.3 Fire Risk Provide the following information for assessment of baseline fire risk in the area: a) Provide fuel modeling using Scott Burgan fuel models, or other model of similar quality. b) Provide values of wind direction and speed, relative humidity, and temperature for representative weather stations along the alignment for the previous 10 years, gathered hourly. c) Digital elevation models for the topography in the project region showing the relationship between terrain and wind patterns, as well as localized topography to show the effects of terrain on wind flow, and on a more local area to show effect of slope on fire spread. d) Describe vegetation fuels within the project vicinity and provide data in map format for the project vicinity. USDA Fire Effects Information System or similar data source should be consulted to determine high-risk vegetation types. Provide the mapped vegetation fuels data in GIS format.	5.20.1.3 Page 5.20-3	
5.20.1.4 Values at Risk Identify values at risk along the proposed alignment. Values at risk may include: Structures, improvements, rare habitat, other values at risk, (including utility-owned infrastructure) within 1000 feet of the project. Provide some indication as to its vulnerability (wood structures vs. all steel features). Communities and/or populations near the project should be identified with their proximity to the project defined.	5.20.1.4 Page 5.20-3	
5.20.1.5 Evacuation Routes Identify all evacuation routes that are adjacent to or within the project area. Identify any roads that lack a secondary point of access or exit (e.g., cul-de-sacs).	5.20.1.5 Page 5.20-3	
5.20.2 Regulatory Setting		
5.20.2.1 Regulatory Setting Identify applicable federal, state, and local laws, policies, and standards for wildfire.	5.20.2 Page 5.20-4	
5.20.2.2 CPUC Standards Identify any CPUC standards that apply to wildfire management of the new facilities.	5.20.2.4 Page 5.20-6	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
5.20.3 Impact Questions		
5.20.3.1 Impact Questions All impact questions for this resource area in the current version of CEQA Guidelines, Appendix G. **5.20.3.2 Additional CEQA Impact Questions** None.	5.20.3 Page 5.20-6 Table 5.20-1	
5.20.4 Impact Analysis		
5.20.4.1 Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.	5.20.4 Page 5.20-7	
Include the following information in the impact analysis:		
5.20.4.2 Fire Behavior Modeling For any new electrical lines, provide modeling to support the analysis of wildfire risk.	N/A	There are no new electrical lines.
5.20.4.3 Wildfire Management Describe approaches that would be implemented during operation and maintenance to manage wildfire risk in the area. Provide a copy of any Wildfire Management Plan.	5.20.1.6 Page 5.20-4	
5.20.5 Mandatory Findings of Significance		
5.20.5.1 Impact Assessment for Mandatory Findings of Significance. Provide an impact analysis for each of the mandatory findings of significance provided in Appendix G of the CEQA Guidelines. The impact analysis can reference relevant information and conclusion from the biological resources, cultural resources, air quality, hazards, and cumulative sections of the PEA, where applicable.	5.21.1 Page 5.21-1	

<table>
<tr><th>Chapter or Section</th><th>PEA Section and Page</th><th>Applicant Notes, Comments</th></tr>
<tr><td>6. Comparison of Alternatives</td><td></td><td></td></tr>
<tr><td>6.1 Alternatives Comparison
a) Compare the ability of each alternative described in Chapter 4 against the proposed project in terms of its ability to avoid or reduce a potentially significant impact. The alternatives addressed in this section will each be:
i. Potentially feasible
ii. Meet the underlying purpose of the proposed project
iii. Meet most of the basic project objectives
iv. Avoid or reduce one or more potentially significant impacts
b) The relative effect of the various potentially significant impacts may be compared using the following or similar descriptors and an accompanying analysis:
i. Short-term versus long-term impacts
ii. Localized versus widespread impacts
iii. Ability to fully mitigate impacts
c) Impacts that the Applicant believes would be less than significant with mitigation may also be included in the analysis, but only if the steps listed above fail to distinguish among the remaining few alternatives.</td><td>6.1
Page 6-1
Table 6-1</td><td></td></tr>
<tr><td>6.2 Alternatives Ranking
Provide a detailed table that summarizes the Applicant's comparison results and ranks the alternatives in order of environmental superiority.</td><td>6.1 Page 6-1
Table 6-1</td><td></td></tr>
</table>

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
7. Cumulative and Other CEQA Considerations		
7.1 Cumulative Impacts		
7.1.1 List of Cumulative Projects a) Provide a detailed table listing past, present, and reasonably foreseeable future projects within and surrounding the project area (approximately 2-mile buffer). The following information should be provided for each project in the table: i. Project name and type ii. Brief description of the project location(s) and associated actions iii. Distance to and name of the nearest project component iv. Project status and anticipated construction schedule v. Source of the project information and date last checked (for each individual project), including links to any public websites where the information was obtained so it can be reviewed and updated (the project information should be current when the PEA is filed) b) Provide a supporting map (or maps) showing project features and cumulative project locations and/or linear features. Provide associated GIS data.	7.1.1 Page 7-1	
7.1.2 Geographic Scope Define the geographic scope of analysis for each resource topic. The geographic scope of analysis for each resource topic should consider the extent to which impacts can be cumulative. For example, the geographic scope for cumulative noise impacts would be more limited in scale than the geographic scope for biological resource impacts because noise attenuates rapidly with distance. Explain why the geographic scope is appropriate for each resource.	7.1. Page 7-1	
7.1.3 Cumulative Impact Analysis Provide an analysis of cumulative impacts for each resource topic included in Chapter 5. Evaluate whether the proposed project impacts are cumulatively considerable for any significant cumulative impacts.	7.1. Page 7-1	

Chapter or Section	PEA Section and Page	Applicant Notes, Comments
7.2 Growth-Inducing Impacts		
7.2.1 Growth-Inducing Impacts Provide an evaluation of the following potential growth-inducing impacts: a) Would the proposed project foster any economic or population growth, either directly or indirectly, in the surrounding environment? b) Would the proposed project cause any increase in population that could further tax existing community service facilities (i.e., schools, hospitals, fire, police, etc.)? c) Would the proposed project remove any obstacles to population growth? d) Would the proposed project encourage and facilitate other activities that would cause population growth that could significantly affect the environment, either individually or cumulatively?	7.2 Page 7-2	
8. List of Preparers		
8.1 List of Preparers Provide a list of persons, their organizations, and their qualifications for all authors and reviewers of each section of the PEA.	8 8-1	
9. References		
9.1 Reference List a) Organize all references cited in the PEA by section within a single chapter called "References." b) Within the References chapter, organize all of the Chapter 5 references under subheadings for each resource area section.	9 9-1	
9.2 Electronic References a) Provide complete electronic copies of all references cited in the PEA that cannot be readily obtained for free on the Internet. This includes any company-specific documentation (e.g., standards, policies, and other documents). b) If the reference can be obtained on the Internet, the Internet address will be provided.	9 9-1	

Appendix A
Emissions Calculations

Table 1
Project Emissions Summary - Criteria Pollutants and Greenhouse Gases
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Daily Threshold

Construction Phase	Average Daily Emissions (lbs/day) [a]						
	ROG	**CO**	**NOx**	**SOx**	**PM_{10} [b]**	**$PM_{2.5}$ [b]**	**CO_2e**
Project Emissions							
Construction Year 2026	1.66	22.8	16.1	0.04	0.79	0.47	3,589
Construction Year 2027	12.9	348	25.4	0.46	14.8	14.6	92,026
Construction Year 2028	1.17	15.7	11.2	0.03	0.51	0.32	2,478
Maximum Average Daily Emissions (lbs/day)	**12.9**	**348**	**25.4**	**0.46**	**14.8**	**14.6**	**92,026**
MDAQMD Significance Threshold (lbs/day)	**137**	**548**	**137**	**137**	**82**	**65**	**548,000**
Exceeds Daily Emission Threshold (Y/N)?	**N**	**N**	**N**	**N**	**N**	**N**	**N**

Notes:
[a] To facilitate comparison to the MDAQMD's daily significance thresholds, the project's annual construction emissions were divided by the maximum number of days construction activity would occur during the year. This was determined using the schedule depicted in Appendix A, Table 3, as summarized below:

Total Days:		460
Total Months:		23
Months per Year:		
	Construction Year 2026 =	3
	Construction Year 2027 =	12
	Construction Year 2028 =	8

[b] PM_{10} and $PM_{2.5}$ emissions represent both exhaust and fugitive dust emissions.

Table 1
Project Emissions Summary - Criteria Pollutants and Greenhouse Gases
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Yearly Threshold

Phase	Emissions (lbs/phase) [a]						
	ROG	CO	NOx	SOx	PM_{10} [b]	$PM_{2.5}$ [b]	CO_2e
Site Mobilization / Site Preparation	49.8	684	481	1.17	22.1	13.8	107,298
Ground Disturbing Activities	75.0	1,029	726	1.77	37.5	21.2	162,039
Electrical Equipment Replacement and Modification	3,244	85,277	7,415	115	3,617	3,539	22,375,165
Site Demobilization	24.9	342	240	0.59	11.0	6.90	53,649
2026 Total (lbs) [c]	**100**	**1,371**	**965**	**2.35**	**47.1**	**28.0**	**215,325**
2027 Total (lbs) [c]	**3,106**	**83,443**	**6,104**	**111**	**3,559**	**3,502**	**22,086,338**
2028 Total (lbs) [c]	**188**	**2,520**	**1,793**	**4.34**	**81.3**	**51.2**	**396,489**
Maximum Yearly Emissions (tons/year)	**1.55**	**41.7**	**3.05**	**0.06**	**1.78**	**1.75**	**11,043**
MDAQMD Significance Threshold (tons/year)	**25**	**100**	**25**	**25**	**15**	**12**	**100,000**
Exceeds Threshold (Y/N)?	**N**	**N**	**N**	**N**	**N**	**N**	**N**

Notes:
[a] Emissions presented are the sum of all emissions occurring within the construction phase, regardless of whether an activity is occurring sequentially or concurrently.
[b] PM_{10} and $PM_{2.5}$ emissions represent both exhaust and fugitive dust emissions.
[c] Emissions were allotted to specific years based on the schedule depicted in Appendix A, Table 3, as summarized below:

Total Days:		460
Total Months:		23
Months per Year:		
	Construction Year 2026 =	3
	Construction Year 2027 =	12
	Construction Year 2028 =	8

Table 2

Project Emissions Summary - Criteria Pollutants and Greenhouse Gases with Applicant-Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Daily Threshold

Construction Phase	Average Daily Emissions (lbs/day) [a, c]						
	ROG	**CO**	**NOx**	**SOx**	**PM_{10} [b]**	**$PM_{2.5}$ [b]**	**CO_2e**
Project Emissions							
Construction Year 2026	1.66	22.8	11.5	0.04	0.41	0.15	3,589
Construction Year 2027	12.9	348	21.5	0.46	14.5	14.3	92,026
Construction Year 2028	1.17	15.7	8.03	0.03	0.26	0.10	2,478
Maximum Average Daily Emissions (lbs/day)	**12.9**	**348**	**21.5**	**0.46**	**14.5**	**14.3**	**92,026**
MDAQMD Significance Threshold (lbs/day)	**137**	**548**	**137**	**137**	**82**	**65**	**548,000**
Exceeds Daily Emission Threshold (Y/N)?	**N**	**N**	**N**	**N**	**N**	**N**	**N**

Notes:

[a] To facilitate comparison to the MDAQMD's daily significance thresholds, the project's annual construction emissions were divided by the maximum number of days construction activity would occur during the year. This was determined using the schedule depicted in Appendix A, Table 3, as summarized below:

Total Days:		460
Total Months:		23
Months per Year:		
	Construction Year 2026 =	3
	Construction Year 2027 =	12
	Construction Year 2028 =	8

[b] PM_{10} and $PM_{2.5}$ emissions represent both exhaust and fugitive dust emissions.

[c] Emissions incorporate Applicant-proposed Measures to reduce fugitive dust and construction equipment exhaust emissions, as applicable.

Table 2

Project Emissions Summary - Criteria Pollutants and Greenhouse Gases with Applicant-Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Yearly Threshold

Phase	Emissions (lbs/phase) [a]						
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}** [b]	**$PM_{2.5}$** [b]	**CO_2e**
Site Mobilization / Site Preparation	49.8	684	343	1.17	11.6	4.31	107,298
Ground Disturbing Activities	75.0	1,029	518	1.77	19.2	6.68	162,039
Electrical Equipment Replacement and Modification	3,244	85,277	6,098	115	3,515	3,447	22,375,165
Site Demobilization	24.9	342	171	0.59	5.82	2.15	53,649
2026 Total (lbs) [c, d]	**100**	**1,371**	**688**	**2.35**	**24.4**	**8.76**	**215,325**
2027 Total (lbs) [c, d]	**3,106**	**83,443**	**5,157**	**111**	**3,485**	**3,435**	**22,086,338**
2028 Total (lbs) [c, d]	**188**	**2,520**	**1,285**	**4.34**	**42.1**	**15.7**	**396,489**
Maximum Yearly Emissions (tons/year)	**1.55**	**41.7**	**2.58**	**0.06**	**1.74**	**1.72**	**11,043**
MDAQMD Significance Threshold (tons/year)	**25**	**100**	**25**	**25**	**15**	**12**	**100,000**
Exceeds Threshold (Y/N)?	**N**	**N**	**N**	**N**	**N**	**N**	**N**

Notes:

[a] Emissions presented are the sum of all emissions occurring within the construction phase, regardless of whether an activity is occurring sequentially or concurrently.

[b] PM_{10} and $PM_{2.5}$ emissions represent both exhaust and fugitive dust emissions.

[c] Emissions were allotted to specific years based on the schedule depicted in Appendix A, Table 3, as summarized below:

Total Days:		460
Total Months:		23
Months per Year:		
	Construction Year 2026 =	3
	Construction Year 2027 =	12
	Construction Year 2028 =	8

[d] Emissions incorporate Applicant-proposed Measures to reduce fugitive dust and construction equipment exhaust emissions, as applicable.

Table 3

Preliminary Construction Schedule [a]

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Construction Phase	Duration (Days)	2026 Months in which Activity Occurs												2027 Months in which Activity Occurs											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Site Mobilization / Site Preparation	40										1	1													
Ground Disturbing Activities	60											1	1	1											
Electrical Equipment Replacement and Modification	360													1	1	1	1	1	1	1	1	1	1	1	1
Site Demobilization	40																								
Maximum Days of Activity per Month [b]	**460**																								
Overlapping Phases		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

Notes:

[a] This schedule depicts the periods during which construction activities could occur. It is expected that construction activities will actually occur intermittently within the identified periods. The final project construction s a full Notice to Proceed, all Applicant-proposed measures and any other environmental mitigation measures have been taken into account, materials needed for construction have been delivered and are ready for instal initiate construction.

[b] The maximum days of activity per month was estimated assuming an even distribution of days within the months in which activities are expected to occur.

Table 3

Preliminary Construction Schedule [a]

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

	2028												2026											
	Months in which Activity Occurs												Approximate Days of Activity per Month											
Construction Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Site Mobilization / Site Preparation																						20	20	
Ground Disturbing Activities																							20	20
Electrical Equipment Replacement and Modification	1	1	1	1	1	1																		
Site Demobilization							1	1																
Maximum Days of Activity per Month [b]													**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**20**	**20**
Overlapping Phases	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**												

Notes:

[a] This schedule depicts the periods during which construction a schedule can only be determined once the Commission's staff issue a full Notice to Proceed, all Applicant-proposed measures and lation, and PG&E's contractors have mobilized and are ready to initiate construction.

[b] The maximum days of activity per month was estimated assun

Table 3

Preliminary Construction Schedule [a]

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

	2027												2028											
	Approximate Days of Activity per Month												Approximate Days of Activity per Month											
Construction Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Site Mobilization / Site Preparation																								
Ground Disturbing Activities	20																							
Electrical Equipment Replacement and Modification	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20						
Site Demobilization																			20	20				
Maximum Days of Activity per Month [b]	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**0**	**0**	**0**	**0**
Overlapping Phases																								

Notes:

[a] This schedule depicts the periods during which construction a
a full Notice to Proceed, all Applicant-proposed measures and a
initiate construction.

[b] The maximum days of activity per month was estimated assun

Table 4
Construction Emissions
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Equipment Power Rating (hp) [d]	Equipment Load Factor [d]	Quantity per Day	Number of Days Used [e]	Hours per Day	Miles per Day per Vehicle	Number of Months with Activities			Emission f
								2026	2027	2028	ROG
Site Mobilization / Site Preparation											
Skid Steer	Skid Steer Loader	71	0.37	1	39	10	NA	2	0	0	0.13
Backhoe	Tractors/Loaders/Backhoe	84	0.37	1	39	10	NA	2	0	0	0.18
Large Generator	Generator Large	50	0.74	2	39	10	NA	2	0	0	0.34
Small Honda Generator	Generator Small	7	0.74	2	19	5	NA	2	0	0	0.54
6-ton Forklift	Rough Terrain Forklift	96	0.40	1	39	10	NA	2	0	0	0.12
Water Truck	Onsite Heavy-Duty Diesel	NA	NA	1	39	NA	2	2	0	0	0.12
185 cfm Air Compressor	Air Compressor (Jackhammer)	37	0.48	2	39	10	NA	2	0	0	0.51
Dump Truck	Onsite Heavy-Duty Diesel	NA	NA	1	9	NA	2	2	0	0	0.12
Worker Commutes	Offsite Light-duty Auto/Truck	NA	NA	18	39	NA	20	2	0	0	0.01
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	NA	NA	1	13	NA	20	2	0	0	0.01
Ground Disturbing Activities											
Skid Steer	Skid Steer Loader	71	0.37	1	58	10	NA	2	1	0	0.13
Backhoe	Tractors/Loaders/Backhoe	84	0.37	1	58	10	NA	2	1	0	0.18
Large Generator	Generator Large	50	0.74	2	58	10	NA	2	1	0	0.34
Small Honda Generator	Generator Small	7	0.74	2	29	5	NA	2	1	0	0.54
6-ton Forklift	Rough Terrain Forklift	96	0.40	1	58	10	NA	2	1	0	0.12
Water Truck	Onsite Heavy-Duty Diesel	NA	NA	1	58	NA	2	2	1	0	0.12
185 cfm Air Compressor	Air Compressor (Jackhammer)	37	0.48	2	58	10	NA	2	1	0	0.51
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	NA	NA	1	56	4	2	2	1	0	0.12
Dump Truck	Onsite Heavy-Duty Diesel	NA	NA	1	14	NA	2	2	1	0	0.12
Handheld Asphalt Saw	Concrete/Industrial Saw	33	0.73	1	2	5	NA	2	1	0	0.41
Fugitive Dust	Grading	NA	NA	[g]	NA	NA	NA	2	1	0	NA
Worker Commutes	Offsite Light-duty Auto/Truck	NA	NA	18	58	NA	20	2	1	0	0.01
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	NA	NA	1	20	NA	20	2	1	0	0.01
Electrical Equipment Replacement and Modification											
Temporary Generator	PERP Generators [h]	302	--	22	160	24	NA	0	8	0	--
Skid Steer	Skid Steer Loader	71	0.37	1	347	10	NA	0	12	6	0.13
Backhoe	Tractors/Loaders/Backhoe	84	0.37	1	347	10	NA	0	12	6	0.18
Large Generator	Generator Large	50	0.74	2	347	10	NA	0	12	6	0.34
Small Honda Generator	Generator Small	7	0.74	2	173	5	NA	0	12	6	0.54
Manlift	Aerial Lift	46	0.31	1	52	5	NA	0	12	6	0.15
Weld Machine	Welder	46	0.45	2	69	10	NA	0	12	6	0.47
6-ton Forklift	Rough Terrain Forklift	96	0.40	1	347	10	NA	0	12	6	0.12
1/2-Ton Boom Truck	Onsite Heavy-Duty Diesel	NA	NA	1	171	NA	1	0	12	6	0.12
Water Truck	Onsite Heavy-Duty Diesel	NA	NA	1	347	NA	2	0	12	6	0.12
185 cfm Air Compressor	Air Compressor (Jackhammer)	37	0.48	2	347	10	NA	0	12	6	0.51
Vacuum Truck Offsite	Offsite Heavy-Duty Diesel	NA	NA	1	24	NA	20	0	12	6	0.01
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	NA	NA	2	24	NA	2	0	12	6	0.12
Dump Truck	Onsite Heavy-Duty Diesel	NA	NA	1	83	NA	2	0	12	6	0.12
Concrete Pump Truck	Offsite Heavy-Duty Diesel	NA	NA	1	12	NA	20	0	12	6	0.01
Concrete Truck	Offsite Heavy-Duty Diesel	NA	NA	1	12	NA	20	0	12	6	0.01

Table 4

Construction Emissions

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	actors (g/hp-hr for equipment, g/mile for vehicles, lb/ton for truck loading, and lb/mile for grading)						Emissions (lbs/phase) [b]				
		CO	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2	ROG	CO	NOx	SOx	PM_{10} [c]
Site Mobilization / Site Preparation												
Skid Steer	Skid Steer Loader	3.25	1.81	0.01	0.05	0.05	530.27	2.99	72.51	40.38	0.11	1.14
Backhoe	Tractors/Loaders/Backhoe	3.48	1.89	0.01	0.06	0.06	531.36	4.86	92.03	49.83	0.13	1.67
Large Generator	Generator Large	3.73	3.38	0.01	0.08	0.07	570.28	21.28	234.85	212.88	0.44	4.97
Small Honda Generator	Generator Small	2.86	4.32	0.01	0.17	0.16	570.30	1.18	6.29	9.51	0.02	0.38
6-ton Forklift	Rough Terrain Forklift	3.22	1.64	0.01	0.03	0.03	530.54	3.76	105.18	53.67	0.16	1.08
Water Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.02	0.18	1.87	0.00	0.08
185 cfm Air Compressor	Air Compressor (Jackhammer)	4.82	3.65	0.01	0.10	0.09	570.26	15.47	145.69	110.16	0.21	2.99
Dump Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.00	0.04	0.45	0.00	0.02
Worker Commutes	Offsite Light-duty Auto/Truck	0.90	0.05	0.00	0.31	0.08	268.65	0.27	27.51	1.52	0.08	9.54
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.00	0.05	0.68	0.01	0.23
Ground Disturbing Activities												
Skid Steer	Skid Steer Loader	3.25	1.81	0.01	0.05	0.05	530.27	4.49	108.77	60.57	0.17	1.71
Backhoe	Tractors/Loaders/Backhoe	3.48	1.89	0.01	0.06	0.06	531.36	7.30	138.04	74.75	0.20	2.50
Large Generator	Generator Large	3.73	3.38	0.01	0.08	0.07	570.28	31.91	352.27	319.32	0.66	7.46
Small Honda Generator	Generator Small	2.86	4.32	0.01	0.17	0.16	570.30	1.78	9.43	14.26	0.03	0.57
6-ton Forklift	Rough Terrain Forklift	3.22	1.64	0.01	0.03	0.03	530.54	5.63	157.76	80.50	0.24	1.62
Water Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.03	0.27	2.80	0.01	0.11
185 cfm Air Compressor	Air Compressor (Jackhammer)	4.82	3.65	0.01	0.10	0.09	570.26	23.20	218.53	165.24	0.32	4.49
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.03	0.26	2.71	0.01	0.11
Dump Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.01	0.06	0.67	0.00	0.03
Handheld Asphalt Saw	Concrete/Industrial Saw	4.32	3.53	0.01	0.09	0.08	576.33	0.25	2.62	2.14	0.00	0.05
Fugitive Dust	Grading	NA	NA	NA	0.60	0.06	NA	NA	NA	NA	NA	4.24
Worker Commutes	Offsite Light-duty Auto/Truck	0.90	0.05	0.00	0.31	0.08	268.65	0.40	41.27	2.28	0.12	14.31
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.01	0.07	1.02	0.01	0.35
Electrical Equipment Replacement and Modification												
Temporary Generator	PERP Generators [h]	--	--	--	--	--	--	2,756.08	78,745.03	2,756.08	103.24	3,406.19
Skid Steer	Skid Steer Loader	3.25	1.81	0.01	0.05	0.05	530.27	26.95	652.60	363.40	1.01	10.26
Backhoe	Tractors/Loaders/Backhoe	3.48	1.89	0.01	0.06	0.06	531.36	43.78	828.24	448.50	1.19	14.99
Large Generator	Generator Large	3.73	3.38	0.01	0.08	0.07	570.28	191.48	2,113.62	1,915.91	3.97	44.75
Small Honda Generator	Generator Small	2.86	4.32	0.01	0.17	0.16	570.30	10.66	56.58	85.55	0.16	3.44
Manlift	Aerial Lift	3.08	2.87	0.01	0.02	0.02	588.90	1.24	25.13	23.49	0.04	0.17
Weld Machine	Welder	4.49	3.57	0.01	0.10	0.09	570.26	29.20	282.13	224.17	0.44	5.97
6-ton Forklift	Rough Terrain Forklift	3.22	1.64	0.01	0.03	0.03	530.54	33.81	946.58	482.99	1.47	9.70
1/2-Ton Boom Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.04	0.40	4.14	0.01	0.17
Water Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.18	1.61	16.81	0.04	0.69
185 cfm Air Compressor	Air Compressor (Jackhammer)	4.82	3.65	0.01	0.10	0.09	570.26	139.22	1,311.20	991.42	1.90	26.92
Vacuum Truck Offsite	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.01	0.09	1.25	0.01	0.43
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.02	0.22	2.32	0.01	0.09
Dump Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.04	0.39	4.03	0.01	0.16
Concrete Pump Truck	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.00	0.04	0.63	0.01	0.21
Concrete Truck	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.00	0.04	0.63	0.01	0.21

Table 4
Construction Emissions
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Emissions (metric tons/phase) [b]		Weight Factor [f]		
		$PM_{2.5}$ [c]	CO_2e	2026	2027	2028
Site Mobilization / Site Preparation						
Skid Steer	Skid Steer Loader	1.05	5.37	1	0	0
Backhoe	Tractors/Loaders/Backhoe	1.53	6.37	1	0	0
Large Generator	Generator Large	4.59	16.28	1	0	0
Small Honda Generator	Generator Small	0.35	0.57	1	0	0
6-ton Forklift	Rough Terrain Forklift	0.98	7.86	1	0	0
Water Truck	Onsite Heavy-Duty Diesel	0.02	0.23	1	0	0
185 cfm Air Compressor	Air Compressor (Jackhammer)	2.75	7.82	1	0	0
Dump Truck	Onsite Heavy-Duty Diesel	0.01	0.06	1	0	0
Worker Commutes	Offsite Light-duty Auto/Truck	2.44	3.73	1	0	0
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.07	0.38	1	0	0
Ground Disturbing Activities						
Skid Steer	Skid Steer Loader	1.58	8.06	0.67	0.33	0
Backhoe	Tractors/Loaders/Backhoe	2.30	9.56	0.67	0.33	0
Large Generator	Generator Large	6.89	24.42	0.67	0.33	0
Small Honda Generator	Generator Small	0.53	0.85	0.67	0.33	0
6-ton Forklift	Rough Terrain Forklift	1.47	11.79	0.67	0.33	0
Water Truck	Onsite Heavy-Duty Diesel	0.03	0.35	0.67	0.33	0
185 cfm Air Compressor	Air Compressor (Jackhammer)	4.12	11.72	0.67	0.33	0
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	0.03	0.34	0.67	0.33	0
Dump Truck	Onsite Heavy-Duty Diesel	0.01	0.08	0.67	0.33	0
Handheld Asphalt Saw	Concrete/Industrial Saw	0.05	0.16	0.67	0.33	0
Fugitive Dust	Grading	0.46	NA	0.67	0.33	0
Worker Commutes	Offsite Light-duty Auto/Truck	3.67	5.60	0.67	0.33	0
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.10	0.57	0.67	0.33	0
Electrical Equipment Replacement and Modification						
Temporary Generator	PERP Generators [h]	3,406.19	9,682.84	0	1	0
Skid Steer	Skid Steer Loader	9.45	48.37	0	0.67	0.33
Backhoe	Tractors/Loaders/Backhoe	13.80	57.35	0	0.67	0.33
Large Generator	Generator Large	41.35	146.54	0	0.67	0.33
Small Honda Generator	Generator Small	3.17	5.12	0	0.67	0.33
Manlift	Aerial Lift	0.16	2.18	0	0.67	0.33
Weld Machine	Welder	5.53	16.24	0	0.67	0.33
6-ton Forklift	Rough Terrain Forklift	8.82	70.74	0	0.67	0.33
1/2-Ton Boom Truck	Onsite Heavy-Duty Diesel	0.05	0.51	0	0.67	0.33
Water Truck	Onsite Heavy-Duty Diesel	0.21	2.09	0	0.67	0.33
185 cfm Air Compressor	Air Compressor (Jackhammer)	24.74	70.34	0	0.67	0.33
Vacuum Truck Offsite	Offsite Heavy-Duty Diesel	0.12	0.70	0	0.67	0.33
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	0.03	0.29	0	0.67	0.33
Dump Truck	Onsite Heavy-Duty Diesel	0.05	0.50	0	0.67	0.33
Concrete Pump Truck	Offsite Heavy-Duty Diesel	0.06	0.35	0	0.67	0.33
Concrete Truck	Offsite Heavy-Duty Diesel	0.06	0.35	0	0.67	0.33

Table 4
Construction Emissions
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Equipment Power Rating (hp) [d]	Equipment Load Factor [d]	Quantity per Day	Number of Days Used [e]	Hours per Day	Miles per Day per Vehicle	Number of Months with Activities			Emission f
								2026	2027	2028	ROG
Jumping Jack	Plate Compactor	8	0.43	1	151	5	NA	0	12	6	0.55
Handheld Asphalt Saw	Concrete/Industrial Saw	33	0.73	1	14	5	NA	0	12	6	0.41
Handheld Core Drill	Other General Industrial Equipment	35	0.34	1	16	5	NA	0	12	6	0.45
Vibraplate	Plate Compactor	8	0.43	1	151	5	NA	0	12	6	0.55
Fugitive Dust	Truck Loading	NA	NA	[i]	NA	NA	NA	0	12	6	NA
Worker Commutes	Offsite Light-duty Auto/Truck	NA	NA	18	347	NA	20	0	12	6	0.01
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	NA	NA	2	117	NA	20	0	12	6	0.01
Demobilization											
Skid Steer	Skid Steer Loader	71	0.37	1	19	10	NA	0	0	2	0.13
Backhoe	Tractors/Loaders/Backhoe	84	0.37	1	19	10	NA	0	0	2	0.18
Large Generator	Generator Large	50	0.74	2	19	10	NA	0	0	2	0.34
Small Honda Generator	Generator Small	7	0.74	2	10	5	NA	0	0	2	0.54
6-ton Forklift	Rough Terrain Forklift	96	0.40	1	19	10	NA	0	0	2	0.12
Water Truck	Onsite Heavy-Duty Diesel	NA	NA	1	19	NA	2	0	0	2	0.12
185 cfm Air Compressor	Air Compressor (Jackhammer)	37	0.48	2	19	10	NA	0	0	2	0.51
Dump Truck	Onsite Heavy-Duty Diesel	NA	NA	1	5	NA	2	0	0	2	0.12
Worker Commutes	Offsite Light-duty Auto/Truck	NA	NA	18	19	NA	20	0	0	2	0.01
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	NA	NA	1	7	NA	20	0	0	2	0.01

Notes:
NA = Parameter not required for computing emissions.
[a] Unless otherwise noted, equipment/vehicle list and daily use provided by PG&E.
[b] The following conversion factors were used to estimate emissions:

1 lb =	453.6	g
1 ton =	2,000	lbs
1 metric ton =	1,000,000	g
1 yd^3 =	1.2641662	tons

[c] PM_{10} and $PM_{2.5}$ emissions include only paved road fugitive dust emissions, as it is assumed all onsite and offsite travel will be on paved roads.
[d] Unless otherwise indicated, default equipment power ratings and load factors were used, as taken from Table G-12 of Appendix G of the *CalEEMod User's Guide* (ICF 2022). The small generator was assumed to be 7 hp an
[e] A number of vehicles and equipment will be used for only a portion of the total duration for each phase.
[f] The weight factors are used to calculate annual emissions below and are derived based on the months of activity per year during the construction period.
[g] Fugitive Dust emissions from Grading activities are a result of smoothing unpaved areas and were estimated per the details provided below:

Activity	Year	Area Graded (acres/phase) [1]	Grader VMT (miles/phase) [2]	Emission Factors (lb/mile)		Emissions (lb/phase)	
				PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Grading	2026	2.7	1.83	1.543	0.167	2.8	0.3
Grading	2027	1.3	0.92	1.543	0.167	1.4	0.2
Grading	2028	0	0.00	1.543	0.167	0.0	0.0

Notes:
[1] Total area to be graded is as follows, as provided by PG&E: 4 acres.
[2] Vehicle miles traveled by graders estimated as follows, per methodology provided in Section 4.4.1 of Appendix C of the *CalEEMod User's Guide* (ICF 2022):
VMT (mile/phase) = Area Graded (acres/phase) / Wb (ft) X 43,560 (ft^2/acre) / 5,280 (ft/mile), where
Wb is the blade width of the grader; the CalEEMod default for Wb is = 12 ft.

Table 4

Construction Emissions

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	actors (g/hp-hr for equipment, g/mile for vehicles, lb/ton for truck loading, and lb/mile for grading)						Emissions (lbs/phase) [b]				
		CO	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2	ROG	CO	NOx	SOx	PM_{10} [c]
Jumping Jack	Plate Compactor	3.47	4.14	0.01	0.16	0.15	570.31	3.13	19.87	23.72	0.05	0.93
Handheld Asphalt Saw	Concrete/Industrial Saw	4.32	3.53	0.01	0.09	0.08	576.33	1.50	15.71	12.84	0.03	0.31
Handheld Core Drill	Other General Industrial Equipment	4.59	3.59	0.01	0.11	0.10	589.87	0.95	9.64	7.53	0.01	0.24
Vibraplate	Plate Compactor	3.47	4.14	0.01	0.16	0.15	570.31	3.13	19.87	23.72	0.05	0.93
Fugitive Dust	Truck Loading	NA	NA	NA	0.00026	0.00004	NA	NA	NA	NA	NA	0.18
Worker Commutes	Offsite Light-duty Auto/Truck	0.90	0.05	0.00	0.31	0.08	268.65	2.42	247.62	13.69	0.73	85.84
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.09	0.87	12.20	0.14	4.15
Demobilization												
Skid Steer	Skid Steer Loader	3.25	1.81	0.01	0.05	0.05	530.27	1.50	36.26	20.19	0.06	0.57
Backhoe	Tractors/Loaders/Backhoe	3.48	1.89	0.01	0.06	0.06	531.36	2.43	46.01	24.92	0.07	0.83
Large Generator	Generator Large	3.73	3.38	0.01	0.08	0.07	570.28	10.64	117.42	106.44	0.22	2.49
Small Honda Generator	Generator Small	2.86	4.32	0.01	0.17	0.16	570.30	0.59	3.14	4.75	0.01	0.19
6-ton Forklift	Rough Terrain Forklift	3.22	1.64	0.01	0.03	0.03	530.54	1.88	52.59	26.83	0.08	0.54
Water Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.01	0.09	0.93	0.00	0.04
185 cfm Air Compressor	Air Compressor (Jackhammer)	4.82	3.65	0.01	0.10	0.09	570.26	7.73	72.84	55.08	0.11	1.50
Dump Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.00	0.02	0.22	0.00	0.01
Worker Commutes	Offsite Light-duty Auto/Truck	0.90	0.05	0.00	0.31	0.08	268.65	0.13	13.76	0.76	0.04	4.77
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.00	0.02	0.34	0.00	0.12

Notes:

NA = Parameter not required for computing emissions.

[a] Unless otherwise noted, equipment/vehicle list and daily use provided t

[b] The following conversion factors were used to estimate emissions:

1 lb =	453.6
1 ton =	2,000
1 metric ton =	1,000,000
1 yd^3 =	1.2641662

[c] PM_{10} and $PM_{2.5}$ emissions include only paved road fugitive dust emissio

[d] Unless otherwise indicated, default equipment power ratings and load fid the large generator was assumed to be 50 hp, as PG&E indicated that two different generator sizes would be used.

[e] A number of vehicles and equipment will be used for only a portion of tl

[f] The weight factors are used to calculate annual emissions below and are

[g] Fugitive Dust emissions from Grading activities are a result of smoothin

Activity	Year
Grading	2026
Grading	2027
Grading	2028

Notes:

[1] Total area to be graded is as follows, as provided by PG&E:

[2] Vehicle miles traveled by graders estimated as follows, per methodolog

VMT (mile/phase) = Area Graded (acres/phase) / Wb (ft) X 43,560 (ft^2/

Wb is the blade width of the grader; the CalEEMod default for Wb is =

Table 4
Construction Emissions
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	$PM_{2.5}$ [c]	Emissions (metric tons/phase) [b] CO_2e	Weight Factor [f] 2026	2027	2028
Jumping Jack	Plate Compactor	0.85	1.48	0	0.67	0.33
Handheld Asphalt Saw	Concrete/Industrial Saw	0.28	0.95	0	0.67	0.33
Handheld Core Drill	Other General Industrial Equipment	0.22	0.56	0	0.67	0.33
Vibraplate	Plate Compactor	0.85	1.48	0	0.67	0.33
Fugitive Dust	Truck Loading	0.03	NA	0	0.67	0.33
Worker Commutes	Offsite Light-duty Auto/Truck	22.00	33.58	0	0.67	0.33
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	1.21	6.80	0	0.67	0.33
Demobilization						
Skid Steer	Skid Steer Loader	0.53	2.69	0	0	1
Backhoe	Tractors/Loaders/Backhoe	0.77	3.19	0	0	1
Large Generator	Generator Large	2.30	8.14	0	0	1
Small Honda Generator	Generator Small	0.18	0.28	0	0	1
6-ton Forklift	Rough Terrain Forklift	0.49	3.93	0	0	1
Water Truck	Onsite Heavy-Duty Diesel	0.01	0.12	0	0	1
185 cfm Air Compressor	Air Compressor (Jackhammer)	1.37	3.91	0	0	1
Dump Truck	Onsite Heavy-Duty Diesel	0.00	0.03	0	0	1
Worker Commutes	Offsite Light-duty Auto/Truck	1.22	1.87	0	0	1
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.03	0.19	0	0	1

Notes:
NA = Parameter not required for computing emissions.
[a] Unless otherwise noted, equipment/vehicle list and daily use provided b
[b] The following conversion factors were used to estimate emissions:

1 lb =	453.6
1 ton =	2,000
1 metric ton =	1,000,000
1 yd^3 =	1.2641662

[c] PM_{10} and $PM_{2.5}$ emissions include only paved road fugitive dust emissio
[d] Unless otherwise indicated, default equipment power ratings and load f
[e] A number of vehicles and equipment will be used for only a portion of t
[f] The weight factors are used to calculate annual emissions below and are
[g] Fugitive Dust emissions from Grading activities are a result of smoothin

Activity	Year
Grading	2026
Grading	2027
Grading	2028

Notes:
[1] Total area to be graded is as follows, as provided by PG&E:
[2] Vehicle miles traveled by graders estimated as follows, per methodolog
VMT (mile/phase) = Area Graded (acres/phase) / Wb (ft) X 43,560 (ft^2/
Wb is the blade width of the grader; the CalEEMod default for Wb is =

Table 4
Construction Emissions
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Equipment Power Rating (hp) [d]	Equipment Load Factor [d]	Quantity per Day	Number of Days Used [e]	Hours per Day	Miles per Day per Vehicle	Number of Months with Activities			Emission f
								2026	2027	2028	ROG

[h] Information and emissions for the temporary Portable Equipment Registration Program (PERP) equipment is detailed in Appendix A, Tables 6a and 6b. The temporary generators were assumed to be utilized entirely withi
[i] Fugitive Dust emissions from Truck Dumping/Loading activities are a result of trenching and foundation work. Volumes were provided by PG&E, as follows:

Activity	Volume (yd^3)	Weight (tons)
Excavated Soil	443	560
Backfill	108	137

Annual Emissions Summary

Year [a]	Emissions (lbs/year)						Emissions (metric tons/year)
	ROG	CO	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2e
2026	100	1,371	965	2	47	28	98
2027	3,106	83,443	6,104	111	3,559	3,502	10,018
2028	188	2,520	1,793	4	81	51	180

Notes:
[a] Yearly emissions were estimated using a weight factor based on the schedule and months of activity per year.

Table 4
Construction Emissions
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	actors (g/hp-hr for equipment, g/mile for vehicles, lb/ton for truck loading, and lb/mile for grading)						Emissions (lbs/phase) [b]				
		CO	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2	ROG	CO	NOx	SOx	PM_{10} [c]

[h] Information and emissions for the temporary Portable Equipment Regis a single calendar year to provide the most conservative emissions estimate, although they are expected to be used intermittently througho
[i] Fugitive Dust emissions from Truck Dumping/Loading activities are a re

Activity	Volume (yd^3)
Excavated Soil	443
Backfill	108

Annual Emissions Summary

Year [a]	ROG
2026	100
2027	3,106
2028	188

Notes:
[a] Yearly emissions were estimated using a weight factor based on the sch

Table 4
Construction Emissions
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	$PM_{2.5}$ [c]	Emissions (metric tons/phase) [b] CO_2e	Weight Factor [f] 2026	2027	2028

[h] Information and emissions for the temporary Portable Equipment Regisıt for a total duration not to exceed 8 months.
[i] Fugitive Dust emissions from Truck Dumping/Loading activities are a res

Activity	Volume (yd^3)
Excavated Soil	443
Backfill	108

Annual Emissions Summary

Year [a]	ROG
2026	100
2027	3,106
2028	188

Notes:
[a] Yearly emissions were estimated using a weight factor based on the sch

Table 5

Construction Emissions with Applicant Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Equipment Power Rating (hp) [d]	Equipment Load Factor [d]	Quantity per Day	Number of Days Used [e]	Hours per Day	Miles per Day per Vehicle	Number of Months with Activities			Emission f
								2026	2027	2028	ROG
Site Mobilization / Site Preparation											
Skid Steer	Skid Steer Loader	71	0.37	1	39	10	NA	2	0	0	0.13
Backhoe	Tractors/Loaders/Backhoe	84	0.37	1	39	10	NA	2	0	0	0.18
Large Generator	Generator Large	50	0.74	2	39	10	NA	2	0	0	0.34
Small Honda Generator	Generator Small	7	0.74	2	19	5	NA	2	0	0	0.54
6-ton Forklift	Rough Terrain Forklift	96	0.40	1	39	10	NA	2	0	0	0.12
Water Truck	Onsite Heavy-Duty Diesel	NA	NA	1	39	NA	2	2	0	0	0.12
185 cfm Air Compressor	Air Compressor (Jackhammer)	37	0.48	2	39	10	NA	2	0	0	0.51
Dump Truck	Onsite Heavy-Duty Diesel	NA	NA	1	9	NA	2	2	0	0	0.12
Worker Commutes	Offsite Light-duty Auto/Truck	NA	NA	18	39	NA	20	2	0	0	0.01
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	NA	NA	1	13	NA	20	2	0	0	0.01
Ground Disturbing Activities											
Skid Steer	Skid Steer Loader	71	0.37	1	58	10	NA	2	1	0	0.13
Backhoe	Tractors/Loaders/Backhoe	84	0.37	1	58	10	NA	2	1	0	0.18
Large Generator	Generator Large	50	0.74	2	58	10	NA	2	1	0	0.34
Small Honda Generator	Generator Small	7	0.74	2	29	5	NA	2	1	0	0.54
6-ton Forklift	Rough Terrain Forklift	96	0.40	1	58	10	NA	2	1	0	0.12
Water Truck	Onsite Heavy-Duty Diesel	NA	NA	1	58	NA	2	2	1	0	0.12
185 cfm Air Compressor	Air Compressor (Jackhammer)	37	0.48	2	58	10	NA	2	1	0	0.51
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	NA	NA	1	56	4	2	2	1	0	0.12
Dump Truck	Onsite Heavy-Duty Diesel	NA	NA	1	14	NA	2	2	1	0	0.12
Handheld Asphalt Saw	Concrete/Industrial Saw	33	0.73	1	2	5	NA	2	1	0	0.41
Fugitive Dust	Grading	NA	NA	[g]	NA	NA	NA	2	1	0	NA
Worker Commutes	Offsite Light-duty Auto/Truck	NA	NA	18	58	NA	20	2	1	0	0.01
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	NA	NA	1	20	NA	20	2	1	0	0.01
Electrical Equipment Replacement and Modification											
Temporary Generator	PERP Generators [h]	302	--	22	160	24	NA	0	8	0	--
Skid Steer	Skid Steer Loader	71	0.37	1	347	10	NA	0	12	6	0.13
Backhoe	Tractors/Loaders/Backhoe	84	0.37	1	347	10	NA	0	12	6	0.18
Large Generator	Generator Large	50	0.74	2	347	10	NA	0	12	6	0.34
Small Honda Generator	Generator Small	7	0.74	2	173	5	NA	0	12	6	0.54
Manlift	Aerial Lift	46	0.31	1	52	5	NA	0	12	6	0.15
Weld Machine	Welder	46	0.45	2	69	10	NA	0	12	6	0.47
6-ton Forklift	Rough Terrain Forklift	96	0.40	1	347	10	NA	0	12	6	0.12
1/2-Ton Boom Truck	Onsite Heavy-Duty Diesel	NA	NA	1	171	NA	1	0	12	6	0.12
Water Truck	Onsite Heavy-Duty Diesel	NA	NA	1	347	NA	2	0	12	6	0.12
185 cfm Air Compressor	Air Compressor (Jackhammer)	37	0.48	2	347	10	NA	0	12	6	0.51
Vacuum Truck Offsite	Offsite Heavy-Duty Diesel	NA	NA	1	24	NA	20	0	12	6	0.01
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	NA	NA	2	24	NA	2	0	12	6	0.12
Dump Truck	Onsite Heavy-Duty Diesel	NA	NA	1	83	NA	2	0	12	6	0.12
Concrete Pump Truck	Offsite Heavy-Duty Diesel	NA	NA	1	12	NA	20	0	12	6	0.01
Concrete Truck	Offsite Heavy-Duty Diesel	NA	NA	1	12	NA	20	0	12	6	0.01

Table 5

Construction Emissions with Applicant Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

		actors (g/hp-hr for equipment, g/mile for vehicles, lb/ton for truck loading, and lb/mile for grading)						Emissions (lbs/phase) [b]				
Equipment / Vehicle List [a]	**Equipment / Vehicle Type**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10} [c]**
Site Mobilization / Site Preparation												
Skid Steer	Skid Steer Loader	3.25	2.74	0.01	0.01	0.01	530.27	2.99	72.51	61.23	0.11	0.22
Backhoe	Tractors/Loaders/Backhoe	3.48	0.26	0.01	0.01	0.01	531.36	4.86	92.03	6.87	0.13	0.26
Large Generator	Generator Large	3.73	2.74	0.01	0.01	0.01	570.28	21.28	234.85	172.47	0.44	0.63
Small Honda Generator	Generator Small	2.86	2.75	0.01	0.01	0.01	570.30	1.18	6.29	6.05	0.02	0.02
6-ton Forklift	Rough Terrain Forklift	3.22	0.26	0.01	0.01	0.01	530.54	3.76	105.18	8.49	0.16	0.33
Water Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.02	0.18	1.87	0.00	0.08
185 cfm Air Compressor	Air Compressor (Jackhammer)	4.82	2.75	0.01	0.01	0.01	570.26	15.47	145.69	83.09	0.21	0.30
Dump Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.00	0.04	0.45	0.00	0.02
Worker Commutes	Offsite Light-duty Auto/Truck	0.90	0.05	0.00	0.31	0.08	268.65	0.27	27.51	1.52	0.08	9.54
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.00	0.05	0.68	0.01	0.23
Ground Disturbing Activities												
Skid Steer	Skid Steer Loader	3.25	2.74	0.01	0.01	0.01	530.27	4.49	108.77	91.84	0.17	0.34
Backhoe	Tractors/Loaders/Backhoe	3.48	0.26	0.01	0.01	0.01	531.36	7.30	138.04	10.31	0.20	0.40
Large Generator	Generator Large	3.73	2.74	0.01	0.01	0.01	570.28	31.91	352.27	258.70	0.66	0.94
Small Honda Generator	Generator Small	2.86	2.75	0.01	0.01	0.01	570.30	1.78	9.43	9.07	0.03	0.03
6-ton Forklift	Rough Terrain Forklift	3.22	0.26	0.01	0.01	0.01	530.54	5.63	157.76	12.74	0.24	0.49
Water Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.03	0.27	2.80	0.01	0.11
185 cfm Air Compressor	Air Compressor (Jackhammer)	4.82	2.75	0.01	0.01	0.01	570.26	23.20	218.53	124.63	0.32	0.45
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.03	0.26	2.71	0.01	0.11
Dump Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.01	0.06	0.67	0.00	0.03
Handheld Asphalt Saw	Concrete/Industrial Saw	4.32	2.75	0.01	0.01	0.01	576.33	0.25	2.62	1.67	0.00	0.01
Fugitive Dust	Grading	NA	NA	NA	0.60	0.06	NA	NA	NA	NA	NA	1.65
Worker Commutes	Offsite Light-duty Auto/Truck	0.90	0.05	0.00	0.31	0.08	268.65	0.40	41.27	2.28	0.12	14.31
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.01	0.07	1.02	0.01	0.35
Electrical Equipment Replacement and Modification												
Temporary Generator	PERP Generators [h]	--	--	--	--	--	--	2,756.08	78,745.03	2,756.08	103.24	3,406.19
Skid Steer	Skid Steer Loader	3.25	2.74	0.01	0.01	0.01	530.27	26.95	652.60	551.04	1.01	2.01
Backhoe	Tractors/Loaders/Backhoe	3.48	0.26	0.01	0.01	0.01	531.36	43.78	828.24	61.86	1.19	2.38
Large Generator	Generator Large	3.73	2.74	0.01	0.01	0.01	570.28	191.48	2,113.62	1,552.21	3.97	5.67
Small Honda Generator	Generator Small	2.86	2.75	0.01	0.01	0.01	570.30	10.66	56.58	54.41	0.16	0.20
Manlift	Aerial Lift	3.08	2.75	0.01	0.01	0.01	588.90	1.24	25.13	22.48	0.04	0.08
Weld Machine	Welder	4.49	2.75	0.01	0.01	0.01	570.26	29.20	282.13	172.68	0.44	0.63
6-ton Forklift	Rough Terrain Forklift	3.22	0.26	0.01	0.01	0.01	530.54	33.81	946.58	76.43	1.47	2.94
1/2-Ton Boom Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.04	0.40	4.14	0.01	0.17
Water Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.18	1.61	16.81	0.04	0.69
185 cfm Air Compressor	Air Compressor (Jackhammer)	4.82	2.75	0.01	0.01	0.01	570.26	139.22	1,311.20	747.78	1.90	2.72
Vacuum Truck Offsite	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.01	0.09	1.25	0.01	0.43
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.02	0.22	2.32	0.01	0.09
Dump Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.04	0.39	4.03	0.01	0.16
Concrete Pump Truck	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.00	0.04	0.63	0.01	0.21
Concrete Truck	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.00	0.04	0.63	0.01	0.21

Table 5

Construction Emissions with Applicant Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type		Emissions (metric tons/phase) [b]	Weight Factor [f]		
		$PM_{2.5}$ [c]	CO_2e	2026	2027	2028
Site Mobilization / Site Preparation						
Skid Steer	Skid Steer Loader	0.22	5.37	1	0	0
Backhoe	Tractors/Loaders/Backhoe	0.26	6.37	1	0	0
Large Generator	Generator Large	0.63	16.28	1	0	0
Small Honda Generator	Generator Small	0.02	0.57	1	0	0
6-ton Forklift	Rough Terrain Forklift	0.33	7.86	1	0	0
Water Truck	Onsite Heavy-Duty Diesel	0.02	0.23	1	0	0
185 cfm Air Compressor	Air Compressor (Jackhammer)	0.30	7.82	1	0	0
Dump Truck	Onsite Heavy-Duty Diesel	0.01	0.06	1	0	0
Worker Commutes	Offsite Light-duty Auto/Truck	2.44	3.73	1	0	0
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.07	0.38	1	0	0
Ground Disturbing Activities						
Skid Steer	Skid Steer Loader	0.34	8.06	0.67	0.33	0
Backhoe	Tractors/Loaders/Backhoe	0.40	9.56	0.67	0.33	0
Large Generator	Generator Large	0.94	24.42	0.67	0.33	0
Small Honda Generator	Generator Small	0.03	0.85	0.67	0.33	0
6-ton Forklift	Rough Terrain Forklift	0.49	11.79	0.67	0.33	0
Water Truck	Onsite Heavy-Duty Diesel	0.03	0.35	0.67	0.33	0
185 cfm Air Compressor	Air Compressor (Jackhammer)	0.45	11.72	0.67	0.33	0
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	0.03	0.34	0.67	0.33	0
Dump Truck	Onsite Heavy-Duty Diesel	0.01	0.08	0.67	0.33	0
Handheld Asphalt Saw	Concrete/Industrial Saw	0.01	0.16	0.67	0.33	0
Fugitive Dust	Grading	0.18	NA	0.67	0.33	0
Worker Commutes	Offsite Light-duty Auto/Truck	3.67	5.60	0.67	0.33	0
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.10	0.57	0.67	0.33	0
Electrical Equipment Replacement and Modification						
Temporary Generator	PERP Generators [h]	3,406.19	9,682.84	0	1	0
Skid Steer	Skid Steer Loader	2.01	48.37	0	0.67	0.33
Backhoe	Tractors/Loaders/Backhoe	2.38	57.35	0	0.67	0.33
Large Generator	Generator Large	5.67	146.54	0	0.67	0.33
Small Honda Generator	Generator Small	0.20	5.12	0	0.67	0.33
Manlift	Aerial Lift	0.08	2.18	0	0.67	0.33
Weld Machine	Welder	0.63	16.24	0	0.67	0.33
6-ton Forklift	Rough Terrain Forklift	2.94	70.74	0	0.67	0.33
1/2-Ton Boom Truck	Onsite Heavy-Duty Diesel	0.05	0.51	0	0.67	0.33
Water Truck	Onsite Heavy-Duty Diesel	0.21	2.09	0	0.67	0.33
185 cfm Air Compressor	Air Compressor (Jackhammer)	2.72	70.34	0	0.67	0.33
Vacuum Truck Offsite	Offsite Heavy-Duty Diesel	0.12	0.70	0	0.67	0.33
Vacuum Truck Onsite	Onsite Heavy-Duty Diesel	0.03	0.29	0	0.67	0.33
Dump Truck	Onsite Heavy-Duty Diesel	0.05	0.50	0	0.67	0.33
Concrete Pump Truck	Offsite Heavy-Duty Diesel	0.06	0.35	0	0.67	0.33
Concrete Truck	Offsite Heavy-Duty Diesel	0.06	0.35	0	0.67	0.33

Table 5

Construction Emissions with Applicant Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Equipment Power Rating (hp) [d]	Equipment Load Factor [d]	Quantity per Day	Number of Days Used [e]	Hours per Day	Miles per Day per Vehicle	Number of Months with Activities			Emission f
								2026	2027	2028	ROG
Jumping Jack	Plate Compactor	8	0.43	1	151	5	NA	0	12	6	0.55
Handheld Asphalt Saw	Concrete/Industrial Saw	33	0.73	1	14	5	NA	0	12	6	0.41
Handheld Core Drill	Other General Industrial Equipment	35	0.34	1	16	5	NA	0	12	6	0.45
Vibraplate	Plate Compactor	8	0.43	1	151	5	NA	0	12	6	0.55
Fugitive Dust	Truck Loading	NA	NA	[i]	NA	NA	NA	0	12	6	NA
Worker Commutes	Offsite Light-duty Auto/Truck	NA	NA	18	347	NA	20	0	12	6	0.01
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	NA	NA	2	117	NA	20	0	12	6	0.01
Demobilization											
Skid Steer	Skid Steer Loader	71	0.37	1	19	10	NA	0	0	2	0.13
Backhoe	Tractors/Loaders/Backhoe	84	0.37	1	19	10	NA	0	0	2	0.18
Large Generator	Generator Large	50	0.74	2	19	10	NA	0	0	2	0.34
Small Honda Generator	Generator Small	7	0.74	2	10	5	NA	0	0	2	0.54
6-ton Forklift	Rough Terrain Forklift	96	0.40	1	19	10	NA	0	0	2	0.12
Water Truck	Onsite Heavy-Duty Diesel	NA	NA	1	19	NA	2	0	0	2	0.12
185 cfm Air Compressor	Air Compressor (Jackhammer)	37	0.48	2	19	10	NA	0	0	2	0.51
Dump Truck	Onsite Heavy-Duty Diesel	NA	NA	1	5	NA	2	0	0	2	0.12
Worker Commutes	Offsite Light-duty Auto/Truck	NA	NA	18	19	NA	20	0	0	2	0.01
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	NA	NA	1	7	NA	20	0	0	2	0.01

Notes:

NA = Parameter not required for computing emissions.

[a] Unless otherwise noted, equipment/vehicle list and daily use provided by PG&E.

[b] The following conversion factors were used to estimate emissions:

1 lb =	453.6	g
1 ton =	2,000	lbs
1 metric ton =	1,000,000	g
1 yd^3 =	1.2641662	tons

Additionally, these emissions incorporate Applicant-proposed Measures to reduce construction equipment exhaust emissions, as applicable.

[c] PM_{10} and $PM_{2.5}$ emissions include only paved road fugitive dust emissions, as it is assumed all onsite and offsite travel will be on paved roads.

[d] Unless otherwise indicated, default equipment power ratings and load factors were used, as taken from Table G-12 of Appendix G of the *CalEEMod User's Guide* (ICF 2022). The small generator was assumed to be 7 hp an

[e] A number of vehicles and equipment will be used for only a portion of the total duration for each phase.

[f] The weight factors are used to calculate annual emissions below and are derived based on the months of activity per year during the construction period.

[g] Fugitive Dust emissions from Grading activities are a result of smoothing unpaved areas and were estimated per the details provided below. Emissions incorporate Applicant-proposed Measures to reduce fugitive dust and

Activity	Year	Area Graded (acres/phase) [1]	Grader VMT (miles/phase) [2]	Emission Factors (lb/mile)		Emissions (lb/phase)	
				PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Grading	2026	2.7	1.83	0.602	0.065	1.1	0.1
Grading	2027	1.3	0.92	0.602	0.065	0.6	0.1
Grading	2028	0	0.00	0.602	0.065	0.0	0.0

Notes:

[1] Total area to be graded is as follows, as provided by PG&E: 4 acres.

[2] Vehicle miles traveled by graders estimated as follows, per methodology provided in Section 4.4.1 of Appendix C of the *CalEEMod User's Guide* (ICF 2022):

VMT (mile/phase) = Area Graded (acres/phase) / Wb (ft) X 43,560 (ft^2/acre) / 5,280 (ft/mile), where

Table 5

Construction Emissions with Applicant Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	actors (g/hp-hr for equipment, g/mile for vehicles, lb/ton for truck loading, and lb/mile for grading)						Emissions (lbs/phase) [b]				
		CO	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2	ROG	CO	NOx	SOx	PM_{10} [c]
Jumping Jack	Plate Compactor	3.47	2.75	0.01	0.01	0.01	570.31	3.13	19.87	15.75	0.05	0.06
Handheld Asphalt Saw	Concrete/Industrial Saw	4.32	2.75	0.01	0.01	0.01	576.33	1.50	15.71	10.01	0.03	0.04
Handheld Core Drill	Other General Industrial Equipment	4.59	2.75	0.01	0.01	0.01	589.87	0.95	9.64	5.77	0.01	0.02
Vibraplate	Plate Compactor	3.47	2.75	0.01	0.01	0.01	570.31	3.13	19.87	15.75	0.05	0.06
Fugitive Dust	Truck Loading	NA	NA	NA	0.00010	0.000015	NA	NA	NA	NA	NA	0.07
Worker Commutes	Offsite Light-duty Auto/Truck	0.90	0.05	0.00	0.31	0.08	268.65	2.42	247.62	13.69	0.73	85.84
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.09	0.87	12.20	0.14	4.15
Demobilization												
Skid Steer	Skid Steer Loader	3.25	2.74	0.01	0.01	0.01	530.27	1.50	36.26	30.61	0.06	0.11
Backhoe	Tractors/Loaders/Backhoe	3.48	0.26	0.01	0.01	0.01	531.36	2.43	46.01	3.44	0.07	0.13
Large Generator	Generator Large	3.73	2.74	0.01	0.01	0.01	570.28	10.64	117.42	86.23	0.22	0.31
Small Honda Generator	Generator Small	2.86	2.75	0.01	0.01	0.01	570.30	0.59	3.14	3.02	0.01	0.01
6-ton Forklift	Rough Terrain Forklift	3.22	0.26	0.01	0.01	0.01	530.54	1.88	52.59	4.25	0.08	0.16
Water Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.01	0.09	0.93	0.00	0.04
185 cfm Air Compressor	Air Compressor (Jackhammer)	4.82	2.75	0.01	0.01	0.01	570.26	7.73	72.84	41.54	0.11	0.15
Dump Truck	Onsite Heavy-Duty Diesel	1.05	10.98	0.03	0.45	0.13	3005.79	0.00	0.02	0.22	0.00	0.01
Worker Commutes	Offsite Light-duty Auto/Truck	0.90	0.05	0.00	0.31	0.08	268.65	0.13	13.76	0.76	0.04	4.77
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.08	1.18	0.01	0.40	0.12	1453.80	0.00	0.02	0.34	0.00	0.12

Notes:

NA = Parameter not required for computing emissions.

[a] Unless otherwise noted, equipment/vehicle list and daily use provided b

[b] The following conversion factors were used to estimate emissions:

1 lb =	453.6
1 ton =	2,000
1 metric ton =	1,000,000
1 yd^3 =	1.2641662

Additionally, these emissions incorporate Applicant-proposed Measures

[c] PM_{10} and $PM_{2.5}$ emissions include only paved road fugitive dust emissio

[d] Unless otherwise indicated, default equipment power ratings and load fid the large generator was assumed to be 50 hp, as PG&E indicated that two different generator sizes would be used.

[e] A number of vehicles and equipment will be used for only a portion of tl

[f] The weight factors are used to calculate annual emissions below and are

[g] Fugitive Dust emissions from Grading activities are a result of smoothin construction equipment exhaust emissions, as applicable.

Activity	Year
Grading	2026
Grading	2027
Grading	2028

Notes:

[1] Total area to be graded is as follows, as provided by PG&E:

[2] Vehicle miles traveled by graders estimated as follows, per methodolog

VMT (mile/phase) = Area Graded (acres/phase) / Wb (ft) X 43,560 (ft^2/

Table 5

Construction Emissions with Applicant Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	$PM_{2.5}$ [c]	Emissions (metric tons/phase) [b] CO_2e	Weight Factor [f] 2026	2027	2028
Jumping Jack	Plate Compactor	0.06	1.48	0	0.67	0.33
Handheld Asphalt Saw	Concrete/Industrial Saw	0.04	0.95	0	0.67	0.33
Handheld Core Drill	Other General Industrial Equipment	0.02	0.56	0	0.67	0.33
Vibraplate	Plate Compactor	0.06	1.48	0	0.67	0.33
Fugitive Dust	Truck Loading	0.01	NA	0	0.67	0.33
Worker Commutes	Offsite Light-duty Auto/Truck	22.00	33.58	0	0.67	0.33
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	1.21	6.80	0	0.67	0.33
Demobilization						
Skid Steer	Skid Steer Loader	0.11	2.69	0	0	1
Backhoe	Tractors/Loaders/Backhoe	0.13	3.19	0	0	1
Large Generator	Generator Large	0.31	8.14	0	0	1
Small Honda Generator	Generator Small	0.01	0.28	0	0	1
6-ton Forklift	Rough Terrain Forklift	0.16	3.93	0	0	1
Water Truck	Onsite Heavy-Duty Diesel	0.01	0.12	0	0	1
185 cfm Air Compressor	Air Compressor (Jackhammer)	0.15	3.91	0	0	1
Dump Truck	Onsite Heavy-Duty Diesel	0.00	0.03	0	0	1
Worker Commutes	Offsite Light-duty Auto/Truck	1.22	1.87	0	0	1
Vendor/Delivery Trucks	Offsite Heavy-Duty Diesel	0.03	0.19	0	0	1

Notes:

NA = Parameter not required for computing emissions.

[a] Unless otherwise noted, equipment/vehicle list and daily use provided b

[b] The following conversion factors were used to estimate emissions:

1 lb =	453.6
1 ton =	2,000
1 metric ton =	1,000,000
1 yd^3 =	1.2641662

Additionally, these emissions incorporate Applicant-proposed Measures

[c] PM_{10} and $PM_{2.5}$ emissions include only paved road fugitive dust emissio

[d] Unless otherwise indicated, default equipment power ratings and load f

[e] A number of vehicles and equipment will be used for only a portion of tl

[f] The weight factors are used to calculate annual emissions below and are

[g] Fugitive Dust emissions from Grading activities are a result of smoothin

Activity	Year
Grading	2026
Grading	2027
Grading	2028

Notes:

[1] Total area to be graded is as follows, as provided by PG&E:

[2] Vehicle miles traveled by graders estimated as follows, per methodolog

VMT (mile/phase) = Area Graded (acres/phase) / Wb (ft) X 43,560 (ft^2/

Table 5

Construction Emissions with Applicant Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Equipment Power Rating (hp) [d]	Equipment Load Factor [d]	Quantity per Day	Number of Days Used [e]	Hours per Day	Miles per Day per Vehicle	Number of Months with Activities			Emission f
								2026	2027	2028	ROG

Wb is the blade width of the grader; the CalEEMod default for Wb is = 12 ft.

[h] Information and emissions for the temporary Portable Equipment Registration Program (PERP) equipment is detailed in Appendix A, Tables 6a and 6b. The temporary generators were assumed to be utilized entirely withi

[i] Fugitive Dust emissions from Truck Dumping/Loading activities are a result of trenching and foundation work. Volumes were provided by PG&E, as follows:

Activity	Volume (yd^3)	Weight (tons)
Excavated Soil	443	560
Backfill	108	137

Annual Emissions Summary

Year [a]	Emissions (lbs/year)						Emissions (metric tons/year)
	ROG	CO	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2e
2026	100	1,371	688	2	24	9	98
2027	3,106	83,443	5,157	111	3,485	3,435	10,018
2028	188	2,520	1,285	4	42	16	180

Notes:

[a] Yearly emissions were estimated using a weight factor based on the schedule and months of activity per year.

Table 5

Construction Emissions with Applicant Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	actors (g/hp-hr for equipment, g/mile for vehicles, lb/ton for truck loading, and lb/mile for grading)						Emissions (lbs/phase) [b]				
		CO	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2	ROG	CO	NOx	SOx	PM_{10} [c]
Wb is the blade width of the grader; the CalEEMod default for Wb is =												

[h] Information and emissions for the temporary Portable Equipment Regis a single calendar year to provide the most conservative emissions estimate, although they are expected to be used intermittently througho

[i] Fugitive Dust emissions from Truck Dumping/Loading activities are a res

Activity	Volume (yd^3)
Excavated Soil	443
Backfill	108

Annual Emissions Summary

Year [a]	ROG
2026	100
2027	3,106
2028	188

Notes:

[a] Yearly emissions were estimated using a weight factor based on the sch

Table 5

Construction Emissions with Applicant Proposed Measures

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Emissions

Equipment / Vehicle List [a]	Equipment / Vehicle Type	$PM_{2.5}$ [c]	Emissions (metric tons/phase) [b] CO_2e	Weight Factor [f] 2026	2027	2028

Wb is the blade width of the grader; the CalEEMod default for Wb is =

[h] Information and emissions for the temporary Portable Equipment Regis t for a total duration not to exceed 8 months.

[i] Fugitive Dust emissions from Truck Dumping/Loading activities are a res

Activity	Volume (yd^3)
Excavated Soil	443
Backfill	108

Annual Emissions Summary

Year [a]	ROG
2026	100
2027	3,106
2028	188

Notes:

[a] Yearly emissions were estimated using a weight factor based on the sch

Tables 6a, 6b, and 6c

Temporary Generator Emissions

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Table 6a. PERP Generators - Parameters

Operation	Generators	
Generator Make	Hipower	
Generator Model	HRNG 230 T6	
Number of Generators [a]	22	
Model Year	2014	
Engine Make	Power Solutions International, Inc.	
EPA Family Name	EPSIB11.1NGP	
Maximum Daily Operating Hours [b]	24	hours
Maximum Rated Horsepower (Prime)	302	hp
Fuel Consumption Rate	2115	ft^3/hr
Maximum Heat Input - per unit [c]	2.16	MMBtu/hr
Maximum Heat Input - Total	47.46	MMBtu/hr

Notes:

[a] As per the information provided by PG&E, all generators have the same make and model.

[b] It is assumed that the generators will have the ability to operate 24/7 for the purposes of calculating the maximum potential to emit.

[c] Natural Gas Heat Content is 1,020 Btu/scf Per AP-42, Table 1.4-1, Footnote a.

Table 6b. PERP Generator Emissions - Potential to Emit

Unit Type	Parameter	Emissions [a, b, c, d, e]					
		PM_{10}	$PM_{2.5}$	CO	NOx	VOC	SO_2
HRNG 230 T6	Value (per engine)	1.87E-02	1.87E-02	1.40	0.049	0.049	0.00057
	Units	lb/MMBtu	lb/MMBtu	g/bhp-hr	g/bhp-hr	g/bhp-hr	lb/MMBtu
	Value (total for all PERPs)	0.887	0.887	20.51	0.72	0.72	2.69E-02
	Units	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
	Value (total for all PERPs)	21.29	21.29	492.16	17.23	17.23	0.65
	Units	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
	Value (total for all PERPs)	7,770	7,770	179,637	6,287	6,287	236
	Units	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
	Value (total for all PERPs)	3.89	3.89	89.82	3.14	3.14	0.118
	Units	tpy	tpy	tpy	tpy	tpy	tpy

Notes:

[a] PM_{10}, $PM_{2.5}$, and SO_2 emission factors per MDAQMD's default emission factors for Internal Combustion Engines, Natural Gas-fired, 4SR. Accessed online: https://www.mdaqmd.ca.gov/home/showpublisheddocument/10131/638433490279600000

Heat content of natural gas assumed to be 1,038 BTU/scf per U.S. Energy Information Administration. Accessed online: https://www.eia.gov/tools/faqs/faq.php?id=45&t=8

Tables 6a, 6b, and 6c
Temporary Generator Emissions
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

[b] CO, VOC and NOx emission factor per EPA Family Name Certification Level from EPA's Large Nonroad Spark-Ignition (NRSI) Engines database (EPA certification test number EPSIBM0020251 for constant speed application)
https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.epa.gov%2Fsystem%2Ffiles%2Fdocuments%2F2024-02%2Flarge-spark-ignition-2011-present.xlsx&wdOrigin=BROWSELINK
The EPA Family Name's VOC and NOx Certification Level is 0.0 g/bhp-hr. For purposes of conservative emission estimates, PG&E assumes that the maximum potential emission factor is 0.049 g/bhp-hr.
[c] PM_{10}, $PM_{2.5}$ and SO_2 Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Maximum Total Heat Input Rate (MMBtu/hr)
[d] CO, NO_x and VOC Hourly Emissions (lb/hr) = Emission Factor (g/bhp-hr)* lb/453.592 g * Maximum Rated Horsepower (HP) * Number of Generators
[e] Daily and annual emissions are calculated based on 24 hours per day and 365 days per year.

Table 6c. PERP Generator Emissions - Greenhouse Gas Potential to Emit

Unit Type	Parameter	Emissions [a, b, c, d, e]			
		CO_2	CH_4	N_2O	CO_2e
HRNG 230 T6	Global Warming Potential	1	25	298	--
	Value (per engine)	117	2.20E-03	2.20E-04	117.10
	Units	lb/MMBtu	lb/MMBtu	lb/MMBtu	lb/MMBtu
	Value (total for all PERPs)	5,552	1.05E-01	1.05E-02	5,558
	Units	lb/hr	lb/hr	lb/hr	lb/hr
	Value (total for all PERPs)	133,243	2.51E+00	2.51E-01	133,381
	Units	lb/day	lb/day	lb/day	lb/day
	Value (total for all PERPs)	48,633,871	917	92	48,684,099
	Units	lb/yr	lb/yr	lb/yr	lb/yr
	Value (total for all PERPs)	24,316.94	0.46	0.05	24,342.05
	Units	tpy	tpy	tpy	tpy

Notes:
[a] Global Warming Potentials are obtained from Subpart A of 40 CFR 98, Table A–1 "Global Warming Potentials."
[b] Emission factor for carbon dioxide is obtained from 40 CFR 98, Table C–1 to Subpart C for natural gas (Weighted U.S. Average). Emission factors for methane and nitrous oxide are obtained from 40 CFR 98, Table C–2 to Subpart C for natural gas.
[c] CO_2e Emission Factor (lb/MMBtu) = [EF_{CO2} (lb/MMBtu) * GWP_{CO2} + EF_{CH4} (lb/MMBtu) * GWP_{CH4} + EF_{N2O} (lb/MMBtu) * GWP_{N2O}]
[d] Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Maximum Total Heat Input Rate (MMBtu/hr)
[e] Daily and annual emissions are calculated based on 24 hours per day and 365 days per year.

Table 7
PG&E Fugitive Dust Emission Factors
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Fugitive Dust Emission Factors for Grading
Grading Equipment Passes

Parameter	PM_{10}	$PM_{2.5}$
S [a]	7.1	7.1
F [a]	0.6	0.031
Emission Factor (lb/mile) [b]	1.543	0.167
Control Efficiency for Watering 2x Daily [c]	61%	61%
Controlled Emission Factor (lb/mile)	0.602	0.065

Notes:
[a] S and F taken from Section 4.4.1 of Appendix C of the *CalEEMod User's Guide* (ICF 2022).
[b] Emission factor calculated using the following equation from Section 4.4.1 of Appendix C of the *CalEEMod User's Guide* (ICF 2022):
PM_{10} Emission Factor (lb/VMT) = $0.051 \times [S\ (mph)]^{2.0} \times F_{PM10}$
$PM_{2.5}$ Emission Factor (lb/VMT) = $0.04 \times [S\ (mph)]^{2.5} \times F_{PM2.5}$
[c] Control efficiency for watering exposed areas twice per day taken from Section 4.4.4 of Appendix C of the *CalEEMod User's Guide* (ICF 2022).

Fugitive Dust Emission Factors for Truck Dumping/Loading
Truck Dumping on a Pile or Loading to a Truck from a Pile

Parameter	PM_{10}	$PM_{2.5}$
k [a]	0.35	0.053
U [b]	11.2	11.2
M [a]	12.0	12.0
Emission Factor (lb/ton) [c]	0.00026	0.000039
Control Efficiency for Watering 2x Daily [d]	61%	61%
Controlled Emission Factor (lb/ton)	0.00010	0.000015

Notes:
[a] k and M taken from Section 4.4.3 of Appendix C of the *CalEEMod User's Guide* (ICF 2022).
[b] U taken as the average annual wind speed measured at the Dagget-Barstow Airport, as presented in Table G-1 of Appendix G of the *CalEEMod User's Guide* (ICF 2022). Original value of 5.0 m/s has been converted to mph.
[c] Emission factor calculated using the following equation from Section 4.4.3 of Appendix C of the *CalEEMod User's Guide* (ICF, 2022):
Emission Factor (lb/ton) = $k \times 0.0032 \times [U\ (mph) / 5]^{1.3} / [M\ (\%) / 2]^{1.4}$
[d] Control efficiency for watering exposed areas twice per day taken from Section 4.4.4 of Appendix C of the *CalEEMod User's Guide* (ICF 2022). It was assumed that keeping exposed areas moist would have the co-benefit of limiting dust emissions associated with loading/unloading materials.

Fugitive Dust Emissions from Paved Roads
Included in vehicle emissions.

Table 8
PG&E Construction Equipment Emission Factors
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Construction Phase

OFFROAD Equipment Category	Fuel Type	Horsepower [a]	Load Factor [a]	Year [b]	ROG	CO	NOx	SOx	PM_{10}	$PM_{2.5}$
Aerial Lift	Diesel	46	0.31	2026	0.152	3.075	2.874	0.005	0.021	0.019
Air Compressor (Jackhammer)	Diesel	37	0.48	2026	0.512	4.822	3.646	0.007	0.099	0.091
Concrete/Industrial Saw	Diesel	33	0.73	2026	0.413	4.315	3.526	0.007	0.085	0.078
Generator Small	Diesel	7	0.74	2026	0.539	2.860	4.324	0.008	0.174	0.160
Generator Large	Diesel	50	0.74	2026	0.338	3.731	3.382	0.007	0.079	0.073
Other General Industrial Equipment	Diesel	35	0.34	2026	0.453	4.594	3.588	0.005	0.113	0.104
Plate Compactor	Diesel	8	0.43	2026	0.547	3.470	4.143	0.009	0.162	0.149
Rough Terrain Forklift	Diesel	96	0.40	2026	0.115	3.220	1.643	0.005	0.033	0.030
Skid Steer Loader	Diesel	71	0.37	2026	0.134	3.245	1.807	0.005	0.051	0.047
Tractors/Loaders/Backhoe	Diesel	84	0.37	2026	0.184	3.481	1.885	0.005	0.063	0.058
Welder	Diesel	46	0.45	2026	0.465	4.493	3.570	0.007	0.095	0.088

Notes:

[a] Unless otherwise indicated, Horsepower and Load Factors taken from Table G-12 of Appendix G of the *CalEEMod User's Guide* (ICF 2022).

The small generator was assumed to be 7 hp and the large generator was assumed to be 50 hp, as PG&E indicated that two different generator sizes would be used.

[b] Construction emission factors conservatively based on the year construction activities begin (2026).

[c] Unless otherwise indicated, Emission Factors taken from Table G-11 of Appendix G of the *CalEEMod User's Guide* (ICF 2022).

[d] CO_2e emissions were calculated using the following global warming potentials from 40 CFR Part 98, Table A-1:

CO_2 = 1
CH_4 = 28
N_2O = 265

[e] Controlled NOx, PM_{10}, and $PM_{2.5}$ emission factors taken from Table G-13 of Appendix G of the *CalEEMod User's Guide* (ICF 2022), assuming all equipment would comply with the Tier 4 Final emissions standards.

Table 8
PG&E Construction Equipment Emission Factors
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Construction Phase

OFFROAD Equipment Category	Fuel Type	Horsepower [a]	Load Factor [a]	Year [b]	Emission Factors (g/hp-hr) [c]						
					CO_2e [d]	CO_2	CH_4	N_2O	Controlled NOx [e]	Controlled PM_{10} [e]	Controlled $PM_{2.5}$ [e]
Aerial Lift	Diesel	46	0.31	2026	588.897	586.900	0.024	0.005	2.750	0.010	0.010
Air Compressor (Jackhammer)	Diesel	37	0.48	2026	570.256	568.287	0.023	0.005	2.750	0.010	0.010
Concrete/Industrial Saw	Diesel	33	0.73	2026	576.326	574.357	0.023	0.005	2.750	0.010	0.010
Generator Small	Diesel	7	0.74	2026	570.296	568.327	0.023	0.005	2.750	0.010	0.010
Generator Large	Diesel	50	0.74	2026	570.284	568.315	0.023	0.005	2.740	0.010	0.010
Other General Industrial Equipment	Diesel	35	0.34	2026	589.874	587.877	0.024	0.005	2.750	0.010	0.010
Plate Compactor	Diesel	8	0.43	2026	570.306	568.337	0.023	0.005	2.750	0.010	0.010
Rough Terrain Forklift	Diesel	96	0.40	2026	530.537	528.889	0.021	0.004	0.260	0.010	0.010
Skid Steer Loader	Diesel	71	0.37	2026	530.269	528.621	0.021	0.004	2.740	0.010	0.010
Tractors/Loaders/Backhoe	Diesel	84	0.37	2026	531.355	529.707	0.021	0.004	0.260	0.010	0.010
Welder	Diesel	46	0.45	2026	570.260	568.291	0.023	0.005	2.750	0.010	0.010

Notes:

[a] Unless otherwise indicated, Horsepower and Load Factors taken from Table G-12 of Appendix G of the *CalEEMoc*
The small generator was assumed to be 7 hp and the large generator was assumed to be 50 hp, as PG&E indicatec

[b] Construction emission factors conservatively based on the year construction activities begin (2026).

[c] Unless otherwise indicated, Emission Factors taken from Table G-11 of Appendix G of the *CalEEMod User's Guide*

[d] CO_2e emissions were calculated using the following global warming potentials from 40 CFR Part 98, Table A-1:

CO_2 = 1
CH_4 = 28
N_2O = 265

[e] Controlled NOx, PM_{10}, and $PM_{2.5}$ emission factors taken from Table G-13 of Appendix G of the *CalEEMod User's (*
assuming all equipment would comply with the Tier 4 Final emissions standards.

Table 9
PG&E Vehicle Emission Factors
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Construction Emission Factors for 2026 [a]

Vehicle Class [b]	Fuel Type	EMFAC Vehicle Types	Exhaust Emission Factors (g/mile) [c]							Paved Road Emission Factors (g/mile) [d]	
			ROG	CO	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2e	PM_{10}	$PM_{2.5}$
Offsite Light-duty Auto/Truck	Gasoline	LDA, LDT1, LDT2	0.01	0.90	0.05	0.00	0.01	0.01	268.65	0.30	0.07
Offsite Heavy-duty Diesel	Diesel	HHDT	0.01	0.08	1.18	0.01	0.10	0.04	1,453.80	0.30	0.07
Onsite Heavy-duty Diesel	Diesel	HHDT	0.12	1.05	10.98	0.03	0.15	0.06	3,005.79	0.30	0.07

Notes:
[a] Construction emission factors conservatively based on the year construction activities begin (2026)
[b] Offsite vehicles were assumed to travel 40 mph and onsite vehicles were assumed to travel 5 mph
[c] Vehicle Emission Factors from EMFAC2021 for the Mojave Desert AQMD, calendar year 2026.
[d] Paved road emission factors calculated using CalEEMod methodology, as described below. It is assumed that no vehicles will travel on unpaved roads during this project

Paved Road Emission Factors

Parameter [a]	PM_{10}	$PM_{2.5}$
Average Weight	2.4	2.4
k	1	0.25
sL	0.1	0.1
P [b]	11.6	11.6
Emission Factor (g/mile) [c]	**0.298**	**0.075**

Notes:
[a] Except for P, all parameters taken from Section 5.1.4 of Appendix C of the *CalEEMod User's Guide* (ICF 2022).
[b] P taken from the CalEEMod model for a location in or around Barstow, California.
[c] Emission factor calculated using methodology from Section 5.1.4 of Appendix C of the *CalEEMod User's Guide* (ICF 2022), as follows:
Emission Factor (g/mile) = k (g/mile) x [sL (g/m^2)]$^{0.91}$ x [Average Weight (tons)]$^{1.02}$ x [1 - P (days) / 1,460 days]

Appendix B1
Biological Resources Technical Report

CONFIDENTIAL figures are provided under separate cover to the CPUC

Biological Resources Technical Report

Version: Final

Pacific Gas & Electric Company

S-238 Hinkley Compressor Station Electrical Upgrades Project
San Bernardino County, California
February 2025

Biological Resources Technical Report

Client name:	Pacific Gas & Electric Company		
Project name:	S-238 Hinkley Compressor Station Electrical Upgrades Project San Bernardino County, California		
Document no:	241105181312_f7aa7575	**Project no:**	D31321EO
Revision:	Final	**Project manager:**	Colleen Taylor
Date:	February 2025	**Prepared by:**	Marjorie Eisert
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Contents

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Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
BLM	Bureau of Land Management
BSA	biological survey area
BUOW	burrowing owl
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CMBC	Circle Mountain Biological Consultants
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
DETO	desert tortoise
EFH	essential fish habitat
ESA	Endangered Species Act
HCP	habitat conservation plan
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
MCC	motor control center
MGS	Mohave ground squirrel
NRCS	Natural Resources Conservation Service
PG&E	Pacific Gas and Electric Company
RTGS	round-tailed ground squirrel
SSC	species of special concern
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service

1. Introduction

Pacific Gas and Electric Company's (PG&E's) S-238 Hinkley Compressor Station Electrical Upgrades Project (project) will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. All construction will occur within the boundaries of the fenced station. The project is scheduled to mobilize in approximately April 2025 and be completed in approximately February 2027. Ground disturbing activities are expected to occur over approximately 60 work days in May 2025 to July 2025.

The station's existing electrical power switchgear and motor control centers (MCCs, or load center) will be replaced or modified and connecting conduit and cable will be installed between the switchgear and MCC locations (Figure 1a). Most of the work will not require ground disturbance; equipment modification will occur within buildings, on existing infrastructure, or cable will be replaced in pre-existing conduit. Other equipment replacement, modification or installation will not be ground disturbing. A portion of the station's existing staging area will be used for project staging. Temporary generators on trailers will power the station during construction when electric equipment connecting with the permanent generators is deenergized during specific construction activities. After the upgrade is complete, the temporary generator equipment will be removed.

Ground-disturbing work will be the excavations for replacement of 4 outdoor MCC foundations and one load center removal that will be replaced with a new MCC. Four trenches will be made in the work area to install approximately 200 feet of new conduit (Figure 1b). The footprint for each of the MCCs will average approximately 150 square feet. The Auxiliary Load Center No. 1 will be removed or retired in place as part of the project. Approximately 0.055 acre of ground disturbance will occur from construction of the proposed project in the highly disturbed areas within the station (Table 1).

Table 1. Estimated Ground Disturbance

Project Component	Ground Disturbing Construction Activity	Approximate Disturbance
MCC-2	Excavate existing equipment foundation and replace.	319 ft^2 (0.0073 acre)
MCC-3	Excavate existing equipment foundation and replace.	319 ft^2 (0.0073 acre)
MCC-6	Excavate existing equipment foundation and replace.	319 ft^2 (0.0073 acre)
MCC-9	Excavate existing equipment foundation and replace.	319 ft^2 (0.0073 acre)
Auxiliary Load Center No.1	Remove existing foundation, or retire in place.	319 ft^2 (0.0073 acre)
MCC-5 Conduit	Trench for conduit installation.	48 ft^2 (0.0011 acre)
MCC-6 Conduit	Trench for conduit installation.	252 ft^2 (0.0058 acre)
MCC-7 and MCC-8 Conduit	Trench for conduit installation.	168 ft^2 (0.0039 acre)
MCC-9 Conduit	Trench for conduit installation.	332 ft^2 (0.0076 acre)
	Total	2,395 ft^2 (0.055 acre)

ft^2 = square foot (feet)

The purpose of this Biological Resources Technical Report is to provide the results of a background review and reconnaissance-level and species-specific surveys of the project area. This report includes a review of relevant databases and literature, presents the results of reconnaissance-level and protocol-level field surveys, and analyzes potential project impacts on biological resources at this project location.

2. Project Location

Hinkley Compressor Station is a staffed facility located at 35863 Fairview Road in the community of Hinkley, California, in San Bernardino County. The main station entrance on Fairview Road is approximately 1 mile south of State Route 58 (refer to Figure 2). The station is approximately 1 mile west of the city limits of the City of Barstow. The fenced station occupies approximately 64 acres on an approximately 160-acre parcel adjacent to Community Boulevard at Fairview Road.

3. Methods

3.1 Survey Areas

Prior to conducting field surveys, a biological survey area (BSA) was identified. The BSA is defined as the area where biological surveys were conducted and includes the project area, the entire station, and adjacent areas to the station where vegetation exists. The project area is defined as the area that may be directly affected by the proposed project, including temporary and permanent impacts, and includes the work area, the staging area, and the internal paved station access road. The entire station and the area outside of the station are included in the BSA to determine if any special-status species occur there and for potential indirect effects. The BSA covers the approximately 64-acre station and includes a 600-foot-wide buffer[1] around the project area (Figure 3). The work area represents the maximum extent of construction activities. Ground-disturbing activities are only anticipated to occur at locations within the work area as identified on Figure 3 and detailed in Table 1. The 1,000-foot area beyond the project work area and staging area was analyzed for land cover types and vegetation communities as shown in Section 4.1.

3.2 Preliminary Agency Consultation

Prior to conducting surveys for special-status species, PG&E consulted with the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) to provide the proposed methodology for conducting protocol surveys for the desert tortoise (DETO) (*Gopherus agassizii*) (CDFW and USFWS), Mohave ground squirrel (MGS) (*Xerospermophilus mohavensis*) (CDFW), and burrowing owl (BUOW) (*Athene cunicularia*) (CDFW). Copies of these communications, described in the following list, are included in Appendix A.

- A description of the project was sent to Brandy Woods/CDFW from Virginia Strohl/PG&E via email on March 22, 2024. On March 28, 2024, Brandy Woods facilitated a Teams call to discuss PG&E's proposed protocol-level surveys for DETO, MGS and BUOW for the project. Participants included Brandy Woods/CDFW, Virginia Strohl/PG&E, Julia Karo/CDFW, Marlee Poff/CDFW, Sharon Dougherty/Circle Mountain Biological, and Marjorie Eisert/Jacobs. The results of the call confirmed that DETO surveys will be conducted following the USFWS 2019 protocol, including zone-of-influence surveys. MGS trapping was modified because the project area is located within an established compression station that has been active for many decades and little suitable habitat is present for MGS. Trapping within the station was confined to an area less than 2 acres along the western edge of the facility with potentially suitable habitat for MGS. Most of the trapping effort would occur in vegetated areas to the west, south, northwest, northeast, and east of the facility. Burrowing owl surveys would consist of a focused habitat evaluation, surveys at 100-foot intervals throughout the site and within a 500-foot buffer area, along with four breeding season surveys.
- Virginia Strohl/PG&E provided the proposed survey methodology that was discussed during the March 28, 2024, Teams call for protocol surveys for the DETO, MGS, and BUOW to Julia Karo and Brandy Wood at CDFW via email dated April 10, 2024. Julia Karo/CDFW replied via email on April 10, 2024, approving the survey methodology for DETO, MGS, and BUOW.
- On April 10, 2024, Virginia Strohl/PG&E provided the proposed survey methodology for protocol surveys for DETO via email to Brooke Su at USFWS. Brooke Su/USFWS replied via email on April 11, 2024, approving the survey methodology for DETO.

[1] The 600-foot buffer around the project area was used for the desert tortoise, burrowing owl, and Mohave ground squirrel surveys. Botanical surveys used a 100-foot buffer around the project area because plants are sessile.

3.3 Literature and Database Review

Literature and database reviews were conducted to investigate the potential presence of sensitive biological resources, special-status species, and critical habitat within the study area and to inform field surveys. The resources considered within this report include the following:

- Sensitive Vegetation Communities and Habitats
  - Sensitive vegetation communities/habitats identified in local or regional plans, policies, or regulations, or designated by CDFW or USFWS
  - Areas that provide habitat for locally unique biotic species/communities (for example, desert washes, dunes, sand flats)
  - Habitat that contains or supports rare, endangered, or threatened wildlife or plant species as defined by CDFW and USFWS
  - Habitat that supports CDFW Species of Special Concern (SSC)
  - Areas that provide habitat for rare or endangered species and that meet the definition in California Environmental Quality Act (CEQA) Guidelines Section 15380
  - Existing game and wildlife refuges and reserves
  - Wetlands and streams
- Special-Status Species
  - Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) (50 Code of Federal Regulations [CFR] Section 17.12 [listed plants], 17.11 [listed animals], and various notices in the *Federal Register* [proposed species])
  - Species that are candidates for possible future listing as threatened or endangered under the federal ESA (61 *Federal Register* Section 40, February 28, 1996)
  - Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 California Code of Regulations Section 670.5)
  - Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.)
  - Species that meet the definitions of rare and endangered under CEQA; CEQA Guidelines Section 15380 provides that a plant or animal species may be treated as “rare or endangered” even if not on one of the official lists
  - Plants considered by the California Native Plant Society (CNPS) to be “rare, threatened, or endangered in California” (California Rare Plant Rank 1A, 1B, 2A, and 2B), as well as California Rare Plant Rank 3 and 4 plant species
  - Species designated by CDFW as Fully Protected or as SSC
  - Species protected under the federal Bald and Golden Eagle Protection Act
  - Birds of Conservation Concern or Watch List species
  - Bats considered by the Western Bat Working Group to be “high” or “medium” priority (Western Bat Working Group 2024)

- Migratory Birds
  - Most birds without a status designation are protected under the Migratory Bird Treaty Act (MBTA), which implements a series of international treaties that provides migratory bird protection; the MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds, and the act provides that it is unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird" (16 United States Code Section 703).

To determine the potential occurrence of special-status species within the study area, a search was conducted using the California Natural Diversity Database (CNDDB) for documented occurrences within 5 miles of the project area (CDFW 2024a). All occurrences identified from the search are included in Table 2 with locations identified on Figure 4.

In addition, the following databases and other sources were used to compile information on the potential biological resources present within the BSA:

- The USFWS Information on Planning and Consultation (IPaC) (USFWS 2024a) species list tool was queried for the study area identifying potentially occurring federally listed species and critical habitats.
- CNPS's Inventory of Rare and Endangered Plants of California database was searched for special-status plant species within the Hinkley U.S. Geological Survey (USGS) 7.5-minute quadrangle, which encompasses the study area (CNPS 2024).
- The National Wetlands Inventory database (USFWS 2024b) was reviewed for the presence of waters and wetlands and to identify suitable habitat for special-status amphibians.
- CDFW VegCAMP program was searched for sensitive habitats mapped in the BSA within 1,000 feet of the project area (CDFW 2024b).
- National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) West Coast Region Protected Resource App mapping tool (NOAA Fisheries 2024aN) was reviewed.
- NOAA Fisheries Essential Fish Habitat (EFH) mapper (NOAA Fisheries 2024b) was reviewed.
- Aquatic habitats within a 3-mile radius were identified using NWI maps, topographic maps, and aerial imagery (Google Earth Pro, National Agriculture Imagery Program, and ESRI World Imagery, and USGS 7.5-minute quadrangle maps of the area) to evaluate the potential for special-status amphibians and fish to occur in the study area.

The CNDDB and CNPS search for special-status species typically includes nine USGS 7.5-minute quadrangle maps for a project located within a single quadrangle: the quadrangle that covers the project footprint and the eight quadrangles that surround the project quadrangle. The nine 7.5-minute USGS quadrangle maps in the project vicinity include: Hinkley, Barstow, Barstow SE, Twelve Gauge Lake, Lockhart, Water Valley, Bird Spring, Mud Hills, Wild Crossing, and Hodge. The CNDDB search was further refined to a 5-mile buffer around the project footprint. The USFWS IPaC species list was generated for the project study area. The National Marine Fisheries Service species were generated using the NOAA Fisheries West Coast Region Protected Resource App mapping tool and NOAA Fisheries EFH mapper.

Other information sources consulted to determine which special-status species or sensitive habitats could potentially occur in the project footprint included the following:

- Natural Resources Conservation Service (NRCS) Web Soil Survey, to obtain information about soils in the BSA (NRCS 2024)
- Hinkley Groundwater Remediation Project Habitat Conservation Plan (HCP), to obtain information about covered species, covered activities, and conservation measures that are implemented during groundwater remediation activities at the site (PG&E 2017)
- Observations made during biological surveys and monitoring conducted while implementing groundwater remediation activities at the site (V. Strohl, personal communication, August 7, 2024)

- U.S. Bureau of Land Management (BLM) Areas of Critical Environmental Concern (ACEC),to determine if they are present in the project area and BSA
- Desert Renewable Energy Conservation Plan Land Use Plan Amendment, to obtain information regarding unique landscape features, rare vegetation types, and special-status species and habitats within the BSA (BLM 2016)
- Aerial photographs

Table 2. California Natural Diversity Database Occurrences within 5 Miles of the Study Area

Occ #	Presence	Date (YYYYMMDD)	Location	Description
Arroyo Toad (Anaxyrus californicus)				
130	Presumed Extant	19490416	Along Mojave River, about 4 miles southeast of Hinkley Post Office, and 6 mi west of Barstow Post Office	Digging site for American badger.
Mojave fringe-toed lizard (*Uma scoparia*)				
38	Presumed Extant	20100816	South of Mojave River, 1 mi north of Depue Airport, 1 mi west of Lenwood, 7 mi west-southwest of Barstow, San Bernardino County	Mapped to UTM coordinates.
39	Presumed Extant	20100610	Vicinity of Mojave River, 2 mi north-northwest of Depue Airport, 3 mi west-northwest of Lenwood, 9 mi west of Barstow, San Bernardino County	Mapped to UTM coordinates.
Desert Tortoise (*Gopherus agassizii*)				
1	Presumed Extant	20070412	Fremont-Stoddard; Fremont Valley south to the vicinity of Adelanto and Hwy 14 east to Calico Mountains, west Mojave Desert	Largest of 4 primary populations in Calif. In 1977, estimated densities were 20 to >250 tortoises/square mi. As of 1987, evidence suggests major declines in estimated density in most areas.
97	Presumed Extant	20070518	Within 1 mi northwest of the junction of Yellowstone Road and Hwy 58, Hinkley	2 adults observed.
98	Presumed Extant	20070518	Within 1 mi northwest of the junction of Yellowstone Road and Hwy 58, Hinkley	1 adult observed.
99	Presumed Extant	20070320	Within 1 mi west-southwest of the junction of Yellowstone Road and Hwy 58, Hinkley	1 adult observed.
100	Presumed Extant	20070320	Within 1 mi southwest of the junction of Yellowstone Road and Hwy 58, Hinkley	1 adult observed at a burrow site.
103	Presumed Extant	20070505	Within1 mi southwest of the junction of Old Hinkley Road and Frontier Road, Hinkley	2 adults observed, 1 near a burrow site.
104	Presumed Extant	20070521	Within 1 mi southeast of the intersection of Valley View Road and Alcudia Road, Hinkley	1 adult observed at a burrow site.

Occ #	Presence	Date (YYYYMMDD)	Location	Description
105	Presumed Extant	20070417	Within 1 mi northeast of the intersection of Indian Wells Road and Hwy 58, Hinkley	1 adult observed.
187	Presumed Extant	20070415	Southwest side of Mt General	1 adult observed.
Burrowing Owl (Athene cunicularia)				
888	Presumed Extant	20070315	North side of Woods Avenue, within 1 mi east of the intersection of Lenwood Road and Sun Valley Drive, Lenwood	2 adults observed at the burrow site.
1037	Presumed Extant	20070323	Southwest of Hinkley, within 1 mi southwest of the Junction of Valley View Road & Frontier Road	Description not available.
1038	Presumed Extant	20070320	Southwest of Hinkley, within1 mi west-northwest of the junction of Valley View Road & Frontier Road	1 adult seen at an old tortoise burrow and flushed from site.
1039	Presumed Extant	20070518	Within 1 mi east-northeast of Barstow-Bakersfield, Hwy 58 at Wagner Road, about 3 mi west-southwest of Hinkley PO	Burrow site with recent sign (whitewash and pellets).
1040	Presumed Extant	20070326	West of Hinkley, along Cook Road, south of Hwy 58; within 1 mi west of the junction of Valley View Road and Frontier Road	2 adults observed at burrow site.
1660	Presumed Extant	20100607	Within1 mi northwest of Green Desert Drive at Rock Springs Avenue, Barstow	1 adult and a burrow (opening due west).
1661	Presumed Extant	20100930	Within 1 mi southwest of Green Desert Drive at Rock Springs Avenue, Barstow	1 adult and a burrow.
American Badger (*Taxidea taxus*)				
419	Presumed Extant	20070509	Along Hwy 58, about Within 1 mi west of Hwy 58 at Valley View Road, about 3 mi west of Hinkley	Description not available.
Mohave Ground Squirrel (Xerospermophilus mohavensis)				
277	Presumed Extant	19900430	At junction of Lenwood Road and Community Boulevard, Hinkley Valley	Description not available.
456	Presumed Extant	19490614	East of Depue Airport, about 1 mi south-southwest of Lenwood, 5 mi east-northeast of Hodge	1 female collected.
493	Presumed Extant	20120223	Mountain View Road about 1 mi north of the Community Boulevard intersection in Hinkley	1 adult observed foraging and resting near and inside burrow.
Chaparral Sand-Verbena (*Abronia villosa* var. *aurita*)				
31	Presumed Extant	19761021	About 4 mi west-northwest of Barstow, north of Hwy 58 on Lenwood Road	Description not available.

Occ #	Presence	Date (YYYYMMDD)	Location	Description
Beaver Dam Breadroot (*Pediomelum castoreum*)				
19	Presumed Extant	19370502	6 mi west of Barstow	Description not available.
20	Presumed Extant	19220512	On Victorville Road, 3 mi southwest of Barstow	Description not available.
Mojave Monkeyflower (*Diplacus mohavensis*)				
46	Presumed Extant	19410427	About 6 mi west of Barstow	Description not available.

Hwy = Highway (State Route)
LSU = Louisiana State University Museum of Natural History
mi = mile(s)
PO = Post Office
UTM = Universal Transverse Mercator

3.4 Field Survey

A reconnaissance-level field survey was conducted on April 12, 2024, to assess habitats present within the BSA to determine suitability for special-status species and/or sensitive and regulated habitats.

Habitat variables assessed incorporated the presence of nearby habitats, including potential for breeding and non-breeding habitats for special-status amphibians and reptiles; underground refugia in the form of burrows; potential nesting and foraging habitat for avian species; and vegetation communities, including those commonly associated with special-status plants. All habitat features associated with the presence of special-status species were recorded within the BSA. During biological surveys, incidental species observations were noted and are discussed in Section 5.1.1.

Based on the results of the reconnaissance survey, protocol-level surveys for DETO, MGS, and BUOW were planned for the study area as described below by species. A rare plant survey and habitat assessment to determine the potential for bat species occurring in the project area also were identified for this project.

3.4.1 Desert Tortoise

DETO surveys were conducted according to the USFWS protocol for presence-absence surveys (USFWS 2019). On March 12 and March 13, 2024, previously approved desert tortoise Authorized Biologists Sharon Dougherty and Susan Seville from Circle Mountain Biological Consultants (CMBC) conducted a protocol-level survey for DETO of all areas with unpaved surfaces inside the station fence line (except in the area to the east occupied by buildings) (CMBC 2024a). The survey consisted of transects spaced at 10-meter (30-foot) intervals per the USFWS (2019) protocol for DETO presence-absence surveys. In addition, at the request of the CDFW, six zone-of-influence transects 100 feet apart from the project area to the east, north, west, and south were surveyed where possible (Figure 5). The area north of Community Boulevard was not considered appropriate habitat because it is agricultural, and a parcel of private property to the west was excluded because it was not possible to get the owner’s permission to access. Refer to Appendix B for additional information.

3.4.2 Mohave Ground Squirrel

Because the project area is located within a station that has been active for many decades, little suitable habitat was present for MGS. The only potentially suitable area comprising less than 2 acres was located along the western edge of the project area. Given the small size of the area, the area for live trapping was limited within the station. Protocol trapping surveys were conducted between April 16, 2024, and June 7, 2024 (CMBC 2024b) for the BSA. CDFW *Mohave Ground Squirrel Survey Guidelines* (January 2003;

revised July 2010, October 2023) were followed and required that visual surveys of the project site be carried out between March 15 and April 15. Visual surveys were carried out concurrent with focused surveys for desert tortoise and habitat assessment for burrowing owl on April 12, 2024. A trapping grid including 100 Sherman live traps was designed based on the best available habitat surrounding the project area. This modification to the protocol was approved by CDFW. Ten trail cameras were placed around the trapping grid (Figure 6).

Three trapping sessions were conducted per the protocol by previously approved MGS Authorized Biologists Sharon Dougherty and Sarah Teed from CMBC and ran for 5 consecutive days during each of the three trapping periods: (1) March 15 through April 30; (2) May 1 through May 31; and (3) June 1 through July 15. The trapping sessions were conducted with at least two weeks apart between them from April 16, 2024 to April 20, 2024, May 3 to 7, 2024, and June 3 to 7, 2024. Captured MGSs were marked using a non-toxic permanent marking pen, as directed by the protocol. All measures to ensure the health and welfare of MGS provided in the survey guidelines were followed. Refer to Appendix C for additional information.

3.4.3 Rare Plants

A protocol-level floristic survey was conducted within the 83-acre botanical survey area on April 15, 2024 and April 16, 2024 (Figure 8). The survey conformed to the guidelines of the CDFW (2009), the USFWS (2011a), and the CNPS (2001) survey protocols. The survey was conducted by Balk Biological botanist Michelle Balk. Refer to Appendix D for additional information.

3.4.4 Burrowing Owl

Burrowing Owl Consortium guidelines (1993) outline survey methods to assess the presence of BUOW habitat, including a 500-foot buffer zone around the project site. Pedestrian surveys were conducted within this project buffer, spaced to provide 100 percent visual coverage of the ground surface, with transects spaced no more than 30 meters (100 feet) apart. The project site and BSA were searched for burrows as well as human-made structures, such as culverts, debris piles, or openings beneath cement or asphalt pavement, that could support BUOW. A habitat assessment for BUOW was conducted on March 12, 2024, by CMBC biologists Sharon Dougherty and Susan Seville concurrent with the DETO survey (CMBC 2024a). The transects followed for the DETO survey were narrower (10-meter or 33-foot transects) than the 30-meter (100-foot) transect lines required by the BUOW protocol (Burrowing Owl Consortium 1993) and transects within the 150-meter (500-foot) buffer coincided with the zone-of-influence transects for desert tortoise (Figure 7). BUOW transects were extended to include the 600-foot buffer zone to be concurrent with DETO survey area. No suitable burrows or habitat were identified during the habitat assessment. Although no suitable habitat was identified, CDFW recommended continuing the BUOW survey protocol with breeding season surveys, which were conducted during the BUOW breeding season.

Four survey visits were conducted approximately 3 weeks apart during the peak of the breeding season from April 15 to July 15 (May 15, 2024; June 5, 2024; June 26, 2024; and July 15, 2024) by CMBC biologists Karyn Sernka and Susan Seville. The surveys concentrated on three burrows with the most potential for supporting BUOW but which did not contain signs of active use during the habitat assessment (Figure 7). BUOW surveys were conducted either from 2 hours before to 1 hour after sunset, or 1 hour before to 2 hours after sunrise. All owl sightings and territories were mapped if identified during the survey. All breeding behavior and nest information were noted. Refer to Appendix E for additional information.

3.4.5 Bat Species

An assessment of suitability for bat roosting and maternity colonies for structures within the station was completed. On July 10, 2024, a site visit was conducted to assess the potential for bats to roost at the site and to look for any maternity colonies that may be present. Bat biologist Kay Nicholson of Jacobs walked through all buildings at the station and examined the walls, ceilings, and internal structures for potential locations that could be used by roosting bats. All electrical cabinets, sheds, towers, and trees were examined for bats and potential roosting locations. The biologist searched for evidence (staining, guano) that bats roost in any of these locations. Refer to Appendix F for additional information.

4. Environmental Setting

4.1 Vegetation Communities and Land Cover

The project area is located within the station, occupied by numerous buildings, housing natural gas generators, offices, and associated infrastructure. The entire project area is disturbed from previous work activities associated with the station. The project area is almost completely denuded of any vegetation except for ornamental landscape plantings along the access road and within the staging area where large ornamental trees (athel [*Tamarix aphylla*], ornamental elm [*Ulmus* sp.], and ornamental pine [*Pinus* sp.]) and shrubs exist around an employee recreation area. Within the station, there is an approximately 2-acre area on the western fenceline that has native vegetation consisting of Allscale Scrub with occasional creosote bushes (*Larrea tridentata*).

Outside of the station, the BSA consists of a mixture of developed areas and degraded Creosote Brush Scrub and degraded Allscale Scrub vegetation communities. The land within the BSA is owned by PG&E and other private property owners and includes a rural residence, a gun club, PG&E office buildings and PG&E groundwater remediation facilities.

Land use in the vicinity of the BSA is limited primarily to agricultural field crops to the east and undeveloped and disturbed habitat surrounding the station. Developed areas consisted of scattered rural residential areas, farm buildings, county and private paved roadways, and private unpaved roadways within the vicinity of the study area.

Prior to field surveys, the CDFW VegCAMP database for the California Deserts and Biogeographic Information and Observation System as part of the CNDDB (CDFW 2024a; 2024b) was reviewed to determine potential habitat occurrence within the BSA. During the field survey, these data were further refined to better characterize habitat within the BSA and to evaluate suitable special-status species habitat. The project site is located within the highly developed station, with little native habitat present. Allscale Scrub habitat dominated by allscale (*Atriplex polycarpa*) is found within the study area but outside of the project area, including a 2-acre area on the western fenceline of the facility, south of the entrance, as well as in adjacent areas outside of the station. The 2-acre area in the western section of the station appears to have been a borrow pit and is low-lying compared to the rest of the site, with some seasonal flooding. Adjacent lands are a mix of Allscale Scrub and Creosote Bush Scrub vegetation communities, with more creosote bush (*Larrea tridentata*) at slightly higher elevations.

The vegetation communities and land cover types within a 1,000-foot buffer of the project area consist of developed areas, degraded Creosote Brush Scrub and degraded Allscale Scrub vegetation communities., and a small area of Desert Dune vegetation community to the southeast most then 700 feet from the project area. Refer to Figure 8.

The following subsections present a discussion of each of these land cover types within 1000 feet, with specific species information gathered during rare plant surveys within 100 feet of the station.

4.1.1 Developed Areas

Developed Areas refer to areas that have been built on or otherwise physically altered to an extent that native vegetation communities are no longer supported. This land cover type generally consists of semipermanent structures, homes, parking lots, pavement or hardscape, and sometimes landscaped areas that require maintenance and irrigation (for example, ornamental greenbelts). Developed areas on the outside of the station within the botanical survey buffer include the PG&E administrative offices, residences, and a gun club, as mentioned previously.

4.1.2 Allscale Scrub

The majority of the vegetation in the area outside of the station can be classified as Allscale Scrub. This vegetation community is common in low-lying, sandy-soil areas of the Mojave Desert, particularly the western Mojave. It is common on low-lying areas such as alluvial fans, edges of playas, and along washes. This community type is dominated by allscale (allscale comprises at least 2 percent of the absolute cover) but may contain other species of shrubs for up to 50 percent of the relative cover (Sawyer et al. 2009). Allscale Scrub within the 100-foot rare plant survey buffer around the station is dominated by allscale, with almost no other shrub species present. In openings between shrubs, annual species may be present. These annual species were uncommon but included gilias (*Gilia* spp.), buckwheat (*Eriogonum* spp.), comb seed (*Pectocarya* spp.), fiddleneck (*Amsinckia* spp.), annual bursage (*Ambrosia acanthicarpa*), and snakehead (*Atriplex coulteri*). This Allscale Scrub habitat varies from moderately high quality south and west of the station, to low quality north and northeast of the station, including the 2-acre parcel west of the project site within the station, where disturbance was more recent and weeds such as London rocket (*Sisymbrium irio*), brome grasses (*Bromus* spp.), and prickly lettuce (*Lactuca serriola*) were common.

4.1.3 Creosote Bush Scrub

Creosote Bush Scrub is also present adjacent to the station in the 100-foot survey buffer. It is most accurately keyed to the Creosote Bush-White Bursage-Allscale Scrub Association (of the Creosote Bush-White Bursage Alliance) (Sawyer et al. 2009). The Creosote Bush-White Bursage vegetation alliance must contain at least 1 percent absolute cover of creosote bush and 1 percent absolute cover of white bursage, with these two species exceeding twice the cover of other shrub species (with a few exceptions). This scrub alliance is common throughout a variety of mainly upland habitats but also may be common in minor washes and rills. Around the station project site in the 100-foot buffer, allscale also is common in this community, allowing a further classification of this community into the Creosote Bush-White Bursage-Allscale Scrub Association. Adjacent to the project site outside of the station, this scrub association is disturbed, with red-stemmed filaree (*Erodium cicutarium*) and Mediterranean schismus (*Schismus barbatus*), although native species also are present in high quantities and diversity. Common native species included evening primroses (*Eremothera/Oenothera* spp.), blue dicks (*Dichelostemma capitatum* ssp. *pauciflorus*), tick-seed (*Coreopsis* spp.), rigid spiny-herb (*Chorizanthe rigida*), and desert plantain (*Plantago ovata*).

4.1.4 Desert Dunes

Desert Dunes are located approximately 0.16 mile south of the station, north of the Mojave River where aeolian (wind-blown) sands have accumulated. Aeolian sand formations in this area range from sparsely to moderately vegetated.

o nant p ant sp c s charact r st cs o th s co un t nc u our n sa t ush (*Atriplex canescens*), allscale, white bursage, California jointfir (*Ephedra californica*), mormon tea (Ephedra viridis), and desert dandelion (*Malacothrix glabrata*). However, vegetative cover within this community varies substantially from year to year, generally reflecting disturbances from major flood and wind events (California Regional Water Quality Board 2013).

Soils within the study area are variable, but generally include sands, loamy sands, and loams (NRCS 2024).

The site is relatively flat, with elevations on the subject property ranging from approximately 681 meters (2,233 feet) at the southwest corner to approximately 670 meters (2,200 feet) at the northeast corner, and the general slope is less than 2 percent.

4.2 Aquatic Resources

There are no wetlands or aquatic resources present within the project area (USFWS 2024b) except for man-made lined evaporation ponds within the station and north of the project area. There are no watercourse crossings associated with the proposed project and no watercourse crossings will be affected by construction activities. Surface waters in the project area flow approximately 1 mile south to the Mojave River.

Historic agricultural pumping resulted in a drop in groundwater levels in the Hinkley Valley. The depth to groundwater under the compressor station is approximately 80 feet below ground surface (Alisto 2014), which is too deep to support wetlands or other surface vegetation.

4.3 Native Wildlife Corridors and Nursery Sites

The BSA and project area are located within an area designated as Fremont-Kramer to Ord-Rodman Linkage for desert tortoise (USFWS 2011b; Figure 9). Desert tortoise linkages are areas that connect conservation areas where desert tortoises can live and reproduce.

Other than the DETO linkage, there are no native wildlife corridors or nursery sites present within the 5-mile buffer outside of the BSA or within the BSA. The station, including the project area, is enclosed with fencing and has inhibited almost all movement through the area. Species that might move across the project include small-sized mammals, such as California ground squirrel, and reptiles such as lizards. The project area is surrounded by disturbed habitat and existing agricultural uses that do not connect to any local wildlife corridors. In addition, the project area is subject to a high level of ongoing human disturbance and the surrounding area consists of public roadways that act as inhibitors to wildlife movement.

5. Results

5.1 Wildlife Habitat Within the BSA

There is no natural habitat within the fenced area of the station except for the approximately 2-acre Allscale Scrub community on the west side of the station, south of the entrance. Construction and ongoing operation of the station results in continued disturbance and prohibits the development of natural habitat within the fenced station. Outside of the fenced area of the station, some natural habitat exists within the BSA; areas of Creosote Bush Scrub and Allscale Scrub are located to the west and east of the station, and a desert dune area is found approximately 700 feet to the southeast of the station fenceline; however, even these areas surrounding the station have been subject to development and disturbance throughout the years.

Common wildlife species identified during the survey are listed in Table 3. Most are common desert species or species typically associated with developed areas, but several waterbirds were present in the vicinity of the evaporation ponds on the north part of the facility. During the survey, active common raven (*Corvus corax*) nests were observed on the station and within the BSA, and European starlings (*Sturnus vulgaris*) were observed actively nesting on the station. Active California ground squirrel burrows were identified in the BSA northwest and southeast of the station.

Table 3. Common Wildlife Species Observed during Surveys

Scientific Name	Common Name	Location Observed
Reptiles		
Uta stansburiana	Common side-blotched lizard	Station; BSA
Cnemidophorus tigris	Western whiptail	BSA
Dipsosaurus dorsalis	Desert iguana	Station; BSA
Gambelia wislizenii	Long-nosed leopard lizard	Station; BSA
Sceloporus magister uniformis	Desert spiny lizard	BSA
Birds		
Egretta thula	Snowy egret	Station
Anas cyanoptera	Cinnamon teal	Station
Anas strepera	Gadwall	Station
Himantopus mexicanus	Black-necked stilt	Station
Recurvirostra americana	American avocet	Station
Streptopelia decaocto	Eurasian collared dove	Station; BSA
Zenaida macroura	Mourning dove	Station; BSA
Sayornis saya	Black phoebe	Station; BSA
Corvus corax	Common raven	Station; BSA
Mimus polyglottos	Northern mockingbird	BSA
Anthus rubescens	American pipit	Station; BSA
Sturnus vulgaris	European starling	Station; BSA
Spizella breweri	Brewer's sparrow	BSA
Zonotrichia leucophrys	White-crowned sparrow	BSA
Sturnella neglecta	Western meadowlark	BSA
Falco sparverius	American kestrel	BSA

Scientific Name	**Common Name**	**Location Observed**
Accipter cooperii	Cooper's hawk	Station; BSA
Buteo jamaicensis	Red-tailed hawk	Station; BSA (flyover)
Mammals		
Lepus californicus	Black-tailed hare	Station; BSA
Otospermophilus beecheyi	California ground squirrel	BSA
Ammerspermophilus leucurus	Antelope ground squirrel	Station; BSA
Dipodomys sp.	Kangaroo rat	BSA
Neotoma lepida	Desert wood rat	Station; BSA
Vulpes macrotis	Desert kit fox	BSA (camera)

5.2 Special-Status Species Habitat Assessment

Special-status species identified during the database and literature review were evaluated to determine their potential to occur within the BSA based on known or expected geographic range, nearby occurrence records, and the presence of known or expected habitat within or near the study area. A full summary of the special-status species identified, along with a potential to occur in the BSA and in the project area is provided in Table 4.

A species was considered special status if it met at least one of the following criteria:

- Species that are listed, proposed for listing, or candidates for listing as threatened or endangered under the federal ESA (50 CFR 17.11, 76 *Federal Register* 66370)
- Species that are listed or proposed for listing by the state of California as threatened or endangered under CESA (Fish and Game Code Sections 2050 et seq., 2062, 2067, and 2068)
- Species listed by CDFW as SSC
- Species listed by CNPS as lists 1 through 4 in the current online version of its Inventory of Rare and Endangered Plants of California (CNPS 2024) or because they meet the definition of "rare" or "endangered" under CEQA Guidelines Section15125 (c) and Section 15380.

An analysis of the likelihood for each species to occur in the BSA was conducted based on species ranges, historic observations, contemporary sightings, and presence of suitable habitat elements. The BSA may be outside of the known range of some species or it may be within the geographic range for a certain species but suitable habitat is absent from the BSA. For this analysis, potential special-status species that occur in the general vicinity of the project, and for which the BSA may provide habitat, were determined to have a moderate or higher potential to occur and are discussed in greater detail. Those species with a low likelihood of occurrence are not discussed further but are included in Table 4.

5.2.1 Special-Status Plants

Special-status plants (endangered, threatened, rare, or California Rare Plant Rank [CRPR]) occurring or potentially occurring within the station and the 100-foot buffer are discussed in Table 4. The CNDDB database query identified three extant special-status plants within 5 miles of the study area (Figure 4). These are Beaver Dam breadroot (P*ediomelum castoreum*), chaparral sand-verbena (*Abronia villosa* var. *aurita*), and Mojave monkeyflower (*Diplacus mohavensis*).

Table 4. Special-Status Species with Potential to Occur in the Study Area

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Plants				
Chaparral sand-verbena *Abronia villosa* var. *aurita*	Federal: None State: None CRPR: 1B.1 BLM: S[a]	Annual herb. Coastal scrub and mostly broad alluvial fans and benches. Sandy soils. Elevations from 260 to 5,250 feet.	January–August	**Unlikely to Occur.** No suitable habitat is present within the biological survey area (BSA). There is one reported CNDDB occurrence within 5-miles of the BSA. The occurrence reports a single collection recorded in 1976 (CDFW 2024). However, this occurrence is thought to be misidentified as the remaining collections for this species are from the coastal plain and low desert areas. Additionally, no species were observed during the 2024 floristic survey. Therefore, it was determined the species is unlikely to occur within the BSA.
Lane Mountain milk-vetch *Astragalus jaegerianus*	Federal: Endangered State: None CRPR: 1B.1 BLM: None	Perennial herb. Joshua Tree woodland and Mojavean Desert scrub. Shallow sandy soils within areas of exposed or partially exposed granitic bedrock. Elevations from 2,952 to 3,936 feet (ft)	April–June	**Unlikely to Occur.** The entire site is below the known elevational range of the species and there is no suitable habitat present within the survey area. Additionally, the species is not known to occur within 5 miles of the BSA (CDFW 2024). No species were observed during the 2024 floristic survey. Therefore, it was determined the species is unlikely to occur within the BSA.
Desert cymopterus *Cymopterus deserticola*	Federal: None State: None CRPR: 1B.2 BLM: S[a]	Perennial herb. Joshua Tree woodland and Mojavean Desert scrub with sandy substrates. From 2,066 to 4,920 feet.	March-May	**Unlikely to Occur**. Moderately suitable habitat is present within the western portion of the BSA. No plants were observed during the 2024 floristic survey. Additionally, the species is not known to occur within 5 miles of the BSA (CDFW 2024). Therefore, the species is unlikely to occur within the BSA.
Mojave monkeyflower *Diplacus mohavensis*	Federal: None State: None CRPR: 1B.2 BLM: S[a]	Annual herb. Joshua Tree woodland, Mojavean Desert scrub and sandy or gravelly places such as washes. From 1,968 to 3,936 feet.	April-June	**Unlikely to Occur.** No suitable habitat is present within the BSA. There is one reported CNDDB occurrence within 5-miles of the BSA. The occurrence reports a single individual collected in 1941 (CDFW 2024). Following the observation there has been significant urban development between the project site and reported occurrence, creating a potential dispersal barrier. Additionally, no species were observed during the 2024 floristic survey. Therefore, it was determined the species is unlikely to occur within the BSA.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Barstow woolly sunflower *Eriophyllum mohavense*	Federal: None State: None CRPR: 1B.2 BLM: S[a]	Annual herb. Saltbush scrub, Mojave Desert scrub and playas. From 1,650 to 3,148 feet.	March-May	**Potential to Occur.** The undeveloped western portion of the BSA outside of the Hinkley Compressor Station contains suitable scrub habitat for this species. No species were observed during the 2024 floristic surveys. This species has potential to occur outside of the project area but is absent from the project area.
Mojave menodora *Menodora spinescens* var. *mohavensis*	Federal: None State: None CRPR: 1B.2 BLM: S[a]	Perennial deciduous shrub. Mojavean desert scrub, and in areas with Andesite gravel on rocky hillsides and in canyons. From 2,263 to 6,560 feet.	April-May	**Unlikely to Occur.** No suitable habitat is present within the BSA. The species is not known to occur within 5 miles of the BSA (CDFW 2024). Additionally, no species were observed during the 2024 floristic survey. Therefore, the species is determined unlikely to occur within the BSA.
Spiny-hair blazing star *Mentzelia tricuspis*	Federal: None State: None CRPR: 2B.1 BLM: None	Annual herb. Sandy and or gravelly Mojavean desert scrub and desert washes. From 490 to 4,200 feet.	March-May	**Unlikely to Occur.** No suitable habitat is present within the BSA. The species is not known to occur within 5 miles of the BSA (CDFW 2024). Additionally, no species were observed during the 2024 floristic survey. Therefore, the species is determined unlikely to occur within the BSA.
Creamy blazing star *Mentzelia tridentata*	Federal: None State: None CRPR: 1B.3 BLM: None	Annual herb. Mojavean desert scrub in association with gravelly, rocky or sandy substrates. From 2,296 to 3,805 feet.	March-May	**Unlikely to Occur.** No suitable habitat is present within the BSA. The species is not known to occur within 5 miles of the BSA (CDFW 2024). Additionally, no species were observed during the 2024 floristic survey. Therefore, the species is determined unlikely to occur within the BSA.
Beaver Dam breadroot *Pediomelum castoreum*	Federal: None State: None CRPR: 1B.2 BLM: S[a]	Perennial herb. Joshua Tree woodland and Mojavean desert scrub within sandy washes and road cuts. From 2,000 to 5,002 feet.	April-May	**Unlikely to Occur**. No suitable habitat is present within the BSA. There are 2 reported CNDDB occurrences of the species within 5-miles of the BSA. The most recent occurrence reports specimens collected in 1937 (CDFW 2024). Following the observation significant urban/suburban development has created barriers between the project site and reported occurrence. No species were observed during the 2024 floristic survey. Therefore, it was determined the species is unlikely to occur within the BSA.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Parish's phacelia *Phacelia parishii*	Federal: None State: None CRPR: 1B.1 BLM: S	Annual herb. Mojavean desert scrub and clay or alkaline playas. From 1,771 to 3,936 feet.	April-May (June-July)	**Unlikely to Occur.** No suitable habitat is present within the BSA. The species is not known to occur within 5 miles of the BSA (CDFW 2024). Additionally, no species were observed during the 2024 floristic survey. Therefore, the species is determined unlikely to occur within the BSA.
California alkali grass *Puccinellia simplex*	Federal: None State: None CRPR: 1B.2 BLM: S[a]	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools. Elevations 5 to 3050 ft.	March-May	**Absent.** No suitable habitat is present within the BSA. The species is not known to occur within 5 miles of the BSA (CDFW 2024). Additionally, no species were observed during the 2024 floristic survey. Therefore, the species is determined unlikely to occur within the BSA.
Western Joshua tree *Yucca brevifolia*	Federal: None State: SC CRPR: None BLM: None	Perennial tree. Native to the southwestern United States (Arizona, California, Nevada, and Utah) and northwestern Mexico confined mostly to the Mojave Desert between 1,300 and 5,900 ft elevation.	March - June	**Absent**. No Joshua trees were observed during the 2024 floristic survey within the BSA.
Insects				
Monarch butterfly *Danaus plexippus*	Federal: FC State: None CDFW: None BLM: None	In spring and summer, habitat is open fields and meadows with milkweed. In winter, this species can be found on the coast of southern California and at high altitudes in central Mexico. Whether it is a field, roadside area, open area, wet area, or urban garden, milkweed and flowering plants are needed for monarch habitat. Adult monarchs feed on the nectar of many flowers, but they breed only where milkweeds are found.	NA	**Absent.** While the BSA is within range of the monarch butterfly, no suitable milkweed species were observed within the BSA during the field surveys and there are no documented occurrences within 5 miles of the BSA (CDFW 2024). They may be seen migrating through the BSA, but it is unlikely they would remain for foraging or breeding. Therefore, this species is determined absent from the BSA.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Amphibians				
Arroyo toad *Anaxyrus californicus*	Federal: E State: None CDFW: SSC BLM: None	This species is currently thought to be restricted to the headwaters of large streams that have persistent water from March to mid-June and also have shallow, gravely pools less than 18 inches deep adjacent sandy terraces. Breeding pools must be open and shallow with minimal current, and with a sand or pea gravel substrate overlain with sand or flocculent silt (Sweet 1989). Adjacent banks must provide open, sandy or gravely terraces with very little herbaceous cover for adult and juvenile foraging areas, within a moderate riparian canopy of cottonwood, willow, or oak. Heavily shaded pools are unsuitable for larvae and juvenile toads due to lower water and soil temperatures and poor algal mat development (Sweet 1992). Juveniles favor areas which remain damp and contain less than 10 percent cover (Sweet 1992). Adults use terraces in the 100-year flood zone, which may extend up to 100 m from the stream (Campbell et.al. 1996), Adults excavate shallow burrows on the terraces where they shelter during the day when the surface is damp or during longer intervals in the dry season.	NA	**Absent**. No suitable habitat is present within the BSA. Suitable habitat is present within the Mojave River, located approximately 1.3 miles south of the BSA. Despite the presence of evaporation ponds within the BSA, they do not support viable habitat for the species. There is one reported CNDDB occurrence approximately 1 mile southeast of the BSA. The occurrence reports one individual collected in 1949 (CDFW 2024). Following the 1949 observation, agricultural development and transportation corridors have created potential dispersal barriers between the project site and the Mojave River. Due to the absence of suitable habitat, this species is determined to be absent from the BSA.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Reptiles				
Southwestern pond turtle *Actinemys pallida*	Federal: PT State: None CDFW: SSC BLM: S[a]	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.	NA	**Absent.** No suitable habitat is present within the BSA. While the agricultural fields may provide marginally suitable upland habitat, there are no irrigation canals present within the BSA. Despite the presence of evaporation ponds within the BSA, they do not support viable habitat for the species. There are no reported CNDDB occurrences within 5-miles of the BSA (CDFW 2024). Due to the absence of suitable habitat this species is determined to be absent from the BSA.
desert tortoise *Gopherus agassizii*	Federal: T State: T CDFW: T BLM: None	Mojave and Sonoran deserts in southwestern Utah, southern Nevada, southeastern California, and western Arizona in the United States. Habitat includes creosote/cactus/shadscale scrub from sandy flats to rocky foothills, including alluvial fans, washes, and canyons where suitable soils for den construction might be found. It is found from near sea level to around 3,500 feet in elevation.	NA	**Unlikely to Occur**. There is no suitable habitat present within the project area. The entire project area consists of developed/disturbed habitat and is surrounded by a chain link fence. The unfenced and undeveloped western portion of the BSA, outside the Hinkley Compressor Station, potentially contains low quality habitat. There are nine reported CNDDB occurrences within 5-miles of the BSA (CDFW 2024). Protocol desert tortoise surveys performed during 2024 found no evidence of species within the BSA. Although desert tortoise are known to occur in the BSA, the project site is enclosed by fencing and precludes tortoise from entering. Therefore, this species is unlikely to occur within the project area.
Mojave fringe-toed lizard *Uma scoparia*	Federal: None State: None CDFW: SSC BLM: S[a]	Restricted to areas with fine, loose, windblown BSAnd including dunes, dry lakebeds, desert washes, riverbanks, sparse desert scrub habitats, and isolated pockets against hillsides.	NA	**Absent.** No suitable habitat is present within the BSA. Suitable habitat is present within the Mojave River, approximately 1.3 miles southeast of the BSA. There are two reported CNDDB occurrences of the species within 5 miles of the BSA. The closest occurrence reports multiple adults in 2010I (CDFW 2024). During the 2024 field surveys it was confirmed no aeolian sand deposits are present within the BSA. Due to the confirmed lack of suitable habitat the species is determined absent from the BSA.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Fish				
Mohave tui chub *Siphateles bicolor mohavensis*	Federal: E State: E CDFW: FP BLM: None	Endemic to the Mojave River basin. Prefers lake habitats, always associated with deep pools and slough-like areas, and do poorly in fast-flowing streams. Is adapted for harsh water qualities including alkaline waters and extreme temperatures.	NA	**Absent.** No suitable aquatic habitat is present within the BSA. CNDDB reports the species has been extirpated from the area as of 1992 (CDFW 2024). Therefore, it is determined this species is absent from the BSA.
Birds				
Golden eagle *Aquila chrysaetos*	Federal: None State: None CDFW: FP BLM: S[a]	Golden eagles can be found from the tundra, through grasslands, intermittent forested habitat and woodland-brushlands, and south to arid deserts and canyonlands. They're typically found in open country in the vicinity of hills, cliffs and bluffs. Golden eagles are known to be sensitive to human activity and are known to avoid developed areas.	NA	**Unlikely to Occur.** Marginal foraging habitat is present in the undeveloped scrub within outer portions of the BSA, though not preferred by the species. No suitable nesting habitat is present within the BSA. Due to the developed nature of the project site and lack of preferred suitable foraging habitat the species may be seen migrating through the BSA, but it is unlikely they would remain for foraging or breeding. Therefore, this species is unlikely to occur within the BSA.
Burrowing owl *Athene cunicularia*	Federal: None State: SC CDFW: SSC BLM: S[a]	Inhabits open, dry, nearly or quite level, grassland; prairie; desert floor; shrubland should be considered potential habitat if shrub cover is below 30%. In coastal Southern California, a substantial fraction of birds are found in microhabitats highly altered by humans, including flood control and irrigation basins, dikes, and banks, abandoned fields surrounded by agriculture, and road cuts and margins. In the western United States burrowing owls are only rarely known to construct their own burrows; strong association between burrowing owls and burrowing mammals, especially ground squirrels (Spermophilus spp.); however burrowing owls will also occupy human-made niches such as banks and ditches, piles of broken concrete, and even abandoned structure	NA	**Unlikely to Occur.** No suitable habitat is present within the project area. There is suitable foraging habitat adjacent to the BSA. There are 7 CNDDB-reported occurrences within 5-miles of the BSA. The 2 most recent occurrences each reported 1 adult and an active burrow in 2010(CDFW 2024). Protocol burrowing owl surveys were conducted in 2024 and reported a lack of evidence for the species within the BSA and surrounding area. No owls were observed during breeding season surveys conducted in 2024. Therefore, the species is unlikely to occur within the BSA.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Mountain plover *Charadrius montanus*	Federal: None State: None CDFW: SSC BLM: S[a]	Nest in shortgrass prairie, especially where blue grama, buffalo grass, and western wheat grass are dominant; and in grassy semidesert with scattered saltbush, sage, prickly pear, and yucca, at elevations ranging from 2,100 to 10,663 feet. They also nest in fallow or recently plowed agricultural fields and in overgrazed landscapes that mimic their natural shortgrass habitat. Mountain Plovers often nest around prairie-dog towns. During migration they may appear in almost any shortgrass habitat, including sod farms, playas, or tilled fields. Wintering birds also gather in tilled or burned farm fields, harvested alfalfa fields, alkaline flats, and coastal prairies in South Texas.	NA	**Unlikely to Occur**. No suitable habitat is present within the BSA. Despite the presence of evaporation ponds within the BSA, the banks of the ponds are lined with black plastic and the remainder of the area, around the complex of ponds, is covered in aggregate gravel and devoid of any vegetation. There are no CNDDB-recorded occurrences within 5 miles of the BSA (CDFW 2024). The species may be seen migrating through the BSA, but it is unlikely they would remain for foraging or breeding. Therefore, this species is unlikely to occur within the BSA.
Western snowy plover *Charadrius nivosus nivosus*	Federal: T State: None CDFW: SSC BLM: None	Found on sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting. Breeds primarily on coastal beaches above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Wintering snowy plovers are found on many of the beaches used for nesting as well as in human-made salt ponds, and on estuarine sand and mudflats.	NA	**Absent**. No suitable habitat is present within the BSA. Despite the presence of evaporation ponds within the BSA, the banks of the ponds are lined with black plastic and the remainder of the area, around the complex of ponds, is covered in aggregate gravel and devoid of any vegetation. There are no CNDDB-recorded occurrences within 5 miles of the BSA (CDFW 2024). Due to the lack of suitable habitat and developed nature of the project area the species is determined to be absent from the BSA.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Federal: T State: E CDFW: None BLM: S[a]	Inhabitant of extensive, mature, riparian forests; has declined from a fairly common, local breeder in much of California 60 years ago, to virtual extirpation with only a handful of tiny populations remaining in all of California today. Losses are tied to obvious loss of nearly all suitable habitat, but other factors may also be involved. Relatively broad, well-shaded riparian forests are utilized, although it tolerates some disturbance. A specialist to some degree on tent caterpillars, with remarkably fast development of young covering only 18–21 days from incubation to fledging	NA	**Absent.** No suitable habitat is present within or adjacent to the BSA. There are no CNDDB-recorded occurrences within 5 miles of the BSA (CDFW 2024). The species may be seen migrating through the BSA, but it is unlikely they would remain for foraging or breeding due the absence of riparian habitat. Therefore, this species is determined to be absent the BSA.
Loggerhead shrike *Lanius ludovicianus*	Federal: None State: None CDFW: SSC BLM: None	Forages in open country of many types (including non-intensive agricultural areas) and nests in small trees and large shrubs, often at the edges of such open areas. Like most birds of prey, generally occurs at low densities. The species is widely distributed in Southern California with some seasonal movements evident.	NA	**Unlikely to Occur**. Marginal foraging habitat is present within the creosote bush scrub/allscale scrub habitat of the BSA. There is no suitable nesting or foraging habitat present within the project area. There are no CNDDB-recorded nests within 5 miles of the BSA (CDFW 2024). The species may be seen migrating and foraging through the BSA, but it is unlikely they would remain for breeding due the lack of nesting habitat. Therefore, this species is unlikely to occur.
Yuma Ridgway's rail *Rallus obsoletus yumanensis*	Federal: E State: T CDFW: FP BLM: None	Found in freshwater and alkali marshes dominated by stands of emergent vegetation interspersed with areas of open water and drier, upland benches. Prefers mature marsh stands along margins of shallow ponds with stable water levels. Nest sites selected by near upland areas in shallow sites dominated by mature vegetation, often in the base of a shrub.	NA	**Absent.** No suitable aquatic habitat is present within the BSA. Despite the presence of evaporation ponds within the BSA, the banks of the ponds are lined with black plastic and the remainder of the area, around the complex of ponds, is covered in aggregate gravel and devoid of any vegetation. There are no CNDDB-recorded occurrences within 5-miles of the BSA (CDFW 2024). Due to the lack of suitable habitat and developed nature of the project area the species is determined to be absent from the BSA.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Le Conte's thrasher *Toxostoma lecontei*	Federal: None State: None CDFW: SSC BLM: S[a]	Found in low, sandy, open deserts that are home to few other bird species. Over most of their range, saltbush, shadscale, cholla cactus, creosote, yucca, mesquite, and ocotillo are common plants, but they are usually sparsely distributed in these mostly flat or rolling landscapes. Generally do not inhabit steep-sided canyons, preferring small arroyos, open flats, or dunes.	NA	**Unlikely to Occur**. Marginal foraging habitat is present within the creosote bush scrub/allscale scrub of the BSA. No suitable breeding habitat is present within the project area. There are no CNDDB-recorded occurrences within 5-miles of the BSA (CDFW 2024). The species may be seen migrating through the BSA, but it is unlikely they would remain for breeding due the lack of habitat in the project site. Therefore, this species is unlikely to occur within the BSA.
Mammals				
Pallid Bat *Antrozous pallidus*	Federal: None State: None CDFW: SSC BLM: S[a]	Roosts in caves, crevices, mines, and occasionally hollow trees and buildings in a wide variety of habitats, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forest. Most common in open, dry habitats with rocky areas for roosting.	NA	**Absent.** Suitable roosting habitat occurs within the BSA; however, a habitat assessment conducted in July 2024 did not identify evidence of bat use within the project site and BSA. Therefore, this species is considered absent from the project site.
Townsend's big-eared bat *Corynorhinus townsendii*	Federal: None State: None CDFW: SSC BLM: S[a]	Roosts in caves, tunnels, mines, & buildings in all habitats found in California except subalpine and alpine.	NA	**Absent.** Suitable roosting habitat occurs within the BSA; however, a habitat assessment conducted in July 2024 did not identify evidence of bat use within the project site and BSA. Therefore, this species is considered absent from the project site.
Spotted bat *Euderma maculatum*	Federal: None State: None CDFW: SSC BLM: S[a]	Roosts mostly in rock crevices, also occasionally in caves and buildings in arid deserts, grasslands and mixed conifer forests at elevations up to and sometimes higher than10,000 feet.	NA	**Absent.** Suitable roosting habitat occurs within the BSA; however, a habitat assessment conducted in July 2024 did not identify evidence of bat use within the project site and BSA. Therefore, this species is considered absent from the project site.
Western mastiff bat *Eumops perotis californicus*	Federal: None State: None CDFW: SSC BLM: S[a]	Roosts in crevices in cliff faces, high buildings, trees, and tunnels in open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas.	NA	**Absent.** Suitable roosting habitat occurs within the BSA; however, a habitat assessment conducted in July 2024 did not identify evidence of bat use within the project site and BSA. Therefore, this species is considered absent from the project site.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Silver-haired bat *Lasionycteris noctivagans*	Federal: None State: None CDFW: SSC BLM: S[a]	Roosts in hollow trees, snags, buildings, rock crevices, caves, and under exfoliating bark. Maternity roosts are typically in dense foliage or hollow trees. Habitat types include coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats, generally below 9,000 feet.	NA	**Absent.** Suitable roosting habitat occurs within the BSA; however, a habitat assessment conducted in July 2024 did not identify evidence of bat use within the project site and BSA. Therefore, this species is considered absent from the project site.
Mohave river vole *Microtus californicus mohavensis*	Federal: None State: None CDFW: SSC BLM: None	Occurs in moist habitats including meadows, freshwater marshes, and irrigated pastures in the vicinity of the Mojave River. Suitable habitat is associated with ponds and irrigation canals along with the Mojave River. Burrows into soft soils. Elevations of known localities range between 2,325–2,700 feet.	NA	**Absent.** No suitable habitat is present within the BSA. While the adjacent agricultural fields may provide marginally suitable habitat there are no irrigation canals present within the BSA. Despite the presence of evaporation ponds within the BSA, they do not support viable habitat for the species. There are no reported CNDDB occurrences within 5-miles of the BSA. With the lack of suitable habitat, potential dispersal barriers, and relatively long distances between the nearest presumed extant records and the project site, the species is determined to be absent from the BSA.
American badger *Taxidea taxus*	Federal: None State: None CDFW: SSC BLM: None	Found in open, drier stages of many shrub, herbaceous, and woodland communities where soils are dry and suitable for burrowing. Sensitive to fragmentation of open spaces. Generally, requires good diversity and abundance of rodent prey.	NA	**Unlikely to Occur.** The entire project area consists of developed/disturbed habitat and is surrounded by a chain link fence. Habitat within and surrounding the BSA has been fragmented due to agricultural development and transportation corridors. There is one CNDDB reported occurrence within 5-miles of the BSA. The occurrence reported a potential badger digging area in May 2007(CDFW 2024). Potential barriers to movement such as active agricultural fields, urban development and infrastructure corridors exist between the reported CNDDB occurrence and the BSA. Therefore, the potential for this species to occur within the BSA is unlikely.

Common Name/ Scientific Name	Status	Habitat	Blooming Period	Potential for Occurrence within the Study Area
Mohave ground squirrel *Xerospermophilus mohavensis*	Federal: None State: T CDFW: None BLM: S[a]	Restricted to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo Counties. Optimal habitats are open desert scrub, alkali desert scrub, and Joshua tree woodland. Feeds in annual grasslands. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover	NA	**Unlikely to Occur.** Potential suitable habitat is present within the BSA. The entire project area is developed and does not contain suitable habitat. There are 3 CNDDB reported occurrences within 5-miles of the BSA. The most recent CNDDB recorded occurrence reports 1 individual within 5-miles of the BSA (CDFW 2024). Protocol live-trapping and camera stations completed during the 2024 field surveys found no individuals in the BSA.

Sources:

Consortium of California Herbaria 2024.

California Department of Fish and Wildlife (CDFW). 2024. CNDDB Maps and Data. California Natural Diversity Database. Accessed May 2024. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

[a] Bureau of Land Management (BLM)

S = sensitive (plants found on BLM lands whose survival is of concern due to: 1) their limited distribution; 2) low number of individuals and/or populations; and 3) potential threats to habitat.

BLM -S: A BLM sensitive animal, defined as (1) under status review by the FWS/NMFS; or (2) whose numbers are declining so rapidly that Federal listing may become necessary, or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats. Existing California-BLM policy concerning the designation of sensitive species identifies two conditions that must be met before a species may be considered as BLM sensitive: (1) a significant population of the species must occur on BLM-administered lands, and (2) the potential must exist for improvement of the species' condition through BLM management.

BSA = biological survey area
CNDDB = California Natural Diversity Database
CRPR = California Rare Plant Rank (CRPR)
E= Endangered
FC= Federal Candidate
FP= Fully Protected
NA = not applicable
PT = proposed Threatened
SC = State Candidate
SSC= State Species of Special Concern
T= Threatened
WL = Watch List

California Rare Plant Rank (CRPR)

List 1A (Presumed extinct in California)
List 1B (Rare, threatened or endangered in California and elsewhere)
List 1B.1 (Seriously endangered in California)
List 1B.2 (Fairly endangered in California)
List 1B.3 (Not very endangered in California)
List 2 (Presumed extinct in California, but more common elsewhere)

The CNPS database (which is queried by U.S. Geological Survey 7.5-minute quadrangles and thus is not synonymous with the CNDDB 5-mile-radius query) identified an additional 18 plants in the eight quadrangles encompassing the project location. The blooming periods for these species are identified in Table 5.

Table 5. Blooming Period for Special-Status Plant Species

Common Name	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Beaver Dam breadroot				X	X							
Chaparral sand-verbena			X	X	X	X	X	X	X			
Mojave monkeyflower				X	X	X						
Lane Mountain milk-vetch				X	X	X						
Borrego milk-vetch		X	X	X	X							
White pygmy-poppy			X	X	X	X						
Mojave spineflower			X	X	X	X	X					
Desert cymopterus			X	X	X							
Colorado Desert larkspur			X	X	X							
Barstow woolly sunflower			X	X	X							
Joshua Tree poppy		X	X	X	X							
Torrey’s box-thorn			X	X	X							
Mojave menodora				X	X							
Spiny-hair blazing star			X	X	X							
Creamy blazing star			X	X	X							
Crowned muilla			X	X								
Slender nemacladus			X	X	X							
Parish’s phacelia			X	X	X							
Mojave indigo-bush			X	X	X							
California alkali grass			X	X	X							
Mojave fish-hook cactus				X	X	X	X					

Sources:

California Natural Diversity Database (CDFW 2024a)

Online Inventory of Rare and Endangered Plants (CNPS 2024)

Based on vegetation communities observed in the station, soil types reported in the station, and the locations and soil preferences of documented rare plant occurrences within 5 miles of the study area, only one special-status plant species, Barstow woolly sunflower (*Eriophyllum mohavense*), has potential to occur in the unfenced and undeveloped western portion of the BSA, outside Hinkley Compressor Station.

Refer to the description in the following subsection.

Suitable habitat for the remaining plant species does not exist in the station. A discussion about habitat suitability for the remaining species can be viewed in Table 4.

5.2.1.1 Barstow Woolly Sunflower

Barstow woolly sunflower is a CRPR 1B.2 species and BLM Sensitive species but is not state or federally listed. It is an annual herb in the Asteraceae family associated with creosote bush scrub, saltbush scrub, and playas. This plant is endemic and found only in the Mojave Desert of California.

Several collections of this species have been made east and west of the project area, with the closest CNDDB-reported occurrence approximately 6 miles northwest of the study area.

Prior to completing surveys, several reference population areas for Barstow woolly sunflower were visited on April 15, 2024, to confirm that the plant was blooming in the area. The reference populations were within approximately 10 to 20 miles west of the project area. No Barstow woolly sunflower was observed blooming in any of the reference population areas on the April 15 visit. No remnants of the species were observed, suggesting that the species did not germinate this year, or that it germinated so early that no remnants of the species were visible by the time of the reference population checks. Outreach to several additional botanists regarding this species did not reveal any observations of this species by these botanists at any location in 2024. A protocol-level floristic survey then was conducted on April 16,2024, of the station and 100-foot buffer. The survey was completed by walking transects in suitable habitat (the Creosote Bush-White Bursage-Allscale Scrub plant community on the west of the station project site). Based on the extremely small size of the target species, transects were walked approximately 5 feet apart to maximize probability of detection of the species if present.

No special-status plant species, including Barstow woolly sunflower, were observed during the 2024 floristic survey of the project area and station, including the approximately 2-acre area with native vegetation on the west of the project area. A complete list of plants observed during the survey is located in the botanical report (Balk Biological 2024) in Appendix D.

5.2.2 Special-Status Wildlife

Special-status wildlife species (endangered, threatened, rare, or other special-status species) generated by database reviews and occurrence data are listed in Table 4. These literature reviews and database queries identified nine special-status wildlife species that are known to occur within 5 miles of the BSA. Of these, suitable habitat within the BSA was identified for DETO, MGS, and BUOW. Based on both proximal occurrence data and the presence of suitable, but disturbed, habitat outside of the station, these species have a low potential to occur and are discussed further in the following subsections. Those species that are unlikely to occur in the BSA are discussed in Table 4.

The following discussion provides a brief description and ecology of the special-status species that were determined to have a low potential to occur in the BSA.

5.2.2.1 Desert Tortoise

The Mojave population of DETO was listed as threatened under the federal ESA on April 2, 1990 (USFWS 1990) and was listed as threatened under CESA in 1989. In the west Mojave Desert, where most annual precipitation falls in winter, DETO are active in May and June when annual spring vegetation is present and they also may be active in September and October. During active periods, DETO typically spend nights and hot days in burrows. During inactive periods, DETO spend approximately 98 percent of the time in burrows. Activity patterns are primarily controlled by temperature and precipitation.

DETO home range sizes were reported by USFWS (1994b; 2011b) at 10 to 450 acres and varied by sex (female ranges are smaller), age, season, density, and resource availability (smaller ranges during drought years). DETO have been known to move 7 miles in a single foray.

DETO primarily forage on annual forbs but also will eat perennials such as grasses and cacti (Boarman 2002). In the West Mojave, DETO eat dwarf white milk-vetch (*Astragalus didymocarpus*), widow's milk-vetch (*A. layneae*), Booth's evening primrose (*Camissonia boothii*), whitemargin sandmat

(*Chamaesyce albomarginata*), foothill deervetch (*Lotus humistratus*), and wish-bone bush (*Mirabilis bigelovii*). DETO prefer native forage species but will eat nonnative species such as red brome (*Bromus rubens*) and red-stem filaree (*Erodium cicutarium*).

Typical habitat for DETO includes creosote bush (*Larrea tridentata*) scrub below 5,500 feet in elevation, annual precipitation of 2 to 8 inches, with diverse, abundant annual and perennial forbs (USFWS 2011a). Tortoises most commonly associate with sandy-gravel soils on alluvial fans and mountain slopes with sparse, low-growing shrubs.

Critical habitat for the DETO was designated in 1994. This critical habitat consists of the following primary constituent elements: (1) sufficient space to support viable populations and provide for movements, dispersal, and gene flow; (2) sufficient quantity and quality of forage species and the proper soil conditions to provide for the growth of such species; (3) suitable substrates for burrowing, nesting, and overwintering; (4) burrows, caliche caves, and other shelter sites; (5) sufficient vegetation for shelter from temperature extremes and predators; and (6) habitat protected from disturbance and human-caused mortality. Designated critical habitat for DETO encompasses portions of the Mojave and Colorado Deserts (59 *Federal Register* 5,820, 5,822 [Feb. 8, 1994]). Based on a review of USFWS critical habitat maps and documentation, critical habitat for the desert tortoise is mapped outside of the study area approximately 2.6 miles northeast of the project area (Figure 9) (USFWS 2024c).

The project area is designated as Fremont-Kramer to Ord-Rodman Linkage for DETO and the habitat value is described as “non-habitat” and “lost or severely disturbed habitat.” In addition, the project area does not overlap with any portions of the Superior-Cronese Desert Wildlife Management Area, which is designated by BLM as an ACEC and is wholly located within the western Mojave recovery unit for desert tortoise (USFWS 2011b).

There are nine CNDDB-reported occurrences of DETO within 5 miles of the project. Most of the occurrences report individuals and active burrows observed within a 3- to 5-mile radius of the BSA in 2007. The occurrence closest to the project area reported one adult approximately 3 miles west of the project area (Figure 9). Observations made as part of the desert tortoise surveys conducted from 2011 to 2013 to support the development of the HCP that are not reflected in the CNDDB are also shown on Figure 9. As part of its ongoing groundwater remedy activities for the station, PG&E submits CNDDB reports to CDFW of any DETO observations made during routine biological surveys; however, these data have not been added by CDFW to the database. Two live occurrences of DETO to the west outside of the station fenceline were reported by Transcon between 2011 and 2013 and were noted as observations along Fairview Road and Highcrest Road. Between 2021 and 2023, four DETO occurrences were reported. One carcass was found in 2021 approximately 1 mile west of the station and a live female DETO was observed approximately 1.9 miles west of the station. In 2023, a live female and a live male DETO were observed on Hinkley Road approximately 5 miles (4.5 miles and 5 miles, respectively) north of the station. It is noted that some of the DETO observations could be domesticated individuals (not wild) based on the history of residents keeping DETO as pets. The most recent observation, reported in March 2024, recorded one severely injured adult (appeared to have been hit by a passing vehicle) approximately 1.6 miles northwest of the study area (Figure 9).

The only DETO signs found either in the station or in adjacent areas during this focused protocol-level survey for the species were two small fragments of an old carcass near the southern fence line. The carcass fragments were identified to be “greater than 4 years old,” which is the oldest estimate a biologist can provide based on the 2019 USFWS protocol. It is likely that these fragments were present as early as 2017 before the station expanded the fence line to the south and vegetation in that area was removed (W. Rhodehamel, personal communication, August 8, 2024). Based on the absence of any other tortoise sign in the station and the BSA, DETO is currently considered absent from the station and project area. Also, there is little likelihood of wild tortoises entering the site from adjacent areas, either to pass through the project area or establish residency, because the station perimeter is enclosed with chain link security fencing and no suitable habitat is present within the fenced facility.

5.2.2.2 Mohave Ground Squirrel

The MGS is listed as state threatened under CESA. There is currently no federal listing for this species. The MGS occurs within an approximately 5.4-million-acre (approximately 22,000 square kilometer) area of the northwestern Mojave Desert at elevations of 2,000 to 5,900 feet (610 to 1,800 meters) above sea level, within Inyo, Kern, Los Angeles, and San Bernardino counties (Best 1995). The study area is near the eastern boundary of the species range.

The MGS is one of two species within the genus *Xerospermophilus*, the second being the round-tailed ground squirrel (RTGS) (*X. tereticaudus*). Interbreeding between the two species was documented in the Hinkley Valley 3.3 miles north of the station (Leitner and Matocq 2015). The two species look similar in appearance but are distinguishable by tail morphology. The Mohave ground squirrel tail is shorter and flatter, with a white-colored undersurface (PG&E2017).

MGS can live up to 5 or more years and breeding occurs in February and March. Young (litters range from 4 to 9, average 6) are born in natal home burrows from late March to early April after a gestation period of approximately 30 days. Young appear above ground from late April to mid-May (Harris and Leitner 2004). Reproductive success is highly dependent on winter rainfall. Following winters with less than 3 inches of rainfall, MGS appear to forego reproductive activities and concentrate instead on gaining weight and storing fat to survive the long dormant period (USFWS 2011b).

MGS are dormant within their burrows for much of the year. Dormancy typically spans July or August through January and is an adaptation to avoid periods of the year when food is scarce, rather than avoidance of cold temperatures. Dormancy may begin earlier if food resources are restricted. During the active season, home burrows are used for shelter at night with burrow entrances typically plugged with soil while occupied.

MGS are territorial and established home ranges rarely overlap. During the mating season, female home ranges (median 1.8 acres) are much smaller than male home ranges (median 16.6 acres) (Harris and Leitner 2004). Following the mating season, home range sizes range from 4 to 27 acres for males and 1 to 5 acres for females. Home ranges may change within and among years during active periods, depending largely on the availability of food resources.

Juvenile MGS disperse over relatively long distances during their first active season (typically, during summer), with juvenile males moving greater distances than juvenile females. Harris and Leitner (2005) suggested that these long-distance movements were potentially critical for connecting populations and recolonizing sites after localized extirpations.

The diet of the MGS consists of plant leaves, flowers, fruits, and seeds, but also includes fungi and caterpillars. In the spring, MGS feed mostly on tender new plant growth. Foraging occurs both on the ground and within the branches of shrubs. MGS obtain water from dietary items. Specific dietary items vary within and among seasons and depend on climate and precipitation.

MGS occur in major Mojave Desert plant communities. Suitable habitat includes Mojave creosote bush scrub, Mojave mixed woody scrub, desert saltbush scrub, blackbrush scrub, Mojave Desert wash scrub, Joshua-tree woodland, and shadscale scrub. Specifically, suitable habitat consists of fine- to medium-textured soils on flat to gently sloping topography with native shrubs, including creosote bush, white bursage, and saltbushes (*Atriplex* spp.). Friable soils are necessary to allow burrow excavation. Rocky soils rarely support Mohave ground squirrels, and they do not occur on lakebeds or playas.

Anthropogenic stressors and sources of mortality responsible for declining populations of MGS include the cumulative effects of urban and rural development, off-highway vehicle recreation, military operations, energy development, transportation infrastructure, grazing, agriculture, mining, and climate change. USFWS (2011b) concluded that while these stressors are important, in 2011, they did not constitute a significant threat to the MGS. In contrast, Inman et al. (2013) reported that the current abundance of wind and solar development projects and project proposals within the Mojave Desert has a significant potential to adversely affect the species.

Dr. Phil Leitner and Marjorie Matocq conducted research on the range of MGS and authored a report titled, *Status of the Mohave Ground Squirrel in the Hinkley Area, San Bernardino County, California* (Leitner and Matocq 2015). In that report, they discussed how recent data strongly indicate that the eastern boundary of the MGS range lies to the west of the Mojave River, instead of passing through Barstow, which is the understood eastern boundary. From trapping data and genetic analysis, they found that it was clear "that the dominant *Xerospermophilus* species in the Hinkley Valley is the round-tailed ground squirrel." To the west of Hinkley Valley, in relatively undisturbed habitat, MGS were more dominant. When PG&E completed protocol-level live trapping for MGS for the Hinkley Groundwater Remediation HCP, no MGS were identified. Two 2nd and 3rd generation hybrids of MGS/RTGS were trapped in the northern part of the Hinkley HCP (3.2 miles north of the station), indicating that MGS likely still exist in that area. Overall, MGS are mostly considered to be extirpated from the Hinkley Valley.

Genetically pure MGS were most frequently associated with undisturbed desert land cover types, while RTGS were most frequently associated with developed land cover types such as agricultural fields. The relative abundance of agricultural fields in the southern portions of the Hinkley Groundwater Remediation HCP likely explained the absence of MGS and presence of RTGS in this region (PG&E 2017). Leitner and Matocq (2015) concluded that the presence of MGS/RTGS hybrids in the Hinkley Groundwater Remediation HCP suggests the presence of genetically pure Mohave ground squirrels in portions of the Hinkley Groundwater Remediation HCP not dominated by agricultural land use.

There are three CNDDB-reported occurrences within 5 miles of the BSA. One record, dated 1949, detected one female MGS approximately 3 miles southeast of the study area. The second report, dated 1990, recorded an unknown number of individuals occurring within approximately 2 miles east of the BSA. The third, and most recent, record, dated 2012, is located approximately 1 mile northwest of the BSA. The 2012 record states one adult was observed foraging and resting near and inside a burrow (Figure 10). Because of the similar appearance between MGS and RTGS, live trapping or photo trapping yield more reliable MGS sitings. The 1990 reported occurrence was an observation siting and was found to be questionable by Leitner and Matocq. The 2012 observation also was a visual observation.

No MGS were captured during this protocol-level trapping effort nor during operation of 10 cameras in use for 28 days (CMBC 2024b). The entire project area is developed and does not contain suitable habitat for the species. MGS are not anticipated to occur within the project area.

5.2.2.3 Burrowing Owl

The BUOW is considered a California SSC by CDFW, Bird of Conservation Concern by the USFWS, and a BLM Sensitive species and it has been listed as a Candidate for listing under CESA (CDFW 2024a; Shuford and Gardali 2008).

The BUOW requires habitat with three basic soil and vegetal attributes: open, well-drained terrain; short, sparse vegetation; and underground burrows or burrow-like openings. Throughout their range, most BUOW rely on burrows excavated by ground squirrels, badgers, foxes, desert tortoise, and coyotes.

There are seven CNDDB-reported occurrences of BUOW within 5 miles of the study area. The two most recent occurrences each reported one adult and an active burrow in 2010, approximately 3 miles southeast of the study area (Figure 4). The additional occurrences report individuals approximately 4 miles west and south of the study area in 2007.

There was no suitable foraging or nesting habitat present within the station or project area, and no BUOW were detected during the breeding season surveys (CMBC 2024a). Surrounding agricultural operations may provide suitable foraging habitat (alfalfa fields, dairy farms); however, these areas are located outside of the project area and the station. BUOW is not likely to occur in the project area.

5.2.2.4 Bats

There are nine species of bats whose known range overlaps the project area. Table 6 lists these species and provides a brief description of habitat requirements for each.

Table 6. Bat Species Potentially Present in the Project Vicinity

Species	Habitat Requirements
Pallid bat *Antrozous pallidus*	Roosts in caves, crevices, mines, and occasionally hollow trees and buildings in a wide variety of habitats, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forest. Most common in open, dry habitats with rocky areas for roosting.
Townsend's big-eared bat *Corynorhinus townsendii*	Roosts in caves, tunnels, mines, and buildings in all habitats found in California except subalpine and alpine.
Big brown bat *Eptesicus fuscus*	Roosts mostly in buildings and other human structures, though sometimes caves, mines, and trees are used. Found in all habitat types except the highest alpine meadows and talus slopes and is uncommon in hot deserts.
Spotted bat *Euderma maculatum*	Roosts mostly in rock crevices, also occasionally in caves and buildings in arid deserts, grasslands, and mixed conifer forests at elevations up to and sometimes higher than10,000 feet.
Western mastiff bat *Eumops perotis*	Roosts in crevices in cliff faces, high buildings, trees, and tunnels in open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas.
Silver-haired bat *Lasionycteris noctivagans*	Roosts in hollow trees, snags, buildings, rock crevices, caves, and under exfoliating bark. Maternity roosts typically are in dense foliage or hollow trees. Habitat types include coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats, generally below 9,000 feet.
California myotis *Myotis californicus*	Roosts in crevices in buildings, under bark, and in caves and mines mostly in desert, chaparral, woodland, and forest habitats from sea level up through mixed conifer and Jeffrey pine.
Canyon bat *Parastrellus hesperus*	Roosts in rock crevices mostly, occasionally mines and caves, and rarely buildings in deserts, arid grasslands, and woodlands at elevations up through mixed conifer forests.
Mexican free-tailed bat *Tadarida brasiliensis*	Roosts in caves, mine tunnels, crevices, and buildings found in all habitats up through mixed conifer forest, though woodlands, shrublands, and grasslands are preferred.

During the bat habitat assessment, all buildings and structures were searched and most buildings had some crevices in the ceiling or at the juncture of the wall and ceiling. These were all examined for use by bats. No body oils or other evidence of bats using these crevices was observed during the survey. The floor below all crevices in which bats could be roosting was examined for guano and none was detected. Trees at the park on the south side of the station had dense branches and foliage all the way to the ground, which does not provide potential roosting habitat for bats (bats need a few feet clear of branches or other obstructions to drop from the roosting site when taking flight). No bats or evidence of roosting bats were detected in any of the buildings, other structures, or trees and, therefore, these species are considered absent from the project site.

6. Impacts on Biological Resources

There will be no temporary or permanent impacts to any habitat for DETO, MGS, BUOW, or rare plants. Ground-disturbing activities to developed areas resulting from temporary impacts associated with the proposed project, including excavation of trenches for conduit and installation/replacement of MCCs, will total approximately 0.055 acre.

The project is within the mapped range of DETO, MGS, and BUOW and contains suitable habitat for these species within the BSA. Results from protocol-level surveys determined that these three species are absent from the station and project area and there is a lack of proximal occurrences of the species within the BSA buffer.

Migratory birds, such as the common raven, are protected under the MBTA and appropriate buffers provided by PG&E's management plan, *Nesting Birds: Species-Specific Buffers for PG&E Activities* (PG&E 2015) would be implemented. Birds not covered under the MBTA, such as the European starling would not be subject to protective measures.

The following measures would be implemented to minimize impacts to migratory birds and common wildlife species during project construction:

BIO-1: Protect nesting birds. If construction is to occur during the avian nesting season (March 1 through August 15), a preconstruction migratory bird and raptor nesting survey will be performed by a qualified biologist who is familiar with local avian species and nesting birds. Surveys will occur only in publicly accessible areas and areas where PG&E has existing access; private property will not be accessed and will instead be observed from adjacent accessible areas.

Preconstruction nesting bird surveys will be performed in accordance with PG&E's Nesting Birds management plan. The preconstruction survey will cover a radius of 200 feet for non-listed raptors and 100 feet for non-listed passerines from project locations that will be actively worked at in the near term. The survey will cover all affected areas where ground disturbance is required. If any active nests containing eggs or young are found, an appropriate nest exclusion zone will be established by the PG&E biologist in accordance with PG&E's Nesting Bird Management Plan. No heavy equipment will be operated in this exclusion zone until the biologist has determined that the nest is no longer active, and the young have fledged. If it is not practicable to avoid work in an exclusion zone around an active nest, work activities will be modified to minimize disturbance of nesting birds but may proceed in these zones at the discretion of the biologist. As appropriate, the biologist will monitor work activities in these zones daily or periodically when construction is occurring and assess their effect on the nesting birds. If the biologist determines that specific activities pose a high risk of disturbing an active nest, the biologist will recommend additional, feasible measures to minimize the risk of nest disturbance. If work cannot proceed without disturbing the nesting birds, or signs of disturbance are observed by the monitor, work may need to be halted or redirected to other areas until the nesting and fledging is completed or the nest has otherwise failed for reasons not related to construction.

BIO-2: Protect wildlife trapped in trenches or steep-walled holes. Field crews will fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife is not trapped. If any wildlife is found, work will stop, and the PG&E biologist will be contacted to move the animal out of harm's way.

BIO-3: Preconstruction surveys. Preconstruction biological clearance surveys will be completed by a qualified biologist prior to construction activities beginning and will occur throughout the project site to minimize impacts on wildlife.

BIO-4: Worker Environmental Awareness Program – Biological Resources Portion. A worker environmental awareness program (WEAP) will be prepared for the project to communicate environmental issues and appropriate work practices specific to the project to all construction field personnel before they begin work on the project. A PG&E biologist or designee familiar with resources in the area will deliver the WEAP biological resources portion. Training will include a discussion of the potential for nesting birds and possible buffers, along with the requirement to protect wildlife from becoming trapped in trenches or steep-walled holes. Training will include information about federal laws protecting nesting birds. A copy of the training sign-in sheets documenting participation in the training will be provided to the CPUC.

7. References

Alisto Engineering Group. 2014. Geotechnical Investigation Report, Hinkley Compressor Station. October 21. Prepared for Pacific Gas & Electric Company.

Balk Biological. 2024. PG&E Hinkley S-238 Floristic Survey Report. September.

Best, T. L. 1995. "Spermophilus mohavensis." *Mammalian Species* No. 509. Published by the American Society of Mammalogists. Pp. 1-7.

Boarman, W. I. 2002. *Threats to Desert Tortoise Populations: A Critical Review of the Literature*. U.S. Geological Survey, Western Ecological Research Center. Sacramento, CA.

California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. April.

California Department of Fish and Wildlife (CDFW). 2024a. California Natural Diversity Database [CNDDB]. GIS dataset for July 2024.

California Department of Fish and Wildlife (CDFW). 2024b. VegCamp. Vegetation Database (GIS). Accessed February 2023. https://wildlife.ca.gov/Data/GIS/Vegetation-Data.

California Department of Fish and Wildlife (CDFW). 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Sacramento, CA. Accessed at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=107494&inline http://www.dfg.ca.gov/bdb/pdfs/guideplt.pdf.

California Native Plant Society (CNPS). 2024. Online Inventory of Rare and Endangered Plants. Accessed July 2024.

California Native Plant Society (CNPS). 2001. Botanical survey guidelines of the California Native Plant Society. 9 December 1983 (Revised 2 June 2001).

California Public Utilities Commission (CPUC). 2010. Staff Assessment. Abengoa Mojave Solar 11 Application for Certification (09-AFC-5). San Bernardino County. March.

California Regional Water Quality Control Board, Lahontan Region (Water Board). 2013. Final Environmental Impact Report. Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County. May. Available at: http://www.swrcb.ca.gov/rwqcb6/water_issues/projects/pge/index.shtml.

Circle Mountain Biological Consultants. 2024a. Transmission Bio Memo for PG&E S-238 Transmission Project, Hinkley, San Baernardino County, California. July.

Circle Mountain Biological Consultants. 2024b. Mohave Ground Squirrel Trapping Results: PG&E S-238 Transmission Project, Hinkley, San Bernardino County, California. Prepared for Jacobs Engineering Group, Inc. June.

Harris, J. H., and P. Leitner. 2004. "Home-range size and use of space by adult Mohave ground squirrel, *Spermophilus mohavensis*." *Journal of Mammalogy* 85: 517-523.

Harris, J. H., and P. Leitner. 2005. "Long-distance movements of juvenile Mohave ground squirrels, *Spermophilus mohavensis*." *The Southwestern Naturalist* 50: 188-196.

Inman, R. D., T. C. Esque, K. E. Nussear, P. Leitner, M. D. Matocq, P. J. Weisberg, T. E. Dilts, and A.G.Vandergast. 2013. Is there room for all of us? Renewable energy and *Xerospermophilus mohavensis*. Endangered Species Research 20:1–18.

Leitner, Philip and Marjorie D. Matocq. 2015. Status of the Mohave Ground Squirrel in the Hinkley Area, San Bernardino County, California. Prepared for CH2M HILL. September.

National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries). 2024a. Research of the West Coast Region Protected Resource App mapping tool for threatened and endangered species range and critical habitat Accessed May 2024. https://www.fisheries.noaa.gov/resource/map/protected-resources-app.

National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries). 2024b. Research of the Essential Fish Habitat Mapper. Accessed May 2024. https://www.habitat.noaa.gov/apps/efhmapper/?page=page_4.

Natural Resources Conservation Service (NRCS). 2024. Web Soil Survey. Soil Survey of San Joaquin County, California. U.S. Department of Agriculture. Accessed June 2024. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

Pacific Gas and Electric Company (PG&E). 2017. Hinkley Groundwater Remediation Project Habitat Conservation Plan, San Bernardino County, California. Report prepared for Pacific Gas and Electric Company. https://hinkleygroundwater.com/wp-content/themes/hinkleygw/documents/hcp/Hinkley_PublicDraft_HCP.pdf

Pacific Gas and Electric Company (PG&E). 2015. Nesting Birds: Species-Specific Buffers for PG&E Activities. November.

Sawyer, J. O., T. Keeler-Wolf, J. Evens. 2009. *A Manual of California Vegetation*. Second Edition. California Native Plant Society. Sacramento, CA.

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

U.S. Bureau of Land Management (BLM). 2016. *Desert Renewable Energy Conservation Plan*. Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan. BLM/CA/PL-2016/03+1793+8321. September.

U.S. Fish and Wildlife Service (USFWS). 1990. "Endangered and threatened wildlife and plants; Determination of threatened status for the Mojave population of the desert tortoise." *Federal Register* 55: 12178-12191. Department of the Interior, Fish and Wildlife Service, 50 CFR Part 17. Final Rule.

U.S. Fish and Wildlife Service (USFWS). 1994b. *Desert Tortoise (Mojave Population) Recovery Plan*. Prepared for Regions 1, 2, and 6 of the Fish and Wildlife Service, Portland, OR. 63 pp. plus appendices. June.

U.S. Fish and Wildlife Service (USFWS) 2011a. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants. USFWS, January 1. Accessed at: https://www.fws.gov/media/guidelines-conducting-and-reporting-botanical-inventories-federally-listed-proposed-and.

U.S. Fish and Wildlife Service (USFWS). 2011b. *Revised Recovery Plan for the Mojave Population of the Desert Tortoise (Gopherus agassizii)*. Region 8, Pacific Southwest Region. U.S. Fish and Wildlife Service, Sacramento, California. May 6.

U.S. Fish and Wildlife Service (USFWS). 2024a. Information for Planning and Consultation (IPaC). Accessed July 2024. https://ecos.fws.gov/ipac.

U.S. Fish and Wildlife Service (USFWS). 2024b. National Wetlands Inventory. Online mapping tool. Accessed July 2024. https://www.fws.gov/wetlands/.

U.S. Fish and Wildlife Service (USFWS). 2024c. Critical Habitat for Threatened & Endangered Species [USFWS]. Accessed June 2024. https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77.

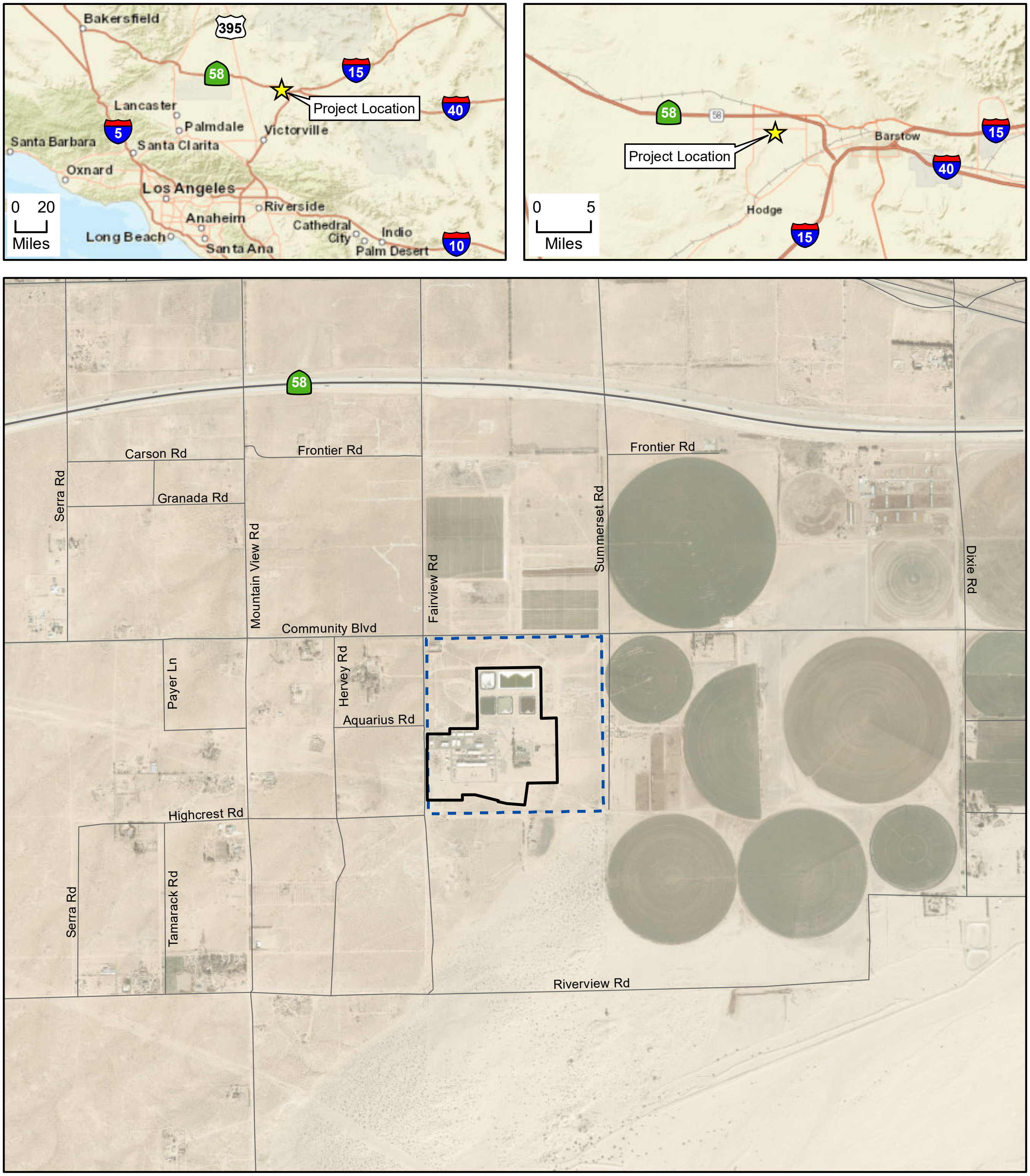
Western Bat Working Group (WBWG). 2024. The Western Bat Species Regional Priority Matrix. Accessed May 2024. https://wbwg.org/matrices/.

Figures

The following figures contain confidential information pursuant to the Confidentiality Declaration dated March 4, 2025:

- Figure 1a
- Figure 1b
- Figure 3
- Figure 4
- Figure 9
- Figure 10

Confidential figures are provided under separate cover to the CPUC.



Version: 8/7/2024

Legend

Hinkley Compressor Station Perimeter Fence Line

Property Boundary

Note: No settled areas, parks, recreational areas, scenic areas, or existing electrical transmission lines are within one mile of the property boundary of the facility.

N

0 0.25 0.5

Miles

Figure 2
Project Location
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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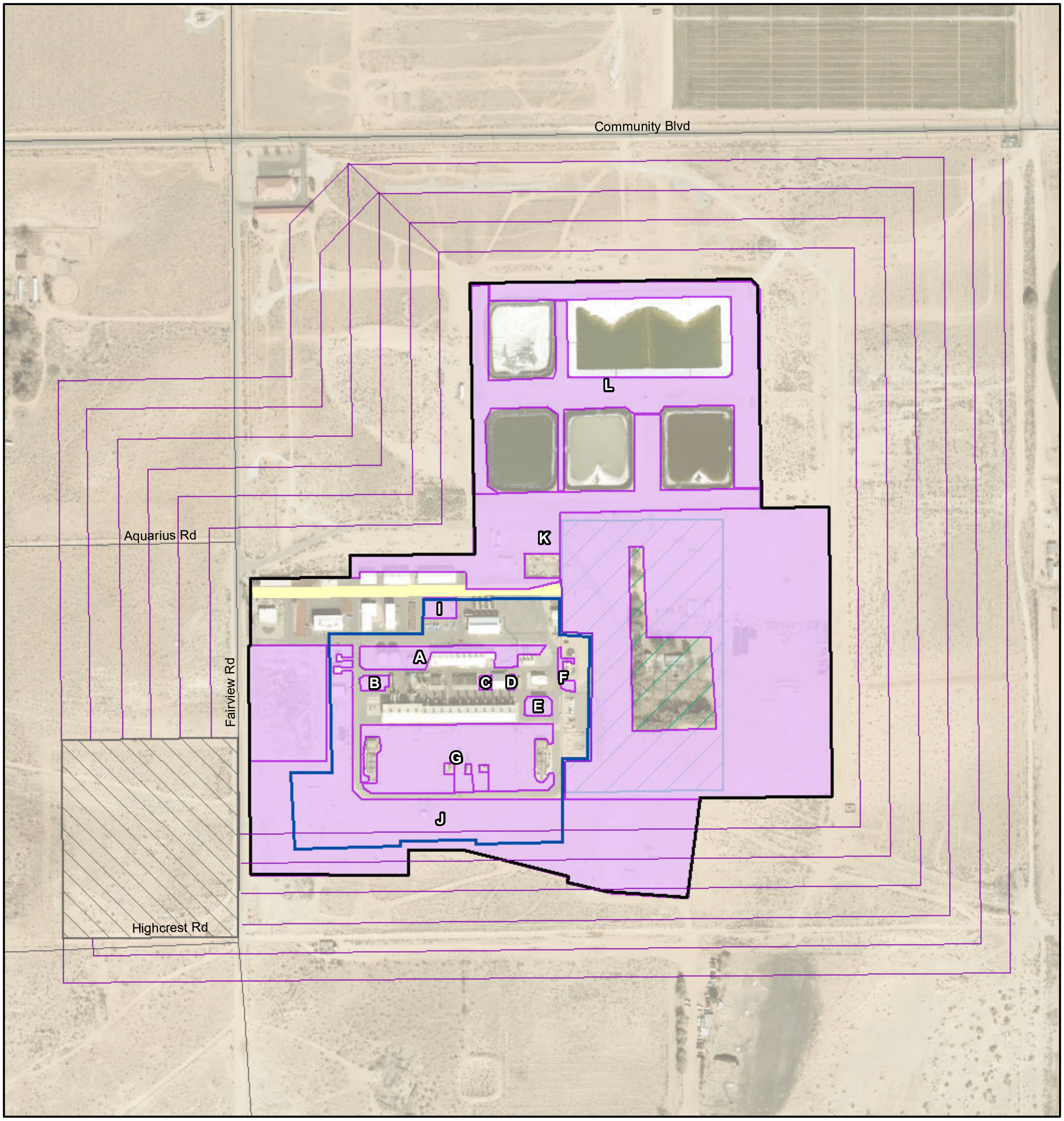

Version: 9/26/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Existing Access Road (Paved)
- Staging Area
- Work Area
- Survey Transect
- Survey Area
- Private Property - No Access Granted for Survey

N

0 250 500
Feet

Figure 5
Desert Tortoise Survey Limits
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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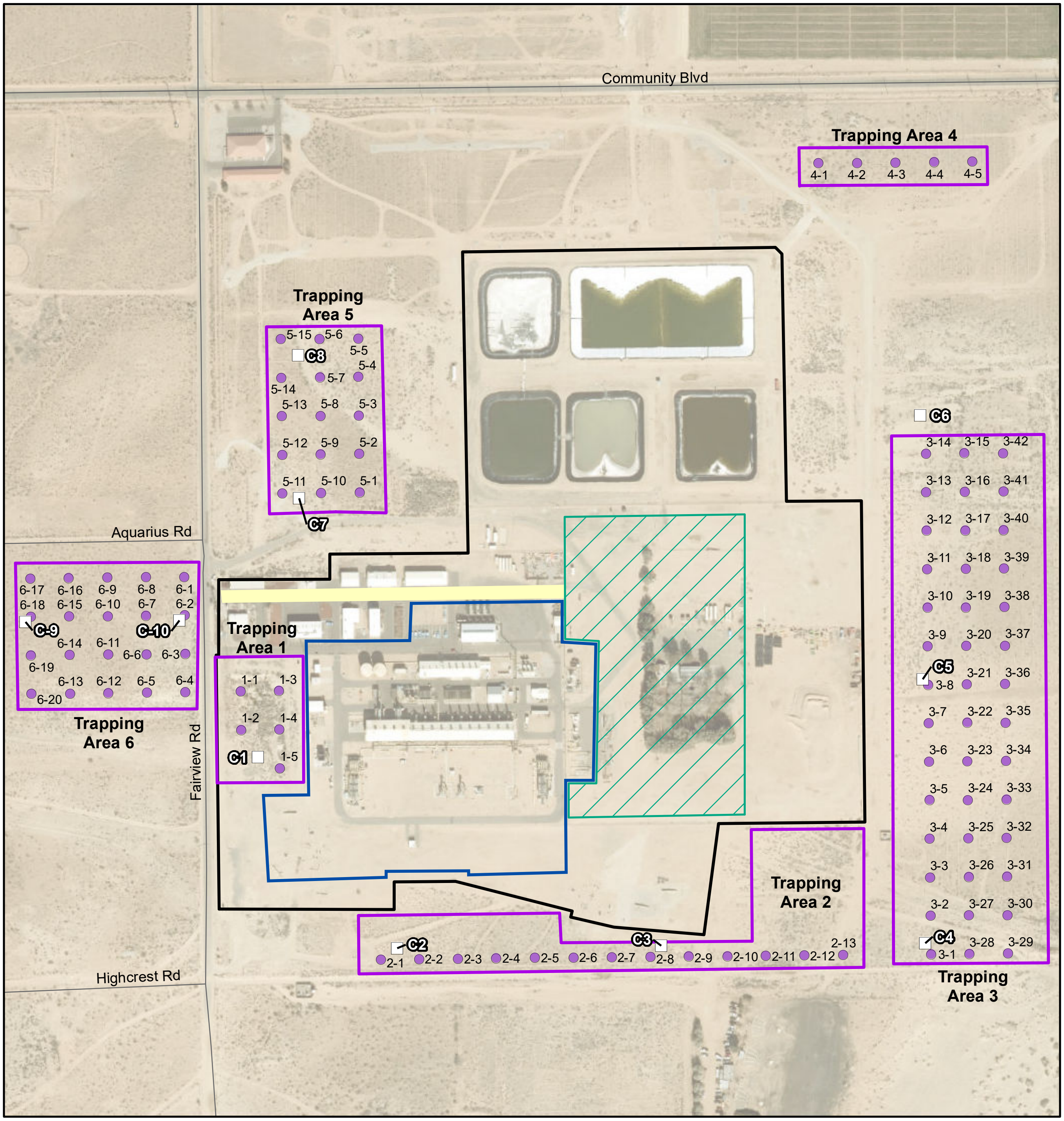

Version: 8/19/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Existing Access Road (Paved)
- Staging Area
- Work Area
- Mohave Ground Squirrel Trapping Area
- Trap Location
- Camera Location

N

0 225 450

Feet

Figure 6
Mohave Ground Squirrel
Trapping and Camera Grid Locations
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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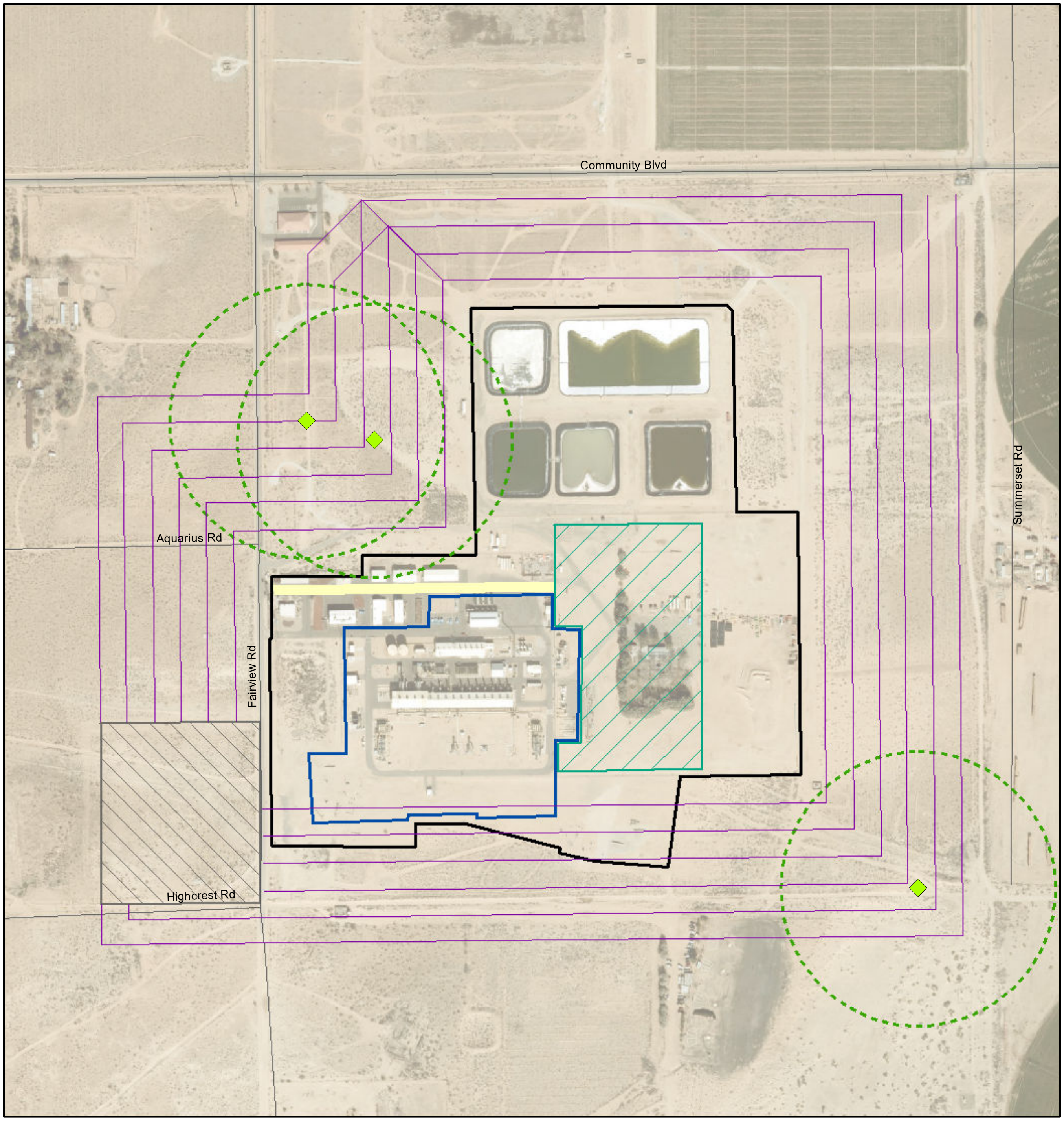

Version: 9/26/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Existing Access Road (Paved)
- Staging Area
- Work Area
- Survey Transect
- Private Property - No Access Granted for Survey
- Breeding Owl Survey Location
- 500-foot Radius of Breeding Owl Survey Location

N

0 275 550

Feet

Figure 7
Burrowing Owl Survey Transects
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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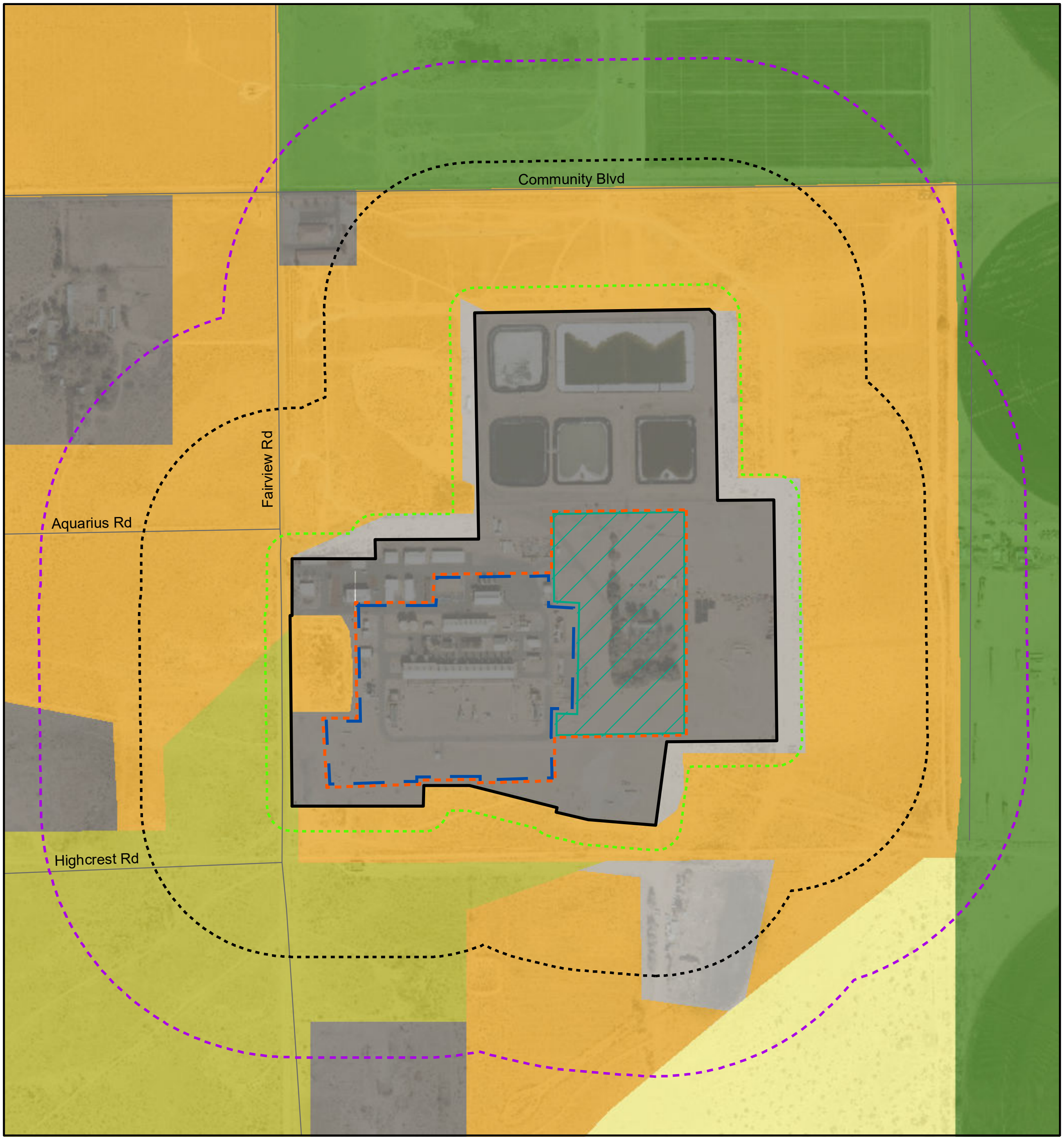

Version: 10/2/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Botanical Survey Limit
- Biological Survey Area (BSA)
- Area Analyzed for Vegetation and Land Cover Types
- Staging Area
- Work Area
- Project Area

Land Cover Types

- Active Agriculture
- Allscale Scrub
- Creosote Brush Scrub
- Desert Dunes
- Disturbed
- Urban/Developed

0 600
Feet

N

Figure 8
Botanical Survey Limit, Vegetation and Land Cover Types
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Appendix A
Agency Consultation

From:	Strohl, Virginia
To:	"Wood, Brandy@Wildlife"
Cc:	"Ellsworth, Alisa@Wildlife"
Subject:	FW: PG&E Hinkley Compressor Station Electrical Upgrade
Attachments:	image001.png

Hi Brandy,

I wanted to provide some preliminary project information with you, so you have some context of the project before we meet to discuss it and our proposed surveys. Please find attached a location map, a site map, and a summary of the project below. I look forward to hearing from you, -Virginia

Hinkley Compressor Station Electrical Upgrade Summary

To maintain gas transmission system reliability, Pacific Gas & Electric Company ("PG&E") is proposing to complete electrical upgrades at the Hinkley Compressor Station (HCS), located in Hinkley, CA approximately 8 miles west of Barstow, CA. HCS is a major compressor station on PG&E's Baja Path gas transmission system, which transports natural gas to millions of customers in pipelines L-300A and L-300B from the Arizona border to the San Francisco Bay Area. The station has no connection to utility power, generating all electricity needed on site with natural gas generators.

The electrical system at HCS has encountered a number of issues related to the equipment's age, reliability, maintainability and safety, and inefficient design. The Hinkley Electrical Upgrades project will increase employee safety and station reliability by upgrading the electrical system at HCS to meet current PG&E standards and requirements.

The Hinkley Electrical Upgrades project will:

- Replace the switchgear line-up (SG) located in the auxiliary building.
- Create a partitioned area inside the auxiliary building to house the new switchgear and provide temperature and humidity control.
- Replace (5) Motor Control Centers (MCC) located at various locations in the station.
- Modify (3) existing MCC located at various locations within the station.
- Install new conduit and cable from the switchgear to MCC.
- Procure temporary generation units to power Hinkley Compressor Station during the switchgear replacement by using 4-5 portable generators.
- Design and fabricate a fuel gas piping system for temporary generation during switchgear replacement.

There will be no improvements to existing gas infrastructure. The project aims to replace existing electrical infrastructure with a modern equivalent that meets current codes and standards. There will be no increases to electrical capacity. The scope of work is contained within the existing, fenced station footprint.

Virginia Strohl
Senior Biologist
Pacific Gas and Electric Company | 406 Higuera Street | San Luis Obispo, California 93401-3869
559.515.3904 cell | v1s4@pge.com

From: Strohl, Virginia <V1S4@pge.com>
Sent: Wednesday, March 20, 2024 5:28 PM
To: Wood, Brandy@Wildlife <Brandy.Wood@Wildlife.ca.gov>
Cc: Ellsworth, Alisa@Wildlife <Alisa.Ellsworth@wildlife.ca.gov>
Subject: PG&E Hinkley Compressor Station Electrical Upgrade

Hi Brandy,

PG&E is planning to upgrade the electrical system at the Hinkley Compressor Station in Hinkley, CA. I'd like to coordinate with CDFW on our proposed desert tortoise and Mohave ground squirrel protocol surveys for the project. Would you be available for a Teams call next week to coordinate?

I'd like to briefly present the project and our proposed surveys prior to beginning our surveys early next month. Please let me know if you do have any availability and what times work best for you.
Thank-you in advance for your time, -Virginia

Virginia Strohl
Senior Biologist
Pacific Gas and Electric Company | 406 Higuera Street | San Luis Obispo, California 93401-3869
559.515.3904 cell | v1s4@pge.com

From: Ellsworth, Alisa@Wildlife <Alisa.Ellsworth@wildlife.ca.gov>
Sent: Wednesday, March 20, 2024 4:34 PM
To: Strohl, Virginia <V1S4@pge.com>
Cc: Wood, Brandy@Wildlife <Brandy.Wood@Wildlife.ca.gov>
Subject: RE: PG&E Hinkley Compressor Station Electrical Upgrade

CAUTION: EXTERNAL SENDER!

This email was sent from an EXTERNAL source. Do you know this person? Are you expecting this email? Are you expecting any links or attachments? If suspicious, do not click links, open attachments, or provide credentials. Don't delete it. **Report it by using the "Report Phish" button.**

Hi Virginia,
I'm including Brandy Wood who can assist you with your request.
Thank you,

Alisa Ellsworth, Environmental Program Manager
California Department of Fish and Wildlife
Inland Deserts Region, North
787 North Main Street Suite 220
Bishop, Ca 93514
(760) 937-2519
Alisa.Ellsworth@wildlife.ca.gov

From: Strohl, Virginia <V1S4@pge.com>
Sent: Wednesday, March 20, 2024 4:31 PM
To: Ellsworth, Alisa@Wildlife <Alisa.Ellsworth@wildlife.ca.gov>
Subject: PG&E Hinkley Compressor Station Electrical Upgrade

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Hi Alisa,
I just left you a voicemail about discussing our proposed protocol surveys for Mohave ground squirrel and desert tortoise for the Hinkley Compressor Station Electrical Upgrade project in the town of Hinkley, CA. I'd like to set up a Teams call to briefly present the project and our proposed surveys prior to beginning our surveys early next month. I wasn't sure if you would be the contact for the coordination or if some one else from your office would be the contact. I'd like to try

schedule a meeting for next week if possible. I look forward to hearing from you soon. Thanks, -Virginia

Virginia Strohl
Senior Biologist
Pacific Gas and Electric Company | 406 Higuera Street | San Luis Obispo, California 93401-3869
559.515.3904 cell | v1s4@pge.com

From:	Karo, Julia@Wildlife
To:	Strohl, Virginia; Wood, Brandy@Wildlife
Cc:	Poff, Marlee@Wildlife; sharon_dougherty@circlemountainbiological.com; Sarah Teed; Nettles, Wendy; Rice, Erin; Taylor, Colleen
Subject:	RE: Request Approval for Modified Protocol Surveys and Notification of Mohave Ground Squirrel Surveys Under MOU (193250005) for the S-238 Hinkley Electrical Upgrade Project
Date:	Wednesday, April 10, 2024 10:51:26 AM

Hi Virginia,

CDFW agrees with this approach for this specific project. Thank you for checking in.

Let me know if any questions arise during the surveys.

Thank you,

Julia Karo (she/her) Why?
Senior Environmental Scientist Specialist
Inland Deserts Region

From: Strohl, Virginia <V1S4@pge.com>
Sent: Wednesday, April 10, 2024 9:54 AM
To: Karo, Julia@Wildlife <Julia.Karo@Wildlife.ca.gov>; Wood, Brandy@Wildlife <Brandy.Wood@Wildlife.ca.gov>
Cc: Poff, Marlee@Wildlife <Marlee.Poff@Wildlife.ca.gov>; sharon_dougherty@circlemountainbiological.com; Sarah Teed <falconbiological@gmail.com>; Nettles, Wendy <WMN3@pge.com>; Rice, Erin <E1RJ@pge.com>; Colleen Taylor - Jacobs (Colleen.Taylor@jacobs.com) <Colleen.Taylor@jacobs.com>
Subject: Request Approval for Modified Protocol Surveys and Notification of Mohave Ground Squirrel Surveys Under MOU (193250005) for the S-238 Hinkley Electrical Upgrade Project

Hi Brandy and Julia,

Pacific Gas & Electric (PG&E) is planning to conduct protocol level surveys for desert tortoise, Mohave ground squirrel (MGS) and burrow owl for the S-238 Hinkley Compressor Station Electrical Upgrades project, which plans to upgrade the electrical equipment at the Hinkley Compressor Station in Hinkley, California. PG&E is seeking your approval of our modified protocol level surveys for the above-mentioned species. In addition, PGE is also notifying the California Department of Fish and Wildlife (CDFW) for Circle Mountain Biological Consultants of their intent to conduct protocol level surveys for MGS, including live-trapping, as required under their Memorandum of Understanding (MOU) connected to Scientific Collecting Permit 193250005-19325-001.

A description of the project was previously sent to Brandy Woods on March 22, 2024. On March 28, 2024, Brandy Woods facilitated a Teams call to discuss PG&E's proposed protocol level surveys for desert tortoise, MGS and burrow owl for the project. In addition to Brandy Woods and myself, Julia Karo, Marlee Poff, Sharon Doughtery and Marjorie Eisert also participated in the Teams call.

The following descriptions of protocol level surveys to be conducted for the project include recommendations that were made by CDFW during the March 28, 2024, meeting.

Desert Tortoise

Focused surveys for desert tortoise will be carried out to USFWS (2019) protocols by qualified desert tortoise biologists with Circle Mountain Biological Consultants (CMBC), to determine presence/ absence of desert tortoise. As required by the protocol, biologist walking transects will survey for signs of desert tortoise at 10m (30-foot) intervals throughout undeveloped portions of the project area and staging areas. (See Figure 1, attached). Positive detection of tortoises will be determined by the following: tortoises, burrows, scats, tracks, courtship rings, drinking depressions, etc. Biologist will record all locations of tortoises and sign encountered during the survey effort using the USFWS 2021 Desert Tortoise Pre-Project Survey Data Sheet. Surveys for desert tortoise will also include the recommended Zone-of-Influence (ZOI) consisting of six transects walked 100' apart starting from the edge of the project area and staging areas. Figure 1 shows the planned survey areas, the desert tortoise ZOI transects, the burrowing owl buffer transects, and the proposed Mohave ground squirrel trapping grid lay-out.

Mohave Ground Squirrel

The MOU issued by CDFW identifies Ed LaRue Principal Investigator, Sharon Dougherty and Sarah Teed as Independent Researchers, and Susan Seville as a Field Assistant. Mr. LaRue, Ms. Dougherty, Ms. Teed and Ms. Seville will carry out protocol level surveys for MGS, including live-trapping, with the assistance of John Myers and Seth Cohen to determine absence/ presence of MGS in the project area. The survey will follow the protocol established by the California Department of Fish and Wildlife in January 2003, and revised in July 2010 and October 2023. Since the project area is located within an established compression station that has been active for many decades, little suitable habitat is present for MGS. The only potentially suitable area is comprised of less than two acres along the western edge of the facility. Given the small size of the area, only 5 live traps can be accommodated within the fenced facility.

The additional 93 traps will be placed at 35-m intervals in a standard 100-camera grid, as can best be accommodated in vegetated areas to the west, south, northwest, northeast, and east of the facility. (See Figure 1.) Ten trail camera stations will be placed in trapping areas within the facility and in adjacent areas.

The protocol requires trapping efforts to occur for 5 consecutive days during each of the three trapping periods: a. March 15 through April 30; b. May 1 through May 31; and c. June 1 through July 15. At least two weeks will separate each of the trapping periods on a project site. Currently CMBC is planning the following trapping session efforts: April 16- April 20, May 3- May 7 and June 3- June 7. Captured ground squirrels (both MGS and Antelope ground squirrels) will be marked using a non-toxic permanent marking pen. To facilitate identifying previously-captured ground squirrels in camera-trap photos, marks will be made on the dorsolateral pelage of the animals. Live-trapping results will be reported to CDFW using the CDFW MGS Survey Form 2024.

The surveys and live-trapping for MGS will all occur on P&GE owned property in San Bernardino County in or adjacent to the Hinkley Compressor Station. For any information regarding the property, please contact me at the email or phone number listed at the bottom of this email. I've also attached a location map and site map for your convenience. The GPS coordinates for the center of the Hinkley Compressor Station are latitude 34.903016 and longitude -177.159001 using a WGS84 geographic projection from Google Earth.

Burrow Owl

A focused habitat evaluation for burrowing owl will be completed by qualified biologists with CMBC to determine presence/ absence of burrowing owl in the project area. Biologists will conduct surveys at 100-foot (30 m) intervals throughout the site and within a 150-meter buffer area, in which owls could be affected by noise and vibration, etc., from construction on the site as recommended by CDFW.

A breeding season burrowing owl survey will be completed as well. The California Burrowing Owl Consortium guidelines for breeding season surveys (1993,1997) require four survey visits spread evenly (roughly every 3 weeks) during the peak of the breeding season, from April 15-July 15. The visits will be timed either from 2 hours before to 1 hour after sunset, or 1 hour before to 2 hours after sunrise. All owl sightings, burrows, and sign will be mapped, and territories mapped as possible. All breeding behavior and nest information will be noted.

Thank-you for meeting with us on March 28, 2024, to discuss the proposed modified protocol surveys. Please let me know if I misconstrued or missed anything we discussed regarding the surveys. I look forward to hearing from you. As noted above, we are currently planning to start surveys on April 16, 2024, and would need your feedback before that date. Thank-you in advance for your time, -Virginia

Virginia Strohl
Senior Biologist
Pacific Gas and Electric Company | 406 Higuera Street | San Luis Obispo, California 93401-3869
559.515.3904 cell | v1s4@pge.com

From: Su, Brooke J
To: Strohl, Virginia
Cc: Rice, Erin; Taylor, Colleen; Eisert, Marjorie; Woulfe, MaryBeth
Subject: Re: [EXTERNAL] Request Approval for Desert Tortoise Protocol-Level Surveys for the S-238 Hinkley Compressor Station Electrical Upgrades Project
Date: Thursday, April 11, 2024 11:17:44 AM

Hi Virginia,

Apologies for the delayed response. The survey protocols look good to us. Looking forward to seeing the results.

Thank you,

Brooke Su (she/her)
Fish and Wildlife Biologist | Tribal Coordinator
U.S. Fish and Wildlife Service | Mojave Desert Division
Carlsbad Fish and Wildlife Office
2177 Salk Ave, Suite 250
Carlsbad, California 92008

From: Strohl, Virginia <V1S4@pge.com>
Sent: Wednesday, April 10, 2024 4:58 PM
To: Su, Brooke J <brooke_su@fws.gov>
Cc: Rice, Erin <E1RJ@pge.com>; Colleen Taylor - Jacobs (Colleen.Taylor@jacobs.com) <Colleen.Taylor@jacobs.com>; Eisert, Marjorie/SAC <Marjorie.Eisert@jacobs.com>
Subject: [EXTERNAL] Request Approval for Desert Tortoise Protocol-Level Surveys for the S-238 Hinkley Compressor Station Electrical Upgrades Project

Hi Brooke,

Pacific Gas & Electric (PG&E) is planning to conduct protocol level surveys for desert tortoise for the S-238 Hinkley Compressor Station Electrical Upgrades project, which plans to upgrade the electrical equipment at the Hinkley Compressor Station in Hinkley, California. PG&E is seeking your approval of our modified protocol level surveys for desert tortoise.

A description of the project was previously sent to Mary Beth Woulfe last month and I am including it again below for your ease of reference.

Focused surveys for desert tortoise will be carried out to USFWS (2019) protocols by qualified desert tortoise biologists with Circle Mountain Biological Consultants, to determine presence/ absence of desert tortoise. As required by the protocol, biologist walking transects will survey for signs of desert tortoise at 10m (30-foot) intervals throughout undeveloped portions of the project area and staging areas. (See Figure 1, attached). Positive detection of tortoises will be determined by the following: tortoises, burrows, scats, tracks, courtship rings, drinking depressions, etc. Biologist will record all locations of tortoises and sign encountered during the survey effort using the USFWS 2021 Desert Tortoise Pre-Project Survey Data Sheet. Surveys for desert tortoise will also include a Zone-of-Influence (ZOI) consisting of six transects walked 100' apart starting from the edge of the project area and staging areas as requested by the California Department of Wildlife. Figure 1 shows the planned survey areas and the desert tortoise ZOI transects.

Hinkley Compressor Station Electrical Upgrade Summary

To maintain gas transmission system reliability, PG&E is proposing to complete electrical upgrades at the Hinkley Compressor Station (HCS), located in Hinkley, CA approximately 8 miles west of Barstow, CA (see attached mapping) . HCS is a major compressor station on PG&E's Baja Path gas transmission system, which transports natural gas to millions of customers in pipelines L-300A and L-300B from the Arizona border to the San Francisco Bay Area. The station has no connection to utility power, generating all electricity needed on site with natural gas generators.

The electrical system at HCS has encountered a number of issues related to the equipment's age, reliability, maintainability and safety, and inefficient design. The Hinkley Electrical Upgrades project will increase employee safety and station reliability by upgrading the electrical system at HCS to meet current PG&E standards and requirements.

The Hinkley Electrical Upgrades project will:

- Replace the switchgear line-up (SG) located in the auxiliary building.
- Create a partitioned area inside the auxiliary building to house the new switchgear and provide temperature and humidity control.
- Replace (5) Motor Control Centers (MCC) located at various locations in the station.
- Modify (3) existing MCC located at various locations within the station.
- Install new conduit and cable from the switchgear to MCC.
- Procure temporary generation units to power Hinkley Compressor Station during the switchgear replacement by using 4-5 portable generators.
- Design and fabricate a fuel gas piping system for temporary generation during switchgear replacement.

There will be no improvements to existing gas infrastructure. The project aims to replace existing electrical infrastructure with a modern equivalent that meets current codes and standards. There will be no increases to electrical capacity. The scope of work is contained within the existing, fenced station footprint.

Please let me know if you have any questions or need additional information. Thank-you in advance for your time, -Virginia

Virginia Strohl
Senior Biologist
Pacific Gas and Electric Company | 406 Higuera Street | San Luis Obispo, California 93401-3869
559.515.3904 cell | v1s4@pge.com

Appendix B
Desert Tortoise Survey Memorandum

Pacific Gas and Electric Company

Attachment 1
Transmission Bio Memo

Project Name: S-238	**PG&E Order #: 74013548**
Contract Biologist: Circle Mountain Biological Consultants: Sharon Dougherty, Susan Seville, Sarah Teed	**PG&E Biologist:** Virginia Strohl
Project Location: Hinkley Compressor Station	**Date Prepared**: 9-4-24

1. Survey Description

Conduct a general biological survey, focused survey for Agassiz's desert tortoise, habitat assessment and breeding season survey for burrowing owl, and protocol-level survey and trapping for Mohave ground squirrel

2. Field Visit Performed?

On April 12, 2024. Sharon Dougherty and Susan Seville from Circle Mountain Biological Consultants (CMBC) visited the site, survey area, and surveyed all areas with unpaved surfaces inside the Hinkley Compressor Station fence line (with the exception of the park-like clubhouse area to the east). The survey consisted of transects spaced at 10-meter intervals per the USFWS (2019) protocol for desert tortoise presence-absence surveys. In addition, burrowing owl surveys of the buffer area were completed on transects spaced at 30-m intervals out to 150 m on all PG&E properties to the south, east, north, and west, and on some private lands to the west where permission was granted from the land owner(s). The owner of one private land to the west could not be contacted, and for this reason, this parcel were excluded from the survey. These burrowing owl transects were also surveyed for evidence of desert tortoise, as was an additional set of transects at 180 m at the request of CDFW. (See Figure 1, attached, for buffer transect and survey locations.). Subsequent burrowing owl breeding surveys were conducted of the buffer area during 4 events between May 15 and July 15, 2024.

Mohave ground squirrel trapping took place between April 16, 2024 and June 7, 2024, and followed the California Department of Fish and Wildlife (CDFW) Mohave Ground Squirrel Survey Guidelines (January 2003; revised July 2010, October 2023).

3. Project Description

To maintain gas transmission system reliability, Pacific Gas & Electric Company ("PG&E") is proposing to complete electrical upgrades at the Hinkley Compressor Station (HCS), located in Hinkley, CA approximately 8 miles west of Barstow, CA. HCS is a major compressor station on PG&E's Baja Path gas transmission system, which transports natural gas to millions of customers in pipelines L-300A and L-300B from the Arizona border to the San Francisco Bay Area. The station has no connection to utility power, generating all electricity needed on site with natural gas generators.

The electrical system at HCS has encountered a number of issues related to the equipment's age, reliability, maintainability and safety, and inefficient design. The Hinkley Electrical Upgrades project will increase employee safety and station reliability by upgrading the electrical system at HCS to meet current PG&E standards and requirements.

The Hinkley Electrical Upgrades project will:

- Replace the switchgear line-up (SG) located in the auxiliary building.
- Create a partitioned area inside the auxiliary building to house the new switchgear and provide temperature and humidity control.
- Replace (4) Motor Control Centers (MCC) located at various locations in the station.
- Modify (3) existing MCC located at various locations within the station.
- Install (1) new MCC within the station.
- Remove Auxiliary Load Center No. 1.
- Install new conduit and cable from the switchgear to MCC.

- Procure temporary generation units to power Hinkley Compressor Station during the switchgear replacement by using 4-5 portable generators.
- Design and fabricate a fuel gas piping system for temporary generation during switchgear replacement.

There will be no improvements to existing gas infrastructure. The project aims to replace existing electrical infrastructure with a modern equivalent that meets current codes and standards and there will be no increases to electrical capacity. The scope of work or project area is shown below and is contained within the existing, fenced station footprint and survey area.

4. Land Ownership

The project site is entirely owned by PG&E. Figure 1, below, shows land ownership in the areas surveyed, as well as within the planned project area.

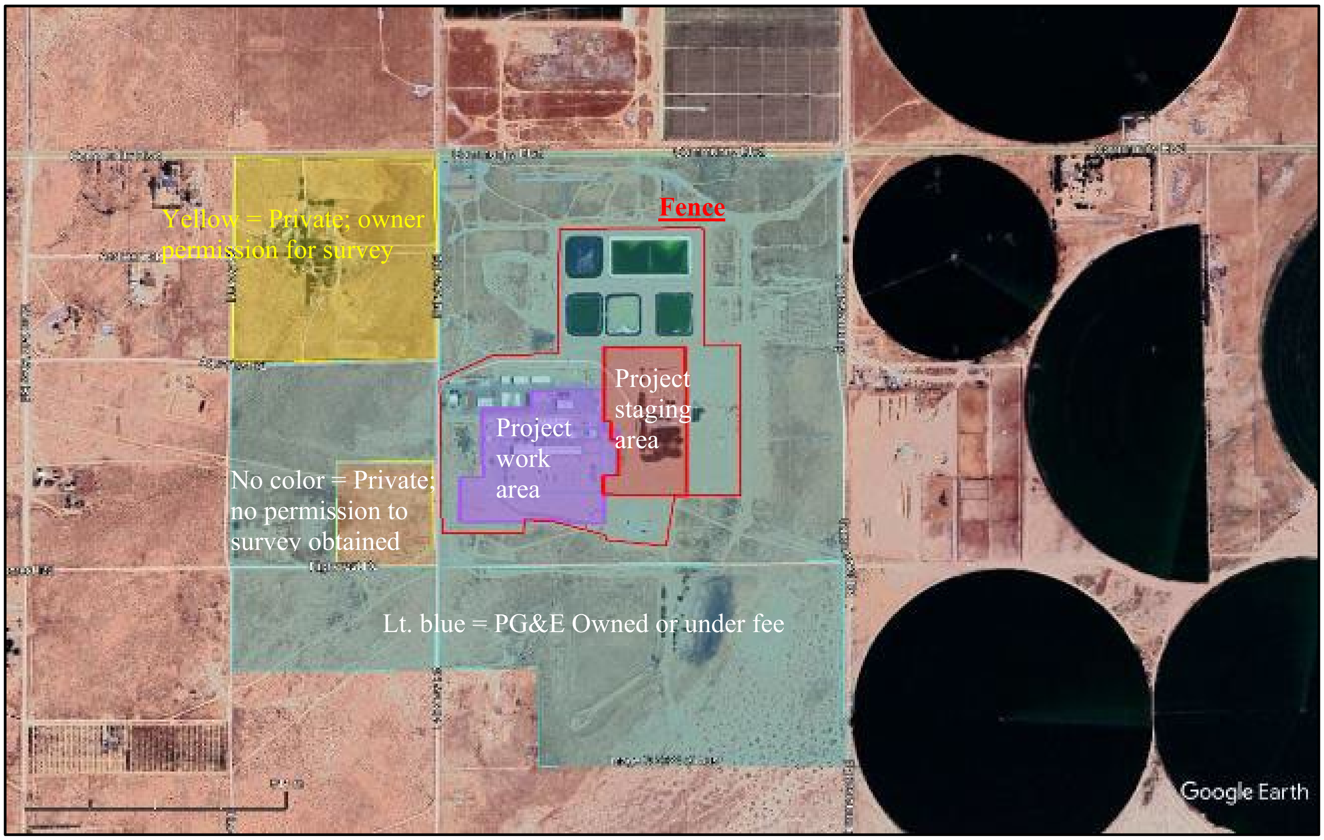

Figure 1. Land Ownership in Survey Area

5. Access

The site is accessed via paved, County-maintained roads, including Community Boulevard and Fairview Road.

6. Summary of Desktop Review

The California Natural Diversity Data Base (CNDDB) was accessed on 26 April 2024. (See "Species Potential for Occurrence," below.) Figure 2, below, shows locations of special-status species records within a 1.5-mile radius of the project area.

Special-status species records mapped at a confidential map scale are Mohave ground squirrel, arroyo toad, and Mojave fringe-toed lizard. CPUC can refer to confidential PEA Figure 5.4-3 and confidential PEA Figure 5.4-5 for the same mapped CNDDB information.

Figure 2. Records of Special Status Species within 1.5 miles of Project Area.

The project area is located in an area designated as Fremont-Kramer to Ord-Rodman Linkage for desert tortoise and the habitat value is described as "non-habitat" and "lost or severely disturbed habitat." The closest designated Critical Habitat Area for desert tortoise is the Fremont-Kramer Critical Habitat Area, which is located at its closest point 2.7 miles to the northwest of the project area. The facility is located about 1 mile east of mapped "MGS Important Areas" shown in PG&E HCP shape files. The project area does not fall within any protected lands or conservation easements, is not within a coastal area, is not located on private land or in any lands managed by a state or federal agency. A KMZ of the work area and access routes is available from PG&E.

6.A. Field Review

6.A.1. Methodology

Survey and Habitat Assessment Protocols. A significant paper was published in June 2011 (Murphy et al. 2011) whereby the "desert tortoise" of the Mojave Desert was split into two species, including *Gopherus agassizii*, referred to as "Agassiz's desert tortoise," and a newly described species, *G. morafkai*, referred to as "Morafka's desert tortoise," which occurs in the Sonoran Desert. According to Murphy et al. (2011), "…this action reduces the distribution of *G. agassizii* to only 30% of its former range. This reduction has important implications for the conservation and protection of *G. agassizii*, which may deserve a higher level of protection." Then in 2016 (Edwards et al. 2016), a third species of tortoise was described, referred to as the "Goode's Thornscrub Tortoise" (*Gopherus evgoodei*), which further reduced the perceived range of Morafka's desert tortoise. Agassiz's desert tortoise is the threatened species that occurs in the region surrounding the subject property.

For **Agassiz's desert tortoise**, CMBC followed the presence-absence survey protocol first developed by the USFWS in 1992 and revised in 2019. USFWS (2019) protocol recommends surveying transects at 10-meter (30-foot) intervals throughout all portions of a given parcel and its associated action area. In addition, at the request of the CDFW, CMBC surveyed six Zone-of-Influence transects located at a distance of 30, 60, 90, 120, 150, and 180 meters (~100 feet apart) from the project area to the east, north, west, and south, where possible. The area north of community Boulevard was not considered appropriate habitat, since it is agricultural, and a parcel of private property to the west was excluded since it was not possible to get the owner's permission to access. (See Figure 1.)

For **burrowing owl**, although the formal habitat assessment does not specify a given interval to survey a site, subsequent breeding and nonbreeding studies identify that transects are surveyed at 7 to 20 meters (23 to 65 feet) apart, with five additional transects surveyed at 30-meter intervals out to 150 meters (500 feet) in adjacent areas in potential habitat (i.e., excluding areas substantially developed for commercial, residential, and/or industrial purposes) (Appendix D in CDFG 2012). With its narrower transect intervals, the tortoise survey was sufficient to cover the site for burrowing owl, and buffer area transects coincided with the first five zone-of-influence transects for desert tortoise. The focus of the survey was to find and inspect all burrows sufficiently large to be used by burrowing owls. UTM coordinates were collected for all such burrows, which are mapped in Figure 4. Importantly, this methodology is considered a formal *habitat assessment* for presence of burrowing owls, which can be conducted any time of the year. Breeding burrowing owl surveys were conducted in the buffer area during the spring and summer as outlined in CDFG (2012).

For **Mohave ground squirrel**, protocol trapping surveys were conducted between April 16, 2024, and June 7, 2024. CDFW Mohave Ground Squirrel Survey Guidelines (January 2003; revised July 2010, October 2023) were followed and required that visual surveys of the project site be carried out between March 15 and April 15. Visual surveys were carried out concurrent with focused surveys for desert tortoise and habitat assessment for burrowing owl. A trapping grid including 100 Sherman live traps was designed based on the best available habitat surrounding the project area. Ten trail cameras baited with grain and peanut butter powder were placed around the grid. Figure 3 shows the trap and camera locations.

Figure 3. Mohave ground squirrel trapping grid and camera placement

Three trapping sessions were conducted per the protocol and ran for 5 consecutive days during each of the three trapping periods: 1) March 15 through April 30; 2) May 1 through May 31; and 3) June 1 through July 15. The trapping sessions were conducted with at least two weeks apart between them. Actual trapping sessions were April 16-20, 2024, May 3-7, 2024, and June 3-7, 2024. Captured ground squirrels (both MGS and AGS) were marked using a non-toxic permanent marking pen, as directed by the protocol. All measures to ensure the health and welfare of Mohave Ground Squirrels provided in the survey guidelines were followed.

Field Survey Methods. For a total of 20 survey hours, between 1015 and 1600 on March 12, 2024, and between 0815 and 1300 on March 13, 2024, Susan Seville and Sharon Dougherty of CMBC surveyed the site and adjacent areas as described herein. This effort entailed a survey of transects, spaced at 10-meter (30-foot) intervals within all unpaved areas within the HCS, shown as turquoise-outlined in Figure 4, below. As depicted in Figure 4, peripheral transects (shown as blue lines) were surveyed for detection of burrowing owls and desert tortoise at 30-meter (100-foot) intervals out to 180 m where habitat is present and permission to survey was obtained.

As the site was surveyed, tallies of observable human disturbances encountered were noted. Habitat quality, adjacent land uses, and this disturbance information are discussed below in Section 3.2 relative to the potential occurrence of Agassiz's desert tortoise and other special-status species on and adjacent to the subject property.

Weather conditions recorded at the beginning and ending of the survey included temperatures measured approximately 5 centimeters (2 inches) above the ground, percent cloud cover, and wind speeds measured by a hand-held Kestrel® weather and wind speed meter, as reported in Table 1.

Table 1. Weather Summary Data for the Survey

Date 2024	Begin to End = Total survey hours*	Weather Conditions	
		Beginning	Ending
4/12/24	1015 to 1600 = 10.5 survey hrs	77°F, 2↑ 3 mph, 20% cloud	80°F, 12 ↑ 24 mph, <5% cloud
4/13/24	0815 to 1300 = 9.5 survey hrs	56°F, 2 ↑ 5 mph, 0% cloud	73°F, 7 ↑ 8 mph, <5% cloud

*Total hours = @@ hours multiplied by two for the two biologists surveying the site = @@ hours.

All plant and animal species identified during the survey were recorded in field notes. Garmin® hand-held, global positioning system (GPS) units were used to survey straight-line transects and record Universal Transverse Mercator (UTM) coordinates (North American Datum – NAD 83) for property boundaries, rare species locations, and other pertinent information. A digital camera (cell phone) was used to take representative photographs. ©2024Google™ Earth was accessed via the internet to provide available aerial photographs of the subject property and surrounding areas.

6.A.2. Results

<u>Common Biological Resources</u>. The common plant and animal species identified during the survey, including survey buffers, are listed in Appendices A and B, respectively. Based on DeLorme Topo USA® 10.0 software, elevations on the subject property range from approximately 681 meters (2,233 feet) at the southwest corner down to 670 meters (2,200 feet) at the northeast corner. Terrain is relatively flat. Soils are sandy loam. No blueline streams designated by the U.S. Geological Survey (USGS) occur on-site.

Common Flora. The 45 plant species identified during the survey are listed in Appendix A. The project is located within the highly developed HCS, with very little native habitat present. The two-acre area, located within the HCS, on the western boundary of the facility, south of the entrance, and in adjacent, unfenced areas is alkali desert scrub (ASD) dominated by Allscale (*Atriplex canescens*). This area, which is outside of the project area, appears to have been a borrow pit and is low-lying compared to the rest of the site, with some seasonal flooding. Adjacent lands are a mix of ASD and Desert Scrub (DSC), with more creosote bush (*Larrea tridentata*) at slightly higher elevations.

Common Fauna. The 2 reptile, 19 bird, and 4 mammal species identified during the survey are listed in Appendix B. Most are common desert species or species typically associated with developed areas, but several waterbirds are present in the vicinity of the evaporation ponds on the north part of the facility.

<u>Uncommon Biological Resources</u>. Figure 4 shows the survey areas, locations of zone-of-influence and burrowing owl buffer transects, observations of special status species, nesting birds, and California ground squirrel burrows inspected for evidence of burrowing owl.

Agassiz's Desert Tortoise. The only **desert tortoise** sign found either on-site or in adjacent areas during this focused protocol survey for the species (USFWS 2019) were two small fragments of an old desert tortoise carcass (greater than 4 years old). (See the green symbol near the southern fence line in in Figure 4, below.) These fragments may have been present as early as ca. 2017, when the fenced area was expanded to the south, and vegetation in that area was removed. Based on the absence of any other tortoise sign on the subject property and in adjacent areas, CMBC concludes that Agassiz's desert tortoise is currently absent from the subject property. Also, there is little likelihood of wild tortoises entering the site from adjacent areas, either to pass through the site or establish residency, as the site is fenced, and no suitable habitat is present within the fenced facility.

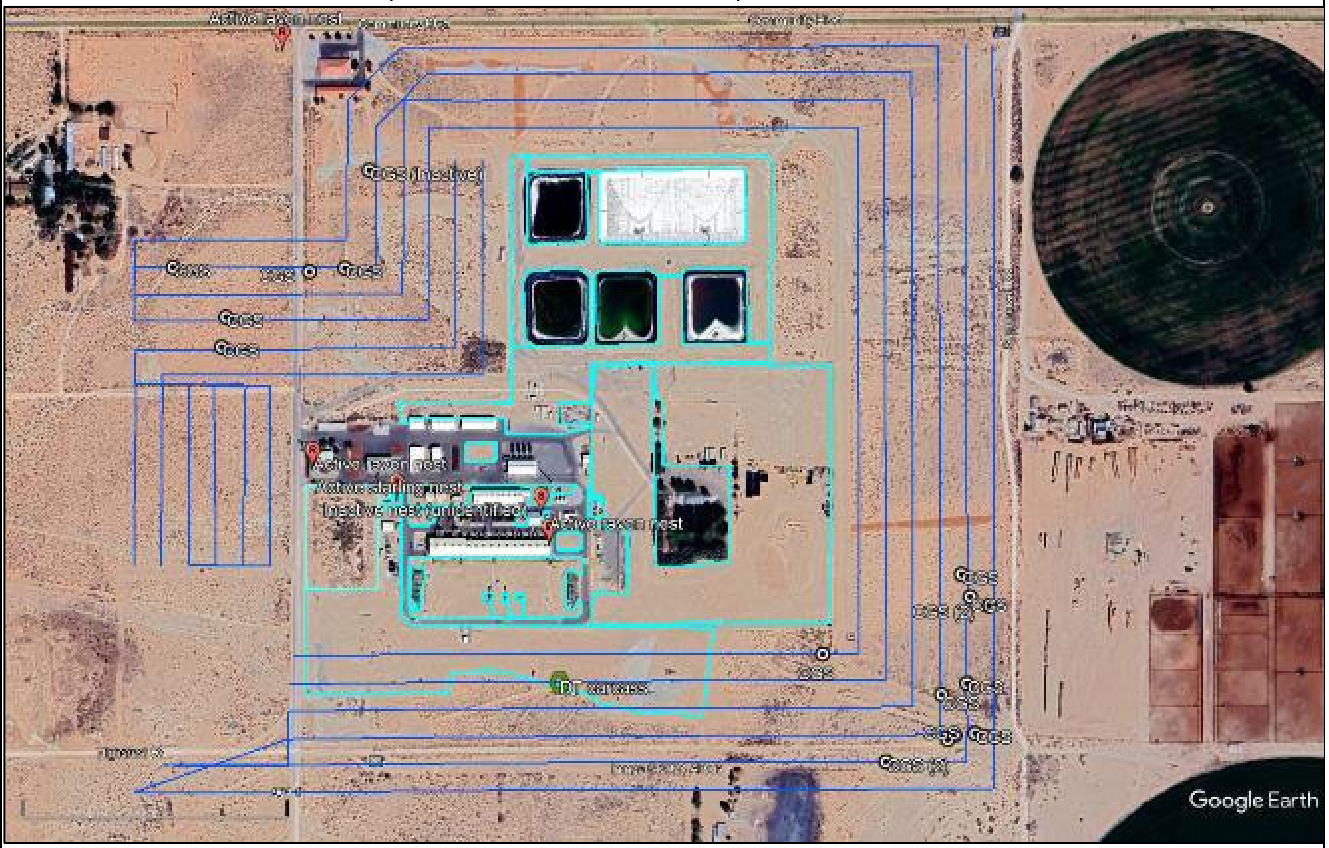

Figure 4. Survey Results.

Other Special Status Species. U.S. Fish and Wildlife Service (2008), California Department of Fish and Wildlife [CDFW 2024a for California Natural Diversity Data Base; 2024b for Special Plant Species list; 2024c for Special Animal Species list; and California Native Plant Society (CNPS 2024)] maintain lists of animals and/or plants considered rare, threatened, or endangered, which are herein collectively referred to as "special status species." The six species included in the CNDDB report for the Hinkley quadrangle are listed and evaluated in a table included in this memo, labeled "Species Potential for Occurrence," and include Arroyo toad, Mojave Tui chub, Mojave fringe-toed lizard, and American badger in addition to the three target species in CMBC's surveys (desert tortoise, burrowing owl, and Mohave ground squirrel). Arroyo toad, Mohave tui chub and Mojave fringe-toed lizard all have specific habitat requirements that preclude their occurrence in the project area and surrounding undeveloped lands and are thus considered absent.

Burrowing owl is designated as a California Species of Special Concern by CDFW (2024c), as a Bird of Conservation Concern by the USFWS (2008) and is considered Sensitive by the BLM (CDFW 2024a). It is one of the focal species specifically sought during field surveys, particularly in adjacent areas, and is usually detected by distinctive feathers, zygodactyl (x-shaped) tracks, and whitewash (fecal material deposited away from burrows may be from other bird species). Although pellets and feathers are sufficiently distinctive that they may be identified away from burrows, it is one or more of these signs at sufficiently large burrows that are the most definitive means of determining burrowing owl use of a given site.

In the case of the subject property, there was no evidence of burrowing owl. Burrowing owls do not create their own burrows; rather they find existing burrows, which they may slightly modify in order to occupy. Typical existing burrows used by burrowing owls include abandoned kit fox dens, both active and inactive tortoise burrows, deeper badger digs, and inactive California ground squirrel burrows. No such burrows were found on-site, but 17 California ground squirrel burrows of appropriate size were noted in adjacent areas and are mapped in Figure 4. Only one of these burrows was clearly inactive.

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Four records for burrowing owls are included in the CNDDB report for the Hinkley quadrangle. These are all from 2007 and located about 4 miles to the northwest of the subject property. Nesting season surveys were conducted during 4 periods between April 15 and July 15. No burrowing owls or active burrows were observed.

No Mohave ground squirrels were found during the 15 trapping-day protocol trapping survey. A total of 28 camera trapping days were completed from April 15 to May 7, 2024, and June 3 to June 7, 2024, Inspection of 86,000 images resulted in no detection of Mohave ground squirrels.

7. Land Use

The project area is located within the fenced PG&E Hinkley Compressor Station, which is occupied by numerous buildings, housing natural gas generators, offices, and associated infrastructure. To the south, there is a mix of developed and undeveloped lands, including the Barstow gun club. To the east, lands outside the fence are disturbed native scrub, with a dairy farm and alfalfa field opposite Summerset Road. To the north, PG&E operates alfalfa cultivation as part of its groundwater recharge project, and to the west, lands are a mix of rural residential and somewhat disturbed native habitat. Several PG&E gas lines pass through lands adjacent to the fenced facility.

8. Habitat Types

The survey is located within the highly developed HCS, with very little native habitat present. The two-acre area on the western boundary of the facility, south of the entrance, and in adjacent unfenced areas is alkali desert scrub (ASD) dominated by Allscale (*Atriplex canescens*). (See Figure 4). This area, which is a part of the HCS and is included in the survey area, is not included in the project area. It appears to have been a borrow pit and is low-lying compared to the rest of the site, with some seasonal flooding. Adjacent lands are a mix of ASD and Desert Scrub (DSC), with more creosote bush (*Larrea tridentata*) at slightly higher elevations.

9. Nesting Birds

During CMBC's site survey and trapping surveys, several nests were identified and are mapped in Figure 4. Three active raven nests were noted, two within the fenced facility and one on a cell tower near the southwest corner of Community Boulevard and Fairview Road. An active European starling nest was located in the eaves of a building, and an inactive nest in a separate building. European starlings are an invasive species, and their nests are not protected under the Migratory Bird Treaty Act. Two other bird species present on the site (house sparrow and Eurasian collared-dove) also fall under this category. The project is scheduled for fall of 2024, by which time there should not be any active nests on the site or in surrounding areas.

10. Aquatic Resources

The only aquatic features on the site are evaporation ponds on the north part of the facility. While American avocets, black stilts, American gadwalls, American pipit, and unidentified sandpipers were observed at these ponds, shorebirds are discouraged from using these ponds through auditory hazing (canons). (Hazing was paused during MGS trapping sessions.) No project activity will take place in the vicinity of these ponds.

11. Safety Observations

No observations.

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12. Species Potential for Occurrence

Species/ Common Name	Absent	Unlikely to Occur	Seasonally present	Likely to occur	Potential to occur	Present*
Anaxyrus californicus/ arroyo toad	X Amphibious. Requires aquatic habitat. Nearest habitat is Mojave River.					
Athene cunicularia/ burrowing owl	X No evidence of species found on-site or in adjacent areas.					
Siphateles bicolor mohavensis/ Mohave tui chub	X Aquatic. No suitable habitat present.					
Xerospermophilus mohavensis/ Mohave ground squirrel					X One record from CNDDB, ±0.7 mile to NW. Protocol trapping surveys completed and none were found. Project area is developed and not suitable habitat.	
Taxidea taxus/ American badger		X No evidence of species found during site surveys and buffer area surveys. Project area is developed and not suitable habitat.				
Gopherus agassizii/ desert tortoise		X No evidence of species found during site surveys and buffer area surveys. Project area is developed and not suitable habitat.				
Uma scoparia/ Mojave fringe-toed lizard	X Requires Aeolian sand deposits. Nearest suitable habitat is Mojave River.					

13. Literature Cited.

Beauchamp, R. 1986. *A Flora of San Diego County, California.* Sweetwater River Press. National City, CA.

California Department of Fish and Game (CDFG). 2003 (revised 2010). Mohave ground squirrel survey guidelines. Unpublished guidelines produced by CDFG (currently CDFW = California Department of Fish and Wildlife). Sacramento, CA.

California Department of Fish and Game. 2012. Staff report on burrowing owl mitigation. 7 March 2012 memo replacing 1995 staff report, State of California Natural resources Agency, Department of Fish and Game. Sacramento, CA.

California Department of Fish and Wildlife (CDFW). 2024a. Electronic database of rare plant and animal species reported to The State Resources Agency, Natural Heritage Division, California Natural Diversity Data Base. Updated monthly. Sacramento, CA.

California Department of Fish and Wildlife, Natural Diversity Database. 2024b. Special Vascular Plants, Bryophytes, and Lichens List. Plant species list published and updated quarterly by State of California, The Resources Agency, Department of Fish and Wildlife, Biogeographic Data Branch, California Natural Diversity Data Base. Dated January 2023. Sacramento, CA.

California Department of Fish and Wildlife, Natural Diversity Database. 2024c. Special Animals. Animal species list published and updated by State of California, The Resources Agency, Department of Fish and Wildlife, Biogeographic Data Branch, California Natural Diversity Data Base. Dated January 2023. Sacramento, CA.

California Native Plant Society (CNPS). 2024. Inventory of Rare and Endangered Plants (on-line edition, v8-02). California Native Plant Society. Sacramento, CA.

Edwards, T., A. Karl, M. Vaughn, P. Rosen, C. Melendez Torres, and R. Murphy. 2016. The desert tortoise trichotomy: Mexico hosts a third, new sister-species of tortoise in the *Gopherus morafkai-G. agassizii* group. ZooKeys 563: 131-158.

Hickman, J. Editor. 1993. *The Jepson Manual: Higher Plants of California.* University of California Press. Berkeley, CA.

Ingles, L. 1965. *Mammals of the Pacific States: California, Oregon, Washington.* Stanford University Press. Stanford, CA.

Jaeger, E. 1969. *Desert Wild Flowers.* Stanford University Press. Stanford, CA.

Munz, P. 1974. *A Flora of Southern California.* University of California Press. Berkeley, CA.

Murphy, R. W., K. H. Berry, T. Edwards, A. E. Leviton, A. Lathrop, and J. D. Riedle. 2011. The dazed and confused identity of Agassiz's desert tortoise, *Gopherus agassizii* (Testudines, Testudinidae) with the description of a new species, and its consequences for conservation. ZooKeys 113: 39–71.

Sibley, D. 2000. National Audubon Society, the Sibley Guide to Birds. First Edition. New York, N.Y.

Stebbins, R. 2003. *A Field Guide to Western Reptiles and Amphibians.* Third Edition. The Peterson Field Guide Series. Houghton Mifflin Company. New York, NY.

U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern. Division of Migratory Bird Management. Arlington, VA.

U.S. Fish and Wildlife Service. 2019. Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*). USFWS Desert Tortoise Recovery Office. Reno, NV.

Appendix A. Plant Species Detected

The following plant species were identified on-site during the focused floral inventory described in this report. Protected plant species are highlighted in red and signified by "(PPS)" following the common names. The 16 species found only in adjacent areas are signified by "+."

GNETAE	GNETAE
Ephedraceae	**Joint-fir family**
+Ephedra nevadensis	Nevada joint-fir
ANGIOSPERMAE: DICOTYLEDONES	DICOT FLOWERING PLANTS
Asclepiadaceae	**Milkweed family**
Funastrum cynanchoides var. *hartwegii*	Climbing milkweed
Asteraceae	**Sunflower family**
Ambrosia dumosa	Burrobush
Ambrosia salsola	Cheesebush
Chaenactis fremontii	Desert pincushion
Chaenactis stevioides	Gray-leaved pincushion
Erigeron (*Conyza*) *canadensis*	Mare's tail
Lasthenia californica	California goldfields
Layia glandulosa	White tidy tips
Malacothrix coulteri	Snake's-head
Malacothrix glabrata	Desert dandelion
+Rafinesquia neomexicana	Desert chicory
+**Sonchus oleraceus*	Common sow-thistle
Stephanomeria exigua	Milk aster
Boraginaceae	**Borage family**
Amsinckia tessellata	Fiddleneck
Cryptantha maritima	Guadalupe cryptantha
Pectocarya platycarpa	Broad-margined combseed
Brassicaceae	**Mustard family**
+**Brassica tournefortii*	Saharan mustard
Lepidium lasiocarpum	Sand peppergrass
**Sisymbrium altissimum*	Tumble mustard
Cactaceae	**Cactus family**
Cylindropuntia echinocarpa	Silver cholla (PPS)
Chenopodiaceae	**Goosefoot family**
Atriplex canescens	Four-winged saltbush
Atriplex polycarpa	Allscale
+**Chenopodium vulvarium*	Stinking goosefoot
**Salsola tragus*	Russian thistle
Geraneaceae	**Geranium family**
**Erodium cicutarium*	Red-stemmed filaree
Loasaceae	**Stick-leaf family**
+Mentzelia albicaulis	Little blazing star
Malvaceae	**Mallow family**
+Eremalche exilis	Trailing mallow
+Malva parviflora	Cheeseweed
+Sphaeralcea ambigua	Desert mallow
Onagraceae	**Evening-primrose family**
+Camissonia campestris	Mojave sun-cups
Chylismia (*Camissonia*) *claviformis*	Brown-eyed primrose
Oenothera deltoides	Devil's lantern
Polemoniaceae	**Phlox family**
Gilia stellata	Dotted-throat gilia
Polygonaceae	**Buckwheat family**
Chorizanthe rigida	Rigid spineflower

Eriogonum gracile	Buckwheat
Solanaceae	**Nightshade family**
+Lycium andersonii	Anderson's box-thorn
+Lycium cooperi	Peach thorn
Tamaricaceae	**Tamarisk family**
*+*Tamarix ramosissima*	Tamarisk
Zygophyllaceae	**Caltrop family**
Larrea tridentata	Creosote bush
ANGIOSPERMAE: MONOCOTYLEDONES	MONOCOT FLOWERING PLANTS
Amaryllidaceae	**Amaryllis family**
Dichelostemma capitatum	Blue dicks
Poaceae	**Grass family**
**Bromus madritensis* ssp. *rubens*	Red brome
**Bromus tectorum*	Cheat grass
**Hordeum murinum*	Hare barley
**Schismus* sp.	Split-grass

* - indicates a non-native (introduced) species.
c.f. – compares favorably to a given species when the actual species is unknown.

Some species may not have been detected because of the seasonal nature of their occurrence. Common names are taken from Beauchamp (1986), Hickman (1993), Jaeger (1969), and Munz (1974).

Appendix B. Animal Species Detected

The following animal species were detected during the general biological inventory described in this report. Waterbirds found only in the evaporation ponds (outside the project area) are signified by #. Those only found in adjacent areas are signified by "+."

REPTILIA	REPTILES
Iguanidae	**Iguanids**
Uta stansburiana	Common side-blotched lizard
Teiidae	**Whiptails**
+Cnemidophorus tigris	Western whiptail
AVES	BIRDS
Ardeidae	**Herons**
#Egretta thula	Snowy egret
Anatidae	**Ducks, geese, and swans**
#Anas cyanoptera	Cinnamon teal
#Anas strepera	Gadwall
Recurvirostridae	**Stilts and avocets**
#Himantopus mexicanus	Black-necked stilt
#Recurvirostra americana	American avocet
Columbidae	**Pigeons and doves**
Streptopelia decaocto	Eurasian collared-dove
Zenaida macroura	Mourning dove
Tyrannidae	**Tyrant flycatchers**
Sayornis saya	Say's phoebe
Corvidae	**Crows and jays**
Corvus corax	Common raven
Mimidae	**Mockingbirds and thrashers**
+Mimus polyglottos	Northern mockingbird
Motacillidae	**Wagtails and pipits**

Anthus rubescens	American pipit
Sturnidae	**Starlings**
Sturnus vulgaris	European starling
Emberizidae	**Sparrows, warblers, tanagers**
+Spizella breweri	Brewer's sparrow
+Zonotrichia leucophrys	White-crowned sparrow
+Sturnella neglecta	Western meadowlark
Euphagus cyanocephalus	Brewer's blackbird
Fringillidae	**Finches**
Carpodacus mexicanus	House finch
Passeridae	**Weavers**
Passer domesticus	House sparrow
MAMMALIA	MAMMALS
Leporidae	**Hares and rabbits**
Lepus californicus	Black-tailed hare
Sciuridae	**Squirrels**
+Otospermophilus beecheyi	California ground squirrel
Heteromyidae	**Pocket mice**
+Dipodomys sp.	Kangaroo rat
Cricetidae	**Rats and mice**
Neotoma lepida	Desert wood rat

Nomenclature follows Stebbins, *A Field Guide to Western Reptiles and Amphibians* (2003), third edition; Sibley, National Audubon Society, the Sibley Guide to Birds (2000), first edition; and Ingles, Mammals of the Pacific States (1965), second edition.

Appendix C. Site Photos

Figure 5. Locations of photos

Photo 1. NW corner of HCS facility, facing SE

Photo 2. SW corner of HCS facility, facing NE

Photo 3. Fence corner on S border of HCS facility, facing NW

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Photo 4. SE corner of HCS facility, facing NW

Picture 5. NE corner of HCS facility, excluding evaporation ponds, facing SW

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Picture 6. NW corner of Project Area, facing SE

Picture 7. Interior SW corner of Project Area, facing NE

Picture 8. SW corner of Project Area, facing NE

Picture 9. SE corner of Project Area, facing NW

Photo 10. NE corner of Project Area, facing SW

Photo 11. NW corner of Staging Area, facing SE

Photo 12. SW corner of Staging Area, facing NE

Picture 13. SE corner of Staging Area, facing NW

Picture 14. NE corner of Staging Area, facing SW

Picture 15. View of Habitat Off-site to East of HCS facility

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Recommendations for Resource Impact Minimization
None

11. Project Impacts	
C. Are any special-status animal or plant species, or habitat that could support such species, known to be present on or near the project site?	☒Yes ☐No ☐Unknown Agassiz's desert tortoise Mohave ground squirrel Burrowing owl ☐Continued on additional page(s)
D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.	CNDDB records, PG&E ArcGIS shape files.
E. Has a biological study been completed for the project site?	☒Yes ☐No
G. Have fish or wildlife resources or waters of the state been mapped or delineated on the project site?	☐Yes ☒No (None present.) Attach Map

12. Measures to Protect Fish, Wildlife, and Plant Resources	
B. Describe project avoidance and/or minimization wildlife, and plant resources. measures to protect fish,	Project will take place within non-habitat, fenced areas. Project will take place in fall, outside the bird nesting season. ☐Continued on additional page(s)
C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.	None ☐Continued on additional page(s)

Appendix C
Mohave Ground Squirrel Survey Memorandum

Mohave Ground Squirrel Trapping Results: PG&E S-238 Transmission Project, Hinkley, San Bernardino County, California

Prepared for:

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Pacific Gas and Electric's S-238 Electric Upgrades Project
at the PG&E Compressor Station in the Community of Hinkley,
San Bernardino County, California
(U.S. Geological Survey 7.5' Hinkley Quadrangle,
Township 9N, Range 3W, a portion of Section 2, S.B.B.&M)

Prepared by:

Sarah Teed
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I hereby certify that the statements furnished herein, including attached exhibits, present the data and information required for this Mohave ground squirrel trapping report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this trapping effort was performed by me or under my direct supervision. I certify that I have not signed a nondisclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project.

Circle Mountain Biological Consultants, Inc.
Author and Field Investigator: Sarah Teed

June 24, 2024

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Mohave Ground Squirrel Trapping Results: S-238 Transmission Project, Hinkley, San Bernardino, California

I. INTRODUCTION

Circle Mountain Biological Consultants, Inc. (CMBC) was contracted by Virginia Strohl, senior biologist with Pacific Gas & Electric Company ("PG&E") to perform trapping surveys to determine the presence of the California State threatened Mohave ground squirrel (*Xerospermophilus mohavensis*), herein "MGS." It is our understanding that in order to maintain gas transmission system reliability, PG&E is proposing to complete electrical upgrades at the Hinkley Compressor Station (HCS), located in Hinkley, CA approximately 8 miles west of Barstow, CA. and that the survey is intended to determine the presence-absence of this particular species.

The project area of 65 acres is located within the developed Hinkley Compressor Station. The grid was set up in the following general location: U.S. Geological Survey 7.5' Hinkley Quadrangle Township 9N, Range 3W, a portion of Section 2, S.B.B.&M. Table 1, below, provides latitude and longitude coordinates for the trapping grid sections that were established and used for the project.

Table 1. Coordinates of Modified Grid (WGS84)

Modified Grid	Latitude:	Longitude:	Total area (acres)
Section 1	34.90211	-117.16223	2.24
Section 2	34.90031	-117.16073	6.68
Section 3	34.90212	-117.15505	15.6
Section 4	34.90671	-117.1558	1.44
Section 5	34.90469	-117.16145	4.43
Section 6	34.90306	-117.16357	5.44

The following background information for the species is published in various places (e.g., David Laabs' species account published in U.S. Bureau of Land Management 2005), and much of it was in the form of personal communication from Dr. Phil Leitner to Ed LaRue of CMBC. Following winters of sufficient rainfall [e.g., a minimum of about 7.5 centimeters (3 inches)], MGS emerge in February from dormancy, reproduce, and have a litter of up to nine young in late March to early April; they forego reproduction if there is less than about 3 inches of rainfall. If reproductive, they will remain active into the summer, with adults becoming dormant in June and July and juveniles as late as August; if there is no reproduction, adults will become dormant as early as late May. The MGS is approximately 20 to 23 centimeters (8 to 9 inches) in length, sandy-colored on top, lighter underneath, with a bi-colored (dark above, light below) tail flattened dorso-ventrally. Their diet consists of seeds, leaves, flowers, and fruits of both annual and perennial plants; arthropods are occasionally taken. Their ability to overwinter depends on achieving a body weight of approximately 180 grams. The MGS is currently listed as Threatened by the California Fish and Game Commission. U.S. Fish and Wildlife Service (USFWS) has declined to list it federally following two petitions, the last of which was in 2005.

Mohave Ground Squirrel

The Memorandum of Understanding (MOU) SC-001544 was issued June 2, 2023, and is valid through December 31, 2026, in connection with Scientific Collecting Permit (SCP; S-193250005-19325-001) issued by California Department of Fish and Wildlife (CDFW) identifies Ed LaRue Principal Investigator, Sharon Dougherty and Sarah Teed as Independent Researchers, and Susan Seville as a Field Assistant. Ms. Teed carried out protocol level surveys for MGS, including live trapping, with the assistance of Sharon Dougherty, Susan Seville, and volunteer observer John Myers to determine absence/presence of MGS within the 65-acre project area. The survey followed the protocol established by the CDFW in January 2003 and revised in July 2010 and October 2023.

Since the project area is located within an established compression station that has been active for many decades, little suitable habitat is present for MGS. The only potentially suitable area is comprised of less than two acres along the western edge of the facility. Given the small size of the area, only five live traps can be accommodated within the fenced facility.

The additional 95 traps were placed at 35-m intervals as best as could be accommodated in vegetated areas to the west, south, northwest, northeast, and east of the facility with a total combined trapping area of 35.83 acres. (See Figure 1.) Ten trail camera stations were placed in trapping areas within the facility and in adjacent areas.

The protocol requires trapping efforts to occur for five consecutive days during each of the three trapping periods: a. March 15 through April 30; b. May 1 through May 31; and c. June 1 through July 15. At least two weeks separated each of the trapping periods on a project site. CMBC completed the following trapping session efforts: Session 1. April 16- April 20, Session 2. May 3- May 7 and Session 3. June 3- June 7. Captured ground squirrels were marked using a non-toxic permanent marking pen. To facilitate identifying previously captured ground squirrels in camera-trap photos, marks were made on the dorsolateral pelage of the animals. Live-trapping results will be reported to California Department of Fish and Wildlife (CDFW) using the CDFW MGS Survey Form 2024.

The surveys and live trapping for MGS all occurred on PG&E-owned property in San Bernardino County in or adjacent to the HCS. The GPS coordinates for the center of the HCS are latitude 34.903016 and longitude -177.159001 using a WGS84 geographic projection from Google Earth.

As described below, the methodology used for this effort is referred to as "Protocol Trapping," which is regulated by CDFW (see CDFG 2003 revised 2010 and October 2023).

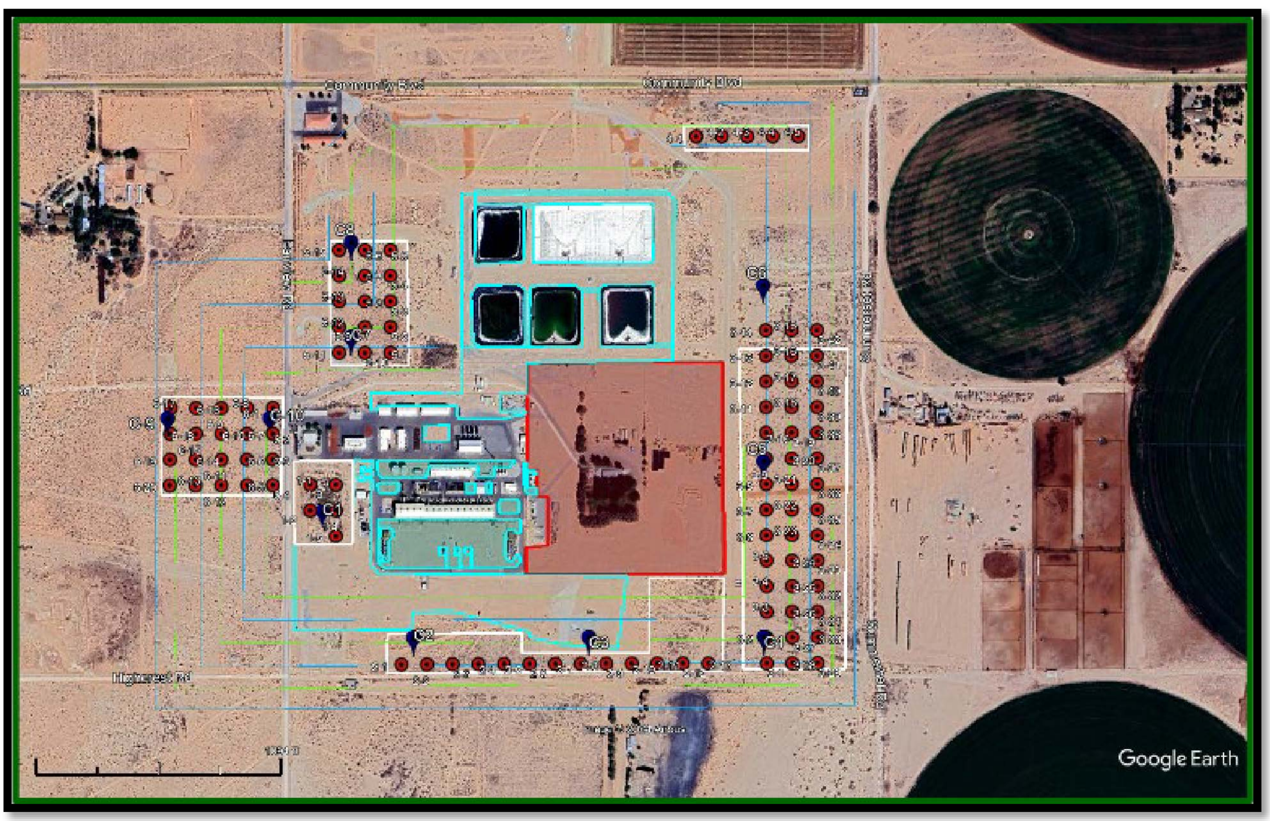

Figure 1. Modified grid location layout projected over aerial photograph of subject property. Individual traps are shown as red circles.

II. FIELD SURVEY METHODS

Surveys were conducted according to the following recommended guidelines. Actual implemented methods are listed following the official methodology, from the "California Department of Fish and Wildlife Mohave Ground Squirrel Survey Guidelines," dated January 2003 and revised in 2010 and 2023. A note on how the requirements have been met is described, following the CDFW text.

1. **Requirement:** Visual surveys to determine MGS activity and habitat quality shall be undertaken the period of 15 March through 15 April. All potential habitat on a project site shall be visually surveyed during daylight hours by a biologist who can readily identify the MGS and the white-tailed antelope squirrel (*Ammospermophilus leucurus*).

   Action Taken: Visual surveys were performed by Sharon Dougherty and Susan Seville during daylight hours on April 12, 2024.

2. **Requirement:** If visual surveys do not reveal presence of the MGS on the project site, standard small-mammal trapping grids shall be established in potential MGS. The number of grids will depend on the amount of potential habitat on the project site.

   Action Taken: For this effort a modified grid of 100 traps was established, comprised of six separate trapping areas throughout the 65-acre site. Notification of approval to implement this modified MGS protocol trapping grid was received April 10, 2024, from Julia Karo, Senior Environmental Scientist Specialist with CDFW.

3. **Requirement:** Live-trap grids should be established in representative patches of the best available MGS habitat within the project site to maximize the potential to detect MGS, as determined by the qualified biologist for the project. Standard configurations of 100 traps spaced at 35 meters (115 feet) apart are ten by ten traps for non-linear projects and 4 by 25 traps for linear projects. Bait should consist of rolled oats, mixed grains, or bird seed. Other seed and grain mixes may be used where personal experience has shown a particular brand or mixture is effective in attracting MGS. If using a simple bait, such as rolled oats, a small amount of peanut butter should be mixed into the dry bait to increase attractiveness.

   Action Taken: In this case, 100, 12-inch Sherman traps with shade boxes, spaced 35 meters apart were placed on the subject property as shown in Figure 1. The configuration was chosen to (a) cover as much of the site and as wide an area as possible; (b) to place traps in habitats most likely to support MGS; and (c) to avoid barren areas, active project areas, etc. that are not ideal for MGS. For this project the single grid of 100 traps was intended to survey the 65-acre± subject property. The bait mixture used, consisted of four-way grain mixed with powdered peanut butter.

4. **Requirement:** Trapping should occur for five consecutive days during each of the three trapping periods. At least two weeks should separate each of the trapping periods on a project site. The Trapping Periods are:
   a. March 15 through April 30
   b. May 1 through May 31 and
   c. June 1 through July 15.

   Action taken: The completed trapping dates are:
   Session 1: April 16-20, 2024.
   Session 2: May 3-7, 2024.
   Session 3: June 3-7, 2024.

5. **Requirement:** The times for trap opening and closure for MGS detection should depend on the forecast high temperature of the day and the actual air temperatures as measured on the project site.
   a. On days forecasted or expected not to exceed 32°C (90°F), trap opening should begin no later than one hour after sunrise. Assuming air temperature as measured onsite does not exceed 32°C (90°F), then the traps should remain open for a minimum of 10 hours.
   b. On days forecasted or expected to exceed 32°C (90°F), trap opening should begin at first light, with the expectation that traps may need to be closed after the first or second trap check. When traps are closed due to high temperatures four hours or more after opening, the effort may be considered a full trap-day. If traps are open less than four hours, an additional day of trapping on the grid should be conducted to make up for the short day.
   c. Additional information on trap check intervals and trap closures on hot days are described in the Health and Welfare section. Basic weather conditions should be recorded each day on each grid during the mid-day/afternoon trap check:
   The date and time of the weather data**.** Date and time should be formatted as mm/dd/yyyy hh:mm, with a space between date and time values. Use 24-hour clock values for time.
   a. Air temperature (Celsius degrees) within 50 cm above the ground surface, recorded in the shade of a natural object (shrub, tree) or human body. Do not record temperature in the shade of a vehicle.
   b. Estimated percent cloud cover, recorded in 10% bins (i.e., 0%, 10%, 20%, etc.)
   c. Wind speed should be recorded as per the attached Beaufort Scale. Beaufort Scale values may be derived from observations or from use of hand-held anemometers.

   Action Taken: These measures were implemented with temperatures measured at 50 cm in the shade of a shrub. Each of the three sessions met the requirements of a four-hour minimum trapping time and were counted as full trap days. The CDFW MGS Survey Form 2024 lists recorded weather results.

7. **Requirement:** Captured ground squirrels (both MGS and AGS) should be marked using a non-toxic permanent marking pen. To facilitate identifying previously captured ground squirrels in camera-trap photos, marks should be made on the dorsolateral pelage of the animals.

   Action Taken: All captured ground squirrels were marked using non-toxic markers. No MGS were captured during this effort.

8. **Requirement:** Live-trapping results should be reported to CDFW using the CDFW MGS Survey Form 2024.

   Action Taken: The results of this trapping session have been recorded using the CDFW MGS Survey Form 2024.

9. **Requirement:** Live-trapping programs should adhere to the Measures to Ensure the Health and Welfare of Mohave Ground Squirrels section of these survey guidelines.

   Action Taken: All live trapping efforts adhered to the Measures to Ensure the Health and Welfare of Mohave Ground Squirrels as stated in the guidelines protocol.

Since no MGS were captured, the results of this survey are valid for the period of one year, or until June 7, 2025. If the site is not developed by June 7, 2025, another protocol trapping survey will be required to ascertain persisting absence.

In addition to establishing the grid and trapping as described above, ten Browning "Dark Ops" motion sensor cameras were placed within the trapping configuration, and simultaneously operated for a total of 28 days during the trapping survey. Four-way grain mixed with powdered peanut butter was placed in front of the traps at a distance conducive to capturing images of squirrels, which is generally 1.5 to 2.0 meters in front of each camera. Cameras were oriented to the north and situated to minimize disturbance by waving branches, so that they focused on a relatively open area. The cameras were placed on site, throughout the six trapping areas at the beginning of Session 1 on April 15, 2024 operating continuously for 24 hours a day in the interim through May 7, 2024, which concluded the second live trapping session. A second session of camera trapping began on June 3, 2024, operating through June 7, 2024, coinciding with the third live-trapping session. Inspection of ±86,000 images resulted in no detection of MGS.

Table 2. Habitat Description & Summary of Effort

Independent Investigator:	Sarah Teed		
Dominant Annuals:	*Bromus madritensis* ssp. *rubens, Schismus* sp.		
Dominant Perennials:	*Atriplex canescens, A. polycarpa*		
Number of Winterfat:	0	**Number of Spiny hopsage:**	0
Landform:	Alluvial plain, dunes to the south		
Soil Type:	Sandy loam, with cobbles	**Elevation:**	671-677 meters (2,203-2,221 feet)
Total Acres Trapped:	65	**# Grids Trapped**	1
		# Traps	100

TRAPPING RESULTS

No MGS were captured during this protocol-level survey performed by CDFW-authorized personnel nor during operation of 10 cameras operated for 28 days. The lack of captures should indicate to CDFW that MGS do not occur on the subject property and that additional surveys are not required so long as the site is developed in the next year, after which time another survey would be required.

The CDFW form accompanying this report contains information for animals captured and weather conditions during the three trapping sessions. Table 3, below, lists specific methods for recording weather and codes for non-target animals trapped incidentally.

Table 3. CDFW MGS Trapping Form Conventions

TEMP °F[2] - The temperature ("air temperature") given was measured 50#cm above the ground in the shade of a shrub at the beginning of the day, followed by the **2**[**nd**] temperature, which was taken the same way at the beginning of the final check. Temperatures and maximum wind speeds were recorded using a hand-held Kestrel® weather and wind speed meter.
Other[3] - Codes for other animals trapped given in the 4th through 6th columns include: AGS = Antelope ground squirrel (*Ammospermophilus leucurus*) CAGS = California ground squirrel (*Otospermophilus beecheyi*) DEMO = Deer mouse (*Peromyscus maniculatus*) DEIG= Desert Iguana (*Dipsosaurus dorsalis)* HOSP = House sparrow (*Passer domesticus*) KRAT = Unidentified kangaroo rat (*Dipodomys* sp.) POMO = Unidentified pocket mouse (*Perognathus* sp.) WWTA = Western whiptail (*Cnemidophorus tigris*)
AGS[4] – Results reported herein for antelope ground squirrel (AGS) indicate total numbers of animals captured each day for each session. Additional data including trap stations, sex of animal, reproductive status (e.g., scrotal males, lactating females, etc.), relative age (adult versus juvenile), and number of recaptures (up to four) were collected in the field and are available upon request.

III. CONCLUSIONS

No MGS were found during the 15-day protocol trapping survey nor during 28 days of operating motion cameras as reported herein. Additional surveys are not required so long as the site is developed in the next year, after which time another survey would be required. Whereas this report includes results of a focused, protocol trapping survey and motion camera study, a more detailed report on all biota observed on the project site for PG&E's S-238 Electrical Upgrades Project S-238 at the HCS is given in the Biological Memo by CMBC in April of 2024 for the project, which has already been provided to PG&E Senior Biologist Virginia Strohl and Jacobs Senior Project Manager/Senior Biologist Marjorie Eisert. That report includes photographs and extensive additional biological information characterizing the subject property.

IV. REFERENCES AND LITERATURE CITED

California Department of Fish and Game (currently "CDFW"). 2003 revised 2010, 2023. CDFG unpublished guidelines. Mohave Ground Squirrel Survey Guidelines. Sacramento, CA.

Circle Mountain Biological Consultants, Inc. 2024. "Bio Memo for PG&E's S-238 Electrical Upgrades project." Dated 24 April 2024.

Appendix D
Rare Plant Survey Memorandum

DRAFT

PG&E S-238 Hinkley Electrical Upgrades Project Pre-construction Floristic Survey Report – Spring 2024

Prepared for

Pacific Gas and Electric Company

September 2024

Prepared by

Balk Biological, Inc.

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Acronyms and Abbreviations

BLM	U.S. Bureau of Land Management
CDNPA	California Desert Native Plants Act
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Ranked
HUC	Hydrologic Unit Code
MCC	Motor Control Center
msl	mean sea level
NRCS	Natural Resources Conservation Service
PG&E	Pacific Gas and Electric Company
Project Area	Hinkley Compressor Station plus 100-foot buffer
SR	State Route
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
Work Area	Hinkley Compressor Station

Introduction

Pacific Gas and Electric Company's (PG&E's) S-238 Hinkley Compressor Station (HCS) Electrical Upgrades Project (project) will upgrade and replace the station's electrical distribution equipment that has reached the end of its useful life or requires change for safety, reliability, or maintainability. As part of the proposed project, the station's existing electrical power switchgear and motor control centers (MCCs) or load centers or will be replaced or modified and connecting conduit and cable (also called wire or feeders) will be installed between the switchgear and MCC locations (Figure 1). Temporary generators will power the station during construction when electric equipment connecting with the permanent generators is deenergized during specific construction activities. After the upgrade is complete, the temporary generator equipment and associated existing gas fuel lines will be removed. The temporary gas fuel lines are installed at the station to allow emergency use of temporary generators to avoid station shutdown should electrical equipment fail while approval for the proposed project is proceeding.

All construction will occur within the boundaries of the fenced HCS. Most of the work will not require ground disturbance; equipment modification will occur within buildings, on existing infrastructure, or cable will be replaced in pre-existing conduit. Other equipment replacement, modification or installation will not be ground disturbing. A portion of the station's existing staging area will be used for project staging. Temporary generators on trailers will power the station during construction when electric equipment connecting with the permanent generators is deenergized during specific construction activities. After the upgrade is complete, the temporary generator equipment will be removed. The only new construction consists of the installation of four (4) Motor Control Centers (MCC) and Four trenches will be made in the work area to install approximately 200 feet of new conduit (Figure 1). The footprint for each of the MCCs will average 150 square feet for a total estimated disturbance of 600 square feet (0.0149 acre). The project is scheduled to mobilize in approximately April 2025 and be completed in approximately February 2027. Ground disturbing activities are expected to occur over approximately 60 workdays in May 2025 to July 2025.

This report presents the results of the botanical surveys conducted in April 2024 to identify and map any special-status plant species (as defined in Section 3, Methodology) that may be present within or adjacent to the proposed work areas.

1.1 Project Location

Hinkley Compressor Station is a staffed facility located at 35863 Fairview Road in the community of Hinkley, California, in San Bernardino County. The main station entrance on Fairview Road is approximately 1 mile south of State Route (SR) 58 (refer to Figure 2). The station is approximately 1 mile west of the city limits of the City of Barstow. The fenced station occupies approximately 64 acres on a 160-acre parcel adjacent to Community Boulevard at Fairview Road. Two PG&E gas transmission lines, Line 300A and Line 300B, cross the southwest corner of the station in a northwest-southeast orientation.

1.2 Ecological Setting

Most of the project is located within the Lucerne-Johnson Valleys and Hills ecological subsection of the Mojave Desert Ecological Section (Miles and Goudey, 1998). The subsection is characterized by mountains, hills, piedmonts, and alluvial plains (Miles and Goudey, 1998). The project is located within the U.S. Department of Agriculture's (USDA's) Land Resource Region D – Western Range and Irrigated Region (Natural Resources Conservation Service [NRCS], 2022). This is the largest of the Land Resource

Regions and includes the semi-desert plateaus, plains, basins, and mountains from southeastern Oregon to the Mexico border throughout eastern California; it extends eastward into southwestern Texas and northward into Wyoming.

Locally, the landscape is characterized by gently rolling hills in the western and southern buffer of the site, with the substation and eastern and northern buffer areas being located on nearly level ground/alluvium. Topography ranges from approximately 669 feet above mean sea level (msl) in the northeast corner of the survey area to 677 feet amsl in the west-central portion of the survey area (across Fairview Road to the west of the PG&E administrative office). The following sections provide additional information on the climate, hydrology, geology, and soils. Descriptions of the vegetation communities are provided in Section 2.

Representative photographs of the survey area are provided in Appendix A.

1.2.1 Climate and Hydrology

Regional climate data were obtained from the Barstow Station (USDA NRCS 2024a), located approximately 8.6 miles east of the Hinkley Electrical Upgrades Project Area (Project Area). Average temperatures range from a low of 24 degrees Fahrenheit (°F) in December to a high of 111°F in July. Average annual precipitation is 3.92 inches with the largest amounts of rainfall occurring during summer thunderstorms between July and September and winter rains between December and March. Very little rainfall occurs in May and June.

The project is located within the Coyote – Cuddeback Lakes Watershed (Hydrologic Unit Code [HUC] 18090207; United States Geological Survey [USGS] 2024), a subset of the Northern Mojave – Mono Lake Watershed (HUC 1800). The primary feature in the Coyote – Cuddeback Lakes Watershed Hydrologic Unit is Harper Lake, located approximately 10.2 miles northwest of the Project Area, north of SR-58.

No water features are located within the Hinkley Project Area itself. Local surface waters consist of the Mojave River, small desert washes that flow south to the Mojave River, and desert washes that flow north to Harper Lake during infrequent large rain events (LRWQCB 2013).

1.2.2 Geographical Setting

The project is located within the Mojave Desert geomorphic province, which is characterized by isolated mountain ranges separated by large expanses of desert, bordered by the Garlock Fault in the north and the San Andreas Fault in the west. There is little elevational relief, with the project area generally located on the edge of a flat basin-like area (the Hinkley Valley) adjacent to the Mojave River, which is located within approximately 0.75 mile to the southeast of the site. Soils consist of quaternary alluviums from deposits by the Mojave River flows. These deposits overlay erosional deposits from surrounding mountains. Project survey areas to the west of the compressor station show more elevational relief, with very gently rolling hills beginning to be present as one moves west.

Three soil types have been mapped within the botanical survey area: (1) Cajon Loamy Sand, Loamy Substratum, 0-2% Slopes; (2) Norob-Halloran Complex, 0-5% Slopes, and (3) Cajon Sand, 0-2% Slopes (NRCS 2024b). See Table 1 below for a summary of the relevant characteristics of each of these soil types.

Table 1. Soil Types Mapped within the Project Area

Map Unit Name	Landform	Drainage Class	Salinity	Profile	Ecological Site Classification	Notes
Cajon Loamy Sand, Loamy Substratum, 0-2% Slopes	Alluvial fan (derived from granitic sources)	Somewhat excessively drained	Very slightly saline to moderately saline	0-7”: loamy sand; 7-20”: sand; 20-42”: loamy sand	Sandy	Soil type consists of approximately 85% Cajon Loamy Sand, Loamy Substratum, and 15% other minor components. Majority of the survey area consists of this soil type.
Norob-Halloran Complex, 0-5% Slopes	**Norob**: Fan remnants (derived from granitic sources) **Halloran**: Alluvial fan (derived from granitic sources)	Moderately well-drained	Slightly saline to strongly saline	**Norob**: 0-5”: loamy sand; 5-33”: sandy clay loam; 33 to 60”: stratified gravelly loamy sand to sandy clay loam **Halloran**: 0 to 2’: sand; 2 to 21”: sandy loam; 21 to 33”: loamy sand; 33 to 60”: stratified sand to sandy loam	Alkali sandy	Soil type consists of approximately 60% Norob soils, 20% Halloran soils, and 20% other minor components. Small area mapped in the southwestern portion of the substation and survey area boundary
Cajon Sand, 0-2% Slopes	Alluvial fan (derived from granitic sources)	Somewhat excessively well-drained	N/A	0-7”: sand; 7-25”: sand; 25-45”: gravelly sand; 45-60”: stratified sand to loamy fine sand	Sandy	Soil type consists of approximately 85% Cajon Sand, 0-2% Slopes, and 15% other minor components. Two small areas mapped in the survey area: northwest of the substation and in the extreme east region of the survey area.

2.0 Vegetation Communities/Land Cover Types

There are two primary terrestrial plant communities and one non-vegetated land cover type located in and around the project work areas. Vegetation classification follows the second edition of *A Manual of California Vegetation* (Sawyer *et al*., 2009). The primary terrestrial plant community types are disturbed creosote bush scrub and disturbed allscale scrub. The non-vegetated land cover type is developed. Detailed descriptions of these primary plant communities are provided in the following sections.

2.1.1 Developed Land

Developed refers to areas that have been constructed upon or otherwise physically altered to an extent that native vegetation communities are no longer supported. This land cover type generally consists of semi-permanent structures, homes, parking lots, pavement or hardscape, and sometimes landscaped areas that require maintenance and irrigation (e.g., ornamental greenbelts). The HCS, occupied by numerous buildings, housing natural gas generators, offices, and associated infrastructure, was mapped as developed. The entire project area is disturbed from previous work activities associated with the HCS. The project area is almost completely denuded of any vegetation except for ornamental landscape plantings along the access road and within the staging area where large ornamental trees (athel [*Tamarix aphylla*], ornamental elm [*Ulmus* sp.], and ornamental pine [*Pinus* sp.]) and shrubs exist around an employee recreation area.

2.1.2 Creosote Bush – White Bursage Scrub: *Larrea tridentata – Ambrosia dumosa* Shrubland Alliance

Creosote Bush Scrub is also present adjacent to the HCS project site. It is most accurately keyed to the Creosote Bush - White Bursage - Allscale Scrub Association (of the Creosote Bush – White Bursage Alliance) (Sawyer *et al.* 2009). The Creosote Bush - White Bursage vegetation alliance must contain at least 1% absolute cover of creosote bush and 1% absolute cover of white bursage, with these two species exceeding twice the cover of other shrub species (with a few exceptions). This scrub alliance is common throughout a variety of mainly upland habitats but may also be common in minor washes and rills. Around the HCS project site, allscale is also common in this community, allowing a further classification of this community into the Creosote Bush - White Bursage – Allscale Scrub association. Adjacent to the project site, this scrub association is disturbed, with red-stemmed filaree (*Erodium cicutarium*) and Mediterranean schismus (*Schismus barbatus*), although native species are also present in high quantities and diversity. Common native species included evening primroses (*Eremothera/Oenothera* spp.), blue dicks (*Dichelostemma capitatum* ssp. *pauciflorus*), tick-seed (*Leptosyne calliopsidea*.), rigid spineflower (*Chorizanthe rigida*), and desert plantain (*Plantago ovata*).

2.1.3 Allscale Scrub: *Atriplex polycarpa* Shrubland Alliance

Within the HCS there is an approximately two-acre area, on the western boundary of the project site, with native vegetation consisting of allscale scrub with occasional creosote bush (*Larraea tridentata*). This area appears to have been a borrow pit and is low-lying compared to the rest of the site, with some seasonal flooding. The majority of the vegetation in the HCS botanical survey area buffer can be classified as Allscale Scrub. This vegetation community is common in low-lying, sandy-soils areas of the Mojave Desert, particularly the western Mojave. It is common on low-lying areas such as alluvial fans, edges of playas, and along washes. It is dominated by allscale (allscale composes at least 2% of the absolute cover) but may contain other species of shrubs for up to 50% of the relative cover (Sawyer *et al.* 2009). Allscale Scrub onsite is dominated by allscale, with almost no other shrub species present. In openings between shrubs, annual species may be present. Onsite, these annual species were uncommon but included gilias (*Gilia* spp.), buckwheat (*Eriogonum* spp.), combseed (*Pectocarya* spp.), fiddlenecks (*Amsinckia* spp.), annual bur-sage (*Ambrosia acanthicarpa*), snakeheads (*Malacothrix coulteri*). Allscale Scrub onsite is low quality habitat due to areas with bare ground due to recent disturbance and other areas with a prevalence of weeds such as London rocket (*Sisymbrium irio*), brome grasses (*Bromus* spp.), and prickly lettuce (*Lactuca serriola*).

2.2 Wetland Communities

There are no wetlands within the project area. The only aquatic features on the site are evaporation ponds within the HCS and north of the project area. The only surface waters in the project vicinity are the Mojave River, small desert washes that flow south to the Mojave River, and desert washes that flow north to Harper Lake during infrequent large rain events (LRWQCB 2013).

There are no watercourse crossings associated with the proposed project and no watercourse crossings will be affected by construction activities.

SECTION 3

Methodology

3.1 Special-Status Plants

The purpose of the pre-construction botanical surveys conducted in April 2024 was to identify any special-status plant species that occur within the project work areas, and to ensure that such species are documented and mapped prior to the start of construction activities.

A plant species was considered to be special-status if it met one or more of the following criteria:

- Species that are listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (50 CFR 17.11, 76 Federal Register 66370)
- Species that are listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (FGC § 2050 et seq., 2062, 2067, and 2068)
- Species listed by California Native Plant Society (CNPS) as lists 1 through 4 in the current online version of its Inventory of Rare and Endangered Plants of California (CNPS 2024) as they meet the definition of "rare" or "endangered" under CEQA Guidelines §15125 (c) and/or §15380

3.1.1 Research and Literature Review

Prior to the initial botanical surveys, research was conducted to identify special-status plant species with a potential to occur in the Project Area. A preliminary list of potentially occurring special-status plants (target list) was derived from several sources. Research on special-status plants in California included quadrangle-based searches of the CNPS Inventory of Rare and Endangered Plants of California and the California Natural Diversity Database (CNDDB) RareFind5 database (CDFW 2024) to identify potentially occurring special-status plants. The 7.5-minute U.S. Geologic Survey (USGS) quadrangle containing the Project Area (Corning Quadrangle) and the 11 surrounding USGS 7.5-minute quadrangles (Hinkley, Barstow, Barstow SE, Twelve Gauge Lake, Lockhart, Water Valley, Bird Spring, Mud Hills, Wild Crossing, and Hodge) were included in both the CNPS and CNDDB RareFind5 database searches. The CNDDB Quickviewer online database was also searched to identify potentially occurring plant species such as CRPR List 4 plants that are not recorded on a quadrangle basis in the RareFind5 database. Prior to the surveys the CNPS (2024) Inventory of Rare and Endangered Plants of California and the CNDDB (CDFW, 2024a) RareFind5 database were both reviewed to determine if any additional species had been added since the initial database review. In addition, plants that are designated as federally listed or candidate species by the U.S. Fish and Wildlife Service (USFWS) (1996, 2024a, 2024b) were also considered.

The list of native plants that are protected under the California Desert Native Plants Act (CDNPA) (1981) was also reviewed and evaluated based on reported occurrences, habitats, and distributional ranges of each species.

If a species' distribution, habitat, or elevation range precluded its possible occurrence in the Project Area or vicinity, it was not considered further. A species was determined to have potential to occur within the Project Area if its known or expected geographic range includes the Project Area and suitable habitat (including soil preference, if any) was identified in the Project Area during any of the botanical surveys.

Based on the pre-survey research and literature review, 22 special-status plants have the potential to occur in the Project Area. These species, along with data on flowering period, conservation status, habitat preferences, geographic distribution, and known locations in the vicinity of the survey area, are presented in Appendix B. The list of potential special-status species includes one species designated as federally-listed endangered, one species proposed for listing by the state of California, 11 additional species designated CRPR 1B or 2B, and 9 plants that are CRPR 3 or 4 in the Inventory of Rare and Endangered Plants of California (CNPS 2024).

3.2 Reference Site Visits

Immediately prior the botanical survey, known occurrences of Barstow woolly sunflower (*Eriophyllum mojavense*), desert cymopteris (*Cymopteris deserticola*), and Beaver Dam breadroot (*Pediomelum castoreum*), were visited. No individuals of these species were observed at any of these locations. It is possible that these locations are no longer extant, or timing of the survey was not optimal for observation of these species.

Survey Area

The approximately 83-acre survey area included the HCS and a 100-foot botanical survey buffer. The extent of the survey area is shown in Figure 2.

3.3 Field Surveys

Protocol-level floristic surveys that conform to the guidelines of the California Department of Fish and Wildlife (CDFW, 2009), the USFWS (2011), and the CNPS (2001) were conducted in the 83-acre survey area (Figure 2). The survey was conducted by Balk Biological botanist Michelle Balk on April 15 and 16, 2024.

The objective of the surveys was to generate a comprehensive list of all plant species that occur in the survey area and to census, map, photograph, and record data for any special-status species found.

Because of the relatively few plant collections known from the Hinkley area, it was possible that a special-status plant not known to occur in the Project Area or vicinity (and therefore not on the target list shown in Appendix B) would be detected during the surveys. Therefore, the surveys were floristic and comprehensive in nature, meaning that all plants found were identified. Species that were not immediately recognizable to the surveyor were identified using the Jepson Manual (Baldwin *et al*., 2012) to the level necessary to determine whether they had special-status significance.

The ability of surveyor to detect and identify plants efficiently and accurately in the field was enhanced by a field review of the common plant species in the Project Area prior to beginning the surveys. The surveyor also reviewed reference locations, photographs and information of targeted special-status plants as well as information provided from the Jepson Online Interchange (Jepson Herbarium, 2024) prior to the surveys.

The entire survey area (HCS plus 100-foot buffer) was walked via meandering transects to ensure coverage of the entire survey area. A list of all vascular plant species observed during the plant surveys is included in Appendix D. Nomenclature for scientific names follows the Jepson Online Interchange for California Floristics (Jepson Herbarium, 2024).

Results

4.1 Survey Conditions

Survey conditions in April 2024 were considered acceptable. The average rainfall for Barstow, California (the nearest station) between October and March is approximately 3.86 inches (USDA NRCS 2024b). The site received approximately 6.22 inches of winter rainfall between the months of October 2023 and March 2024 (USDA NRCS 2024b).

4.2 Survey Results

No federal or state listed endangered, threatened, or rare plants and no BLM sensitive species were found during the March 2024 surveys. No CRPR-listed plants according to the CNPS were observed.

References

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, second edition. University of California Press, Berkeley.

California Department of Fish and Wildlife (CDFW). 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Sacramento, CA. Accessed at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=107494&inline http://www.dfg.ca.gov/bdb/pdfs/guideplt.pdf.

California Department of Fish and Wildlife (CDFW). 2024. California Natural Diversity Database RareFind5 electronic database. Sacramento, California. August.

California Desert Native Plants Act (CDNPA). 1981. Accessed at: https://www.wildlife.ca.gov/Conservation/Plants/CA-Desert-Plant-Act.

California Native Plant Society (CNPS). 2001. *Botanical survey guidelines of the California Native Plant Society*. 9 December 1983 (Revised 2 June 2001).

California Native Plant Society (CNPS). 2024. Inventory of Rare and Endangered Plants of California (online edition). Accessed at: http://www.cnps.org/cnps/rareplants/inventory/.

Jepson Herbarium, The. 2024. The Jepson Online Interchange for California Floristics. The University of California, Berkeley. Accessed at: http://ucjeps.berkeley.edu/interchange/.

Lahontan Regional Water Quality Control Board (LRWQCB). 2013. Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County, Final Environmental Impact Report Volume II. May. https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/feir.html.

Miles, Scott R. and Charles B. Goudey. 1998. United States Department of Agriculture (USDA) Forest Service R5-EM-TP-005-NET (Internet publication). May.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. *A manual of California vegetation, 2nd ed.* California Native Plant Society, Sacramento, CA.

United States Department of Agriculture, Natural Resources Conservation Service. 2022. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture, Agriculture Handbook 296.

United States Department of Agriculture -- Natural Resources Conservation Service National Weather and Climate Center Website. Barstow Station. 2024a. Accessed September 13, 2024. https://www.nrcs.usda.gov/wps/portal/wcc/home/climateSupport/agAcisClimateData/.

United States Department of Agriculture -- Natural Resources Conservation Service Web Soil Survey 2024b. Accessed September 13, 2024. https://websoilsurvey.nrcs.usda.gov/app/

United States Geological Survey. Science in Your Watershed website. URL: https://water.usgs.gov/wsc/cat/18090208.html. Accessed September 13, 2004.

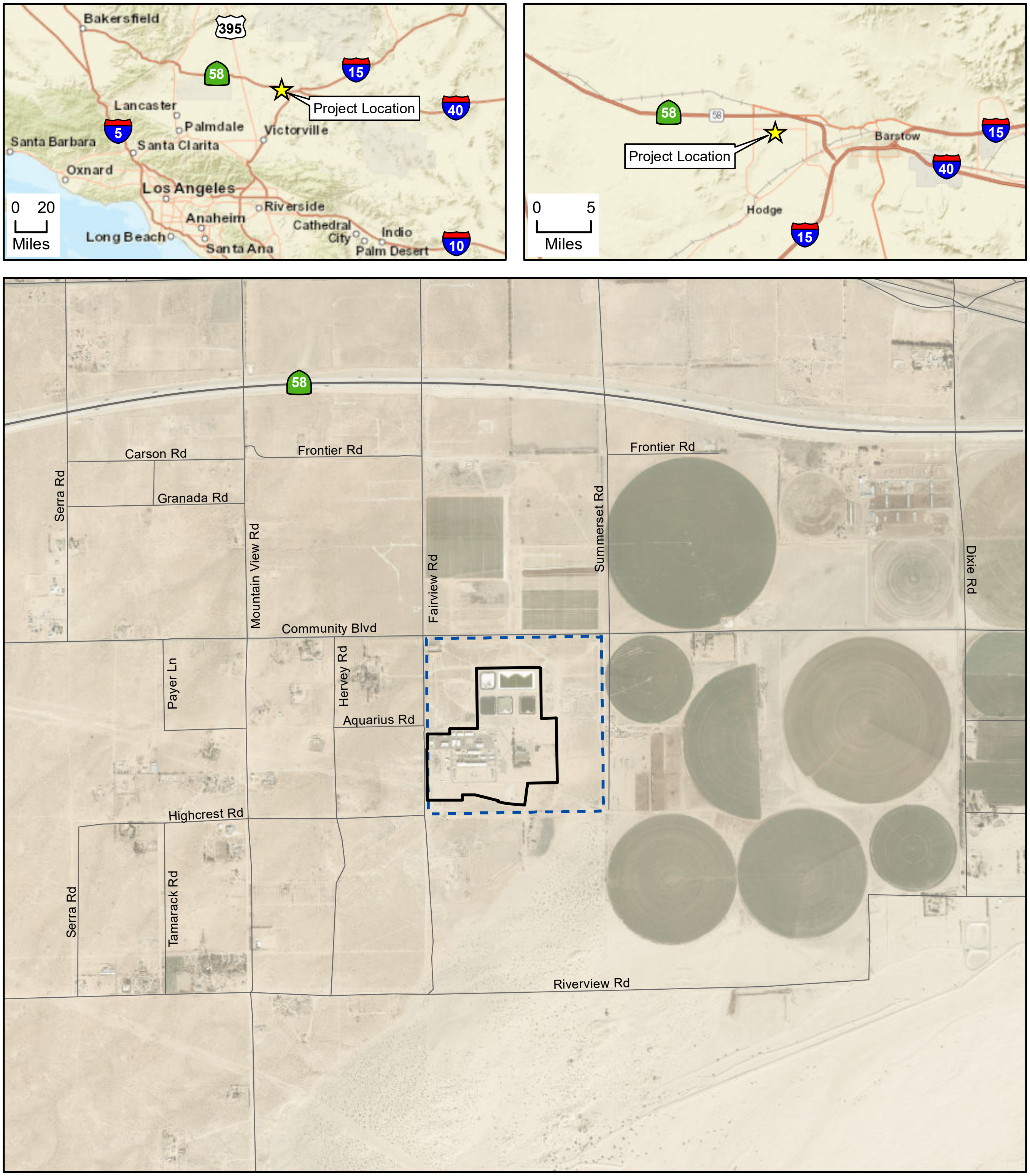
U.S. Fish and Wildlife Service (USFWS). 1996. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species; Notice of Review; Proposed Rule. Federal Register 61(40): 7596-7613.

U.S. Fish and Wildlife Service (USFWS) 2011. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants*. USFWS, January 1. Accessed at: https://www.fws.gov/media/guidelines-conducting-and-reporting-botanical-inventories-federally-listed-proposed-and

U.S. Fish and Wildlife Service (USFWS). 2024a. List of federal candidates for listing. Accessed at: https://ecos.fws.gov/ecp/species-reports.

U.S. Fish and Wildlife Service (USFWS). 2024b. List of federally listed threatened & endangered species which may occur in San Bernardino County, CA. USFWS, Carlsbad Fish and Wildlife Office, Carlsbad, CA. Accessed at https://fws.gov/office/carlsbad-fish-and-wildlife/species.

Figures



Version: 9/17/2024

Legend

Hinkley Compressor Station Perimeter Fence Line

Property Boundary

N

0 0.25 0.5

Miles

Figure 1
Project Overview
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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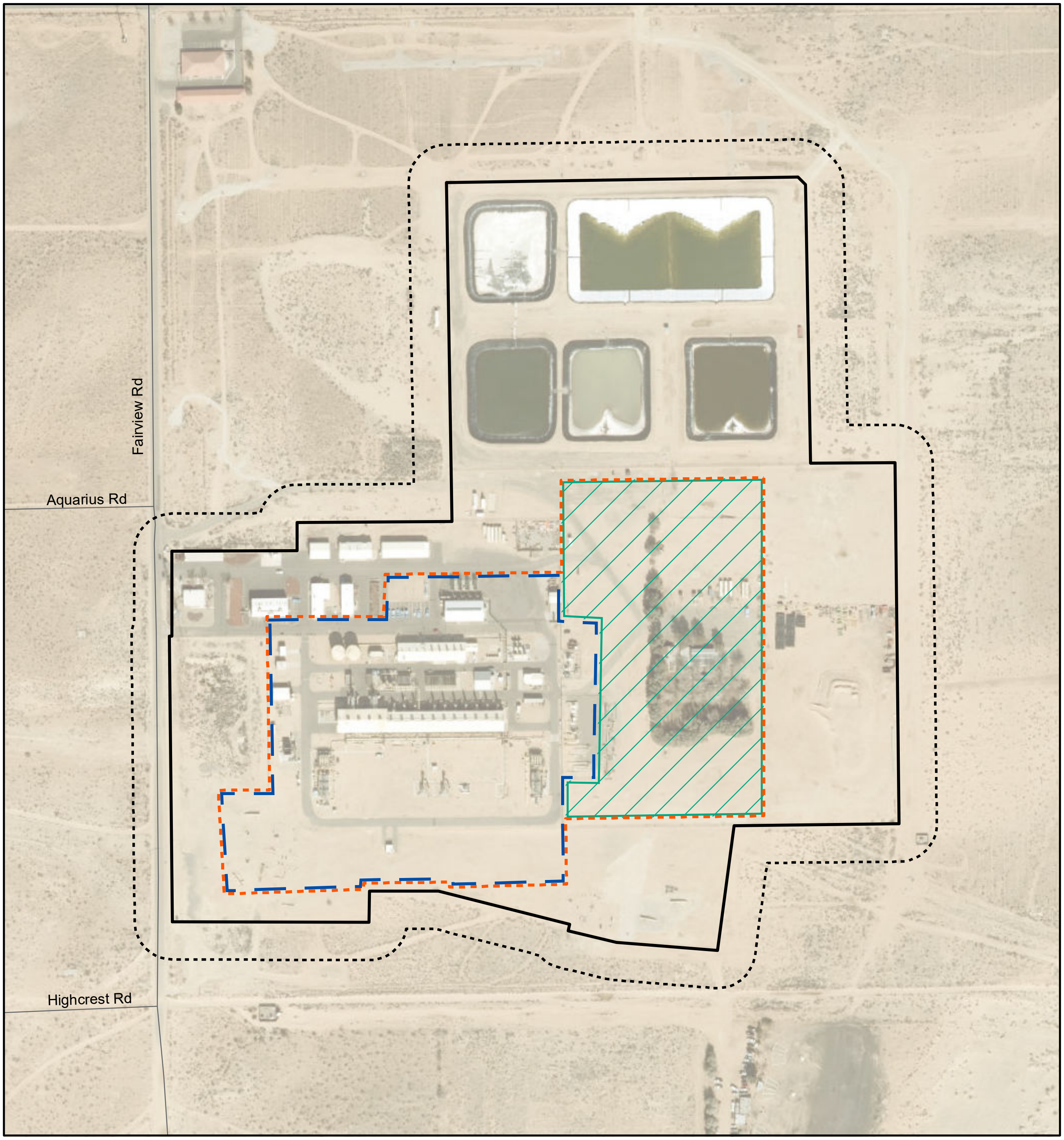

Version: 9/17/2024

Legend

- Hinkley Compressor Station Perimeter Fence Line
- Botanical Survey Limit
- Staging Area
- Work Area
- Project Area

0 200 400
Feet
N

Figure 2
Botanical Survey Area
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Appendix A
Photographs of the Survey Area

Photo 1. Northern Portion of the Survey Area, facing West

Photo 2. Northeast Corner of the Survey Area, facing South

Photo 3. East-central Region of the Survey Area, facing South

Photo 4. Southeast Corner of the Survey Area, facing North

Photo 5. Southwestern Corner of the Survey Area, facing North

Photo 6. Western Region of the Survey Area, facing East/Southeast

Photo 7. West-central Region of the Survey Area, facing South

Photo 8. Northwestern Region of the Survey Area, facing East

Photo 9. North-central Region of the Survey Area, facing Southwest

Photo 10. North-central Region of the Survey Area, facing East

Appendix B
Target List of Special-status Plant Species with the Potential to Occur in the Project Area

Table B. Target List of Special-status Plant Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Status[1] State/Federal/CRPR	Flowering Period	Habitat	Potential to Occur[2]
TREES					
Western Joshua tree	*Yucca brevifolia*	SC/None/None	Mar-May	Joshua tree "woodland", desert flats and slopes	**Unlikely.** Not observed during surveys. Suitable habitat is present, but if present onsite this large perennial species would likely have been observed.
SHRUBS AND CACTI					
Mojave fishhook cactus	*Sclerocactus polyancistrus*	None/None/4.3	April -July	Great Basin scrub, Joshua tree "woodland"; Mojavean desert scrub, usually carbonate soils	**Unlikely.** Not observed during surveys. Suitable habitat is present, but if present onsite this large perennial species would likely have been observed.
Mojave indigo-bush	*Psorothamnus arborescens* var. *arborescens*	None/None/4.3	April - May	Mojavean desert scrub, riparian scrub	**Unlikely.** Not observed during surveys. Suitable habitat is present, but if present onsite this large perennial species would likely have been observed.
Mojave menodora	*Menodora spinescens* var. *mohavensis*	None/None1B.2	Apr – May	Mojavean desert scrub. Slopes, canyons, gravelly, rocky soils. Andesite gravel	**Unlikely.** Not observed during surveys. Suitable habitat is present, but if present onsite this large perennial species would likely have been observed.
Torrey's box-thorn	*Lycium torreyi*	None/None/4.2	Jan–Nov	Sandy, rocky, washes, streambanks, desert valleys in Mojavean and Sonoran Desert scrub.	**Unlikely.** Suitable habitat is present, but if present onsite this large perennial species would likely have been observed.
HERBACEOUS PLANTS					
Barstow woolly sunflower	*Eriophyllum mojavense*	None/None/1B.2	Mar – May	Chenopod scrub, Mojavean desert scrub, playas	**Possible within buffer area only.** Suitable habitat is present for this annual herb within the buffer area west of Fairview Road, but this species was not observed.
Beaver dam breadroot	*Pediomelum castoreum*	None/None/1B.2	April - May	Joshua tree "woodland," Mojavean desert scrub/roadsides, washes, sandy areas, openings, roadcuts	**Unlikely to occur within buffer area only.** Suitable habitat is present onsite, but this species was not observed.
Borrego milkvetch	*Astragalus lentiginosus* var. *borreganus*	None/None/4.3	Feb–May, Sep	Creosote bush scrub; widely scattered in sand dunes, or semi-stabilized sandy areas in valleys.	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.

Table B. Target List of Special-status Plant Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Status[1] State/Federal/CRPR	Flowering Period	Habitat	Potential to Occur[2]
California alkali grass	*Puccinellia simplex*	None/None/1B.2	March – May	Sinks, lake margins, flats within chenopod scrub, meadows and seep;, valley and foothill grassland, vernal pools. Alkaline areas, vernally mesic	**Unlikely.** Suitable habitat and microhabitat generally not present within survey area.
Chaparral sand verbena	*Abronia villosa ssp. aurita*	None/None/1B.1	(Jan)Mar-Sep	Chaparral, coastal scrub, desert dunes. Sandy soils	**Unlikely.** Suitable habitat and microhabitat generally not present within survey area.
Colorado Desert larkspur	*Delphinium parishii* ssp. *subglobosum*	None/None/4.3	Mar – June	Chaparral, cismontane woodland, pinyon and juniper woodland, Sonoran desert scrub	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.
Creamy blazing star	*Mentzelia tridentata*	None/None/1B.3	Mar – May	Mojaven desert scrub. Sandy, rocky, or gravelly substrates	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.
Crowned muilla	*Muilla coronata*	None/None/4.2	Mar – April (May)	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.
Desert cymopterus	*Cymopterus deserticola*	None/None/1B.2	Mar – May	Joshua tree "woodland", Mojavean desert scrub. Sandy soils	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.
Joshua Tree poppy	*Eschscholzia androuxii*	None/None/4.3	Feb – May (June)	Washes in Joshua tree "woodland" and Mojavean desert scrub.	**Unlikely.** Site does not contain washes to support this species.
Lane Mountain milkvetch	*Astragalus jaegerianus*	None/FE/1B.1	Apr – June	Joshua tree "woodland", Mojavean desert scrub. Granitic, sometimes gravelly or sandy	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.
Mojave monkeyflower	*Diplacus mohavensis*	None/None/1B.2	Apr – June	Joshua tree "woodland", Mojavean desert scrub. Sometimes sandy or gravelly soils. Often in washes.	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.

Table B. Target List of Special-status Plant Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Status[1] State/Federal/CRPR	Flowering Period	Habitat	Potential to Occur[2]
Mojave spineflower	*Chorizanthe spinosa*	None/None/4.2	Mar – July	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Playas. Often alkaline soils.	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.
Parrish's phacelia	*Phacelia parishii*	None/None/1B.1	Apr-May (Jun-Jul)	Mojavean desert scrub, playas. Sometimes alkaline or clay soils.	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.
Slender cottonheads	*Nemacaulis denudata* var. *gracilis*	None/None/2B.2	Mar–May	Creosote bush scrub; sandy soils on stabilized dunes and sand ramps.	**Unlikely.** Site does not contain stabilized dunes or sand ramps to support this species, and the species was not observed in the survey area.
Spiny-hair blazing star	*Mentzelia tricuspis*	None/None/2B.1	Apr–Jun, Sept–Oct	Mojavean desert scrub; sandy or gravelly slopes and washes.	**Unlikely.** The site buffer contains a minimal amount of marginally suitable habitat for this species, but the species was not observed in the survey area.
White pygmy-poppy	*Canbya candida*	None/None/4.2	Mar – June	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland. Sandy/granitic/gravelly soils	**Possible within buffer area only.** Suitable habitat is present for this annual herb, but the species was not observed in the survey area.

Table B. Target List of Special-status Plant Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Status[1] State/Federal/CRPR	Flowering Period	Habitat	Potential to Occur[2]

Notes

[1] **Conservation status abbreviations:**

SC – State Candidate for listing

FE – Federally-listed endangered

S – Sensitive. California Rare Plant Ranks (CRPR) (formerly CNPS Lists)

- 1B Plants rare, threatened or endangered in California and elsewhere.
- 2B Plants rare, threatened or endangered in California, more common elsewhere.
- 3 Plants for which more information is needed – a review list.
- 4 Plants of limited distribution – a watch list.

California Rare Plant Subcategories

- .1 Seriously threatened in California.
- .2 Fairly threatened in California.
- .3 Not very threatened in California.

[2] Potential to occur definitions:

- Present: Species observed on the site.
- Possible: Species not observed on the site, however conditions suitable for occurrence.
- Unlikely: Species not observed on the site, conditions marginal for occurrence.

Sources:

California Native Plant Society, 2024; California Natural Diversity Database (CDFW, 2024a); Jepson Online Interchange, 2024

Appendix C
Vascular Plant Species Observed in the Project Area

Table C. Vascular Plants Observed within the Hinkley Compressor Station Botanical Survey Area During April 2024 Surveys

Scientific Names[1]	Common Names	Status[1]
GYMNOSPERMS		
EPHEDRACEAE	**Ephedra family**	
Ephedra sp.	Mormon tea	Native
PINACEAE	**Pine family**	
Pinus sp.	Pine	Non-native
ANGIOSPERMS-DICOTS		
APOCYNACEAE	**milkweed family**	
Nerium oleander	Oleander	Non-native
ASTERACEAE	**Sunflower family**	
Ambrosia acanthicarpa	Annual bur-sage	Native
Ambrosia dumosa	white bursage	Native
Ambrosia salsola	Cheesebush	Native
Chaenactis fremonti	Fremont's pincushion	Native
Erigeron canadensis	Horseweed	Native
Lactuca serriola	Prickly lettuce	Naturalized
Lasthenia californica	California goldfields	Native
Leptosyne calliopsidea	Leaf-stem tickseed	Native
Malacothrix coulteri	Snakeheads	Native
Malacothrix glabrata	Desert dandelion	Native
Sonchus asper	Spiny sow-thistle	Naturalized
Sonchus oleraceus	Common sow-thistle	Naturalized
Stephanomeria exigua	Small wirelettuce	Native
Taraxacum officinale	Common dandelion	Naturalized
BORAGINACEAE	**Borage family**	
Amsinckia menziesii	Common fiddleneck	Native
Amsinckia tessellata	Bristly fiddleneck	Native
Cryptantha angustifolia	Red-root cryptantha	Native
Cryptantha micrantha	Winged-nut cryptantha	Native
Pectocarya linearis	Slender pectocarya	Native
Pectocarya sp.	Combseed	Native
Phacelia cicutaria	Caterpillar phacelia	Native
BRASSICACEAE	**Mustard family**	
Capsella bursa-pastoris	Shepherd's purse	Naturalized
Descurainia pinnata	Tansy mustard	Native
Guillenia lasiophylla	California mustard	Native
Lepidium lasiocarpum	Pepperweed	Native
Sisymbrium irio	London rocket	Natralized
CHENOPODIACEAE	**goosefoot family**	
Atriplex hymenelytra	Desert holly	Native (CDNPA Protection)
Atriplex lentiformis	Big saltbush	Native

Table C. Vascular Plants Observed within the Hinkley Compressor Station Botanical Survey Area During April 2024 Surveys

Scientific Names[1]	**Common Names**	**Status[1]**
Atriplex polycarpa	Allscale	Native
Chenopodium album	White goosefoot	Naturalized
Salsola tragus	Russian thistle	Naturalized
FABACEAE	**Legume family**	
Astragalus didymocarpus	Two-seeded milkvetch	Native
Lupinus bicolor	Miniature lupine	Native
Senna armata	Senna	Native
GERANIACEAE	**Geranium family**	
Erodium cicutarium	Red-stemmed filaree	Naturalized
MALVACEAE	**Mallow family**	
Eremalche exilis	White mallow	Native
Malva parviflora	Cheeseweed	Naturalized
Sphaeralcea ambigua	Apricot mallow	Native
OLEACEAE	**ash family**	
Fraxinus sp.	Ash tree	Non-native
ONAGRACEAE	**Evening primrose family**	
Eremothera boothii	Booth's desert evening primrose	Native
PAPAVERACEAE	**Poppy family**	
Eschscholzia minutiflora	Small-flowered California poppy	Native
PLANTAGINACEAE	**Plantain family**	
Plantago ovata	Ovate plantain	Native
Veronica arvensis	No common name	Naturalized
POLEMONIACEAE	**Phlox family**	
Gilia sp.	Gilia	Native
POLYGONACEAE	**Buckwheat family**	
Chorizanthe rigida	Rigid spineflower	Native
Eriogonum gracillimum	Rose-and-white buckwheat	Native
Eriogonum trichopes	Little desert buckwheat	Native
Polygonum sp.	Knotweed	Naturalized
SALICACEAE	**Willow family**	
Salix exigua	Narrow-leaved willow	Native
SOLANACEAE	**Nightshade family**	
Lycium pallidum var. *oligospermum*	Rabbit thorn	Native
TAMARICACEAE	**Tamarisk family**	
Tamarix ramosissima	Salt cedar	Naturalized
Tamarix aphylla	Athel tamarisk	Naturalized
ULMACEAE	**Elm family**	
Ulmus sp.	Elm	Non-native landscape species
ZYGOPHYLLACEAE	**Caltrop family**	
Larrea tridentata	Creosote bush	Native

Table C. Vascular Plants Observed within the Hinkley Compressor Station Botanical Survey Area During April 2024 Surveys

Scientific Names[1]	**Common Names**	**Status**[1]
MONOCOTS		
POACEAE	**Grass family**	
Bromus catharticus	Rescue grass	Naturalized
Bromus madritensis	Foxtail chess	Naturalized
Cynodon dactylon	Bermuda grass	Naturalized
Hordeum murinum ssp. *leporinum*	Hare barley	Naturalized
Poa annua	Annual bluegrass	Naturalized
Schismus barbatus	Mediterranean grass	Naturalized
Stipa hymenoides	Indian rice grass	Native
THEMIDACEAE	**Brodiaea family**	
Dipterostemon [=*Dichelostemma*] *capitatus* ssp. *pauciflorus*	Few-flowered bluedicks	native
TYPHACEAE	**Cattail family**	
Typha sp.	Cattail	native

Notes:

[1] Taxonomic nomenclature and status are based on the March 2024 Jepson Online Interchange for California Floristics. Accessed at: http://ucjeps.berkeley.edu/interchange/ (September 9-16, 2024).

Appendix B2
PG&E Nesting Bird Management Plan

Nesting Birds: Species-Specific Buffers for PG&E Activities

Within PG&E's Avian Program, standard nest buffers were developed for all common and special-status birds present within its Service Territory. There are no standard nest buffers specified in the Migratory Bird Treaty Act (MBTA) or within California Fish and Game Code. Table 1 provides nest buffers based on the best available information, including relevant literature review and avian biology. Disturbance factors including *nest location*, *human activity*, *activity duration*, and *noise level* may influence nesting behavior and reproductive success, and were each considered in establishing standard buffer distances for individual species. Where regulatory agencies have provided information on nest buffer distances for special-status species, those buffer distances are primarily used as *standard buffers* in Table 1. *Standard buffers* are species-specific buffer distances between occupied nest sites and work activities where work will not occur while the nest is active (containing eggs or young). These standard buffers are intended to be applied to nests located in proximity to PG&E activities at a sufficient distance to provide suitable nest protection. For example, a nesting black-crowned night heron has a standard buffer distance of 400 feet (Table 1).

Because it is not always possible to apply the standard buffer, non-standard species-specific buffer distances have also been established. As part of the determination of these non-standard buffers, PG&E activities are assigned disturbance rankings (Low, Medium, or High) for each factor identified above. Evaluation of all disturbance factors combined produces an overall disturbance category by assessing each disturbance factor for one or more PG&E activities. If the overall disturbance category is high, the standard buffer will generally apply. If the evaluation results in low or medium overall disturbance categories, the standard buffer is applied as feasible or reduced buffers may be appropriate. For example, in some circumstances it may be necessary to perform certain types of work within the standard buffer. In these cases, biologists consider all relevant site-specific conditions, including the species' tolerance for disturbance, work activity type, noise levels, and distance to nest to determine if reducing the standard buffer is appropriate. Alternatively, the buffer may be increased beyond the standard buffer for certain exceptions. Helicopters are the main exception that may require increased buffers.

Table 1 lists the standard buffers and non-standard buffer ranges for activities with low-medium and medium-high disturbances. Nest buffers will be implemented and adjusted by the biologist[1].

The following site-specific conditions are considered in determining if a reduced or increased buffer is appropriate:

- **Disturbance**. Evaluate nest disturbance, including consideration of activity intensity and duration, construction type, amount of habitat disturbance, level of human disturbance or acclimation, activity length, and the amount of noise generated by the activity.
- **Existing Conditions**. Assess site conditions to determine if there is acclimation to human disturbance.
- **Nest Concealment**. Evaluate surrounding habitat for its ability to provide visual and/or acoustic barriers between the nest and construction.
- **Species Natural History**. Consider individual species' natural history, nest stage (incubation, rearing, fledging), and known tolerances to disturbance.
- **Habituation**. Consider species habituation to new or ongoing activities.
- **Environmental Conditions**. Consider weather and other related factors.
- **Helicopter Use.** Consider helicopter type, flight plans, and duration.

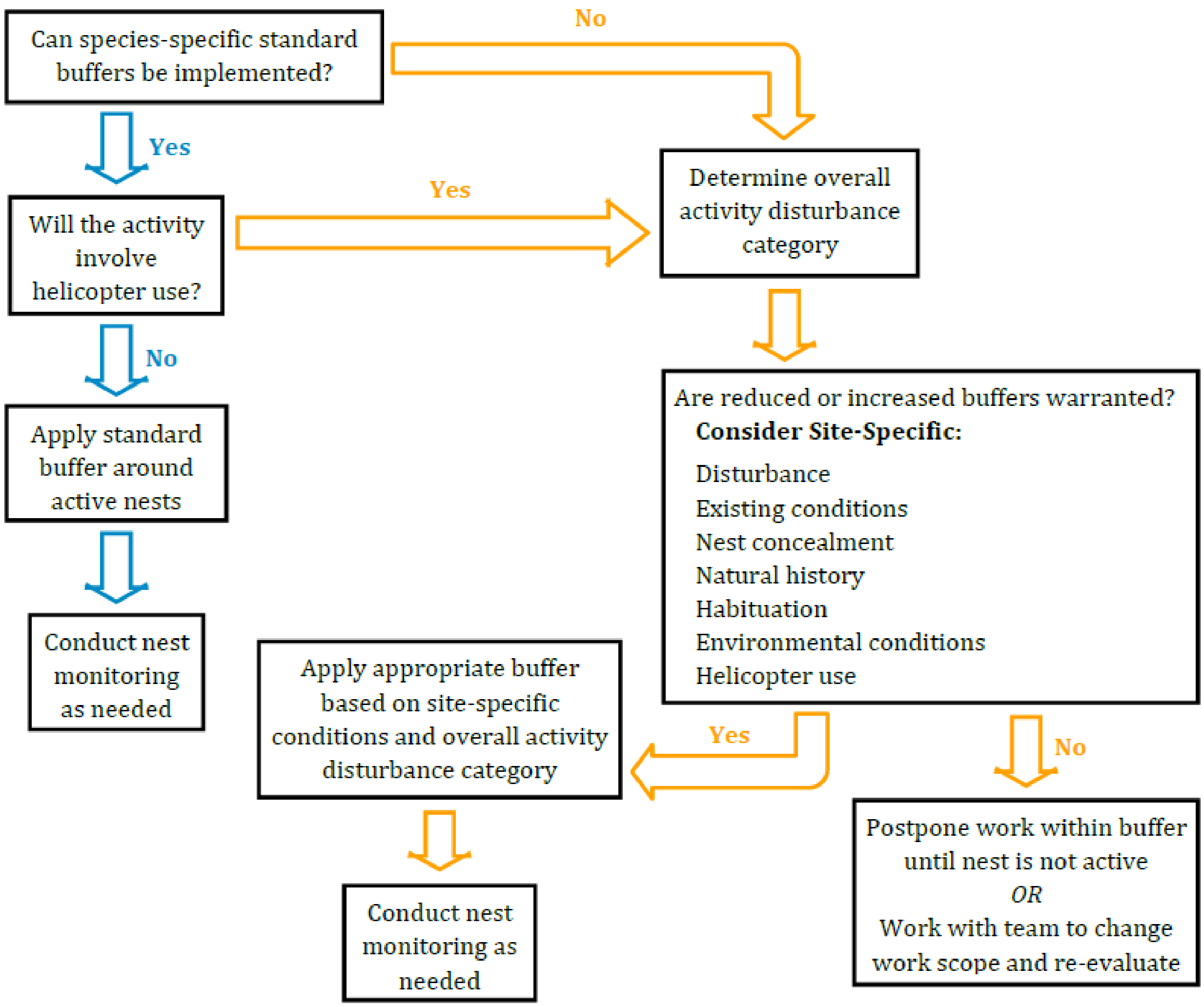
Nest Buffer Implementation Guidelines

Step/Task/Responsible	Outcome and Components
1. Desktop review *Biologist*	• Assess habitat types and potential nesting bird species • Identify potentially appropriate buffers for the species that may nest • Determine whether to conduct preconstruction nesting bird survey in accordance with nature of planned work and desktop review results
2. Preconstruction nesting bird surveys *Biologist*	• Conduct preconstruction surveys within the standard buffers • Document species detections including nests and active nests
3. Assign Buffers *Biologist*	• Assess intensity/duration of activity • Assess acclimation to human disturbance • Assess site-specific conditions • Consider species' natural history, reproductive stage, tolerances to disturbance, and observed behavior • Evaluate and assign standard, reduced, or increased buffers
4. Implement Buffers *Biologist/Biological Monitor*	• Implement buffers when work activities are occurring • Conduct periodic biological monitoring where needed • Adjust buffers as appropriate

[1] Biologist refers to an individual with a bachelor's degree or above in a field related to biological sciences and demonstrated field expertise in ornithology, in particular, nesting behavior; these qualified biologists may be PG&E employees or contractors.

Species-Specific Buffers for PG&E Activities

Buffer Assignment Process – Quick Reference



Can species-specific standard buffer(s) be implemented (Table 1)?

Other Biological Considerations in Determining Buffers

- Provisioning frequency of hatchlings or older young
- Egg turning
- Egg incubation (female or male or combination)
- Egg hardiness
- Ambient Temperatures
- Heat tolerance (eggs or nestlings)
- Cold tolerance (eggs or nestlings)
- Unsheltered nest risk
- Premature fledging risk
- Unattended nests and predation risk

Time on Nest is Important. An egg initially requires a controlled heat input, but later in incubation the embryo may produce more heat and may need to be cooled rather than heated. Ambient temperatures need to be considered. Unattended, unsheltered nests may experience temperature extremes (heat or cold). Egg turning during incubation is also a critical component for successful hatching; absence of turning during incubation will result in reduced and delayed hatching. During the nestling stage for altricial birds (i.e., birds that typically require feeding by adults), adults must provision food to nestlings. The provisioning rate is highly variable between species and is correlated to clutch size and body size, but most birds make frequent trips to attend nestlings. Collectively referred to as brooding, these forms of parental care are essential for reproductive success. Unattended nests also may experience increased rates of predation. Premature fledging is more likely to occur during later nest stages, when young are nearing fledging stage but not yet capable of flight.

Table 1. Species-specific Nest Buffers for PG&E Work Activities

**High-intensity activities, such as helicopter use, usually require increased buffers beyond the standard buffer*

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Approx, Vertical Height (feet)	General Breeding Season (Peak); Number of Broods per Season	Approximate Incubation Duration; Nestling Duration	Standard Buffer* (feet)	Med. to High Disturbance Category Buffer (feet)	Low to Med. Disturbance Category Buffer (feet)
Mallard	*Anas platyrhynchos*	Scrapes under overhanging cover or in dense vegetation in uplands near water.	Ground	Mar through mid-Jul (Apr through May); one brood.	23–30 days (28 average [avg]) by female; precocial.	100	30–100	15–30
Cinnamon Teal	*Anas cyanoptera*	Scrapes under overhanging cover or in dense vegetation in uplands near water.	Ground	Mid-Mar through Jul; one brood.	21–25 days by female; precocial.	100	30–100	15–30
Canada Goose	*Branta canadensis*	Scrapes on slightly elevated, firm ground in uplands near water.	Ground	Mid-Feb through Jun (Apr through mid-Jun); one brood.	25–28 days by female; precocial.	100	30–100	15–30
Wood Duck	*Aix sponsa*	Cavities in riparian woodlands and other woodland habitats near water.	Up to 60 feet	Apr through mid-Aug (May through Jun); often two broods.	25–35 days by female; precocial.	100	30–100	15–30
Blue-Winged Teal	*Anas discors*	Scrapes in dense grass or forbs in wetlands or grasslands near water.	Ground	Apr through Jul (May through Jun); one brood.	19–29 days (24 avg) by female; precocial.	100	30–100	15–30
Northern Shoveler	*Anas clypeata*	Scrapes in low grasses or forbs in uplands near water.	Ground	Mar through Jul; one brood.	25–27 days by female; precocial.	100	30–100	15–30
Gadwall	*Anas strepera*	Scrapes in dense, low emergent vegetation or grasses in uplands near water.	Ground	Apr through Jul (mid-May through mid-Jul); one brood.	24–27 days (26 avg) by female; precocial.	100	30–100	15–30
American Wigeon	*Anas americana*	Scrapes in dense vegetation cover in uplands near water.	Ground	Apr through Jul (May through Jun); one brood.	23–28 days by female; precocial.	100	30–100	15–30

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Redhead	*Aythya americana*	Platform nests over water in dense vegetation; occasionally nests in uplands near water.	Ground	Apr through Jul (mid-Apr through mid-Jun); one brood.	24–28 days by both sexes; precocial.	100	30–100	15–30
Ring-Necked Duck	*Aythya collaris*	Platform nests over water in dense emergent vegetation in wetlands.	Ground	Apr through Jul (mid-Apr through mid-Jun); one brood.	25–29 days (26 avg) by female; precocial.	100	30–100	15–30
Common Merganser	*Mergus merganser*	Cavities in trees, snags and stumps in riparian woodlands.	Up to 50 feet	Mid-Mar through mid-Aug (mid-Apr through Jun); one brood.	28–35 days (32 avg) by female; precocial.	100	30–100	15–30
Ruddy Duck	*Oxyura jamaicensis*	Platform nests constructed on shallow water in dense, tall emergent vegetation.	Ground	Apr through Aug (mid-May through mid-Jul); one brood.	20–26 days (23 avg) by female; precocial.	100	30–100	15–30
Pied-Billed Grebe	*Podilymbus podiceps*	Platform nests constructed in emergent vegetation bordering open water.	Ground	Mar through Jul; (Apr through Jun); one or two broods.	20–27 days (23 avg) by both sexes; precocial.	100	30–100	15–30
Eared Grebe	*Podiceps nigricollis*	Platform nests in water on emergent wetland vegetation.	Ground	Apr through Jul; one brood.	21–23 days by both sexes; precocial.	100	30–100	15–30
Western Grebe	*Aechmophorus occidentalis*	Platform nests in emergent vegetation or open water or, less frequently, on dry land near water.	Ground	May through mid-Aug; one brood.	23–24 days by both sexes; precocial.	100	30–100	15–30

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Clark's Grebe	*Aechmophorus clarkii*	Platform nests constructed in emergent vegetation or open water or, less frequently, on dry land near water.	Ground	May through mid-Aug; one brood.	23 days by both sexes; precocial.	100	30–100	15–30
Double-Crested Cormorant	*Phalacrocorax auritus*	Platform nests on islands, on the ground or in trees; also in power poles and other artificial structures. Colonial nester.	Ground	Mid-Mar through Aug (Apr through mid-Aug); one brood.	25–28 days by both sexes; altricial; young fledge at 6–8 weeks.	400	75–400	50–75
Pelagic Cormorant	*Phalacrocorax pelagicus*	Platform nests on steep cliffs along rocky and exposed shorelines along outer coasts, bays, inlets, estuaries, rapids, coves, surge narrows, harbors, lagoons, and coastal log storage sites. Colonial nester.	Ground	Mid-Apr through Aug (May through mid-Aug); one brood.	28–32 days by both sexes; altricial; young fledge at 6–8 weeks.	400	75–400	50–75
American Bittern	*Botaurus lentiginosus*	Platform nests in shallow water or on ground near water.	Ground	Apr through Jul (mid-Apr through Jun); one brood.	24–28 days by female; altricial; young fledge at 3–4 weeks.	100	50–100	25–50
Least Bittern	*Ixobrychus exilis*	Platform nests about 1 foot above the water in freshwater marshes.	Ground	Apr through Jul (mid-Apr through Jun); two broods.	16–20 days by both sexes; altricial; young fledge at 3–4 weeks.	100	50–100	25–50

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Great Blue Heron	*Ardea herodias*	Platform nests in tall trees or other types of vegetation near water. Colonial nester.	Up to 130	Mid-Feb through mid-Aug (Mar through Jul); one or two broods.	25–29 days by both sexes; altricial; young fledge at 8–12 weeks.	400	75–400	50–75
Great Egret	*Ardea alba*	Platform nests in tall trees or other types of vegetation near water. Colonial nester.	10–80	Mar through Jul (Apr through mid-Jul); one brood.	23–27 days (26 avg); semi-altricial; young fledge at 6–8 weeks.	400	75–400	50–75
Snowy Egret	*Egretta thula*	Platform nests in tall trees or other types of vegetation near water. Colonial nester.	Up to 30 but usually 10–15	Mar through Jul (Apr through mid-Jul); one brood.	20–24 days by both sexes; semi-altricial; young fledge at 4–6 weeks.	400	75–400	50–75
Cattle Egret	*Bubulcus ibis*	Platform nests in tall shrubs and trees near water.	Up to 30 but usually 5–15	Mar through Jul; one brood.	23–25 days; semi-altricial; young fledge at 4–6 weeks days.	400	75–400	50–75
Green Heron	*Butorides striatus*	Platform nests in shrubs, trees, thickets, or other vegetation near water.	10–30, sometimes higher	Mar through Jul (Apr through Jun); one or two broods.	19–21 days by both sexes; semi-altricial; young fledge at 3–4 weeks.	100	50–100	25–50
Black-Crowned Night-Heron	*Nycticorax nycticorax*	Platform nests in shrubs, trees, thickets, or other vegetation near water. Colonial nester.	Up to 150	Apr through Jul (May through Jun); one brood.	24–26 days by both sexes; semi-altricial; young fledge at 6–7 weeks.	400	75–400	50–75
White-Faced Ibis	*Plegadis chihi*	Platform nests of emergent wetland vegetation in extensive wetlands. Colonial nester.	Ground	Apr through Jul; one brood.	20–26 days by both sexes; altricial; young leave nest at 10–12 days; fledge at 6–7 weeks.	400	75–400	50–75

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Turkey Vulture	*Cathartes aura*	Caves, rock crevices, possibly abandoned buildings, or other dark, secluded sites.	Up to 20	Mar through Jul; one brood.	37–41 days by both sexes; semi-altricial; young fledge at 9–13 weeks.	300	100–300	50–100
California Condor	*Gymnogyps californianus*	Caves on high, remote cliff-faces or in hollow in large redwood snag.	Cliff	Mid-Jan through Oct; one brood.	53–60 days by both sexes; semi-altricial; young fledge at 22–24 weeks.	3,960	CR[a]	CR
White-Tailed Kite	*Elanus caeruleus*	Platform nests in tall trees near grasslands, oak savannah, or other open habitats.	12–60	Feb through Jul (Sep for two broods); two broods common.	30–32 days by both sexes; semi-altricial; young fledge at 4–5 weeks.	500	CR	CR
Osprey	*Pandion haliaetus*	Platform nests on treetops, rocky outcrops, or utility poles near water.	Up to 60	Mid-Mar through Aug (Apr through Jul); one brood.	36–42 days by both sexes; semi-altricial; young fledge at 7–9 weeks.	300	100–300	50–100
Bald Eagle	*Haliaeetus leucocephalus*	Platform nests in large trees or rocky outcrops close to lakes and large rivers.	50–200	Jan through Jul; one brood.	35 days by both sexes; semi-altricial; young fledge at 10–12 weeks.	1.320-2,640	CR	CR
Northern Harrier	*Circus cyaneus*	Platform nests on ground in grasslands and open marshland with vegetative cover.	Ground	Mid-Mar through Aug (Apr through Jul); one brood.	28–36 days by both sexes; altricial; young fledge at 4–6 weeks.	300	200–300	100–200
Sharp-Shinned Hawk	*Accipiter striatus*	Platform nests in trees in riparian woodland or other forested habitat with thick cover.	10–60	Apr through Aug (mid-Apr through Jul); one brood.	30–35 days by both sexes; semi-altricial; young fledge at 3–4 weeks.	300	100–300	50–100

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Cooper's Hawk	*Accipiter cooperii*	Platform nests in trees in riparian woodlands or other forested habitat.	20–60	Mid-Mar through Jul (Apr through Jun); one brood.	30–36 days by female; semi-altricial; young fledge at 4–5 weeks.	300	100–300	50–100
Northern Goshawk	*Accipiter gentilis*	Platform nests in top of tall coniferous or deciduous trees in mature forest.	Up to 75	April through mid-Aug (May through Jul); one brood.	30–38 days by female; semi-altricial; young fledge at 5–6 weeks.	1,320	200–1,320	100–200
Red-Shouldered Hawk	*Buteo lineatus*	Platform nests below canopy in a variety of tree species.	20–60	Mid-Feb through mid-Jul (March through May); one brood.	30–35 days by both sexes; semi-altricial; young fledge at 5–7 weeks.	300	100–300	50–100
Swainson's Hawk	*Buteo swainsoni*	Platform nests in isolated trees in grasslands and agricultural areas.	5–30	Apr through Aug; one brood.	34–35 days by both sexes; semi-altricial; young fledge at 5–7 weeks.	1,320–2,640	CR	CR
Red-Tailed Hawk	*Buteo jamaicensis*	Platform nests in tall trees and other structures in a variety of open habitats.	35–90	Mid-Feb through Aug (mid-Mar through Jul); one brood.	28–32 days by both sexes; semi-altricial; young fledge at 6–7 weeks.	250	100–300	50–100
Ferruginous Hawk	*Buteo regalis*	Nest in substrates ranging from cliffs, trees, utility structures, and farm buildings to haystacks and relatively level ground.	Up to 70	Mar through mid-Jul (mid-Mar through May); one brood.	32–33 days by both sexes; altricial; young fledge at 6–7 weeks.	300	100–300	50–100

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Golden Eagle	*Aquila chrysaetos*	Platform nests on rock ledges of outcrops or cliffs, and occasionally trees, in proximity to grassland, farmland, oak savannah, and other foraging grounds.	10–100 or higher on cliffs	Feb through Jul; one brood.	41–45 days by female and occasionally male; semi-altricial; young fledge at 10 weeks.	1,320-2,640	CR	CR
American Kestrel	*Falco sparverius*	Cavities in trees or other structures near grasslands, agricultural areas, oak savannah, or other open areas.	7–80	Mar through Jul; one or two broods.	27–30 days by both sexes; semi-altricial; young fledge at 4–5 weeks.	200	50–200	25–50
Prairie Falcon	*Falco mexicanus*	Ledges under overhangs on rock outcrops or cliffs near grassland, farmland, oak savannah, or other foraging habitat.	20–40	Mar through Jul (mid-Mar through Jun); one brood.	29–34 days by both sexes; semi-altricial; young fledge at 5–6 weeks.	300	100–300	50–100
American Peregrine Falcon	*Falco peregrinus*	Cliff ledges, tall buildings, high bridges, and other high locations near open habitats.	High on cliffs or tall structures	Mid-Feb through Jul; one brood.	33–37 days by both sexes; semi-altricial; young fledge at 6 weeks.	500	CR	CR
Mount Pinos Sooty Grouse	*Dendragapus fuliginosus*	Scrapes near logs, shrubs, or other cover in coniferous forests, shrub-steppe habitat, and subalpine forests.	Ground	Apr through Jul; one brood.	25–28 days by female; precocial.	100	50–100	25–50
Ruffed Grouse	*Bonasa umbellus*	Scrapes near the base of stumps, trees, or logs in forested habitat.	Ground	Apr through mid-Jul (May – Jun); one brood.	23–24 days by female; precocial.	100	50–100	25–50

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Wild Turkey	*Meleagris gallopavo*	Scrapes in thick, low vegetation in oak woodlands and forest edges and clearings.	Ground	Mar through mid-Jul; one brood.	25–30 days by female; precocial.	100	30–100	15–30
Gambel's Quail	*Callipepla gambellii*	Scrapes under shrubs in desert habitats.	Ground	Apr through Jun; one brood.	21–23 days by female; precocial.	100	50–100	25–50
California Quail	*Callipepla californica*	Scrapes under shrubs in riparian woodland, coastal scrub, chaparral, shrub-steppe, and mixed-hardwood forest.	Ground	Apr through Jul; one or two broods.	21–23 days by female; precocial.	100	50–100	25–50
Mountain Quail	*Oreortyx pictus*	Scrapes under shrubs in mountain woodland and scrub habitats, usually near water.	Ground	Mid-Mar through Jun; one brood.	24–25 days by female; precocial.	100	50–100	25–50
California Black Rail	*Laterallus jamaicensis coturniculus*	Cup nests on or near ground at upper edges of tidal marshes.	0–1	Mar through Jul; one or two broods.	17–20 days by both sexes; semi-precocial.	300–600	CR	CR
Clapper Rail (California, Yuma, Light-footed)	*Rallus obsoletus (obsoletus yumanensis, levipes)*	Platform nests in dense tidal marsh vegetation dominated by cordgrass or gumplant.	0–1	Mar through mid-Aug (Apr through Jul); one or two broods.	23–29 days by both sexes; semi-precocial.	700	CR	CR
Virginia Rail	*Rallus limicola*	Platform nests in dense emergent vegetation in freshwater or estuarine marshes.	0–1	Mid-Mar through mid-Aug (Apr through Jul); one or two broods.	18–20 days by both sexes; precocial.	100	50–100	25–50
Sora	*Porzana carolina*	Cup nests secured to reeds and rushes in freshwater or estuarine marshes.	0–1	Apr through mid-Aug (May through Jul); one brood.	16–19 days by both sexes; precocial.	100	50–100	25–50

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Common Gallinule	*Gallinula galeata*	Platform nests in dense vegetation at edge of marshes and other freshwater habitats.	Ground or water level	Apr through mid-Aug (May through mid-Jul); one or two broods.	19–22 days by both sexes; precocial.	100	50–100	25–50
American Coot	*Fulica americana*	Platform nests in dense vegetation at edge of marshes and other freshwater habitats.	Ground or water level	Mid-Feb through Aug (Mar through Jul); one or two broods.	21–24 days by both sexes; precocial.	100	30–100	15–30
Greater Sandhill Crane	*Grus canadensis tabida*	Platform nests in wetland vegetation on dry ground or shallow water in extensive marsh systems or grasslands.	Ground	Apr through Aug; one or two broods.	29–32 days by both sexes; precocial.	500	CR	CR
Western Snowy Plover	*Charadrius alexandrinus nivosus*	Scrapes on sand beaches/bars, salt pannes, or dry river beds.	Ground	Mar through Aug; one–three broods.	26 - 32 days by both sexes; precocial.	600 (coastal) 300 (interior)	CR (coastal) 200–300 (interior)	CR (coastal) 100–200 (interior)
Killdeer	*Charadrius vociferus*	Scrapes in open places usually in areas with short grass, sand, or gravel.	Ground	Mar through Aug (mid-Mar through Jul); one or two broods.	24–29 days by both sexes; precocial.	75	30–75	15–30
Black-Necked Stilt	*Himantopus mexicanus*	Scrapes or plant tufts/ tussocks in fresh, brackish, or salt marshes.	Ground	Apr through mid-Jul; one brood.	22–27 days by both sexes; precocial.	150	50–150	25–50
American Avocet	*Recurvirostra americana*	Scrapes on salt pannes, dikes, levees, and bare islands.	Ground	Mid-Mar through Jul; one brood.	22–26 days by both sexes; precocial.	150	50–150	25–50

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Spotted Sandpiper	*Actitis macularia*	Scrapes in grasses among rocks, wrack, or driftwood.	Ground	Apr through Aug; one brood.	20–24 days by both sexes; precocial.	75	30–75	15–30
Wilson's Snipe	*Gallinago gallinago*	Scrapes in dense, medium to tall marshy or wet meadow vegetation.	Ground	Apr through Aug; one brood.	18–20 days by female; precocial.	75	30–75	15–30
Lesser Yellowlegs	*Tringa flavipes*	Scrapes on shallow wetlands, trees or shrubs, and open areas.	Ground	Apr through Aug; one brood.	22–23 days by both sexes; precocial.	75	30–75	15–30
Whimbrel	*Numenius phaeopus*	Hummocks or mounds near dwarfed shrub, flat heath tundra, in grass or sedge tussocks, and on gravel.	Ground	May through mid-Aug; one brood.	22–28 days by both sexes; precocial.	75	30–75	15–30
Black Skimmer	*Rynchops niger*	Saucer-shaped depressions on beaches, bars, dredge deposition, salt marsh.	Ground	May through Aug; one brood.	21–25 days by both sexes; semi-precocial.	300	100–300	50–100
Long-Billed Curlew	*Numenius americanus*	Scrapes in short-grass or mixed-prairie habitat with flat to rolling topography.	Ground	Mid-Mar through mid-Jul; one brood.	27–29 days by both sexes; precocial.	75	30–75	15-30
Marbled Godwit	*Limosa fedoa*	Scrapes in short, sparsely to moderately vegetated landscapes that include native grassland and wetland complexes with a variety of wetland classes (ephemeral to semipermanent).	Ground	May through Jul; one brood.	23–26 days by both sexes; precocial.	75	30–75	15–30

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California Gull	*Larus californicus*	Scrapes on islands in alkali or freshwater lakes and ponds or salt ponds.	Ground	Apr through Jul; one brood.	23–27 days by both sexes; precocial.	150	50–150	25–50
Western Gull	*Larus occidentalis*	Ledges on cliffs, bluffs, bridges, buildings, and other areas inaccessible to nest predators.	Ground/ cliff	Mid-Apr through mid-Aug; one brood.	30–32 days by both sexes; semi-precocial.	150	50–150	25–50
Caspian Tern	*Sterna caspia*	Scrapes on islands, beaches, and levees.	Ground	Apr through Aug; one brood.	25–27 days by both sexes; semi-precocial; young fledge at 14 days.	300	100–300	50–100
Forster's Tern	*Sterna forsteri*	Scrapes on open levees, islands, and occasionally reed beds.	Ground	Apr through Sep; one brood.	23–28 days by both sexes; semi-altricial; young fledge at 7 days.	300	100–300	50–100
California Least Tern	*Sterna antillarum*	Scrapes on bare sandy or gravelly substrates in undisturbed areas.	Ground	May through mid-Aug; one brood.	20–25 days by both sexes; semi-precocial.	600	CR	CR
Black Tern	*Chlidonias niger*	Platform nests constructed of dead plant stems in freshwater wetlands and flooded rice fields.	Ground	May through mid-Aug; one brood.	20–22 days by both sexes; semi-precocial young fledge at 14 days.	300	100–300	50–100

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Marbled Murrelet	*Brachyramphus marmoratus*	Horizontal limbs of large, old-growth conifers.	20–250	Mid-Mar through mid-Aug; likely one brood.	28–30 days by both sexes; semi-precocial; young fledge at 27–40 days.	1,320 (high disturbance)[b]	CR	CR
Cassin's Auklet	*Ptychoramphus aleuticus*	Excavates burrows in soft soil, sod or natural cavities such as rock crevices and under trees, cacti or logs. Colonial nester.	Ground/ cliff	Dec through Jul; one or two broods.	37–42 days by both sexes; altricial; young fledge at 40–50 days.	400	75–400	50–75
Band-Tailed Pigeon	*Columba fasciata*	Platform nests in trees or shrubs in oak woodlands, mixed hardwood forests, and mixed coniferous forests, usually in areas with oak trees.	5–180	Mar through Nov; one–three broods.	16–22 days by both sexes; altricial; young fledge at 25–30 days.	75	50–75	25–50
Mourning Dove	*Zenaida macroura*	Platform nests in a tree or shrub, but also on buildings or on ground, in a variety of habitats.	0–25	Feb through Sep; several broods.	14–15 days by both sexes; altricial; young fledge at 13–15 days.	50	20–50	10–20
Western Yellow-Billed Cuckoo	*Coccyzus americanus*	Platform nests in bushes or trees in dense, wide riparian woodlands.	2–20	Jun through Jul; one brood.	9–11 days by both sexes; altricial; young fledge at 21 days.	500	CR	CR
Greater Roadrunner	*Geococcyx californianus*	Cup nests in dense, brushy habitats in desert, sagebrush, and chaparral habitats.	3–15	Mar through Jul (Apr through Jun); one or two broods.	17–20 days by male; altricial; young fledge at 14–30 days.	100	50–100	25–50

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Barn Owl	*Tyto alba*	Cavities in trees, buildings, crevices in rocks, outcrops, cliffs and quarries. No nest building unless digging out occurs.	1–400	Mid-Jan through Jul; often two broods.	30–32 days by female; altricial; young fledge 60 days.	150	100–150	50–100
Flammulated Owl	*Otus flammeolus*	Cavities (often woodpecker) in trees, including aspens, oaks, pines, or other trees in forested areas. No nest building.	10–40	May through Aug; one brood.	21–24 days by female; altricial; young initial fledge/branch at 25 days; flying 8 weeks; dispersal 30 days post-fledge.	200	100–200	50–100
Western Screech Owl	*Otus kennicottii*	Cavities (including woodpecker) in trees, particularly deciduous trees such as cottonwoods, in open woodlands. Nest boxes.	20–50	Mar through Jun; one brood unless first brood fails.	26–34 days by female; altricial; young fledge at 4–5 weeks; dispersal 58 days post-fledging.	200	100–200	50–100
Great Gray Owl	*Strix nebulosa*	Near high elevation meadows, on broken top trees or stick nests of other species, platforms. No nest building.	30-50	Late Mar through Jul; one brood unless first brood fails.	30 days by female; semi-precocial; young initial fledge/branch at 26–29 days, flying at 7–14 days; female tends juveniles for 3–6 weeks, dependent on nest site and male parent, for 3 months.	1,320	CR	CR
Great Horned Owl	*Bubo virginianus*	Cavities or large nest platforms of other species in trees, rock ledges, buildings, pipes, or caves. No nest building.	Uses existing platform; nests at various heights	Jan through Jun; one brood unless first brood fails.	30–37 days by female; altricial; nestlings for 42 days; young initial fledge/branch at 6 weeks, flying at 7–10 weeks; parental care into Sep/Oct.	300	100–300	50–100

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Northern Pygmy Owl	*Glaucidium gnoma*	Cavities in trees in oak woodlands and coniferous forests.	8–20	Apr through Aug; number of broods unknown	25–30 days by female; semi-altricial; young initially fledge/branch at 23–30 days; parental care 1 month postfledging.	200	50–200	25–50
Spotted Owl (Northern/ California)	*Strix occidentalis caurina/ occidentalis*	Cavities or platforms (natural or old nests of other species) in multi-canopy coniferous or mixed hardwood forests.	30–165	Mar through Aug; one brood.	30 days by female; altricial; young fledge/ branch at 36 days; juveniles may not fly well for weeks; parental care for 60–90 days postfledging.	1,320 (high disturbance)b	CR	CR
Burrowing Owl	*Athene cunicularia*	Small mammal burrows in open grasslands, intermixed developed areas or edge of agricultural areas.	Ground	Mar through mid-Aug; one brood unless first brood fails.	28–30 days by female; altricial; walking at 2 weeks, fledge at 40–53 days; occupy satellite burrows at 7–8 weeks.	250	CR	CR
Long-Eared Owl	*Asio otus*	Platform or stick nests built by other species in coniferous forests or mixed woodlands. No nest building.	10–30	Feb through Jun; one brood unless first clutch fails.	25–30 days by female; semi-altricial; young initial fledge/branch at 21 days; young fledge at 35 days; parental care for 10–11 weeks.	300	100–300	50–100
Short-Eared Owl	*Asio flammeus*	Scrapes in tall, dense vegetation in grasslands and freshwater or brackish marshes.	Ground	Mar through Jul; one or possibly two broods.	21–28 days by female; semi-altricial; young leave nest at 31–36 days.	300	100–300	50–100
Northern Saw-Whet Owl	*Aegolius acadicus*	Cavities in trees in forested areas.	5–50	Mar through July; one or two broods.	25–29 days by female; semi-altricial; young fledge at 30 days; parental care for 1 month postfledging.	200	100–200	50–100

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Lesser Nighthawk	*Chordeiles acutipennis*	Scrapes on bare gravelly or sandy ground in desert and sparsely vegetated habitats.	Ground	Apr through mid-Aug; one or two broods.	18–19 days by female; semi-precocial; young fledge at 3–4 weeks.	75	30–75	20–30
Common Nighthawk	*Chordeiles minor*	Scrapes on bare gravelly or sandy ground in open areas within chaparral, grasslands, and forest openings.	Ground	Mid-May through mid-Aug; one or two broods.	18–20 days by female; semi-precocial; young fledge at 25–30 days.	75	30–75	20–30
Common Poorwill	*Phalaenoptilus nuttallii*	Scrapes on bare gravelly, sandy, or leaf-litter-covered ground in grasslands and desert habitats.	Ground	Mar through Aug; two broods.	20–21 days by both sexes; precocial.	75	30–75	20–30
Black Swift	*Cypseloides niger*	Sheltered crevices or ledges on cliff faces on coast or under waterfall.	20–45	May through Sep; one brood.	23–27 days by both sexes; altricial; young fledge at 45–50 days.	75	30–75	15–30
Vaux's Swift	*Chaetura vauxi*	Cavities in redwoods, other conifers, and occasionally sycamores, chimneys, and buildings.	Up to 50	May through Aug; one brood.	18–20 days; altricial; young fledge at 28–32 days.	75	30–75	15–30
White-Throated Swift	*Aeronautes saxatalis*	Rock cracks and crevices on cliffs and tall bridges.	10–195	Apr through Jul; one brood.	20–27 days; altricial; young fledge at 40–46 days.	75	30–75	15–30
Black-Chinned Hummingbird	*Arcgilochus alexandri*	Cup nests in trees and shrubs in woodlands, urban areas, and other habitats with nectar sources.	4–10	Apr through Jun; two or three broods.	13–16 days by female; altricial; young fledge at 21 days.	50	20–50	15–20

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Anna's Hummingbird	*Calypte anna*	Cup nests in trees and shrubs in woodlands, urban areas, and other habitats with nectar sources.	1–30	Dec through Jun; two or three broods.	16–17 days by female; altricial; young fledge at 25–26 days.	50	20–50	15–20
Costa's Hummingbird	*Calypte costae*	Cup nests in trees and shrubs in riparian scrub, urban areas, and other habitats with nectar sources.	4–5	Apr through Jul; one or occasionally two broods.	15–18 days by female; altricial; young fledge at 20–23 days.	50	20–50	15–20
Calliope Hummingbird	*Stellula calliope*	Cup nests in montane or riparian woodlands.	2–70	May through Aug; one brood.	15–16 days by female; altricial; young fledge at 21–23 days.	50	20–50	15–20
Allen's Hummingbird	*Selasphorus sasin*	Cup nests in shrubs, trees, or vines in a variety of forest and woodland types, as well as coastal scrub.	1–15; occasionally as high as 90	Feb through Aug; two broods.	16–22 days by female; altricial; young fledge at 30 days.	50	20–50	15–20
Belted Kingfisher	*Ceryle alcyon*	Burrow in banks near fresh water. Occasionally in tree cavity.	3 feet from the top of a bank	Apr through Jul; one brood.	23–24 days by both sexes; altricial; young fledge at 27–29 days.	100	50–100	25–50
Lewis's Woodpecker	*Melanerpes lewis*	Cavities in snags or dead branches in oak woodlands and mixed hardwood forests.	5–80	May through Jul; one brood.	13–14 days by both sexes; altricial; young fledge at 28–34 days.	50	15–50	10–15
Acorn Woodpecker	*Melanerpes formicivorous*	Cavities in trees or snags in open woodlands, partly wooded areas, or utility poles near a source of acorns.	5–25	Apr through Jul; two or three broods.	11 days by both sexes; altricial; young fledge at 31 days.	50	15–50	10–15

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Red-Breasted Sapsucker	*Sphyrapicus ruber*	Cavities in trees or snags in coniferous or mixed forest.	5–45	May through Jun; one brood.	12–14 days by both sexes; altricial; young fledge at 23–28 days.	50	15–50	10–15
Williamson's Sapsucker	*Sphyrapicus thyroideus*	Tree cavities in conifer and mixed conifer-deciduous forests.	8–52	Late April through late Jul; one brood.	12–14 days by both sexes; altricial; young fledge at 31–32 days.	50	15–50	10–15
Ladder-Backed Woodpecker	*Picoides scalaris*	Cavities in trees and cactus.	4-20	Late Apr through late Jul; one brood.	14 days by both sexes; altricial; young with unknown fledging period.	50	15–50	10–15
Nuttall's Woodpecker	*Picoides nuttallii*	Cavities in trees or snags in oak woodlands, or less frequently riparian or other woodlands.	3–60	Apr through Jun; one brood.	14 days by both sexes; altricial; young fledge at 29 days.	50	15–50	10–15
Downy Woodpecker	*Picoides pubescens*	Cavities in trees or snags in riparian or other deciduous woodlands, or less frequently in coniferous forests.	12–30	Apr through Jun; one brood.	12 days by both sexes; altricial; young fledge at 20–25 days.	50	15–50	10–15
Hairy Woodpecker	*Picoides villosus*	Cavities in snags or dead branches in woodlands and coniferous forests.	4–60	Mar through Aug; one brood.	11–15 days by both sexes; altricial; young fledge at 28–30 days.	50	15–50	10–15
White-Headed Woodpecker	*Picoides albolarvatus*	Cavities in snags or stumps at least 2 feet in diameter in pine forests.	6–15	May through Jul; one brood.	13–15 days by both sexes; altricial; young fledge at 26 days.	50	15–50	10–15

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Northern Flicker	*Colaptes auratus*	Cavities in tree trunks or snags in open or sparsely wooded areas; more often in live wood.	6–20	Apr through Jun; one brood.	11–16 days by both sexes; altricial; young fledge at 25–28 days.	50	15–50	10–15
Pileated Woodpecker	*Dryocopus pileatus*	Cavities in snags or dead branches in mature forests.	15–80	Mar through Jul; one brood.	18 days by both sexes; altricial; young fledge at 26–28 days.	50	15–50	10–15
Olive-Sided Flycatcher	*Contopus cooperi*	Cup nest in trees in open conifer forest or mixed woodland.	5–70	Jun through Jul; one brood.	16–17 days by female; altricial; young fledge at 21–23 days.	75	30–75	15–30
Western Wood-Pewee	*Contopus sordidulus*	Cup nests in trees, mainly coniferous but sometimes deciduous woodlands near watercourses.	15–40	Late May through Jul; one brood.	12–13 days by female; altricial; young fledge at 14–18 days.	75	30–75	15–30
Willow Flycatcher (Southwestern, Little, *adastus*)	*Empidonax traillii extimus/brewsteri/adastus*	Cup nests in densely vegetated riparian associations of cottonwoods and willows.	5–15	Late May through Jul; one brood.	12–15 days by female; altricial; young fledge at 12–14 days.	300	CR	CR
Vermilion Flycatcher	*Pyrocephalus rubinus*	Loosely constructed nest in wooded riparian areas.	6-20	Apr through mid-Jul; one or two broods.	14–15 days by female; altricial; young fledge at 14–16 days.	75	30–75	15–30
Hammond's Flycatcher	*Empidonax hammondii*	Cup nests in trees in forests and woodlands.	55–65	Mid-May through Jul; one brood.	15–16 days by female; altricial; young fledge at 16–18 days.	75	30–75	15–30

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Dusky Flycatcher	*Empidonax oberholseri*	Cup nests in small trees or shrubs pine forests	3–15	May through Jul; one brood.	15–16 days by female; altricial; young fledge at 15–20 days.	75	30–75	15–30
Western (Pacific-slope and Cordilleran) Flycatcher	*Empidonax difficilis/occidentalis*	Cup nests in cavities or tree stumps or on ledges or crevices in woodlands and forests often in riparian areas.	0–30	Apr through Jul; sometimes two broods.	14–15 days by female; altricial; young fledge at 15–18 days.	75	30–75	15–30
Black Phoebe	*Sayornis nigricans*	Cup nests of mud cemented to vertical structures, often under an overhang.	3–10	Mar through Jun; two broods.	15–17 days by female; altricial; young fledge at 14–21 days.	75	30–75	15–30
Say's Phoebe	*Sayornis saya*	Cup nests on ledges with overhang or under a bridge; nest not made of mud like black phoebe.	0–79	Mar through Jun; two broods.	12–14 days by female; altricial; young fledge at 14–16 days.	75	30–75	15–30
Ash-Throated Flycatcher	*Myiarchus cinerascens*	Cavities in trees and other structures in open deciduous woodland.	2–70	May through Jul; one or two broods.	14–16 days by female; altricial; young fledge at 14–16 days.	50	15–50	10–15
Cassin's Kingbird	*Tyrannus vociferans*	Cup nests in trees in savannahs and other open habitats.	25–70	Apr through Jun; typically one brood.	18 days by female; altricial; young fledge at 14–17 days.	75	30–75	15–30
Western Kingbird	*Tyrannus verticalis*	Cup nests in trees and artificial structures (e.g., power poles) in variety of open habitats.	15–50	Apr through Jun; two broods.	18–19 days typically by female; altricial; young fledge at 16–17 days.	75	30–75	15–30

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Loggerhead Shrike	*Lanius ludovicianus*	Cup nests in dense shrubs near grasslands and other open habitats.	5-30	Mar through Jun; two or three broods.	16–17 days by female while male provisions her; altricial; young fledge at 17–21 days.	75	30–75	15–30
Least Bell's Vireo	*Vireo bellii pusillus*	Cup nests in dense shrubs and small trees in dense riparian areas.	1–3	Apr through Aug; two broods.	14 days by both sexes; altricial; young fledge at 10–12 days.	500	CR	CR
Arizona Bell’s Vireo	*Vireo bellii arizonae*	Cup nests in dense shrubs and small trees in dense riparian areas.	1–3	Apr through Aug; two broods.	14 days by both sexes; altricial; young fledge at 10–12 days.	500	CR	CR
Cassin’s Vireo	*Vireo cassinii*	Cup nests in a trees or shrubs in oak or oak-coniferous or mixed riparian woodland.	5–35	Apr through Jul; occasionally two broods.	15 days by both sexes; altricial; young fledge at 13 days.	75	30–75	15–30
Hutton's Vireo	*Vireo huttoni*	Cup nests on twig forks in oaks and other trees along streams and canyons.	3–45	Mar through Jun; one or two broods.	14–16 days by both sexes; altricial; young fledge at 14 days.	75	30–75	15–30
Warbling Vireo	*Vireo gilvus*	Cut nests high in trees in mature oak woodlands and mixed deciduous forests.	20–90	Apr through Jul; two broods.	12–13 days by both sexes; altricial; young fledge at 14–16 days.	75	30–75	15–30
Gray Vireo	*Vireo vicinior*	Nests in thorn scrub or pinyon-juniper woodland, low in thorny or twiggy shrub or tree.	2–8	Mid-Mar through mid-Aug; two broods.	13–14 days by both sexes; altricial; young fledge at 13–14 days.	75	30–75	15–30

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Gray Jay	*Perisoreus canadensis*	Cup nests in shrubs or trees in coniferous forests and sometimes oak woodlands.	5–30	Mar through Jul; one brood.	16–18 days by female; altricial; young fledge at 22–24 days.	75	30–75	15–30
Steller's Jay	*Cyanocitta stelleri*	Cup nests in trees or shrubs in coniferous or mixed hardwood forests or other woodlands.	7–25	Apr through Jun; likely one brood.	16 days by female; altricial; young fledge at 16–18 days.	75	30–75	15–30
Western Scrub-jay	*Aphelocoma californica*	Platform nests in shrubs, trees, bushes or vine tangles in a wide variety of habitats, including oak woodlands, savannah, agricultural, and suburban.	2–50	Mar through Jul; one brood.	15–18 days by female; altricial; young fledge at 20–24 days.	75	30–75	15–30
Pinyon Jay	*Gymnorhinus cyanocephalus*	Cup nests in trees in ponderosa-pine forest.	3–115	Mid-Feb through Jun; occasionally two broods.	17 days by female; altricial; young fledge at 21–22 days.	75	30–75	15–30
Clark's Nutcracker	*Nucifraga columbiana*	Cup nests in pines, junipers, and firs in mountain coniferous forests.	8–50	Feb through Aug; one brood.	16–18 days by both sexes; altricial; young fledge at 18–22 days.	75	30–75	15–30
Yellow-Billed Magpie	*Pica nuttallii*	Large globe-shaped nest with dome in oak trees (often in mistletoe) and occasionally other trees in savannah.	30–80	Mid-Mar through Jul; one brood.	16–18 days by female; altricial; young fledge at 30 days.	75	30–75	15–30

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American Crow	*Corvus brachyrhynchos*	Large cup nests in a variety of large trees, usually near the trunk, and artificial structures in wide variety of habitats.	10–70	Mar through Jul; one brood.	18–20 days by female and rarely, helpers; altricial; young fledge at 28–35 days.	50	30–50	15–30
Common Raven	*Corvus corax*	Large cup nests on sheltered rock ledges or in forks of large trees and artificial structures in a wide variety of habitats.	45–80	Mid-Feb through mid-Jul; one brood.	20–25 days by female; altricial; young fledge at 38–44 days.	50	30–50	15–30
Western Bluebird	*Sialia mexicana*	Cavities in woodland clearings, savannahs, and other open habitats.	4–50	Mar through Sep (Mar through Jul); one or two broods; occasionally three broods.	13–14 days by female; altricial; young fledge at 20–22 days.	50	15–50	10–15
Townsend's Solitaire	*Myadestes townsendi*	Cup nests on ground usually on cutbanks and other slopes in mountain coniferous forests.	0–12	Apr through Aug; one or two broods.	11–14 days by female; altricial; young fledge at 10–14 days.	75	30–75	15–30
Swainson's Thrush	*Catharus ustulatus*	Cup nests in dense shrubs, often in riparian woodlands and mixed coniferous forests.	2–20	Apr through Aug one or (rarely) two broods.	10–13 days by female; altricial; young fledge at 10–12 days.	75	30–75	15–30
Hermit Thrush	*Catharus guttatus*	Cup nests in dense shrubs in a variety of forests and woodlands.	2–10	May through Aug; one or two broods.	12–13 days by female; altricial; young fledge at 12–13 days.	75	30–75	15–30
American Robin	*Turdus migratorius*	Cup nests in trees or shrubs, ledges of buildings, or in tree forks in variety of open habitats.	3–25	May through Aug; two or three broods.	11–14 days by female; altricial; young fledge at 14–16 days.	75	30–75	15–30

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Varied Thrush	*Ixoreus maevius*	Cup nests on horizontal branches of trees in moist coniferous forests.	5–25	Apr through Aug; two broods.	14 days by female; altricial; young fledge at 13–15 days.	75	30–75	15–30
Horned Lark	*Eremophila alpestris*	Scrapes in a small hollow; nest lined with grasses, roots, etc.; usually sheltered by plant tufts in grasslands and other open habitats.	Ground	Feb through Aug; two or three broods.	10–12 days by female; altricial; young fledge at 9–12 days.	75	30–75	15–30
Purple Martin	*Progne subis*	Cavities in trees in mountain forests, particularly burned areas with snags. Colonial nester.	5–34	Apr through Aug; one brood.	15–18 days by female; altricial; young fledge at 28–31 days.	75	30–75	15–30
Tree Swallow	*Tachycineta bicolor*	Cavities in open habitats, such as grasslands or wetlands with dead standing trees; usually near water.	5–16	Apr through Aug; two broods.	13–16 days by female; altricial; young fledge at 15–25 days.	50	30–50	15–30
Violet-Green Swallow	*Tachycineta thalassina*	Cavities or occasionally on cliffs or banks in deciduous, coniferous, and mixed woodlands.	5–16	Apr through Aug; one brood.	13–15 days by female; altricial; young fledge at 23–24 days.	50	30–50	15–30
Northern Rough-Winged Swallow	*Stelgidopteryx serripennis*	Cavities on a steep slope or use crevices and holes in bridges and buildings. Single or colonial nester.	4+	Apr through Jul; one brood.	15–16 days by female; altricial; young fledge at 18–21 days.	75	30–75	15–30
Bank Swallow	*Riparia riparia*	Cavities in sandy banks or cliffs along rivers. Colonial nester.	4+	Apr through mid-Jul; one brood.	14–16 days by both sexes; altricial; young fledge at 18–24 days.	100	CR	CR

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Approx, Vertical Height (feet)	General Breeding Season (Peak); Number of Broods per Season	Approximate Incubation Duration; Nestling Duration	Standard Buffer* (feet)	Med. to High Disturbance Category Buffer (feet)	Low to Med. Disturbance Category Buffer (feet)
Barn Swallow	*Hirundo rustica*	Cup nests often on buildings and bridges in open habitats near water.	6–40	Apr through Aug; two broods.	14–16 days by both sexes; altricial; young fledge at 17–24 days.	50	30–50	15–30
Cliff Swallow	*Petrochelidon pyrrhonota*	Closed mud nests often on cliff faces, buildings, or bridges in open habitats near water. Colonial nester.	5+	Apr through Aug; two broods.	12–14 days by both sexes; altricial; young fledge at 21–23 days.	50	30–50	15–30
Mountain Chickadee	*Poecile gambeli*	Cavities in trees in coniferous mountain forests.	4–50	Apr through Aug; one or two broods.	12–15 days by female; altricial; young fledge at 18–21 days.	50	15–50	10–15
Chestnut-Backed Chickadee	*Poecile rufescens*	Cavities trees in coniferous forests and deciduous woodlands.	1–80	Mar through Jul; one or (rarely) two broods.	12–18 days by female; altricial; young fledge at 18–21 days.	50	15–50	10–15
Oak Titmouse	*Baeolophus inornatus*	Cavities in trees in oak woodlands.	2–90	Mar through Jul; one brood.	14–16 days by female; altricial; young fledge at 15–18 days.	50	15–50	10–15
Bushtit	*Psaltriparus minimus*	Pendulous nests in trees and shrubs in a variety of habitats.	3–50	Mar through Aug; two broods.	12–13 days by both sexes; altricial; young fledge at 14–18 days.	50	30–50	15–30
Red-Breasted Nuthatch	*Sitta canadensis*	Cavities in trees in coniferous forests and mixed woodlands.	5–40	Apr through Jul; one or (rarely) two broods.	12 days by female; altricial; young fledge at 18–21 days.	75	30–75	15–30
White-Breasted Nuthatch	*Sitta carolinensis*	Cavities in trees in deciduous woodlands and mixed coniferous forests.	1–50	Mar through mid-Jul; one brood.	12–14 days by female; altricial; young fledge at 26 days.	50	15–50	10–15

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Approx, Vertical Height (feet)	General Breeding Season (Peak); Number of Broods per Season	Approximate Incubation Duration; Nestling Duration	Standard Buffer* (feet)	Med. to High Disturbance Category Buffer (feet)	Low to Med. Disturbance Category Buffer (feet)
Pygmy Nuthatch	*Sitta pygmaea*	Cavities in dead trees or dead portions of trees in long-needled pine forests.	6–70	Mar through Aug; one or two broods.	13–16 days by female; altricial; young fledge at 14–22 days.	75	30–75	15–30
Brown Creeper	*Certhia americana*	Cup nests concealed behind loose bark, in crevices on trees in coniferous forests and mixed coniferous forests..	5–30	Apr through Aug; one brood.	15–18 days by female; altricial; young fledge at 13–17 days.	75	30–75	15–30
Rock Wren	*Salpinctes obsoletus*	Cavities on rocky slopes	Ground/ cliff	Mar through Aug; two or three broods.	12–15 days by female; altricial; young fledge at 14–16 days.	75	30–75	15–30
Canyon Wren	*Catherpes mexicanus*	Cup nests in rock crevices or ledges in rocky habitats.	Cliff	Mar through Aug; two broods.	12–18 days by female; altricial; young fledge at 12–17 days.	75	30–75	15–30
Bewick's Wren	*Thryomanes bewickii*	Cavities in trees, brush, or between rocks in open woodlands and shrubby areas.	0–20	Mar through Aug; two or three broods.	14–16 days by female; altricial; young fledge at approximately 14–17 days.	75	30–75	15–30
House Wren	*Troglodytes aedon*	Cavities in shrubby cover and thickets in open woodlands and hedgerows.	0–20	Apr through Aug; two broods.	13–15 days by female; altricial; young fledge at 12–18 days.	50	30–50	15–30
Pacific Wren	*Troglodytes pacificus*	Cavities or crevices in logs, stumps, root balls, or trees in variety of forests.	0–10	Mar through Aug; one or two broods.	14–17 days by female; altricial; young fledge at 16–19 days.	75	30–75	15–30

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Marsh Wren	*Cistothorus palustris*	Domed nests over the water in tall rushes and marsh grasses in wetland habitats.	1–9	Mar through Aug; two or three broods.	12–16 days by female; altricial; young fledge at 13–15 days.	75	30–75	15–30
American Dipper	*Cinclus mexicanus*	Domed nests in crevices in rocks, logs, bridges, or other protected areas immediately adjacent to water.	0–30	Mar through Aug; two broods.	14–17 days by female; altricial; young fledge at 24–26 days.	75	30–75	15–30
Golden-Crowne d Kinglet	*Regulus satrapa*	Hanging nests woven onto conifer twigs in coniferous forests and mixed woodlands.	4–60	May through Aug; two broods.	14–15 days by female; altricial; young fledge at 16–19 days.	75	30–75	15–30
Ruby-Crowned Kinglet	*Regulus calendula*	Cup nests in trees in coniferous woodlands.	4–100	May through Aug; one brood.	12–14 days by female; altricial; young fledge at 16–18 days.	75	30–75	15–30
Blue-Gray Gnatcatcher	*Polioptila caerulea*	Cup nests in trees or shrubs in a variety of habitats from shrublands to mature forests.	3–80	April through Aug; two broods.	11–15 days by both sexes; altricial; young fledge at 12–13 days.	75	30–75	15–30
Coastal California Gnatcatcher	*Polioptila californica californica*	Cup nests in coastal sage scrub and chaparral.	2–3	Feb through Aug; two broods.	14 days by both sexes; altricial; young fledge at 10–16 days.	500	CR	CR
Wrentit	*Chamaea fasciata*	Cup nests in coastal sage scrub and chaparral.	1–15	Mar through Aug; two broods.	15–16 days by both sexes; altricial; young fledge at 14–16 days.	75	30–75	15–30

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Northern Mockingbird	*Mimus polyglottos*	Cup nests in shrubs and trees in variety of habitats, including woodlands and in developed areas.	3–10	Mar through Jul; two or three broods.	11–14 days by female; altricial; young fledge at 12–14 days; fly 8 days later.	75	30–75	15–30
Sage Thrasher	*Oreoscoptes montanus*	Cup nests in low shrubs in sagebrush habitat.	2–3	Apr through Aug; one or two broods.	13–17 days by both sexes; altricial; young fledge at 11 days.	75	30–75	15–30
Le Conte's Thrasher	*Toxostoma lecontei*	Cup nests in cholla or a low tree, in desert areas with shrubby growth.	2–8	Feb through Jun; two or three broods.	14–20 days by both sexes; altricial; young fledge at 12–20 days.	75	30–75	15–30
California Thrasher	*Toxostoma redivivum*	Cup nests in low trees or shrubs in sage scrub and chaparral.	2–4	Feb through Jul; two broods.	14 days by both sexes; altricial; young fledge at 12–14 days; fly 8 days later.	75	30–75	15–30
Bendire's Thrasher	*Toxostoma bendirei*	Cup nests in shrubs, cacti, or trees.	2–5	Mar through Jun; one or two broods.	12–14 days by both parents; altricial; young fledge at 12–13 days.	75	30–75	15–30
Cedar Waxwing	*Bombycilla cedrorum*	Cup nests in forks of trees in riparian or redwood forests.	5–50	Jun through Sep; one or two broods.	12–14 days; altricial; young fledge at 16–18 days.	75	30–75	15–30
Phainopepla	*Phainopepla nitens*	Cup nests in trees in desert scrub and coastal chaparral.	6–11	Late Feb through mid-Aug – desert; Apr through mid-Aug – coastal; two broods.	14–15 days by both sexes; altricial; young fledge at 20 days.	75	30–75	15–30

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Approx, Vertical Height (feet)	General Breeding Season (Peak); Number of Broods per Season	Approximate Incubation Duration; Nestling Duration	Standard Buffer* (feet)	Med. to High Disturbance Category Buffer (feet)	Low to Med. Disturbance Category Buffer (feet)
Orange-Crowned Warbler	*Oreothlypis celata*	Cup nests on the ground or in crevices near ground in a variety of habitats, often where woodland and chaparral habitats meet.	Ground	Apr through Jul; one or two broods.	12–14 days by female; altricial; young fledge at 10–12 days.	75	30–75	15–30
Nashville Warbler	*Oreothlypis ruficapilla*	Cup nests on ground concealed in bushes or small trees in woodland edges or shrubby areas.	Ground	May through Jul; one brood.	11–12 days by female; altricial; young fledge at 11 days.	75	30–75	15–30
Yellow Warbler	*Setophaga petechia*	Cup nests in trees or shrubs in shrubby growth in riparian areas.	2–12	Apr through Jul; one brood.	11–12 days by female; altricial; young fledge at 9–12 days.	75	30–75	15–30
Yellow-Rumped Warbler	*Setophaga coronata*	Cup nests in trees in coniferous woodlands.	4–50	Apr through Jul; one or (rarely) two broods.	12–13 days by female; altricial; young fledge at 12–14 days.	75	30–75	15–30
Black-Throated Gray Warbler	*Setophaga nigrescens*	Cup nests in trees or shrubs in open woodlands in mountainous areas.	8–35	May through Jul; one or two broods.	Clutch incubated by female; altricial; incubation period and age at fledging are undocumented.	75	30–75	15–30
Hermit Warbler	*Setophaga occidentalis*	Cup nests high in trees in coniferous forests	20–40	May through Jul; one brood.	12 days by both sexes; altricial; young fledge at 8–10 days.	75	30–75	15–30

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MacGillivray's Warbler	*Geothlypis tolmiei*	Cup nests in low thick shrub in riparian woodlands and coniferous or mixed forests.	1–5	May through Jul; one brood.	11–13 days by female; altricial; young fledge at 8–10 days.	75	30–75	15–30
Common Yellowthroat	*Geothlypis trichas*	Cup nests in reeds and other wetland vegetation over water or near water.	1–3	Apr through Jul; one brood.	12 days by female; altricial; young fledge at 9–10 days.	75	30–75	15–30
Wilson's Warbler	*Cardellina pusilla*	Cup nests on ground, hidden by vegetation in shrub habitats in forests and chaparral.	Ground	Apr through Jun; one or (rarely) two broods.	11–13 days by female; altricial; young fledge at 10–11 days.	75	30–75	15–30
Yellow-Breasted Chat	*Icteria virens*	Cup nests in a dense shrub or tangle in thick riparian vegetation.	1–8	Apr through Jul; one or (rarely) two broods.	11–12 days by female; altricial; young fledge at 8–11 days.	75	30–75	15–30
Western Tanager	*Piranga ludoviciana*	Cup nests high in trees on outer branches in coniferous and mixed hardwood forests.	8–75	May through Jul; one brood.	13 days by female; altricial; young fledge at 10–11 days.	75	30–75	15–30
Green-Tailed Towhee	*Pipilo chlorulus*	Cup nests in or at base of low shrubs in chaparral and disturbed (low growth) forest habitats.	0–2	Apr through Aug; one or two broods.	11–13 days by female; altricial; young fledge at 11–14 days.	75	30–75	15–30
Spotted Towhee	*Pipilo maculatus*	Cup nests usually on the ground or very low in bushes shrubby habitats.	2–12	Apr through Jul; one or two broods.	12–14 days by female; altricial; young fledge at 10–12 days.	75	30–75	15–30

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California Towhee	*Melozone crissalis*	Cup nests in shrubs or small trees in brushy habitats.	4–12	Mar through Jul; two or three broods.	14 days by female; altricial; young fledge at 6–11 days.	75	30–75	15–30
Rufous-Crowned Sparrow	*Aimophila ruficeps*	Cup nests at the base of a grass clumps, in dry rocky areas with sparse undergrowth.	0–2	Mar through mid-Jul; one or two broods.	11–13 days by female; altricial; young fledge at 9 days.	75	30–75	15–30
Chipping Sparrow	*Spizella passerina*	Cup nests in trees or shrubs in open woodlands.	3–20	Mid-Mar through Jul; one or two broods.	11–15 days by female; altricial; young fledge at 9–12 days.	75	30–75	15–30
Black-Chinned Sparrow	*Spizella atrogularis*	Cup nests in shrubs in chaparral habitat.	1–3	Mid-Apr through mid-Aug (May through Jun); one brood.	12–13 days by female; altricial; young fledge at 9–10 days.	75	30–75	15–30
Lark Sparrow	*Chondestes grammacus*	Cup nests usually in scrapes on ground in open grasslands, or cup nests in herbaceous or woody shrubs.	0–9	Apr through Jul; one or two broods.	11–13 days by female; altricial; young fledge at 9–12 days.	75	30–75	15–30
Black-Throated Sparrow	*Amphispiza bilineata*	Cup nests in thorny shrubs or cactus in chaparral or desert habitats.	1	Apr through Jul; one or two broods.	12–13 days by female; altricial; young fledge at 9–10 days.	75	30–75	15–30
Sage Sparrow	*Artemisiospiza belli*	Cup nests in thick bushes in chaparral and desert habitats.	1	Mar through Jul; often two broods.	10–16 days by female; altricial; young fledge at 9–10 days.	75	30–75	15–30

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Bryant's Savannah Sparrow	*Passerculus sandwichensis alaudinus*	Cup nests on ground in dense, moist grasslands, ruderal vegetation, or saltmarsh vegetation.	Ground	Apr through Jul; one or two broods.	10–13 days; altricial; young fledge at 7–14 days.	75	30–75	15–30
Belding's Savannah Sparrow	*Passerculus sandwichensis beldingi*	Cup nests on ground in dense, moist grasslands, ruderal vegetation, or saltmarsh vegetation.	Ground	Apr through Jul; one or two broods.	10–13 days; altricial; young fledge at 7–14 days.	75	CR	CR
Grasshopper Sparrow	*Ammodramus savannarum*	Ground nest at the base of bunchgrass or other vegetation in grasslands.	Ground	Apr through Jul; one–three broods.	11–13 days by female; altricial; young fledge at 7–9 days.	75	30–75	15–30
Song Sparrow	*Melospiza melodia*	Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats.	1–3	Mid-Feb through mid-Aug (Mar through Jul); one–four broods.	12–15 days by female; altricial; young fledge at 8–12 days.	75	30–75	15–30
Suisun Song Sparrow	*Melospiza melodia maxillaris*	Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats.	1–3	Mid-Feb through mid-Aug (Mar through Jul); one–four broods.	12–15 days by female; altricial; young fledge at 8–12 days.	75	30–75	15–30
Alameda Song Sparrow	*Melospiza melodia pusillula*	Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats.	1–3	Mid-Feb through mid-Aug (Mar through Jul); one–four broods.	12–15 days by female; altricial; young fledge at 8–12 days.	75	30–75	15–30

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San Pablo Song Sparrow	*Melospiza melodia samuelis*	Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats.	1–3	Mid-Feb through mid-Aug (Mar through Jul); one–four broods.	12–15 days by female; altricial; young; fledge at 8–12 days.	75	30–75	15–30
Lincoln's Sparrow	*Melospiza lincolnii*	Cup nests in depressions on the ground in shrubby growth at forest edges, clearings; often near wet areas	Ground	May through mid-Aug; one brood.	10–13 days by female; altricial; young fledge at 10–12 days.	75	30–75	15–30
White-Crowned Sparrow	*Zonotrichia leucophrys*	Cup nests on ground or in shrubs or small trees in coastal or mountain chaparral and mountain forests.	0–5	Mid-Mar through mid-Aug; one–three broods.	9–15 days; altricial; young fledge at 9–11 days.	50	30–50	15–30
Dark-Eyed Junco	*Junco hyemalis*	Cup nests in depressions on the ground among tree roots or brush in variety of woodland habitats; also on building ledges or in trees.	Ground, but up to 8 feet on ledges or trees	Apr through Jul; one–three broods.	12–13 days by female; altricial; young fledge at 10–13 days.	50	30–50	15–30
Black-Headed Grosbeak	*Pheucticus melanocephalus*	Cup nests in trees or shrubs in thickets, under trees along streams in riparian woodlands or coniferous or mixed forests near edges.	6–12	Mid-Apr through Jul; one brood.	12–14 days by both sexes; altricial; young fledge at 10–14 days.	75	30–75	15–30

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Blue Grosbeak	*Guiraca caerulea*	Cup nests in small trees, shrubs, or other low vegetation, usually near open areas in desert, chaparral, savannah, and forest edge habitats.	<1–16	Apr through Aug; one or two broods.	11–13 days by female; altricial; young fledge at 9–13 days.	75	30–75	15–30
Lazuli Bunting	*Passerina amoena*	Cup nests in low thick shrubby riparian or chaparral habitat.	1–10	May through mid-Aug; one or two broods.	11–14 days by female; altricial; young fledge at 10–15 days.	75	30–75	15–30
Red-Winged Blackbird	*Agelaius phoeniceus*	Cup nests in cattails, bulrushes, and other marsh vegetation or in shrubs in grasslands and shrubby habitats.	1–13	Mid-Mar through mid-Jul; one or two broods.	11–13 days by female; altricial; young fledge at 10–11 days.	75 350 (Kern Red-winged Blackbird)	30–75 200–350 (Kern Red-winged Blackbird)	15–30 100–200 (Kern Red-winged Blackbird)
Tricolored Blackbird	*Agelaius tricolor*	Cup nests in cattails and bulrushes in marshes and shrubby areas in uplands and agricultural areas. Colonial nester.	1–5	Mar through mid-Aug; often two broods.	11 days by female; altricial; young fledge at 12–14 days.	350	CR	CR
Yellow-Headed Blackbird	*Xanthocephalus xanthocephalus*	Cup nests cattails or other emergent vegetation over water in marshes with thick vegetative growth. Colonial nester.	2–3	Mid-Apr through Jul; one brood.	10–13 days by female; altricial; young fledge at 9–12 days.	350	200–350	100–200
Brewer's Blackbird	*Euphagus cyanocephalus*	Cup nests high in trees or shrubs near water in agricultural or suburban/urban areas.	8–43	Mar through Jul; one or two broods.	12–13 days by female; altricial; young fledge at 12–16 days.	50	30–50	15–30

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Western Meadowlark	*Sturnella neglecta*	Domed nests on ground in open grasslands.	Ground	Mar through Jul; one or two broods.	13–15 days by female; altricial; young fledge at 10–12 days.	75	30–75	15–30
Hooded Oriole	*Icterus cucullatus*	Closed cup nests high in trees (often palm trees) or shrubs, often in riparian habitat and in suburban areas.	10–45	Apr through Aug; one–three broods.	12–14 days by female; altricial; young fledge at 14 days.	75	30–75	15–30
Bullock's Oriole	*Icterus bullockii*	Pensile cup nests in twig fork of trees in riparian and oak woodlands.	6–15	Apr through Jul; one brood.	11–14 days by female; altricial; young fledge at 14 days.	75	30–75	15–30
Pine Grosbeak	*Pinicola enucleator*	Cup nests near the end of horizontal tree branches in coniferous forests.	5–35	May through Jul; one brood.	13–14 days by female; young fledge at 14 days.	75	30–75	15–30
Purple Finch	*Haemorhous purpureus*	Cup nests high in trees well hidden by foliage, in coniferous forests and woodlands.	5–60	Apr through Jun; one or two broods.	13 days by female; altricial; young fledge at 14 days.	75	30–75	15–30
House Finch	*Haemorhous mexicanus*	Cup nests in trees, building ledges, and other locations in urban/suburban, agriculture, woodlands, desert, and chaparral habitats.	3–30	Mar through Jul; one–three broods.	12–14 days by female; altricial; young fledge at 14–16 days.	50	15–30	10–15
Red Crossbill	*Loxia curvirostra*	Loose cup constructed near the end of horizontal branch in coniferous forests.	6–60	Feb through Jun; one brood.	12–16 days by female; altricial; young fledge at 15–25 days.	75	30–75	15–30

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Pine Siskin	*Spinus pinus*	Cup nest constructed on conifer or hardwood in coniferous or mixed hardwood forests.	3–50	Apr through Jul; one or two broods.	13 days; altricial; young fledge at 14–15 days.	75	30–75	15–30
Lesser Goldfinch	*Spinus psaltria*	Cup nests in trees and shrubs in a variety of open habitats including oak woodlands, mixed coniferous forests, riparian woodlands, chaparral, agricultural and suburban habitats.	3–40	Apr through Aug; one or two broods.	12 days by female; altricial; young fledge at 11 days.	75	30–75	15–30
Lawrence's Goldfinch	*Spinus lawrencei*	Cup nests in scattered trees in oak woodlands and savannahs.	3–40	Apr through Jul; one or (rarely) two broods.	12–13 days by female; altricial; young fledge at 11 days.	75	30–75	15–30
American Goldfinch	*Spinus tristis*	Cup nests in a variety of shrubs in a variety of open habitats including ruderal fields and grasslands with shrub component nearby.	3–10	Apr through Aug; one or two broods.	12–14 days by female; altricial; young fledge at 11–17 days.	75	30–75	15–30
Evening Grosbeak	*Coccothraustes vespertinus*	Cup nests in fir or other conifers in coniferous forests.	20–60	Jun through Aug; one or (rarely) two broods.	12–14 days by female; altricial; young fledge at 13–14 days.	75	30–75	15–30

[a] Internal consultation recommended to work within standard buffer. May require agency consultation.

[b] The 1,320-foot (0.25-mile) buffer applies to the highest noise level category (90 dB or greater measured at 50 feet). Smaller buffers may be appropriate based on the noise levels of the project. Biologists should follow the methodology found in *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California* (U.S. Fish and Wildlife Service 2006) to determine the noise level and appropriate buffer for their specific project.

Appendix C
Cultural Assessment Report

CONFIDENTIAL, provided under separate cover to the CPUC

Appendix D
Energy Calculations

Table 1

Project Fuel Consumption

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Fuel Consumption During Construction

Construction Phase	Fuel Type	Fuel Consumption (gallons or MMscf)
Phase/Activity #1 - Site Mobilization / Site Preparation	Gasoline	467
	Diesel	6,536
	Natural Gas	0
Phase/Activity #2 - Ground Disturbing Activities	Gasoline	701
	Diesel	9,839
	Natural Gas	0
Phase/Activity #3 - Electrical Equipment Replacement or Modification	Gasoline	4,206
	Diesel	67,227
	Natural Gas	179
Phase/Activity #4 - Demobilization	Gasoline	467
	Diesel	6,536
	Natural Gas	0
Total	**Gasoline**	**5,841**
	Diesel	**90,139**
	Natural Gas	**179**

Portion of Statewide Fuel Resources Used for Project Activities

Project Activity	Fuel Type	Consumed by Project (gallons or MMscf) [a]	Statewide Fuel Resources (gallons or MMscf) [b]	Consumed by Project (%)
Construction	Gasoline	5,841	12,746,185,200	0.00005%
	Diesel	90,139	2,373,378,000	0.004%
	Natural Gas	179	--	--

Notes:

[a] Total gallons of fuel consumed for project construction represents the total gasoline and diesel from employee vehicle trips, construction equipment, vendor delivery truck trips, and material and equipment hauling truck trips during the construction phases, as applicable. Total natural gas consumed (in million standard cubic feet [MMscf]) represents the total natural gas from use of the Portable Equipment Registration Program (PERP) engines during construction.

[b] Data taken from the California Energy Commission's Weekly Fuels Watch Report, available at https://www.energy.ca.gov/data-reports/reports/weekly-fuels-watch/refinery-inputs-and-production. A conservative estimate of annual statewide fuel resources consumed is assumed to be equivalent to 100 percent of annual production/stocks consumed within the state for the period of January 1, 2023 through December 31, 2023. California Energy Commission data are not available for statewide natural gas production.

Table 2
Fuel Consumption by Vehicle and Equipment
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Fuel Consumption

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Fuel Type [b]	Equipment Power Rating (hp) [c]	Equipment Load Factor [c]	Quantity per Day	Number of Days Used [d]	Hours per Day	Miles per Day per Vehicle
Site Mobilization / Site Preparation								
Skid Steer	Skid Steer Loader	Diesel	71	0.37	1	37	10	NA
Backhoe	Tractors/Loaders/Backhoe	Diesel	84	0.37	1	37	10	NA
Large Generator	Generator Large	Diesel	50	0.74	2	37	10	NA
Small Honda Generator	Generator Small	Diesel	7	0.74	2	18	5	NA
6-ton Forklift	Rough Terrain Forklift	Diesel	96	0.40	1	37	10	NA
Water Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	37	NA	2
185 cfm Air Compressor	Air Compressor (Jackhammer)	Diesel	37	0.48	2	37	10	NA
Dump Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	9	NA	2
Worker Commutes	Light-duty Auto/Truck	Gasoline	NA	NA	18	37	NA	20
Vendor/Delivery Trucks	Heavy-Duty Diesel	Diesel	NA	NA	1	12	NA	20
Ground Disturbing Activities								
Skid Steer	Skid Steer Loader	Diesel	71	0.37	1	56	10	NA
Backhoe	Tractors/Loaders/Backhoe	Diesel	84	0.37	1	56	10	NA
Large Generator	Generator Large	Diesel	50	0.74	2	56	10	NA
Small Honda Generator	Generator Small	Diesel	7	0.74	2	28	5	NA
6-ton Forklift	Rough Terrain Forklift	Diesel	96	0.40	1	56	10	NA
Water Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	56	NA	2
185 cfm Air Compressor	Air Compressor (Jackhammer)	Diesel	37	0.48	2	56	10	NA
Vacuum Truck Onsite	Heavy-Duty Diesel	Diesel	NA	NA	1	56	4	2
Dump Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	13	NA	2
Handheld Asphalt Saw	Concrete/Industrial Saw	Diesel	33	0.73	1	2	5	NA
Worker Commutes	Light-duty Auto/Truck	Gasoline	NA	NA	18	56	NA	20
Vendor/Delivery Trucks	Heavy-Duty Diesel	Diesel	NA	NA	1	19	NA	20
Electrical Equipment Replacement or Modification								
Temporary Generator	PERP Generators [g]	Natural Gas	302	NA	22	160	24	NA
Skid Steer	Skid Steer Loader	Diesel	71	0.37	1	333	10	NA
Backhoe	Tractors/Loaders/Backhoe	Diesel	84	0.37	1	333	10	NA
Large Generator	Generator Large	Diesel	50	0.74	2	333	10	NA
Small Honda Generator	Generator Small	Diesel	7	0.74	2	166	5	NA
Manlift	Aerial Lift	Diesel	46	0.31	1	52	5	NA
Weld Machine	Welder	Diesel	46	0.45	2	69	10	NA
6-ton Forklift	Rough Terrain Forklift	Diesel	96	0.40	1	333	10	NA
1/2-Ton Boom Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	171	NA	1

Table 2

Fuel Consumption by Vehicle and Equipment

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Fuel Consumption

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Fuel Type [b]	Equipment Power Rating (hp) [c]	Equipment Load Factor [c]	Quantity per Day	Number of Days Used [d]	Hours per Day	Miles per Day per Vehicle
Water Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	333	NA	2
185 cfm Air Compressor	Air Compressor (Jackhammer)	Diesel	37	0.48	2	333	10	NA
Vacuum Truck Offsite	Heavy-Duty Diesel	Diesel	NA	NA	1	24	NA	20
Vacuum Truck Onsite	Heavy-Duty Diesel	Diesel	NA	NA	2	24	NA	2
Dump Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	80	NA	2
Concrete Pump Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	12	NA	20
Concrete Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	12	NA	20
Jumping Jack	Plate Compactor	Diesel	8	0.43	1	151	5	NA
Handheld Asphalt Saw	Concrete/Industrial Saw	Diesel	33	0.73	1	14	5	NA
Handheld Core Drill	Other General Industrial Equipment	Diesel	35	0.34	1	16	5	NA
Vibraplate	Plate Compactor	Diesel	8	0.43	1	151	5	NA
Worker Commutes	Light-duty Auto/Truck	Gasoline	NA	NA	18	333	NA	20
Vendor/Delivery Trucks	Heavy-Duty Diesel	Diesel	NA	NA	2	112	NA	20
Demobilization								
Skid Steer	Skid Steer Loader	Diesel	71	0.37	1	37	10	NA
Backhoe	Tractors/Loaders/Backhoe	Diesel	84	0.37	1	37	10	NA
Large Generator	Generator Large	Diesel	50	0.74	2	37	10	NA
Small Honda Generator	Generator Small	Diesel	7	0.74	2	18	5	NA
6-ton Forklift	Rough Terrain Forklift	Diesel	96	0.40	1	37	10	NA
Water Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	37	NA	2
185 cfm Air Compressor	Air Compressor (Jackhammer)	Diesel	37	0.48	2	37	10	NA
Dump Truck	Heavy-Duty Diesel	Diesel	NA	NA	1	9	NA	2
Worker Commutes	Light-duty Auto/Truck	Gasoline	NA	NA	18	37	NA	20
Vendor/Delivery Trucks	Heavy-Duty Diesel	Diesel	NA	NA	1	12	NA	20
Total Diesel Fuel Use for Construction Equipment and Vehicles (gallons)								
Total Gasoline Fuel Use for Construction Equipment and Vehicles (gallons)								
Total Natural Gas Fuel Use for Construction Equipment and Vehicles (MMscf)								

Notes:

NA = Parameter not required for computing fuel consumption.

[a] Unless otherwise noted, equipment/vehicle list and daily use provided by PG&E.

[b] Workers are conservatively assumed to travel in gasoline-fueled passenger vehicles or light-duty trucks, even though some of these vehicle trips may occur in diesel, electric, or plug-in hybrid vehicle heavy/heavy-duty trucks, even though some of these vehicle trips may occur in gasoline-fueled, electric, or natural gas-fueled vehicles.

[c] Unless otherwise indicated, default equipment power ratings and load factors were used, as taken from Table G-12 of Appendix G of the *CalEEMod User's Guide* (ICF 2022). The small generator was assum

[d] A number of vehicles and equipment will be used for only a portion of the total duration for each phase.

[e] Fuel consumption calculated from OFFROAD2021 model output for the Mojave Desert Air Quality Management District in the year 2026, based on aggregate equipment horsepower ratings. This out

[f] Fuel efficiency calculated from EMFAC2021 model output for the Mojave Desert Air Quality Management District in the year 2026, based on the presumed vehicle mix. This output was generated usi

[g] Natural gas consumption from the PERP Engines (in million standard cubic feet, MMscf) is based on a total maximum heat input of 47.46 million British thermal units (MMBtu) per hour for all PERP a

Table 2
Fuel Consumption by Vehicle and Equipment
PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Fuel Consumption

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Fuel Type [b]	Equipment Fuel Consumption Rate (gallons/hour) [e]	Equipment Diesel Consumption (gallons/phase)	Equipment Gasoline Consumption (gallons/phase)	Equipment Natural Gas Consumption (MMscf/phase)	Vehicle Fuel Efficiency (miles/gallon) [f]	Vehicle Diesel Consumption (gallons/phase)	Vehicle Gasoline Consumption (gallons/phase)
Site Mobilization / Site Preparation									
Skid Steer	Skid Steer Loader	Diesel	1.52	564	NA	NA	NA	NA	NA
Backhoe	Tractors/Loaders/Backhoe	Diesel	2.21	817	NA	NA	NA	NA	NA
Large Generator	Generator Large	Diesel	3.67	2,719	NA	NA	NA	NA	NA
Small Honda Generator	Generator Small	Diesel	3.67	678	NA	NA	NA	NA	NA
6-ton Forklift	Rough Terrain Forklift	Diesel	2.21	819	NA	NA	NA	NA	NA
Water Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	12	NA
185 cfm Air Compressor	Air Compressor (Jackhammer)	Diesel	1.19	884	NA	NA	NA	NA	NA
Dump Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	3	NA
Worker Commutes	Light-duty Auto/Truck	Gasoline	NA	NA	NA	NA	28.54	NA	467
Vendor/Delivery Trucks	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	39	NA
Ground Disturbing Activities									
Skid Steer	Skid Steer Loader	Diesel	1.52	846	NA	NA	NA	NA	NA
Backhoe	Tractors/Loaders/Backhoe	Diesel	2.21	1,226	NA	NA	NA	NA	NA
Large Generator	Generator Large	Diesel	3.67	4,079	NA	NA	NA	NA	NA
Small Honda Generator	Generator Small	Diesel	3.67	1,018	NA	NA	NA	NA	NA
6-ton Forklift	Rough Terrain Forklift	Diesel	2.21	1,229	NA	NA	NA	NA	NA
Water Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	17	NA
185 cfm Air Compressor	Air Compressor (Jackhammer)	Diesel	1.19	1,326	NA	NA	NA	NA	NA
Vacuum Truck Onsite	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	17	NA
Dump Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	4	NA
Handheld Asphalt Saw	Concrete/Industrial Saw	Diesel	1.50	17	NA	NA	NA	NA	NA
Worker Commutes	Light-duty Auto/Truck	Gasoline	NA	NA	NA	NA	28.54	NA	701
Vendor/Delivery Trucks	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	58	NA
Electrical Equipment Replacement or Modification									
Temporary Generator	PERP Generators [g]	Natural Gas	NA	NA	NA	179	NA	NA	NA
Skid Steer	Skid Steer Loader	Diesel	1.52	5,078	NA	NA	NA	NA	NA
Backhoe	Tractors/Loaders/Backhoe	Diesel	2.21	7,356	NA	NA	NA	NA	NA
Large Generator	Generator Large	Diesel	3.67	24,474	NA	NA	NA	NA	NA
Small Honda Generator	Generator Small	Diesel	3.67	6,105	NA	NA	NA	NA	NA
Manlift	Aerial Lift	Diesel	1.14	297	NA	NA	NA	NA	NA
Weld Machine	Welder	Diesel	1.71	2,355	NA	NA	NA	NA	NA
6-ton Forklift	Rough Terrain Forklift	Diesel	2.21	7,374	NA	NA	NA	NA	NA
1/2-Ton Boom Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	27	NA

Table 2

Fuel Consumption by Vehicle and Equipment

PG&E S-238 Hinkley Compressor Station Electrical Upgrades

Vehicle and Equipment Fuel Consumption

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Fuel Type [b]	Equipment Fuel Consumption Rate (gallons/hour) [e]	Equipment Diesel Consumption (gallons/phase)	Equipment Gasoline Consumption (gallons/phase)	Equipment Natural Gas Consumption (MMscf/phase)	Vehicle Fuel Efficiency (miles/gallon) [f]	Vehicle Diesel Consumption (gallons/phase)	Vehicle Gasoline Consumption (gallons/phase)
Water Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	104	NA
185 cfm Air Compressor	Air Compressor (Jackhammer)	Diesel	1.19	7,958	NA	NA	NA	NA	NA
Vacuum Truck Offsite	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	75	NA
Vacuum Truck Onsite	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	15	NA
Dump Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	25	NA
Concrete Pump Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	37	NA
Concrete Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	37	NA
Jumping Jack	Plate Compactor	Diesel	3.15	2,377	NA	NA	NA	NA	NA
Handheld Asphalt Saw	Concrete/Industrial Saw	Diesel	1.50	103	NA	NA	NA	NA	NA
Handheld Core Drill	Other General Industrial Equipment	Diesel	4.38	350	NA	NA	NA	NA	NA
Vibraplate	Plate Compactor	Diesel	3.15	2,377	NA	NA	NA	NA	NA
Worker Commutes	Light-duty Auto/Truck	Gasoline	NA	NA	NA	NA	28.54	NA	4,206
Vendor/Delivery Trucks	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	702	NA
Demobilization									
Skid Steer	Skid Steer Loader	Diesel	1.52	564	NA	NA	NA	NA	NA
Backhoe	Tractors/Loaders/Backhoe	Diesel	2.21	817	NA	NA	NA	NA	NA
Large Generator	Generator Large	Diesel	3.67	2,719	NA	NA	NA	NA	NA
Small Honda Generator	Generator Small	Diesel	3.67	678	NA	NA	NA	NA	NA
6-ton Forklift	Rough Terrain Forklift	Diesel	2.21	819	NA	NA	NA	NA	NA
Water Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	12	NA
185 cfm Air Compressor	Air Compressor (Jackhammer)	Diesel	1.19	884	NA	NA	NA	NA	NA
Dump Truck	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	3	NA
Worker Commutes	Light-duty Auto/Truck	Gasoline	NA	NA	NA	NA	28.54	NA	467
Vendor/Delivery Trucks	Heavy-Duty Diesel	Diesel	NA	NA	NA	NA	6.40	39	NA
									90,139
									5,841
									179

Notes:

NA = Parameter not required for computing fuel consumption.

[a] Unless otherwise noted, equipment/vehicle list and daily use provided by PG&E.

[b] Workers are conservatively assumed to travel in gasoline-fueled passenger vehicles or light-duty trucks, ev‹s. Onsite construction vehicles and offsite material and equipment transport vehicles are conservatively assumed to be diesel-fueled heavy/heavy-duty trucks, even though some of these vehicle trips may occur in gasoline-fueled, electric, or r

[c] Unless otherwise indicated, default equipment power ratings and load factors were used, as taken from Table ‹ed to be 7 hp and the large generator was assumed to be 50 hp, as PG&E indicated that two different generator sizes would be used

[d] A number of vehicles and equipment will be used for only a portion of the total duration for each phase.

[e] Fuel consumption calculated from OFFROAD2021 model output for the Mojave Desert Air Quality Manage‹put was generated using the OFFROAD Web Database (https://arb.ca.gov/emfac/offroad/).

[f] Fuel efficiency calculated from EMFAC2021 model output for the Mojave Desert Air Quality Management D‹ng the EMFAC2021 Web Database (https://arb.ca.gov/emfac/).

[g] Natural gas consumption from the PERP Engines (in million standard cubic feet, MMscf) is based on a total nd U.S. EPA's AP-42 average gross heating value of natural gas 1,020 btu/scf.

Appendix E
Paleontological Evaluation

CONFIDENTIAL pages provided under separate cover to the CPUC

Cultural and Paleontological Resource Studies for the Pacific Gas & Electric Groundwater Remediation Project, Hinkley Compressor Station, San Bernardino County

VOLUME 3
Paleontological Evaluation Report

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April 2014

SUMMARY OF FINDINGS

At the request of CH2M Hill and on behalf of Pacific Gas and Electric Company (PG&E), Applied EarthWorks Inc. (Æ) performed a paleontological resource evaluation in support of the PG&E Groundwater Remediation Project, Hinkley Compressor Station, San Bernardino County (the Project) near the community of Hinkley, California. This study consisted of a museum records search, a comprehensive literature and geologic map review, a field reconnaissance survey, and preparation of this Paleontological Evaluation Report. This technical report summarizes the methods and results of a paleontological resources evaluation and provides Project-specific management recommendations. This study is intended to fulfill the requirements of measure CUL-MM-8 of the Mitigation Monitoring and Reporting Program (MMRP): Comprehensive Groundwater Cleanup Strategies for Historical Chromium Discharges, attached as Appendix F to Lahontan Regional Water Quality Control Board's Order No. R6V-2014-0023, *Waste Discharge Requirements for PG&E Groundwater Remediation Project Agricultural Treatment Units*. Mitigation Measure (MM) CUL-MM-8 requires PG&E to retain a qualified paleontologist and/or geologist to prepare a paleontological resource evaluation report that identifies site-specific measures for monitoring, avoiding, protecting, recovering, and/or curating resources prior to each ground-disturbing remedial activity.

Æ performed a comprehensive review of published and unpublished literature and museum collections records maintained by the Natural History Museum of Los Angeles County and the San Bernardino County Museum to identify the geologic units underlying the Project area and determine whether or not previously recorded paleontological localities occur either within the Project boundaries or within the same geologic units elsewhere. The museum records search was supplemented by a search of the University of California Museum of Paleontology's online collections database. Following the literature and museum searches, Æ conducted a field survey to visually inspect the ground surface for exposed fossils and evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. Using the results of the literature review and museum records search, the paleontological resource potential of the Project area was determined in accordance with the 2010 Society of Vertebrate Paleontology guidelines and the 2007 Bureau of Land Management Potential Fossil Yield Classification System.

Published geologic mapping indicates that the majority of the Project area is underlain by Quaternary alluvium (Holocene age), Holocene eolian deposits, Quaternary older alluvium (Pleistocene age), and Pleistocene fluvial and lacustrine deposits. In addition, portions of the Project area include outcrops of Precambrian to Paleozoic metamorphic rocks, Mesozoic plutonic igneous rocks, and Tertiary volcanic rocks. Museum records contained one previously recorded vertebrate locality directly within Project boundaries; in addition, at least 79 scientifically significant fossil localities have been recorded in San Bernardino County from within similar Pleistocene-age alluvial and lacustrine deposits, mostly from the nearby Lake Manix deposits. These localities yielded fossilized specimens of reptiles, fish, birds, and

terrestrial mammals, including mammoth, ground sloth, mastodon, horse, camel, cat, bear, rabbit, sheep, and bison among others. No fossils were recovered during the course of this fieldwork.

As a result of this study, portions of the Project area are determined to have a high paleontological resource potential (i.e., sensitivity) and the likelihood of impacting scientifically significant vertebrate fossils as a result of Project construction in these areas is high. Therefore, Æ recommends that a qualified paleontologist be retained to implement a Paleontological Mitigation Plan during construction in highly sensitive areas identified in this report. The mitigation plan will address the monitoring, Stop Work, and fossil recovery and curation requirements of MMRP CUL-MM-8. In addition, all construction and maintenance personnel are required by the MMRP to receive paleontological resources awareness training that includes information on the possibility of encountering fossils during construction; the types of fossils likely to be seen, based on finds in the site vicinity; and proper procedures in the event fossils are encountered. All significant fossils found during the course of construction monitoring should be delivered to an approved repository for permanent curation. By implementing these management recommendations, the requirements set forth in CUL-MM-8 of the MMRP will be met and adverse impacts to paleontological resources can be reduced to a less than significant level pursuant to the requirements of the California Environmental Quality Act. Documentation of compliance with requirements of the measure will be provided to the California Regional Water Quality Control Board, Lahontan Region as part of an Annual Report.

CONTENTS

FIGURES

TABLES

1
PROPOSED PROJECT

On behalf of Pacific Gas and Electric Company (PG&E) and at the request of CH2M Hill, Applied EarthWorks, Inc. (Æ) performed a paleontological resource evaluation in support of the Pacific Gas and Electric Groundwater Remediation Project, Hinkley Compressor Station, San Bernardino County (the Project). The work was designed to comply with the Mitigation Monitoring and Reporting Program (MMRP): Comprehensive Groundwater Cleanup Strategies for Historical Chromium Discharges, Appendix F to Lahontan Regional Water Quality Control Board's Order No. R6V-2014-0023, *Waste Discharge Requirements for PG&E Groundwater Remediation Project Agricultural Treatment Units*, and specifically with MMRP CUL-MM-8, which requires PG&E to retain a qualified paleontologist and/or geologist to prepare a paleontological resource evaluation report that identifies site-specific measures for monitoring, avoiding, protecting, recovering, and/or curating resources prior to each ground-disturbing remedial activity. The assessment consisted of a museum records search, a comprehensive literature and geologic map review, a pedestrian field survey, and preparation of this Paleontological Evaluation Report that includes Project-specific management recommendations.

1.1 PROJECT LOCATION

The Project area is near the community of Hinkley, California, approximately 6 miles northwest of the city of Barstow within the Mojave Desert region of eastern California (Figure 1-1). It is mapped within Township 9 North, Range 2 West, Sections 4–7; Township 9 North, Range 3 West, Sections 1–5 and 8–12; Township 10 North, Range 2 West, Sections 6–7, 18–19, and 29–33; Township 10 North, Range 3 West, Sections 1–6, 9–16, 21–28, and 33–36; Township 11 North, Range 3 West, Sections 7–10, 15–23, and 26–36 on the U.S. Geological Survey (USGS) Barstow, Hinkley, Mud Hills, and Water Valley, Calif. 7.5-minute quadrangles (Figure 1-2). The Project area encompasses roughly 50 square miles (32,159 acres), extending approximately 12 miles north-south across State Route 58, and about 6 miles east-west across Hinkley Valley and Harper Lake Valley. According to the Final EIR, the Project area is generally bounded by Valley Wells Road on the west, Mount General on the northeast, and the Mojave River on the southeast. The Project area includes PG&E-owned parcels, federal land managed by the Bureau of Land Management (BLM), and privately held land. Only lands that are owned by PG&E as of March 2014 will be subject to ground disturbance and potential paleontological resource impacts (Nettles, personal communication 2014).

1.2 PROJECT DESCRIPTION

PG&E proposes to expand remediation activities related to the cleanup of historical chromium discharges from the Hinkley Compressor Station in San Bernardino County, California. Remediation will be conducted pursuant to existing California Regional Water Quality Control Board, Lahontan Region (Water Board) orders. Pursuant to WDRs issued in March 2014 (Water Board Order No. R6V-2014-0023), these activities are subject to the mitigation measures in the MMRP adopted by the Water Board in May 2013

Figure 1-1 **Project vicinity in San Bernardino County, California.**

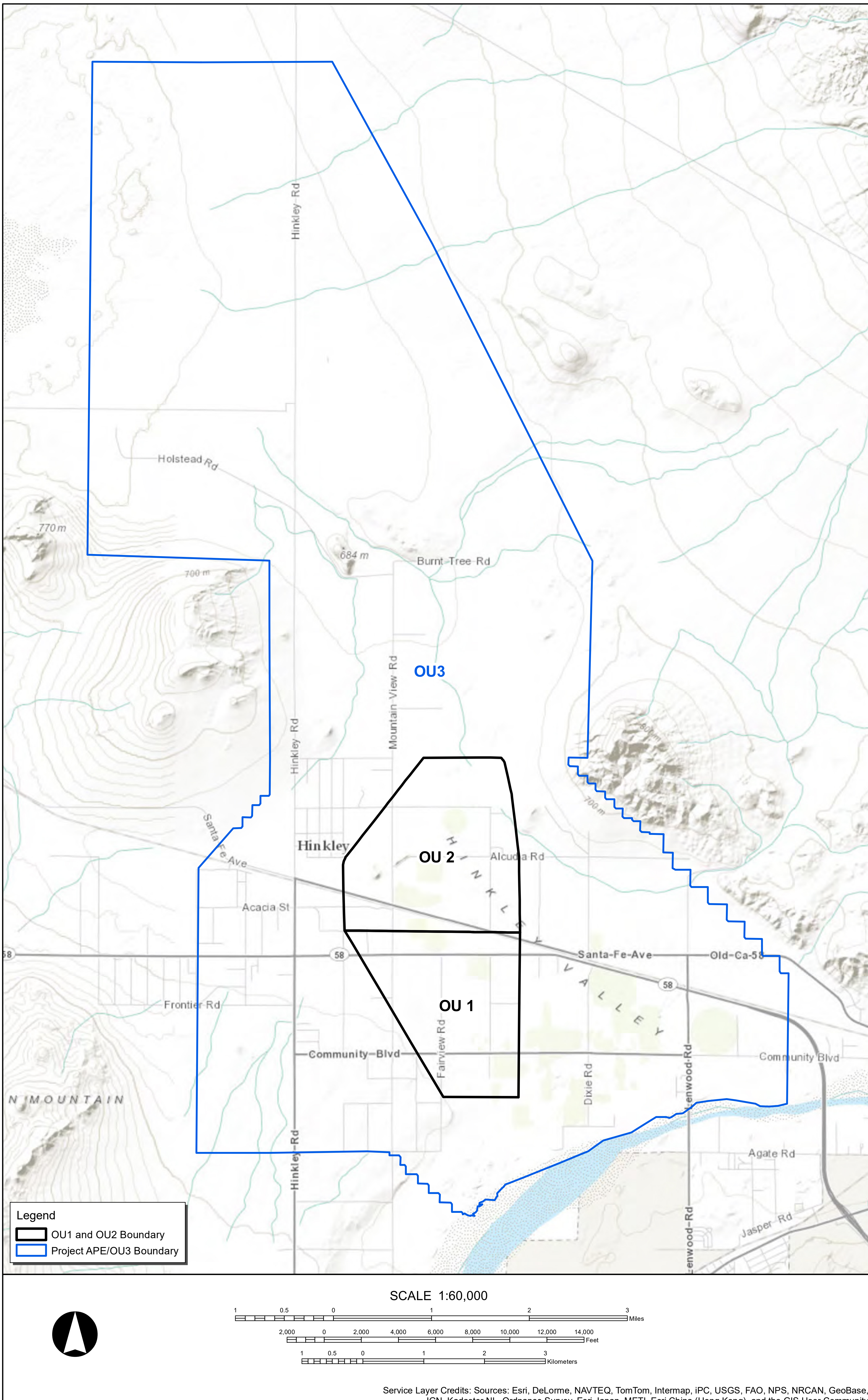

Figure 1-2 Project location showing Operable Units (OUs).

The Project area encompasses area where groundwater contains more than 3.1 parts per billion (ppb) of hexavalent chromium [Cr(VI)] as of the fourth quarter of 2012, as well as areas of potential groundwater drawdown, future plume migration, and areas of potential effects due to groundwater pumping associated with the Project. For the EIR analysis, the Project area was divided into subareas, including three Operable Units (OUs) known as OU1, OU2, and OU3. The majority of the planned or existing ground-disturbing remediation activities will occur in OU1 and OU2. Potential future ground disturbing remediation activities will occur in OU3.

PG&E currently owns the Hinkley Compressor Station and other surrounding properties in the Project area. In order to comply with the Water Board's directives, PG&E plans to remediate the chromium discharges from the Hinkley Compressor Station consistent with the alternatives described in the Final EIR (ICF International 2013). Accordingly, PG&E proposes to install monitoring wells, develop agricultural treatment, extract groundwater, contain the plume with freshwater injection, and treat the plume with biological and chemical reducing agents. Specifically, Project activities may include excavation for pipeline installation; well drilling and installation; grading and excavation associated with installation of an aboveground treatment facility near the compressor station (not currently planned); and land clearing, crop planting, and irrigation installation for the new ATUs. The pipeline and well excavation will include extensive subsurface ground disturbance to a substantial depth; agricultural activities and grading for a treatment facility, if constructed, will include relatively shallow surficial excavations. Ground-disturbing remediation activities will only occur on PG&E-owned parcels (Nettles, personal communication 2014).

The Final EIR disclosed that the Project area is underlain in part by geologic units with undetermined and potentially high paleontological sensitivity but that the Project's potential to impact unique paleontological resources could be reduced to a less than significant level with the implementation of Mitigation Measure (MM) CUL-MM-8. Pursuant to CUL-MM-8, Æ conducted an additional preconstruction paleontological resources evaluation per approved CUL-MM-8a and -8b of the Final EIR and MMRP.

1.3 PURPOSE OF INVESTIGATION

The purpose of this investigation is to: (1) identify the geologic units within the Project area and assess their paleontological resource potential, (2) determine whether or not the Project has the potential to adversely impact known scientifically significant paleontological resources, (3) provide Project-specific management recommendations for paleontological resources mitigation, as necessary, and (4) demonstrate compliance with the MMRP. The study was conducted in accordance with professional standards and guidelines set forth by the Society of Vertebrate Paleonotology (SVP 2010) and Bureau of Land Management (BLM 2007) and meets the requirements of the laws and regulations described in Chapter 2.

1.4 REPORT ORGANIZATION

This report documents the results of Æ's paleontological resource evaluation of the Project area. Chapters 1 has introduced the scope of work, identified the Project location, described the Project, and defined the purpose of the investigation. Chapter 2 outlines the regulatory framework governing the Project, and Chapter 3 defines the paleontological significance and sensitivity criteria used for this assessment. Chapter 4 provides the methods, and Chapter 5 presents the results of the literature review and the museum records search and includes an overview of the geology and paleontology of the Project area. Chapter 6 provides a summary of the field reconnaissance and defines the paleontological significance and sensitivity of the geologic units underlying the Project area. Findings are summarized in Chapter 7, and recommendations are presented in Chapter 8. Conclusions are provided in Chapter 9, and Chapter 10 lists references cited.

2
REGULATORY ENVIRONMENT

2.1 LAWS, REGULATIONS, AND GUIDELINES

Paleontological resources (i.e., fossils) are considered nonrenewable scientific resources because once destroyed, they cannot be replaced. As such, paleontological resources are afforded protection under various federal, state, and local laws and regulations. Federal laws and regulations apply only when projects are located on federal lands or federally managed lands, or when they are federally funded. The Project area encompasses public land administered by the BLM, however direct Project-related ground disturbances will not impact federally owned land.

2.1.1 State of California

The California Environmental Quality Act (CEQA) encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the potential environmental impacts of a proposed project, and to consider analyses when making decisions.

Under CEQA, a lead agency generally considers a resource to be “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resource Code 5024.1, 14 California Code of Regulations [CCR] 4852), which includes “any object [or] site . . . that has yielded or may be likely to yield information important in prehistory” (14 CCR 15064.5[3]). This criterion is typically interpreted as including fossil materials and other paleontological resources. Destruction of a “unique paleontological resource or site or unique geologic feature constitutes a significant impact under CEQA” (CEQA Guidelines, Appendix G Section XIV[a]).

Treatment of paleontological resources under CEQA generally requires evaluation of resources in the project; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include avoidance, monitoring, or data recovery excavation.

2.1.2 San Bernardino County

Paleontological resources are addressed under the Conservation Element of the County of San Bernardino General Plan (2012). Section V-C2, Cultural/Paleontological Resources, addresses the treatment of paleontological resources for which the following objective and policy are set forth:

> **GOAL CO 3.** The County will preserve and promote its historic and prehistoric cultural heritage.
>
> . . . .

CO 3.4 The County will comply with Government Code Section 65352.2 (SB 18) by consulting with tribes as identified by the California Native American Heritage Commission on all General Plan and specific plan actions.

Programs:

1. Site record forms and reports of surveys, test excavations, and data recovery programs will be filed with the Archaeological Information Center at the San Bernardino County Museum, and will be reviewed and approved in consultation with that office.

2. Any artifacts collected or recovered as a result of cultural resource investigations will be catalogued per County Museum guidelines and adequately curated in an institution with appropriate staff and facilities for their scientific information potential to be preserved. This shall not preclude the local tribes from seeking the return of certain artifacts as agreed to in a consultation process with the developer/project archaeologist.

3. When avoidance or preservation of an archaeological site or historic structure is proposed as a form of mitigation, a program detailing how such long-term avoidance or preservation is assured will be developed and approved prior to conditional approval.

4. In areas of potential but unknown sensitivity, field surveys prior to grading will be required to establish the need for paleontologic monitoring.

5. Projects requiring grading plans that are located in areas of known fossil occurrences, or demonstrated in a field survey to have fossils present, will have all rough grading (cuts greater than 3 feet) monitored by trained paleontologic crews working under the direction of a qualified professional, so that fossils exposed during grading can be recovered and preserved. Fossils include large and small vertebrate fossils, the latter recovered by screen washing of bulk samples.

6. A report of findings with an itemized accession inventory will be prepared as evidence that monitoring has been successfully completed. A preliminary report will be submitted and approved prior to granting of building permits, and a final report will be submitted and approved prior to granting of occupancy permits. The adequacy of paleontologic reports will be determined in consultation with the Curator of Earth Science, San Bernardino County Museum [V-18–V-19].

3
PALEONTOLOGICAL SIGNIFICANCE AND RESOURCE CLASSIFICATION

3.1 DEFINITION OF PALEONTOLOGICAL RESOURCES AND SIGNIFICANCE CRITERIA

Paleontological resources are the evidence of once-living organisms as preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (trackways, imprints, burrows, etc.). In general, fossils are considered to be greater than 5,000 years old (middle Holocene in age) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (SVP 2010).

Significant paleontological resources are defined as “identifiable” vertebrate fossils, uncommon invertebrate, plant, and trace fossils that provide taphonomic, taxonomic, phylogenetic, paleoecologic, and stratigraphic or biochronological data (SVP 2010). Well-preserved and identifiable individual fossils are considered significant if they are a type specimen, rare, a complete specimen, or part of an important diverse fossil assemblage. These data are important because they are used to examine evolutionary relationships, provide insight on the development of and interaction between biological communities, establish time scales for geologic studies, and for many other scientific purposes (Scott and Springer 2003; SVP 2010).

3.2 PROFESSIONAL STANDARDS AND PALEONTOLOGICAL RESOURCE SENSITIVITY

Absent specific agency guidelines, most professional paleontologists in California adhere to guidelines set forth by SVP in “Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources” (SVP 2010). These guidelines establish detailed protocols for the assessment of the paleontological resource potential (i.e., “sensitivity”) of a project area and outline measures to follow in order to mitigate adverse impacts to known or unknown fossil resources during project development. The protocols and procedures for a standard paleontological resources assessment include the following elements: (1) literature search, (2) records search, (3) consultation with others, (4) field survey, (5) reporting, (6) agency confirmation, (7) repository agreement, and (8) pre-excavation meeting.

In order to prevent project delays, SVP highly recommends that the owner or developer retain a qualified professional paleontologist in the advance planning phases of a project to conduct an assessment and to implement paleontological mitigation during construction, as necessary. A qualified professional paleontologist is defined by SVP (2010) as “a practicing scientist who is recognized in the paleontological community as a professional and can demonstrate familiarity and proficiency with paleontology in a stratigraphic context.” Using baseline information gathered during a paleontological resource assessment, the paleontological resource potential of the geologic unit(s) (or members thereof) underlying a project area can be assigned to one of four categories defined by SVP (2010). These categories include high, undetermined, low, and no potential. The criteria for each SVP sensitivity class, and the corresponding mitigation recommendations, are summarized in Table 3-1.

Table 3-1
Paleontological Sensitivity Categories

Potential Fossil Yield Classification[a]	Resource Potential (SVP)[b]	Criteria	Mitigation Recommendations
Class 1 Very Low	No Potential	Rock units that are formed under or exposed to immense heat and pressure, such as high-grade metamorphic rocks and plutonic igneous rocks; volcanic rocks, excluding reworked ash deposits; Precambrian age or older rocks.	No mitigation required.
Class 2 Low	Low Potential	Sedimentary rock units that have yielded few, if any, vertebrate fossils or significant invertebrate fossils in the past, based upon review of available literature and museum collections records. Geologic units of low potential also include those that yield fossils only on rare occasion and under unusual circumstances; eolian deposits, rock units deposited less than 10,000 years before present; and deposits that exhibit a high degree of diagenetic alteration.	Mitigation is not typically required.
Class 3 3a: Moderate 3b: Unknown[c]	N/A Undetermined Potential	A fossiliferous rock unit with moderate potential is a sedimentary deposit where the significance, abundance, and predictability of recovery of fossils vary. In some cases, available literature on a particular geologic unit will be scarce and a determination of whether or not it is fossiliferous or potentially fossiliferous will be difficult to make. Under these circumstances, the sensitivity is unknown and further study is needed to determine the unit's paleontological resource potential.	Due to the unknown potential or moderate or infrequent occurrence of fossils, surface-disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action. Management recommendations may include a preconstruction field survey, monitoring, or avoidance.
Class 4 4a: High Buried 4b: High Covered	High Potential High Potential	Geologic units with high potential for paleontological resources are those that have been proven to yield vertebrate or significant invertebrate, plant, or trace fossils in the past or are likely to contain new vertebrate materials, traces, or trackways, but may vary in occurrence and predictability. A unit with high sensitivity is susceptible to surface-disturbing activities and includes fossiliferous sedimentary deposits that are well exposed with little vegetative cover as well as those shallowly covered by soil, alluvium, or vegetation.	Typically, a field survey as well as on-site construction monitoring will be required. Any significant specimens discovered will need to be prepared, identified, and curated in a museum. A final report documenting the significance of the finds will also be required.

Table 3-1 (continued)
Paleontological Sensitivity Categories

Potential Fossil Yield Classification[a]	Resource Potential (SVP)[b]	Criteria	Mitigation Recommendations
Class 5 5a: Very High Buried 5b: Very High Covered	 N/A N/A	Geologic units with very high potential for paleontological resources are those that consistently and predictably yield vertebrate or significant invertebrate, plant, or trace fossils. A unit with very high sensitivity is highly susceptible to surface disturbing activities and includes fossiliferous sedimentary deposits that are well exposed with little vegetative cover, as well as those shallowly covered by soil, alluvium, or vegetation.	Typically, a field survey as well as on-site construction monitoring will be required. Any significant specimens discovered will need to be prepared, identified, and curated in a museum. A final report documenting the significance of the finds will also be required.

a - BLM (2007); Pacific Gas and Electric Company (PG&E 2013).
b - SVP (2010).
c - Generally, this classification is only used when limited or no research has been conducted and minimal or no background information regarding a rock unit's paleontological resource potential is available. Given adequate research and evaluation, a geologic unit can be categorized as having a very high, high, moderate, low, or very low sensitivity.

In addition, in accordance with PG&E's (2013) draft Paleontological Resource Guidelines and Standards, this report will utilize the Potential Fossil Yield Classification System (PFYC) developed by the BLM (2007) to assess paleontological sensitivity and level of effort required to manage potential impacts to significant resources. Using this system, the sensitivity of geologic units is assigned on the basis of the relative abundance and risk of adverse impacts to vertebrate fossils and significant invertebrates and plants. The area of sensitivity is typically defined as the entire rock unit (formation, member, or distinguishable unit at the most detailed mappable level) and not limited to areas where surface fossils may be exposed. Using baseline information gathered during a paleontological resource assessment, the sensitivity of the geologic unit(s) underlying a project area can be assigned to one of five categories defined by BLM (2007). These categories include very high, high, moderate or unknown, low, and very low. The criteria for each PFYC sensitivity class, and the corresponding mitigation recommendations, are summarized in Table 3-1.

In areas where highly sensitive strata will be disturbed, CUL-MM-8d, -8e, and -8f of the MMRP will apply. These measures require worker awareness training prior to construction (MM 8c) and paleontological monitoring of ground disturbance in sensitive locations (CUL-MM-8d). If fossil materials are discovered anywhere in the Project area, all ground disturbance in the vicinity of the find will stop until a qualified paleontologist can assess the nature and importance of the find and recommend appropriate treatment (CUL-MM-8e). Appropriate recovery of significant fossils will occur, and such materials will be recorded, prepared, identified, curated, and reported according to standard scientific procedures (CUL-MM-8f).

4
METHODS

4.1 LITERATURE REVIEW AND RECORDS SEARCH

Paleontological resources are not found in "soil" but are contained within the geologic deposit or bedrock that underlies the soil layer. Therefore, in order to ascertain whether or not a particular study area has the potential to contain significant fossil resources at the subsurface, it is necessary to review relevant scientific literature and geologic mapping to determine the geology and stratigraphy of the area. Further, to delineate the boundaries of an area of paleontological sensitivity it is necessary to determine the extent of the entire geologic unit, because paleontological sensitivity is not limited to surface exposures of fossil material.

To determine whether or not fossil localities have been previously discovered within the Project area or a particular rock unit, Æ researched the records of the Los Angeles County Museum of Natural History (LACM) and the San Bernardino County Museum (SBCM). The museum records search was supplemented by a review of the University of California Museum of Paleontology's (UCMP) online database, which contains paleontological records for San Bernardino County.

4.2 FIELDWORK

Æ visited the Project area on March 13 and 14, 2014, to search the ground surface for exposed fossils and evaluate geologic exposures in areas of proposed disturbance for their potential to contain preserved fossil material at the subsurface.

4.3 KEY PERSONNEL

This paleontological assessment was prepared under the direction of Æ's Paleontology Program Manager Jessica DeBusk, who serves as Senior Paleontologist and provided a quality assurance (QA) review of this report. In addition, DeBusk requested the museum records searches, supervised the field survey, and served as primary author of this report. Staff Paleontologist Heather Clifford conducted the literature and geologic map review and was the primary author of the geology and paleontology sections of this report. The field survey was conducted by Clifford and Æ Associate Archaeologist Michael Kay. DeBusk has more than 11 years of professional experience as a consulting paleontologist and meets the SVP's definition of a qualified professional paleontologist. Geographic Information Systems (GIS) Specialist Michael Mirro produced all graphics.

5
RESULTS

5.1 LITERATURE REVIEW

5.1.1 Geologic Setting

The Project area is situated within the Mojave Desert geomorphic province in southeastern California (Norris and Webb 1990). A geomorphic province is a region of unique topography and geology that is readily distinguished from other regions based on its landforms and diastrophic history. The Mojave Desert geomorphic province extends from the San Andreas and Garlock faults toward the Basin and Range Province and Colorado Desert (Dibblee and Hewett 1966). The Mojave Desert was formed as a result of Proterozoic (2,500 million years ago [Ma] to 542 Ma) and Paleozoic (542 to 252 Ma) subsidence and sediment accumulation; Mesozoic (252 to 66 Ma) volcanism, plutonic intrusion, regional uplift, and metamorphism; and ongoing Cenozoic (66 Ma to present) uplift, depression, erosion, volcanism, and crustal deformation associated with movement along the Garlock and San Andreas faults (Dibblee 1967). The western Mojave Desert is situated on top of an uplifted basement block consisting of Proterozoic to Mesozoic crystalline rocks covered by a thin veneer of Cenozoic sedimentary rocks and Quaternary (2.6 Ma to present) alluvium (Garfunkel 1974). In general, the Mojave Desert is dominated by broad alluvial basins and uplifted, unroofed basement rock; late Cenozoic basaltic and rhyolitic volcanic rocks; sedimentation from the Pleistocene Mojave River and pluvial lakes; and active faulting, including the right-lateral, northwest-trending Lenwood-Lockhart fault and Mount General fault near the Project area (Amoroso and Miller 2012). The Mojave Desert is entirely landlocked and averages 2,500 feet above mean sea level (amsl) in elevation (Norris and Webb 1990).

In the vicinity of the Project area, the Mojave River flows through the central Mojave Desert on its way to the endorheic (i.e., closed-basin) Soda Lake and Silver Lake in the east (Enzel et al. 2003). The Mojave River is an ephemeral stream with headwaters in the San Bernardino Mountains, south of Hesperia (Garcia et al. 2013). During the Pleistocene, when the atmosphere held more moisture over the Mojave Desert, the Mojave River had a greater discharge and fed several regional lakes. The lakes were part of a larger pluvial lake system in the Mojave Desert and Basin and Range Province, which formed in response to climatic changes during times of Pleistocene glaciation (Enzel et al. 2003). One of those pluvial lakes occupied what is now Harper basin, or Harper dry lake, an endorheic basin that covers approximately 18 square miles and is located 10 miles north of the Mojave River, near the Community of Hinkley (Garcia et al. 2013; Dibblee 1968). At present, Harper basin is a small playa ranging between approximately 2,020 to 2,040 feet amsl; however, during the Pleistocene it was a much larger lake, full of flood water from the Mojave River (Enzel et al. 2003; Garcia et al. 2013; USGS 2012a, 2012b). During that time, fluvial, deltaic, playa, flood, and lacustrine sediments were deposited in the Harper Lake basin, as well as in other pluvial lakes within the Mojave River watershed, including Lake Manix and Lake Mojave (Enzel et al. 2003). Pluvial Harper Lake likely had its high stand approximately 45,000 years before present (B.P.) at roughly 2,160 feet amsl, based on paleoclimate conditions and the ancient shoreline geomorphology in southeastern Harper basin (Dibblee 1968; Dibblee and Minch 2008; Garcia et al. 2013). A stratigraphic column measured by Garcia et al. (2013) indicates transgressive nearshore to offshore lacustrine facies ranging from coarse shoreline deposits at the base of the column, to fine beach sands and mudflat deposits at the top. The stratigraphic column was measured in a 7-foot-deep trench near Mountain View Hill in Harper basin.

5.1.2 Geology and Paleontology of the Project Area

The Project area is mapped at a scale of 1:62,500 by Dibblee (1960) and Dibblee and Minch (2008), and at a scale of 1:100,000 by Amoroso and Miller (2012). The lithology of the Project area consists of the Precambrian to Paleozoic Waterman Metamorphic Complex; Jurassic to Cretaceous granitic rocks; Tertiary dacitic and mafic volcanic rock; Quaternary older alluvium; Middle to Late Pleistocene lacustrine deposits; and Quaternary alluvial, eolian, playa, and valley-axis deposits (Figure 5-1). These units are described below and their paleontological resource potential is discussed in Chapter 6.

5.1.2.1 Precambrian, Paleozoic, and Mesozoic Basement Rocks

Precambrian to Paleozoic age quartz diorite gneiss (wg) and marble (wm) are exposed in the Project area and are part of the Waterman Metamorphic Complex; an assemblage of metamorphic rocks exposed in the Mojave Desert as a result of Miocene regional extension and detachment faulting (Dibblee and Minch 2008; Dokka et al. 1991). These rocks consist of weathered felsic gneiss, quartzite, amphibolite, granulite, schist, and intercalated fine- to medium-grained white marble (Dibblee 1968). Multiple episodes of high- to low-grade metamorphism deformed these Precambrian to Paleozoic metasedimentary rocks during the Mesozoic and Cenozoic (Dokka et al. 1991). Jurassic to Cretaceous plutonic rocks, including quartz monzonite (qm), quartz diorite (qd), and quartz latite (ql), are associated with the Waterman Metamorphic Complex and are exposed in the Project area (Dibblee and Minch 2008; Dokka et al. 1991). The marble unit in the Waterman Gneiss Complex was previously designated as Carboniferous marine (C) in the Paleontological Resources Section of the Final EIR (ICF International 2013). Rodgers' (1967) California Geologic Survey reference map, which was used for that analysis, predates comprehensive research of the metamorphic assemblage in the region (Dokka 1989; Fletcher et al. 1995; Glazner et al. 2002; and Henry and Dokka 1992, for example). Therefore, the updated mapping used in this analysis more accurately reflects current knowledge of the metamorphic units in the central Mojave and the Project area, including those within the Waterman Metamorphic Complex (Dibblee and Minch 2008).

Metamorphosed clastic and carbonate rocks in the Mojave Desert and throughout eastern California are known to yield Paleozoic invertebrates (Mount 1976; Nelson 1962); however, high-grade metamorphic and plutonic igneous rocks normally do not contain fossils due to their high heat and pressure of formation. The marble of the Waterman Metamorphic Complex is high-grade metamorphic rock and is not known to contain fossilized material (Dibblee 1968; Dokka et al. 1991). In addition, plutonic igneous rocks do not contain fossils due to their high heat of formation deep below the surface of the Earth.

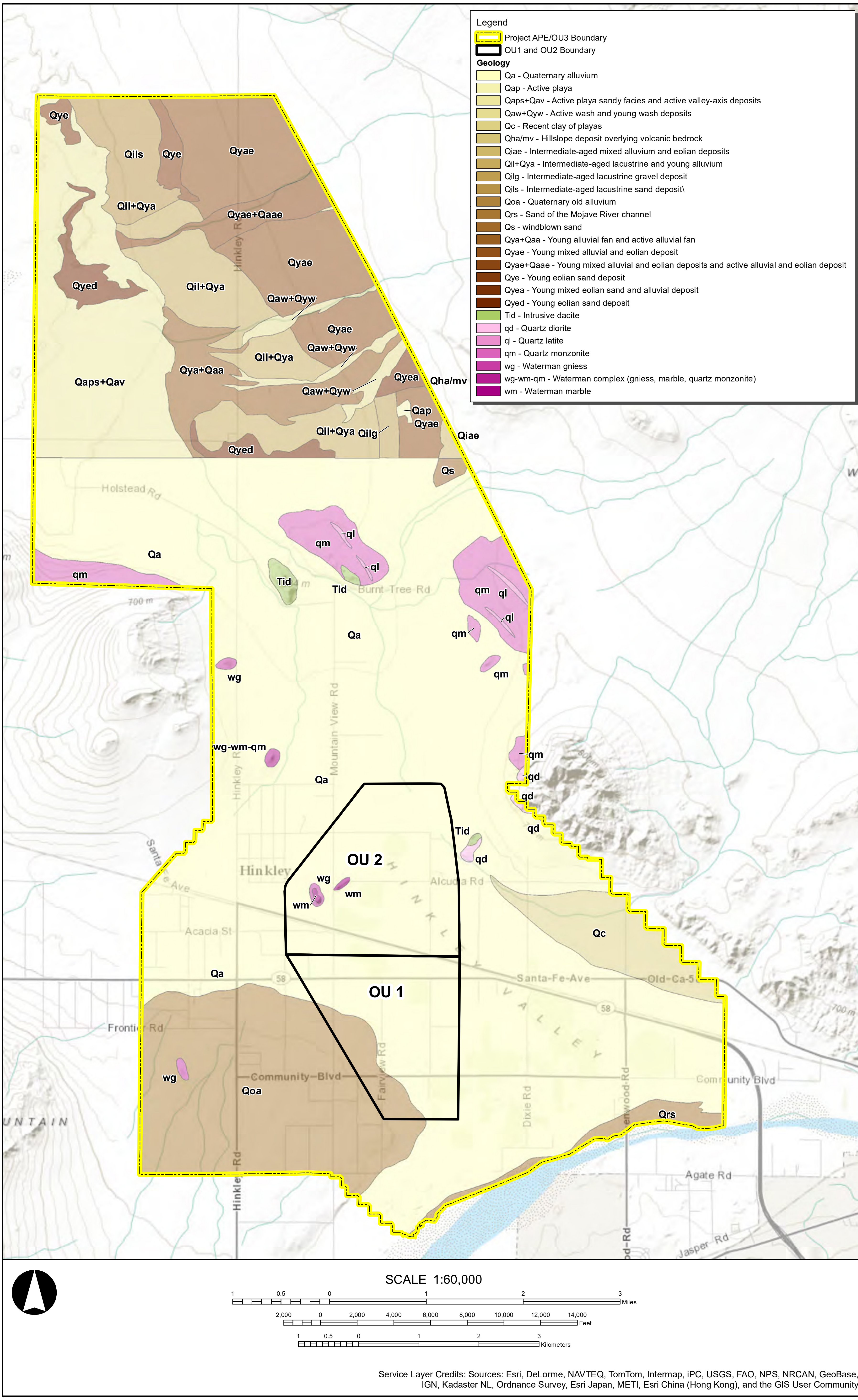

Figure 5-1 Geologic units in the Project area.

5.1.2.2 Tertiary Volcanic Rocks

The Mojave Desert and Basin and Range Province are regions of crustal extension and associated mafic and silicic volcanism. Within the Project area, silicic dacite (Tid) is exposed at Red Hill and mafic volcanic rock, either andesite or basalt (Qha, mv), is exposed at a small outcrop east of Harper basin (Dibblee and Minch 2008). The dacite is porphyritic with plagioclase phenocrysts in a very fine-grained groundmass and light pink to gray with a massive to flow-laminated texture. It was likely emplaced as an intrusive dome, which are common in the central Mojave Desert (Amoroso and Miller 2012; Singleton and Gans 2008). Typically, crystalline volcanic rocks are not conducive to the preservation of fossil remains.

5.1.2.3 Pleistocene Lacustrine Deposits

Pleistocene lacustrine deposits are extensively exposed in the northern Project area (Amoroso and Miller 2012). These sediments were deposited in pluvial Harper Lake during the Middle to Late Pleistocene and consist of thinly bedded to massive fine sand, silt, and clay of nearshore lake deposits and distal alluvial fan deposits (Qil); platforms of thinly bedded, well-sorted, very fine- to medium-grained sand (Qils); and deposits of well-sorted bedded gravel that is generally associated with beach and barrier bar landforms (Qilg) (Amoroso and Miller 2012).

Thompson (1929) and Meek (1999) (as cited in Enzel et al. 2003) reported Pleistocene shell fossils from fine-grained laminated to massive green mud and sand deposits in Harper basin. Specifically, Meek recovered bivalve and ostracode fossils from alluvial material approximately 6 feet below the Pleistocene high-stand. The fossils yielded an age of approximately 25,000 B.P. In addition, Reynolds and Reynolds (1994) (as cited in Enzel et al. 2003), reported aquatic fauna from southern Harper basin, including specimens of minnow and bivalve. Similar lacustrine deposits from the Mojave River pluvial lake system include the Late Pleistocene Manix Formation, which was deposited in Lake Manix, approximately 45 miles east of Harper basin. Vertebrate localities from within the lacustrine and fluvial deposits of the Manix Formation have yielded specimens of over 55 aquatic and terrestrial taxa, including bony fish, pond turtles, eagles, geese, duck, gulls, stork, crane, pelican, cormorant, cattle, sheep, camel, cat, bear, rabbit, horse, mammoth, and ground sloth (Jefferson 2003; McLeod 2014).

5.1.2.4 Quaternary Older Alluvium

Quaternary older alluvial deposits are exposed in the Project area and unconformably overlie plutonic basement rock (Amoroso and Miller 2012; Dibblee and Minch 2008). The total thickness of the deposits varies locally, but in the Project area they are up to 300 feet thick (Garcia et al. 2013; Dibblee 1960, 1968). The sediments were generally derived from a granitic source and consist of weakly consolidated and dissected, poorly bedded light gray to tan alluvial gravel, sand, and silt (Qoa) as well as mixed sand and gravel alluvium with subordinate eolian deposits, indistinct to well-defined thin bedding, and poor to moderate desert pavement development (Qiae). The Quaternary older alluvium deposits in the central Mojave Desert typically grade from coarse gravel and boulders in the highlands to sand and silt in the valleys and playas. In the vicinity of the Project area, Pleistocene-age alluvium was likely deposited as a result of bedrock erosion coincident with uplift of nearby highlands (e.g. Iron Mountain, Stoddard Mountain) and sedimentation along the Mojave River (McLeod 2014; Scott 2014).

Quaternary alluvial, fluvial, and lacustrine deposits of Pleistocene age have yielded significant vertebrate fossil localities throughout California and near the Project area (Cox et al. 2003; Jefferson 2003; Scott 2014; Scott and Cox 2008; UCMP collections data). Numerous terrestrial vertebrate fossils have been recovered from within Pleistocene-age alluvial deposits in the Mojave Desert within San Bernardino County. Approximately 40 miles south of the Project area near Victorville, vertebrate fossil remains have been recovered within Pleistocene Mojave River deposits, including specimens of mammoth (Cox et al. 2003). Additional Pleistocene-age vertebrate fauna from the Mojave Desert were reported by Scott and Cox (2008), including horse, camel, lama, pronghorn, deer, sheep, and bison. The mammal fossils were recovered from within Pleistocene-age deposits throughout San Bernardino County, including the Calico Hills, Newberry Mountains, Fort Irwin, Daggett, Yermo, and the Kramer Hills (Scott and Cox 2008). In addition, taxonomic data for a vertebrate locality in the vicinity of the Project area in San Bernardino County was downloaded from the Paleobiology Database (paleodb.org) on March 10, 2014. The locality, near Calico ghost town, yielded specimens of *Neotoma* (pack rat) and *Equus conversidens* (Mexican horse) from within Pleistocene-age deposits. Lastly, a historical Public Land Map (Norris 1857) indicates a "bed of shells" invertebrate locality near Red Hill in the central Project area. Mapping by Garcia et al. (2013) indicates that the shells were likely derived from Late Pleistocene mudflat deposits exposed at the surface.

5.1.2.5 Holocene Alluvial, Eolian, and Playa Deposits

Holocene (0.0117 Ma to present) alluvial deposits are widely exposed in the Project area (Amoroso and Miller 2012; Dibblee and Minch 2008). The young deposits consist of alluvial gravel and sands that likely drained from the highlands in the east and were subsequently reworked by surface water and wind processes. Holocene-age deposits are widely exposed in the Project area and generally consist of tan to light gray unconsolidated, undissected fluvial, overbank, and alluvial fan deposits (Qa, Qrs, Qs, Qc, Qaa, Qya, Qyae); unconsolidated angular to subrounded arkosic sand and gravel deposits in the ephemeral stream channels (Qaw, Qyw); well sorted wind-blown sand (eolian) deposits (Qyed, Qyea, Qye, Qaae); and fine-grained, well-sorted tan to gray argillaceous clay and micaceous silt playa deposits (Qap, Qaps, Qav) (Amoroso and Miller 2012; Dibblee and Minch 2008; Onken 2012). The total thickness of the Quaternary deposits is highly variant dependent on lithology and local conditions, but in the vicinity of the Project area the sediments are up to 100 feet thick (Dibblee 1960). According to radiocarbon dates obtained during a recent geomorphologic investigation within the Quaternary alluvial deposits in the central Project area, Holocene-age strata reach a depth of at least 12 feet below ground surface (bgs) and strata below that depth were deposited prior to 10,000 B.P (Onken 2012). Based on the relative shallow depth of early Holocene-age deposits, it is very likely that Late Pleistocene deposits are present beneath the surface at a much shallower depth than 100 feet.

A planorbid (snail) fossil recovered from the Project area within Holocene-age sandy channel deposits approximately 5 feet bgs yielded a radiocarbon date of 2,500 ± 30 yr B.P. (Onken 2012). Notwithstanding the lone mollusk fossil recovered from the Project area, Holocene deposits are generally considered too young to contain fossilized remains but may be underlain by older Pleistocene deposits that contain significant vertebrate fossil remains (McLeod 2014).

5.2 MUSEUM RECORDS SEARCH RESULTS

The LACM's collections records do not contain any previously recorded vertebrate fossil localities directly within the Project boundaries; however, museum collections record numerous vertebrate localities within similar deposits in San Bernardino County in the vicinity of the Project area (McLeod 2014; Table 5-1). The LACM reports that Pleistocene lacustrine and fluvial sediments from the nearby pluvial Lake Manix deposits (Manix Formation) yielded fossil fauna from 32 vertebrate localities, including specimens of *Gila* (minnow); *Clemmys marmorata* (western pond turtle); *Aquila chrysaetos* (golden eagle); *Anas carolinensis*, *A. crecca, Aythya valisineria, Branta canadensis,* and *Oxyura jamaicensis* (ducks and geese); *Phoenicopterus minutes* (holotype), *P. copei*, *Larus oregonus, Actitis* and *Phalaropus fulicarius* (gulls and waders); *Ciconia maltha* (La Brea stork)*, Fulica americana,* and *Grus* (coots and cranes); *Pelecanus erythrorhynchus*, *Phalacrocorax auritus*, and *P. macropus* (pelicans and cormorants); *Aechmophorus occidentalis* (grebe); *Camelops kansanus*, *Hemiauchenia*, and *Tanupolama* (camels); *Bison* (bison); *Capra* (goat); *Felis concolor* and *Homotherium* (cats); *Nothrotheriops* (ground sloth); *Tremarctotherium* and *Ursus* (bears); Leporidae; *Equus* (horse); and *Mammuthus* (mammoth).

Table 5-1
Vertebrate Localities Reported from within the Geologic Units in the Vicinity of the Project Area in San Bernardino County[a]

Locality No.	Geologic Unit	Age	Taxa
SBCM 1.110.11; southwestern Project area, just north of the Mojave River	Quaternary older alluvium	Pleistocene	Indeterminate vertebrate bones
LACM (CIT) 540-542, LACM 1093, 3496, 4032-4039, 4054-4061, and 5746-5756 (32); Manix Wash and Mojave River	Manix Formation	Late Pleistocene	*Phoenicopterus minutes*, *P. copei*, *Gila bicolar*, *Clemmys marmorata*, *Aquila chrysaetos*, *Anas carolinensis*, *A. crecca, Aythya valisineria*, *Branta canadensis*, *Oxyura jamaicensis, Larus oregonus*, *Actitis*, *Phalaropus fulicarius* (red phalarope), *Ciconia maltha, Fulica americana, Grus, Pelecanus erythrorhynchus*, *Phalacrocorax auritus*, *P. macropus, Aechmophorus occidentalis*, *Camelops kansanus*, *Hemiauchenia*, *Tanupolama*, *Bison*, *Capra*, *Felis concolor*, *Homotherium*, *Nothrotheriops*, *Tremarctotherium*, *Ursus*, Leporidae, *Equus*, and *Mammuthus*
UCMP 43 Vertebrate Localities	Manix Formation/ Lake Manix	Late Pleistocene	Over 250 fossil specimens of terrestrial mammals, birds, reptiles, and fish
UCMP V3625, Old Spring	Quaternary deposit	Pleistocene	*Equus*, Camelidae
UCMP V3864, Mescal Cave	Quaternary deposit	Pleistocene	Over 3,000 fossil specimens of mammals, mostly rodents
UCMP V5930, Silver Creek Canyon	Quaternary deposit	Pleistocene	*Lepus* and rodents
UCMP V99366	Quaternary deposit	Pleistocene	*Hesperotestudo* and *Ordosemys leios*

a - McLeod 2014; Scott 2014; and UCMP collections database: http://ucmpdb.berkeley.edu/loc.html, accessed March 2014

A search of the SBCM's Regional Paleontologic Locality Inventory (RPLI) indicates that one vertebrate paleontological locality has been previously recorded from within the Project boundaries (Scott 2014; Table 5-1). Locality SBCM 1.110.11 yielded indeterminate vertebrate bones from Mojave River and alluvial fan-derived Pleistocene sediments in the southwestern portion of the Project area. Additionally, SBCM reports that Pleistocene deposits similar to those within the Project area have yielded unspecified significant paleontological resources throughout the central Mojave Desert region, including near Barstow, Lenwood, and Victorville (Scott 2014).

Finally, a review of online museum collections records maintained by the UCMP reveals at least 43 vertebrate fossils localities for the Manix Formation from nearby Lake Manix, which yielded over 250 fossil specimens of terrestrial mammals, birds, reptiles, and fish. In addition to those taxa reported from the LACM and the literature review, the UCMP localities yielded specimens of Rhinolophidae (bat), *Elephas* (elephant), *Bubo virginianus* (great horned owl), and *Canis latrans* (coyote). Lastly, the UCMP has records for four vertebrate localities within unnamed Quaternary sedimentary deposits in San Bernardino County. The localities from Pleistocene-age deposits yielded specimens of Camelidae, rodents, *Lepus* (rabbit), *Hesperotestudo* (extinct turtle), *Ordosemys leios* (sea turtle), and *Equus* (horse). The results of the museum records search and literature review are presented in Table 5-1.

6
PALEONTOLOGICAL FIELD RECONNAISSANCE

Æ conducted a field survey of the Project area to visually inspect the ground surface for exposed fossils and to evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. The field method included a pedestrian walkover and windshield survey of areas of proposed disturbance within PG&E-owned parcels (Figure 6-1). In accordance with CUL-MM-8, geologic units identified as sensitive for paleontological resources, or with undetermined sensitivity, were surveyed (Appendix F, Lahontan Regional Water Quality Control Board's Order No. R6V-2014-0023, *Waste Discharge Requirements for PG&E Groundwater Remediation Project Agricultural Treatment Units*).

6.1 FIELDWORK RESULTS AND DISCUSSION

Æ Staff Paleontologist Heather Clifford and Associate Archaeologist Michael Kay conducted the field survey on March 13 and 14, 2014. The survey focused on potential paleontologically sensitive units in the area of potential physical disturbance within Operable Units OU1, OU2, and OU3. All previously undisturbed, accessible PG&E-owned parcels underlain by Quaternary older alluvium and Paleozoic to Precambrian Waterman marble were intensively surveyed for paleontological resources utilizing evenly spaced zigzag transects. During the course of fieldwork, a windshield survey of inaccessible or previously disturbed PG&E-owned parcels was conducted, and the geology and topography surrounding the Project area was observed. In total, 632.9 acres were intensively surveyed for paleontological resources. Areas underlain by Paleozoic to Precambrian and Pleistocene-age units were obscured by vegetation, soil development, poor to moderate desert pavement development, agricultural development (e.g., tilling, fallow fields, etc.), animal disturbances (e.g., burrowing animals), buildings, structural remains, and roads. In the field, Clifford and Kay utilized a handheld Global Positioning System (GPS) Trimble Geo XH unit, topographic maps, and aerial photographs to locate geologic formation boundaries and the extent of PG&E parcels. When a rock outcrop was encountered, the surface of the exposure was visually scanned for paleontological resources. The field crew noted the geology and lithology of each geologic unit and photo documented the survey areas (Figures 6-2–6-5).

Quaternary older alluvium underlies a portion of the Project area, which consists of desert scrubland with rolling hills of moderate relief, rocky metamorphic outcrops, and isolated volcanic domes, abandoned drainages, and active shallow washes (Figure 6-3). In the Project area, Quaternary older alluvial deposits consist of unconsolidated tan to pinkish brown silt, sand, and gravel with subordinate angular pebbles and cobbles derived from metamorphic and granitic source rock. At least 50 percent of the Quaternary older alluvial deposits in the Project area are covered by rippled eolian deposits and stabilized sand dunes (coppice dunes), which are approximately 1–4 feet high and 2–10 feet wide. In addition, much of the Quaternary older alluvium is obscured by vegetation and anthropogenic disturbance (Figure 6-4 and 6-5). In the southwestern Project area, on a relict alluvial fan surface near a previously recorded vertebrate locality (SBCM 1.110.11), fresh, erosive surfaces were absent; thus texture, sedimentary

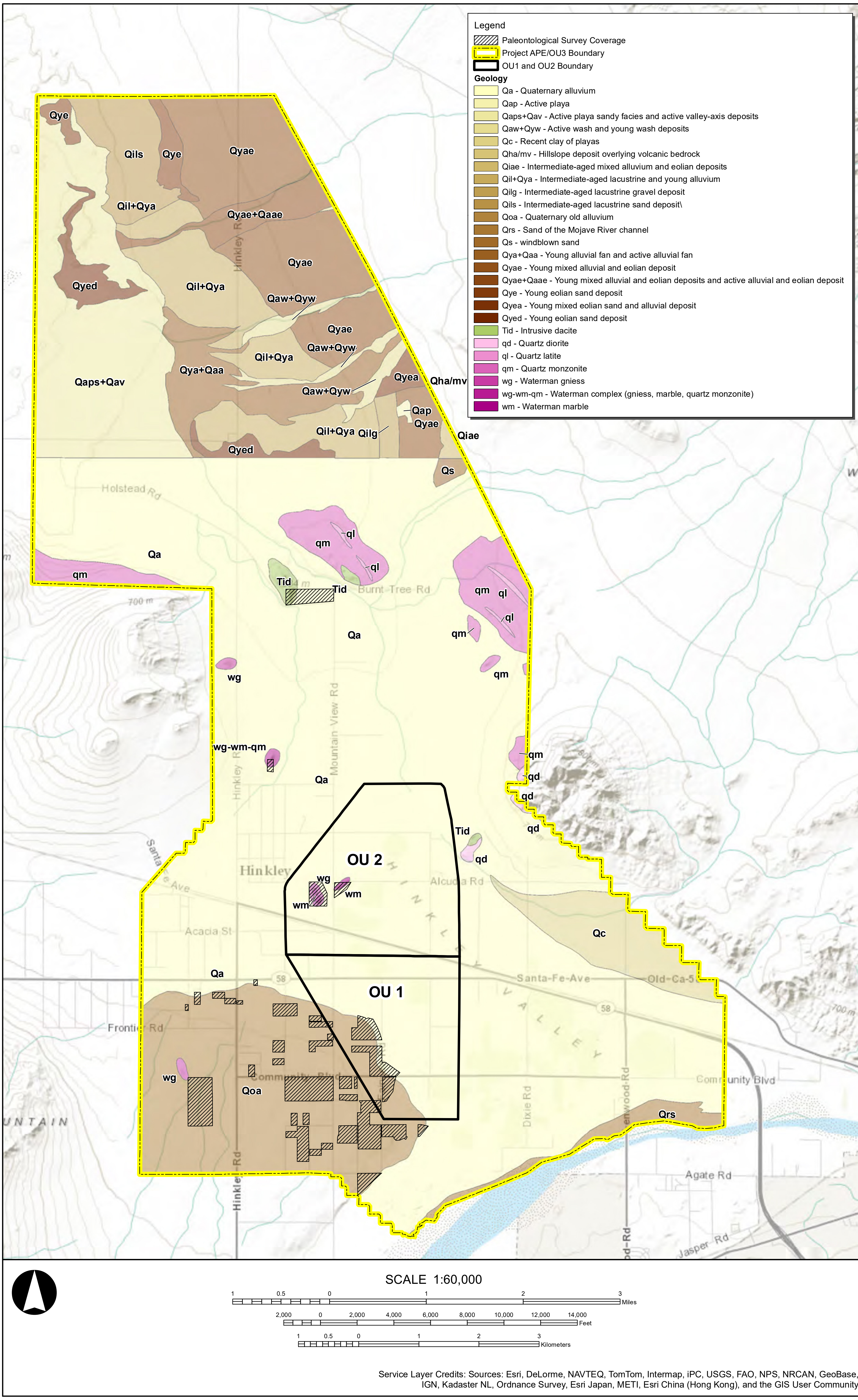

Figure 6-1 Survey coverage in the Project area.

Figure 6-2 Representative conditions and partially obscured geology at the hidden contact between Quaternary older alluvium and Holocene-age alluvial deposits in the Project area; view to the north within the southern Project area near Community Boulevard.

Figure 6-3 Flat desert scrubland environment, vegetation, eolian deposits, Holocene-age Quaternary alluvium, and a volcanic dome in the Project area; view to the west within the central Project area near Red Hill. No direct evidence of the depth of Holocene substrate was observed.

Figure 6-4 Scrubland brush and eolian deposits obscure much of the underlying Quaternary older alluvium in the southern Project area; view to the northeast.

Figure 6-5 Fallow agricultural fields, nonnative planting, and buildings obscure much of the underlying Quaternary older alluvium in the southern Project area; view to the northeast.

structures, and bedding of the Quaternary older alluvium were not visible. The Pleistocene-age alluvium is locally overlain by Holocene-age alluvium, which consists of unconsolidated tan to reddish brown silt, sand, and gravel, with subordinate fine to medium pebbles composed of lithic clasts and felsic minerals. In the absence of visible bedding or other sedimentary structures within the Quaternary deposits, the depth of the Holocene substrate can only be estimated; however, in general, the Holocene-age alluvium is at least 15 feet thick in the center of Hinkley Valley and thins to the north and south where it grades into Pleistocene lacustrine deposits and Quaternary older alluvium, respectively (Garcia et al. 2013; Onken 2012).

The Precambrian to Paleozoic marble unit of the Waterman Metamorphic Complex (wm) is exposed in isolated outcrops in the central Project area. The unit is composed of resistant, moderately weathered coarse-grained white to grayish white marble and light to dark gray medium-grained quartzitic marble (Figure 6-6). Medium- to high-grade metamorphic rocks such as schist and gneiss are interbedded with the marble. The marble outcrops appear to have been quarried, and surface scars are visible that are consistent with noncommercial mining. These exposures were extensively surveyed for evidence of paleontological resources. The high-grade

Figure 6-6 Marble of the Waterman Metamorphic Complex within the Project area; view to the west within near Hinkley Dairy. The marble is resistant, moderately weathered, and coarse- to medium-grained; field notebook for scale.

metamorphism of the rock unit strongly indicates that it is unlikely that fossil remains were preserved, and no fossils were observed during the course of the survey.

The field survey established that the Waterman marble is a high-grade metamorphic rock that contains no fossilized remains or evidence thereof. In addition, Quaternary older alluvium is exposed in the southwestern Project area and most likely underlies the majority of Hinkley Valley at moderately shallow depth. Although the depth of the Holocene substrate cannot be definitively assessed, it is likely shallow in the northern Project area, becoming thicker toward the center of Hinkley Valley. Surficial ground disturbance of Holocene-age strata from construction-related activities will likely not reach Pleistocene-age deposits. Although subsurface well drilling might disturb buried Pleistocene-age strata, it will not have a significant impact because paleontological resources are nonrecoverable in that case.

No fossil resources were discovered during the course of fieldwork. However, at least 75 percent of the survey area was obscured by vegetation, eolian deposits, or anthropogenic disturbances, limiting surface visibility. The Quaternary older alluvium is characterized by fine to medium-grained sediments that have proven to be conducive to the preservation of vertebrate remains. Therefore, these rock units may contain an unknown number of fossil resources at the subsurface, although their significance, abundance, and predictability of occurrence may vary.

6.2 DETERMINATION OF SENSITIVITY FOR GEOLOGIC UNITS WITHIN THE PROJECT AREA

Based on the literature review of the local and regional geology and paleontology, the museum records search results, and the field reconnaissance survey, the geologic units underlying the Project area are determined to have a paleontological sensitivity ranging from very low to high in accordance with the SVP (2010) and BLM's PFYC system (2007). Fine-grained Pleistocene lacustrine deposits, which typically have the potential to produce significant vertebrate fossils, underlie portions of the Project area and have yielded vertebrate remains in the vicinity (McLeod 2014). Similar deposits, such as the nearby Manix Formation, are known to contain abundant fossilized vertebrate remains, and as a result, the Pleistocene lacustrine deposits are determined to have a high paleontological resource potential and a PFYC Class 3a ranking. In addition, vertebrate fossils are known to occur within the Pleistocene alluvial deposits that underlie a portion of the southern Project area; therefore, the deposits are also determined to have a high paleontological resource potential and a PFYC Class 3a ranking. Holocene-age surficial alluvial, eolian, playa, and valley-axis deposits are determined to have a low paleontological resource potential and a PFYC Class 2 ranking at the surface, because they are either too young or unlikely to preserve significant fossilized remains due to their coarse-grained nature. However, younger alluvial deposits may overlie the sensitive Pleistocene deposits at moderately shallow depth. The crystalline bedrock and volcanic units in the Project area each have a low paleontological resource potential and a PFYC Class 1 ranking. Marble strata of the Precambrian to Paleozoic Waterman Metamorphic Complex was previously assigned an "undetermined" paleontological sensitivity; however, further literature review and field reconnaissance indicate that the unit has very low potential for fossil resources. The paleontological sensitivity ratings of the geologic units underlying the Project area are depicted on Figures 6-7 and 6-8 and described in Table 6-1.

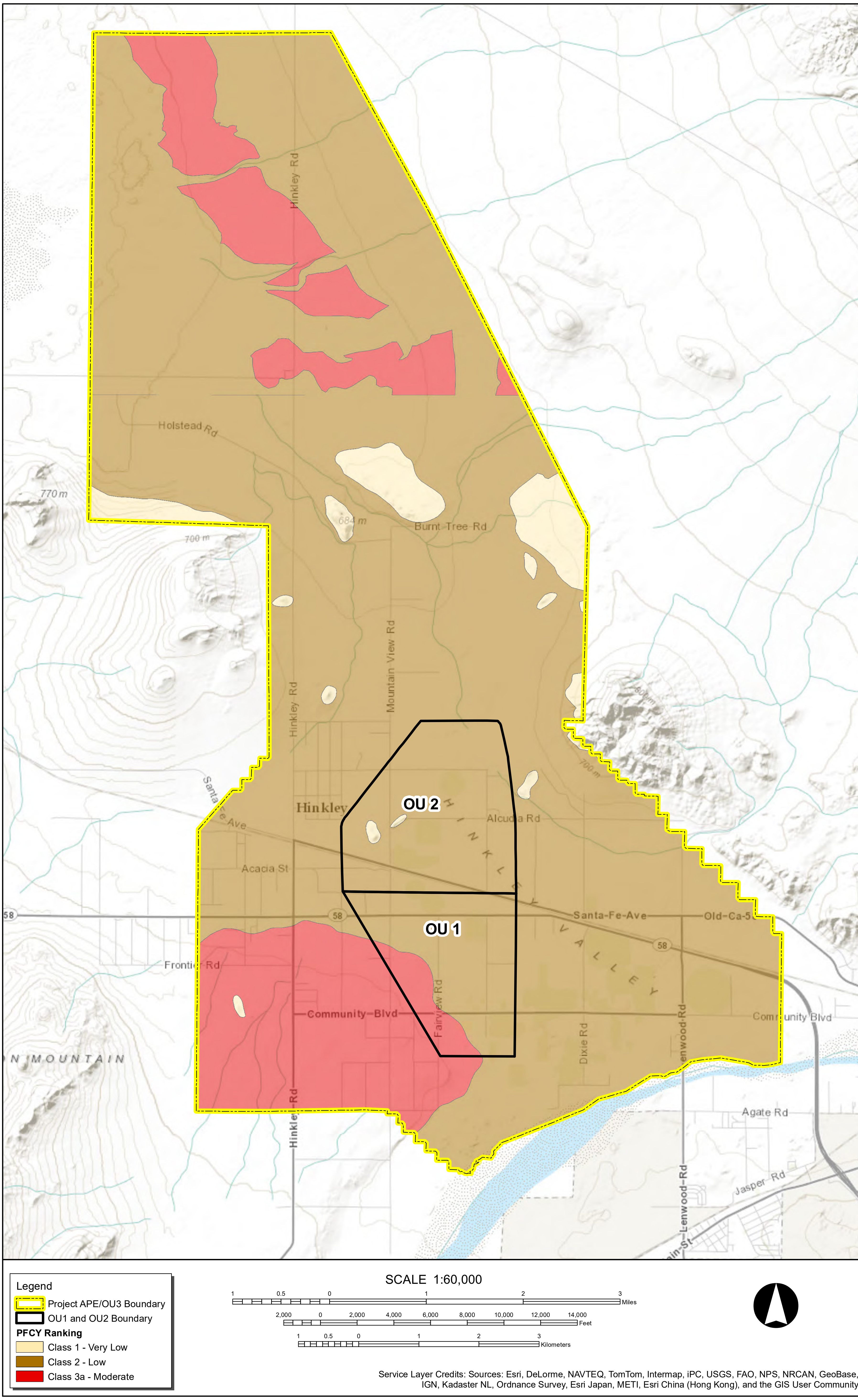

Figure 6-7 Paleontological sensitivity of the Project area defined by the PFYC ranking for the geologic units.

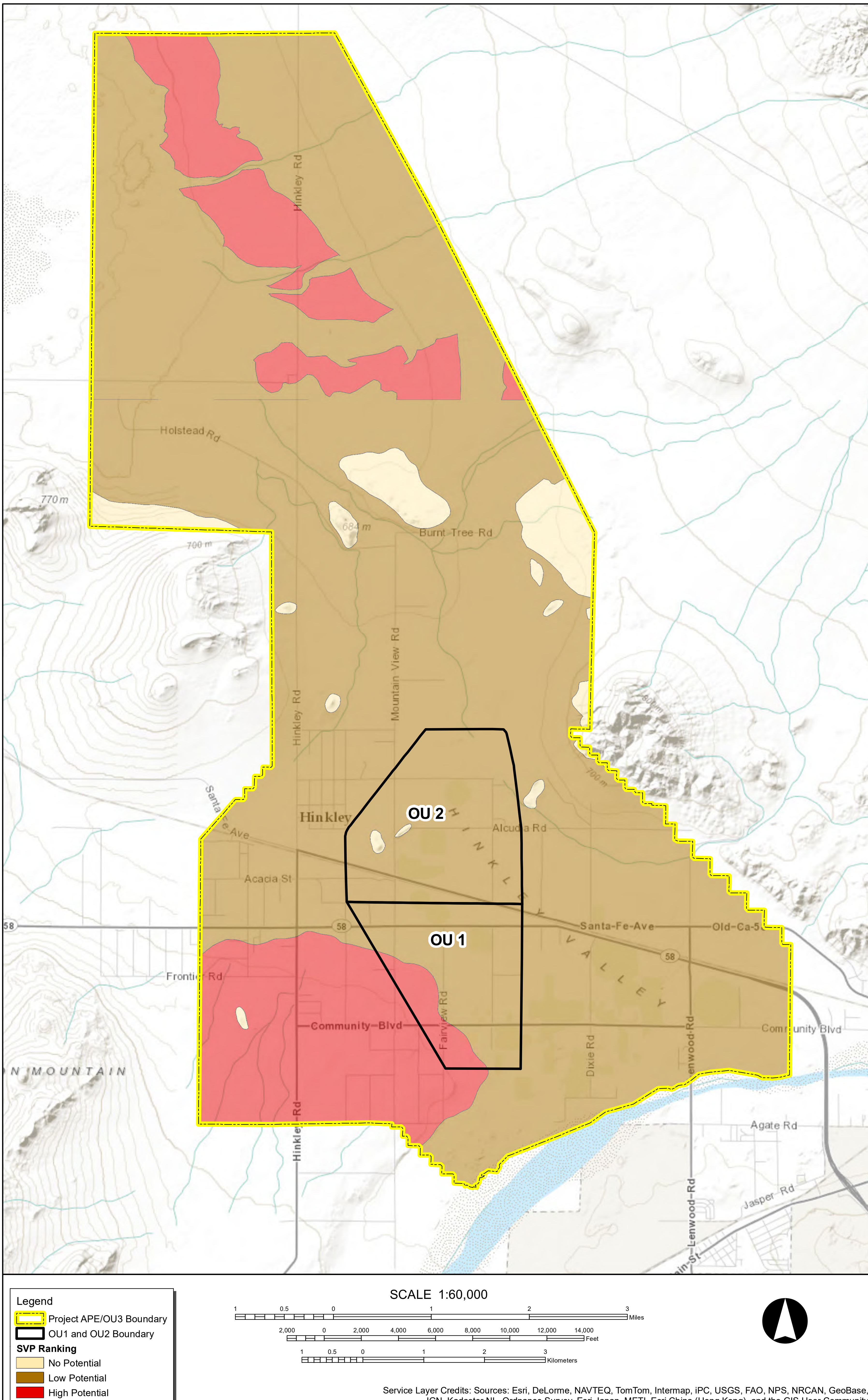

Figure 6-8 Paleontological sensitivity of the Project area defined by the SVP categories for the geologic units..

Table 6-1
Geologic Units within the Project Area and Their Paleontological Sensitivity

Geologic Unit[a]	Age	Map Symbol	Typical Fossils	Paleontological Resource Potential[b]	PFYC Ranking[c]
Waterman Metamorphic Complex	Precambrian to Paleozoic	wm, wg	None	No Potential	Class 1—Very Low
Quartz Monzonite, Diorite, and Latite	Jurassic to Cretaceous	qm, qd, ql	None	No Potential	Class 1—Very Low
Dacite	Tertiary	Tid	None	No Potential	Class 1—Very Low
Mafic Volcanic Rock (Basalt or Andesite)	Tertiary	Qha, mv	None	No Potential	Class 1—Very Low
Quaternary Older Alluvium	Pleistocene	Qoa, Qiae	Vertebrates; birds, mammals	High	Class 3a—Moderate
Lacustrine Deposits (Pluvial Harper Lake)	Middle to Late Pleistocene	Qil, Qils, Qilg	Vertebrates; mammals, rodents	High	Class 3a—Moderate
Quaternary Surficial Sediments	Latest Pleistocene to Holocene	Qa, Qrs, Qs, Qc, Qaa, Qya, Qyae, Qaw, Qyw	None	Low Potential	Class 2—Low
Quaternary Eolian Deposits	Latest Pleistocene to Holocene	Qyed, Qyea, Qye, Qaae,	None	Low Potential	Class 2—Low
Quaternary Playa and Valley-Axis Deposits	Latest Pleistocene to Holocene	Qap, Qaps, Qav	None	Low Potential	Class 2—Low

a - Amoroso and Miller (2012) and Dibblee and Minch (2008).
b - SVP (2010).
c - BLM (2007).

7
FINDINGS

In general, the potential for a given project to result in adverse impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the project. Since this Project entails groundwater remediation of chromium discharge from an existing compressor station, new ground disturbances are anticipated. Surface and subsurface ground disturbance is planned for portions of the Project area that are underlain by Holocene-age alluvial, eolian, and playa deposits, which will likely impact previously undisturbed sediments in that deposit. However, those deposits have a low paleontological resource potential and PFYC Class 2 ranking; significant fossils have not been reported in the vicinity of the Project from within similar deposits. Additionally, surface and subsurface ground disturbances are proposed within portions of the Project area underlain by previously undisturbed Quaternary older alluvial deposits, which have a high paleontological resource potential and PFYC Class 3a ranking. Pleistocene lacustrine deposits in the northern Project area also have a high paleontological resource potential and PFYC Class 3a ranking; however, at this time, ground-disturbing remediation activities are not planned for areas underlain by those deposits. Older igneous and metamorphic units within the Project area will not be adversely impacted by Project-related activities because their paleontological resource potential is low and they have a very low PFYC Class 1 ranking. Consequently, the likelihood of impacting scientifically significant fossils because of Project development ranges from very low to high.

Both the Pleistocene alluvial and lacustrine deposits have a high potential to contain exposed and/or shallowly buried paleontological resources and have yielded significant paleontological resources elsewhere. Therefore, it is recommended that a qualified paleontologist be retained to implement paleontological resource monitoring during construction involving ground disturbance, pursuant to MM-CUL-8. In addition, all construction workers and other on-site personnel shall receive environmental awareness training on paleontological resources. Detailed management recommendations are outlined in the following chapter.

8
MANAGEMENT RECOMMENDATIONS

The following mitigation measures have been developed in accordance with BLM and SVP guidelines and, if implemented, will reduce Project impacts to less than significant levels in accordance with CEQA.

8.1 WORKER'S ENVIRONMENTAL AWARENESS TRAINING

As required by CUL-MM-8c of the MMRP, all construction and maintenance personnel shall receive a worker's environmental awareness training module on paleontological resources prior to partaking in construction projects. The training will provide a description of the fossil resources that may be encountered in the Project area, outline steps to follow in the event that a fossil discovery is made, and provide contact information for the Project Paleontologist and on-site monitor(s). The training will be developed by the Project Paleontologist and may be conducted concurrent with other environmental training (e.g., cultural and natural resources awareness training, safety training, tortoise training, etc.). The training also may be videotaped for future use by field personnel not present at the start of the Project.

8.2 PALEONTOLOGICAL MONITORING

As required by CUL-MM-8d, any ground disturbing activities within portions of the Project area that are underlain by geologic units identified as highly sensitive for paleontological resources will require monitoring by a trained paleontological monitor. Procedures for paleontological monitoring are described below.

8.2.1 Monitoring Locations, Tasks, and Procedures

A trained paleontological monitor will observe all ground-disturbing activities in previously undisturbed geologic deposits determined to have a high paleontological sensitivity (i.e., Quaternary older alluvial deposits and Pleistocene lacustrine deposits). The frequency of monitoring can be reduced at the discretion of the Project Paleontologist if, after one-half of work is completed, no significant fossil resources are encountered. In addition, part-time spot checking may be implemented for subsurface excavations within Holocene substrate when it is likely that underlying sensitive units will be adversely impacted.

Monitoring will consist of the visual inspection of excavated or graded areas and trench sidewalls. Screening of sedimentary matrix will be conducted as necessary and at no time will a monitor enter an unsafe cut or unshored trench. All paleontological work will be directed by the Project Paleontologist and reported on a Daily Monitoring Record; additional data will be recorded in waterproof field notebooks. At a minimum, information in the report will include areas monitored, monitor name(s), and a summary of monitoring activities. Recording of stratigraphic data will be an ongoing task during monitoring in order to provide context for any eventual fossil discoveries. In paleontologically sensitive areas, or in peripheral areas that can provide context for the geology and paleontology, outcrops and cut exposures will be examined, and observed geologic features will be recorded in field notes. The goal of this work is to define the nature of fossil-bearing sedimentary units within the Project area, determine their areal extent and depositional contacts, and record any evidence of sediment structures or deformation. Standard geologic and stratigraphic data collected include lithologic descriptions (i.e., color, sorting, texture, structures, and grain size, and compositional percentages), stratigraphic relationships (i.e., bedding type, thickness, and contacts), and geographic position (i.e., Universal Transverse Mercator [UTM] coordinates). Stratigraphic sections will be routinely measured in areas where fossiliferous sediments are recovered.

8.2.2 Fossil Discovery and Salvage

In the event that a paleontological resource is discovered, the monitor will be empowered to temporarily divert the construction equipment around the find until it is assessed for scientific significance. Diversion and adjustment of construction activities will only occur in coordination with construction personnel, once the Construction Supervisor has determined it is safe to do so. A temporary construction exclusion zone of at least 50 feet, consisting at a minimum of lath and flagging tape, will be erected around the discovery. The exclusion zone acts as a buffer around the discovery and is maintained for safety. The monitor will immediately report the discovery to the Construction Supervisor and the Project Paleontologist so that appropriate notifications can be immediately issued to PG&E. PG&E will be responsible for notifying the Water Board. Construction activities can occur outside the buffer if it is safe to do so. The size of the buffer may be increased or decreased once the monitor adequately explores the discovery to determine its size and significance.

If the discovery is considered scientifically significant, the monitor will collect the fossil specimen(s) and associated data. For this Project, the SVP (1995, 2010) criteria of scientific significance will be used to make this determination in the field. In general, small unidentifiable vertebrate fossils will not be collected and only well-preserved or representative invertebrates or plants will be salvaged if avoidance is not feasible. At each fossil locality, the monitor will document UTM coordinates, describe the encasing sediments in detail, record stratigraphic context and fossil orientation, and photo document the fossil(s). The fossil(s) will then be collected and placed in bags or trays for transport to Æ's paleontology laboratory. At the discretion of the Project Paleontologist, matrix samples also may be collected for subsequent laboratory studies (i.e., microfossil analysis). Immediately following fossil collection, the temporary construction exclusion zone will be removed and the monitor or Project Paleontologist will notify the Construction Supervisor that Project activities may resume in the area of the find.

8.2.3 Microfossil Screening

Monitoring is largely a visual inspection of sediments; therefore, the most likely fossils to be observed will be macrofossils of vertebrates (bones, teeth, tusks) or invertebrates (shells). No significant plant fossils are anticipated in the Project area, and most microfossils (diatoms, pollen) are too small to be seen with the naked eye. However, at the discretion of the Project Paleontologist, the monitor may periodically screen sediments to check for the presence of microfossils that can be seen with the aid of a hand lens (i.e., microvertebrates). Should microvertebrate fossils be encountered during the screening process, bulk matrix samples will be taken for processing off site. For each fossiliferous horizon or paleosol, a standard sample (4.0 cubic yards or 6,000 pounds) will be collected for subsequent “wet-screening” per SVP (2010) guidelines.

8.2.4 Equipment and Supplies

The paleontological monitor will have an Apple iPad equipped with technical software, including Global Positioning System (GPS) applications, a Theodolite digital camera, compass, and reporting applications. The monitor will also be supplied with a tool kit that contains specimen containers, matrix bags, field labels, tools (shovel, pick, awls, chisels, dental picks, pin vises, brushes, etc.), chemical preservatives (e.g., Vinac), and plaster. The monitor will also have fluorescent flagging tape and survey stakes to delineate temporary construction exclusion zones. For microfossil screening, the monitor will have hand sieves, 5-gallon buckets, and an eye loupe. At all times, the monitor will wear the appropriate personal protective equipment (PPE) in compliance with the PG&E or on-site contractor PPE work rules, including a hard hat, heavy footwear, sleeved shirt, long pants, safety glasses, and a high-visibility safety vest.

8.3 LABORATORY WORK

Upon completion of fieldwork, all significant fossil specimens will be prepared in a paleontology laboratory to a point ready for curation. Preparation will include the careful removal of excess matrix from fossil materials using manual devices such as dental picks or pin vises; for harder materials, a pneumatic air scribe may be used. For microfossil screening, chemicals such as detergents or weak acids may be used to further break down the matrix so that it can be picked for fossils under a microscope. All fossil specimens will be stabilized with glues and consolidants as needed and repaired, as necessary. Especially fragile specimens may need a support cradle constructed out of specialty plaster. Microvertebrates may require pin-mounting, a process by which the specimen is mounted using glue or wax onto a pinhead that is embedded in a cork and stored in a glass vial. Following laboratory preparation, all fossil specimens will be identified to the lowest taxonomic level, analyzed within a stratigraphic context, organized into a faunal list, cataloged, and inventoried into an electronic database.

8.4 CURATION

Upon completion of laboratory preparation and fossil identification, all scientifically significant specimens recovered as a result of the Project will be delivered to an appropriate accredited museum repository such as the SBCM. The fossil specimens will be accompanied by field notes, photographs, locality data, a signed deed of gift from PG&E, and a copy of the final technical report. The cost of curation is assessed by the repository and is the responsibility of PG&E.

8.5 REPORTING

At the completion of preconstruction and grading activities, a final report will be prepared describing the results of the paleontological monitoring efforts associated with the Project. The report will include a summary of the field and laboratory methods; an overview of the Project area geology and stratigraphy, including a stratigraphic column; a faunal list with stratigraphy ranges/occurrences for each taxon; a description of the significance of the site and its relationship to other nearby and/or similar fossil localities; a list of taxa recovered (if any); an analysis of fossils recovered (if any) and their scientific significance; recommendations; and a list of references used. A complete set of field notes, photographs, and any newly developed geologic field maps should also be included. In addition, a map will be appended to the report depicting areas that were monitored for paleontological resources; the map also will delineate any Project areas that will require monitoring should any future site developments occur. The report will be submitted to PG&E and the Water Board annually. If the monitoring efforts produced fossils, then a copy of the report will also be submitted to the designated museum repository.

9
CONCLUSIONS

This paleontological resource evaluation is based on the results of a museum records search, review of available geologic and paleontologic literature, and a pedestrian and windshield survey of bedrock exposures within the Project area. No fossils were observed during the course of the survey; therefore, only fossils that have already been inventoried or collected are available for this analysis. Based on this analysis and in accordance with SVP (2010) guidelines, there is a high potential for an unknown number of fossils to be buried within Quaternary older alluvial deposits and Pleistocene lacustrine deposits. As of March 2014, ground-disturbing activities are planned within Project areas underlain by Quaternary older alluvium and monitoring of these activities by a trained paleontological monitor will be required. No ground-disturbing activities are currently planned in Project areas underlain by Pleistocene lacustrine deposits because there are currently no PG&E-owned parcels underlain by that geologic unit. If, in the future, property is acquired within the Project area that is underlain by Pleistocene lacustrine deposits, then impacts may occur and mitigation measures such as a paleontological resources field survey and construction monitoring are recommended for that geologic unit. These nonrenewable scientific resources may be adversely impacted during the development of the Project. By implementing the management recommendations presented in Chapter 8, the requirements set forth in CUL-MM-8 of the MMRP will be met and adverse impacts to paleontological resources can be reduced to a less than significant level pursuant to CEQA.

10
REFERENCES CITED

Amoroso, Lee, and David M. Miller

2012 *Surficial Geologic Map of the Cuddeback Lake 30′ x 60′ Quadrangle, San Bernardino and Kern Counties, California.* Scientific Investigations Map 3107, U.S. Geological Survey, scale 1:100,000.

Bureau of Land Management (BLM)

2007 Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. Instruction Memorandum No. 2008-009. Department of the Interior, Washington, D.C.

County of San Bernardino

2007 Section V-C2, Cultural/Paleontological Resources. In *County of San Bernardino 2007 General Plan.* URS Corporation, Santa Ana, California. Prepared for County of San Bernardino Land Use Services Division, San Bernardino. Electronic document, http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGPtext20130718.pdf, accessed 28 March 2014.

Cox, B. F., J. W. Hillhouse, and L. A. Owen

2003 Pliocene and Pleistocene Evolution of the Mojave River, and Associated Tectonic Development of the Transverse Ranges and Mojave Desert, Based on Borehole Stratigraphy Studies and Mapping of Landforms and Sediments near Victorville, California. In *Paleoenvironments and Paleohydrology of the Mojave and Southern Great Basin Deserts,* edited by Yehouda Enzel, Stephen G. Wells, and Nicholas Lancaster, pp. 1–42. Geological Society of America Special Paper 368. Boulder, Colorado.

Dibblee, Thomas W., Jr.

1960 *Geologic Map of the Barstow Quadrangle, California.* U.S. Geological Survey Mineral Investigations Field Study Map, MF 233, scale 1:62,500.

1967 *Areal Geology of the Western Mojave Desert, California*. U.S. Geological Survey and the California Division of Mines and Geology Professional Paper 522. Washington, D.C.

1968 *Geology of the Fremont Peak and Opal Quadrangles, California.* California Division of Mines and Geology Bulletin 188.

Dibblee, Thomas W., Jr., and D. F. Hewett

1966 Geology of the Mojave Desert Region. In *Mineral Resources of California*, pp. 62–65. U.S. Geological Survey and the California Division of Mines and Geology Bulletin 191. San Francisco, California.

Dibblee, T. W., Jr., and J. A. Minch
2008 *Geologic Map of the Barstow & Daggett 15′ Quadrangles, San Bernardino County, California.* http://ngmdb.usgs.gov/Prodesc/proddesc_86300.htm, accessed 7 February 2014. Dibblee Geological Foundation Map DF-401, scale 1:62,500.

Dokka, Roy K.
1989 The Mojave Extensional Belt of Southern California. *Tectonics* 8(2):363–390.

Dokka, Roy K., Darrell J. Henry, Timothy M. Ross, Ajoy K. Baksi, John Lambert, Christopher J. Travis, Steven M. Jones, Carl Jacobson, Michael M. McCurry, Michael O. Woodburne, and John P. Ford
1991 Aspects of the Mesozoic and Cenozoic Geologic Evolution of the Mojave Desert. In *Geological Excursions in Southern California and Mexico*, edited by M. J. Walawender and B. B. Hanan, pp. 1–43. Geological Society of America Annual Meeting Field Trip Guidebook, San Diego, California. San Diego State University Department of Geological Sciences.

Enzel, Yehouda, Stephen G. Wells, and Nicholas Lancaster
2003 Late Pleistocene Lakes along the Mojave River, Southeast California. In *Paleoenvironments and Paleohydrology of the Mojave and Southern Great Basin Deserts,* edited by Yehouda Enzel, Stephen G. Wells, and Nicholas Lancaster, pp. 61–77. Geological Society of America Special Paper 368. Boulder, Colorado.

Fletcher, J. M., J. M. Bartley, M. W. Martin, A. F. Glazner, and J. D. Walker
1995 Large-magnitude Continental Extension: An Example from the Central Mojave Metamorphic Core Complex. *Geological Society of America Bulletin* 107(12):1468–1483.

Garcia, Anna L., Jeffrey R. Knott, Shannon A. Mahan, and Jordon Bright
2013 Geochronology and Paleoenvironment of Pluvial Harper Lake, Mojave Desert, California, USA. *Quaternary Research* 81(2):305–317. Electronic document, http://dx.doi.org/10.1016/j.yqres.2013.10.008, accessed 2 April 2014.

Garfunkel, Z.
1974 Model for the Late Cenozoic Tectonic History of the Mojave Desert, California, and for Its Relation to Adjacent Regions. *Geological Society of America Bulletin* 85(12): 1931–1944.

Glazner, A. F., J. D. Walker, J. M. Bartley, and J. M. Fletcher
2002 Cenozoic Evolution of the Mojave Block of Southern California. In *Geologic Evolution of the Mojave Desert and Southwestern Basin and Range*, edited by A. F. Glazner, J. D. Walker, and J. M. Bartley, pp. 19–41. Geological Society of America Memoir 195. Boulder, Colorado.

Henry, D. J., and Roy K. Dokka
1992 Metamorphic Evolution of Exhumed Middle to Lower Crustal Rocks in the Mojave Extensional Belt, Southern California, USA. *Journal of Metamorphic Geology* 10(3): 347–364.

ICF International
2013 *Final Environmental Impact Report, Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County,* Vol. II. ICF International, San Francisco, California. Prepared for California Regional Water Quality Control Board (CRWQCB), Lahontan Region, South Lake Tahoe. Electronic document, http://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/docs/feir/covertoces_ch1.pdf, accessed 17 March 2014.

Jefferson, George T.
2003 Stratigraphy and Paleontology of the Middle to Late Pleistocene Manix Formation, and Paleoenvironments of the Central Mojave River, Southern California. In *Paleoenvironments and Paleohydrology of the Mojave and Southern Great Basin Deserts,* edited by Yehouda Enzel, Stephen G. Wells, and Nicholas Lancaster, pp. 43–60. Geological Society of America Special Papers 368.

McLeod, S.A
2014 Unpublished museum records. The Natural History Museum of Los Angeles County.

Mount, Jack D.
1976 Early Cambrian Faunas from Eastern San Bernardino County, California. *Bulletin of the Southern California Paleontological Society* 8(12):173–182.

Nelson, C. A.
1962 Lower Cambrian-Precambrian Succession White-Inyo Mountains, California. *Geological Society of America Bulletin* 73(1):139–144.

Nettles, Wendy
2014 Personal communication, Senior Cultural Resource Specialist at Pacific Gas and Electric Company, 7 March 2014.

Norris, R. W.
1857 *Public Land Map of Township No. 10 North, Range No. 3 West* (San Bernardino Meridian). Surveyor General's Office, San Francisco, California.

Norris, Robert M., and Robert W. Webb
1990 *Geology of California.* John Wiley and Sons, New York.

Onken, Jill
2012 Geoarchaeology of CA-SBR-15103/H. In *Archaeological Evaluation Report: CA-SBR-15103/H, State Route 58 Hinkley Expressway Project near Hinkley, San Bernardino County, California,* by John J. Eddy and Dennis McDougall. Applied EarthWorks, Inc., Hemet, California. Prepared for the California Department of Transportation, District 8, San Bernardino.

Pacific Gas and Electric Company (PG&E)
2013 *Paleontological Resource Guidelines and Standards for Pacific Gas and Electric Company.* Draft (April). Pacific Gas and Electric Company, San Ramon, California.

Rodgers, T. H.
1967 *Geologic Map of California: San Bernardino Sheet*. California Division of Mines and Geology, scale 1:250,000.

Scott, Eric
2014 Unpublished museum records. San Bernardino County Museum.

Scott, Eric, and Shelley M. Cox
2008 Late Pleistocene Distribution of Bison (Mammalia; Artiodactyla) in the Mojave Desert of Southern California and Nevada. In *Geology and Vertebrate Paleontology of Western and Southern North America*, edited by X. Wang and L. G. Barnes, pp. 359–382. Natural History Museum of Los Angeles County Science Series 41.

Scott, Eric, and Kathleen Springer
2003 CEQA and Fossil Preservation in California. *The Environmental Monitor* Fall 2003. Association of Environmental Professionals, Sacramento, California.

Singleton, J. S., and P. B. Gans
2008 Structural and Stratigraphic Evolution of the Calico Mountains: Implications for Early Miocene Extension and Neogene Transpression in the Central Mojave Desert, California. *Geosphere* 4:459–479.

Society of Vertebrate Paleontology
1995 Conformable Impact Mitigation Guidelines Committee. Electronic document. http://vertpaleo.org/The-Society/Statements-and-Guidelines/Conformable-Impact-Mitigation-Guidelines-Committee.aspx, accessed 21 March 2014.

2010 Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee.

U.S. Geological Survey
2012a *Water Valley, CA 7.5-Minute Quadrangle.* U.S. Geological Survey, scale 1:24,000.

2012b *Lockhart, CA 7.5-Minute Quadrangle.* U.S. Geological Survey, scale 1:24,000.

APPENDIX A

Records Search Results: LACM Data

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
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NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325
Fax: (213) 746-7431
e-mail: smcleod@nhm.org

21 February 2014

Applied EarthWorks, Inc.
133 North San Gabriel Boulevard, Suite 201
Pasadena, CA 91107-3414

Attn: Jessica DeBusk, Paleontology Program Manager

re: Paleontological resources for the proposed Hinkley Compressor Station Project, near Barstow, San Bernardino County, project area

Dear Jessica:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Hinkley Compressor Station Project, near Barstow, San Bernardino County, project area as outlined on the portions of the Water Valley, Hinkley, Barstow, and Hodge USGS topographic quadrangle maps that you sent to me via e-mail on 30 January 2014. We do not have any vertebrate fossil localities that lie directly within the proposed project area, but we do have localities farther afield from the same or similar sedimentary deposits as occur in the proposed project area.

Most of the elevated terrain in the proposed project area, in the central portion, has exposures composed of intrusive igneous rocks that, of course, will not contain recognizable vertebrate fossils. The small portion of elevated terrain in the very southeastern portion of the proposed project area has exposures of Tertiary sedimentary rocks that probably represent the middle Miocene Barstow Formation. In the Mud Hills Just east of the northern portion of the proposed project area we have a number of vertebrate fossil localities from the Barstow Formation. These localities, including LACM (CIT) 473-475, 489, and 491-497, produced a suite of vertebrates including tortoise, *Gopherus mohavense* and *Testudo milleri*, falcon, Falconidae, duck, *Oxyura*, gomphothere, *Serridentinus stocki*, bear-dog, *Amphicyon*, dogs, *Aelurodon saevus*, *Aelurodon taxoides*, *Leptocyon vafer*, *Tephrocyon kelloggi*, *Tephrocyon* *rurestris*, *Tephrocyon scitulus*, and *Tephrocyon temerariusm*, Marten, *Martes kinseyi*, rabbit, Leporidae, horse, *Merychippus*, oreodont, Merycoidodontinae, pronghorn antelope, Merycodontinae, and camel, *Protolabis*. The tortoise specimens, from localities LACM (CIT) 494-495, were published in the scientific literature by B. H. Brattstrom in 1961 (Some new fossil tortoises from western North America with remarks on the zoogeography and paleoecology of tortoises. Journal of Paleontology, 35(3):543-560) and by J. R. Des Lauriers in 1965 (A New Miocene Tortoise from Southern California. Bulletin of the Southern California Academy of Sciences, 64(1):1-10).

In the middle of the Mojave River drainage there are pebbly sands from the active river channel. West of the Mojave River there are some exposures of slightly elevated older Quaternary fan deposits derived from the Iron Mountains to the west and south. Throughout the rest of the proposed project area there are surface deposits of younger Quaternary Alluvium derived as alluvial fan deposits from the surrounding elevated terrain. All of these deposits typically do not contain significant vertebrate fossils in the uppermost layers, but they may well be underlain by older sediments that do contain significant fossil vertebrate remains. In particular, most of the northern portion of the proposed project area down through the Water Valley and Hinkley Valley to the Mojave River was covered by the formerly expanded Lake Harper, that currently exists as a dry lake directly west of the northern portion of the proposed project area. The fine-grained sediments found in lacustrine deposits always have the potential to produce significant vertebrate fossils. Our closest vertebrate fossil localities from similar lake deposits occur to the east of the proposed project area along the Manix Wash and Mojave River in deposits referred to as the Manix Formation. These Manix Formation localities include LACM (CIT) 540-542, LACM 1093, 3496, 4032-4039, 4054-4061, and 5746-5756. An extensive fossil fauna, primarily of birds, has been produced from these localities and a composite faunal list is provided in an appendix. Some of the specimens from these localities have also been published in the scientific literature, particularly the holotype (name-bearing specimen for a species new to science) of the extinct gull-like bird *Phoenicopterus minutus* named by Howard in 1955 (see attached appendix for a list of publications).

Excavations in the exposures of intrusive igneous rocks in most of the more elevated terrain in the proposed project area will not uncover any recognizable fossils. Surface grading or shallow excavations in the active river deposits, the older Quaternary fan deposits, or in the younger Quaternary Alluvium exposed in the remainder of the proposed project area are unlikely to encounter significant vertebrate fossils. Deeper excavations that extend down into older Quaternary deposits, particularly in lacustrine deposits in the northern portion of the proposed project area, as well as any excavations in the supposed Barstow Formation deposits exposed in the very southeastern portion of the proposed project area, however, may well encounter significant remains of fossil vertebrates. Any substantial excavations in the finer-grained sedimentary deposits in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains while not impeding development. Any fossils collected should be placed in an accredited scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosures: appendices; invoice

Manix Formation composite fossil fauna
based on specimens in the LACM collections

Osteichthyes			
Cypriniformes			
Cyprinidae		- minnows & carp	
Gila	*bicolar*		
Reptilia			
Chelonia			
Emydidae		- pond turtles	
Clemmys	*marmorata*		
Aves			
Accipitriformes			
Accipitridae		- eagles & haws	
Aquila	*chrysaetos*		- Published
Anseriformes			
Anatidae		- ducks & geese	
Anas	*carolinensis*		
Anas	*crecca*		- Published
Aythya	*valisineria*		- Published
Branta	*canadensis*		- Published
Oxyura	*jamaicensis*		- Published
Charadriiformes			
Laridae		- gulls & terns	
Larus	*oregonus*		- Figured
Phoenicopteridae		- extinct gull relatives	
Phoenicopterus	*copei*		- Published
Phoenicopterus	*minutus*		- HOLOTYPE
Scolopacidae		- sandpipers & avocets	
Actitis			- Published
Phalaropus	*fulicarius*		
Ciconiiformes			
Ciconiidae		- storks	
Ciconia	*maltha*		- Published
Gruiformes			
Gruidae		- cranes	
Grus			- Published
Rallidae		- coots	
Fulica	*americana*		- Published
Pelecaniformes			
Pelecanidae		- pelecans	
Pelecanus	*erythrorhynchus*		- Published
Phalacrocoracidae		- cormorants	
Phalacrocorax	*auritus*		- Published
Phalacrocorax	*macropus*		- Published
Podicipediformes			
Podicipedidae		- grebes	
Aechmophorus	*occidentalis*		- Figured

Manix Formation composite fossil fauna
based on specimens in the LACM collections [continued]

Mammalia			
Artiodactyla			
Bovidae		- cattle, sheep & goats	
Bison			
Capra			
Camelidae		- camels	
Camelops	*kansanus*		
Hemiauchenia			
Tanupolama			
Carnivora			
Felidae		- cats	
Felis	*concolor*		
Homotherium			- Figured
Ursidae		- bears	
Tremarctotherium			
Ursus			
Lagomorpha			
Leporidae		- rabbits	
Perissodactyla			
Equidae		- horses	
Equus			
Proboscidea			
Elephantidae		- mammoths	
Mammuthus			
Xenarthra			
Megatheriidae		- ground sloths	
Nothrotheriops			

Scientific Publications on Manix Formation specimens
based on specimens in the LACM collections

Emslie, Stephen D. 1992. Two New Late Blancan Avifaunas from Florida and the Extinction of Wetland Birds in the Plio-Pleistocene. Natural History Museum of Los Angeles County Science Series, 36:249-269.

Howard, Hildegarde. 1955. Fossil birds from Manix Lake. United States Geological Survey Professional Paper, 264:199-205.

Jefferson, George T. 1985. Review of the Late Pleistocene avifauna from Lake Manix, Central Mojave Desert, California. Natural History Museum of Los Angeles County Contributions in Science, 362:1-13.

Jefferson, George T. 2003. Stratigraphy and paleontology of the middle to late Pleistocene Manix Formation, and paleoenvironments of the central Mojave River, southern California. Geological Society of America Special Paper, 368:43-60.

Jefferson, George T. and A. E. Tejada-Flores. 1993. The Late Pleistocene Record of *Homotherium* (Felidae: Machairodontinae) in the Southwestern United States. PaleoBios, 15(3):37-46.

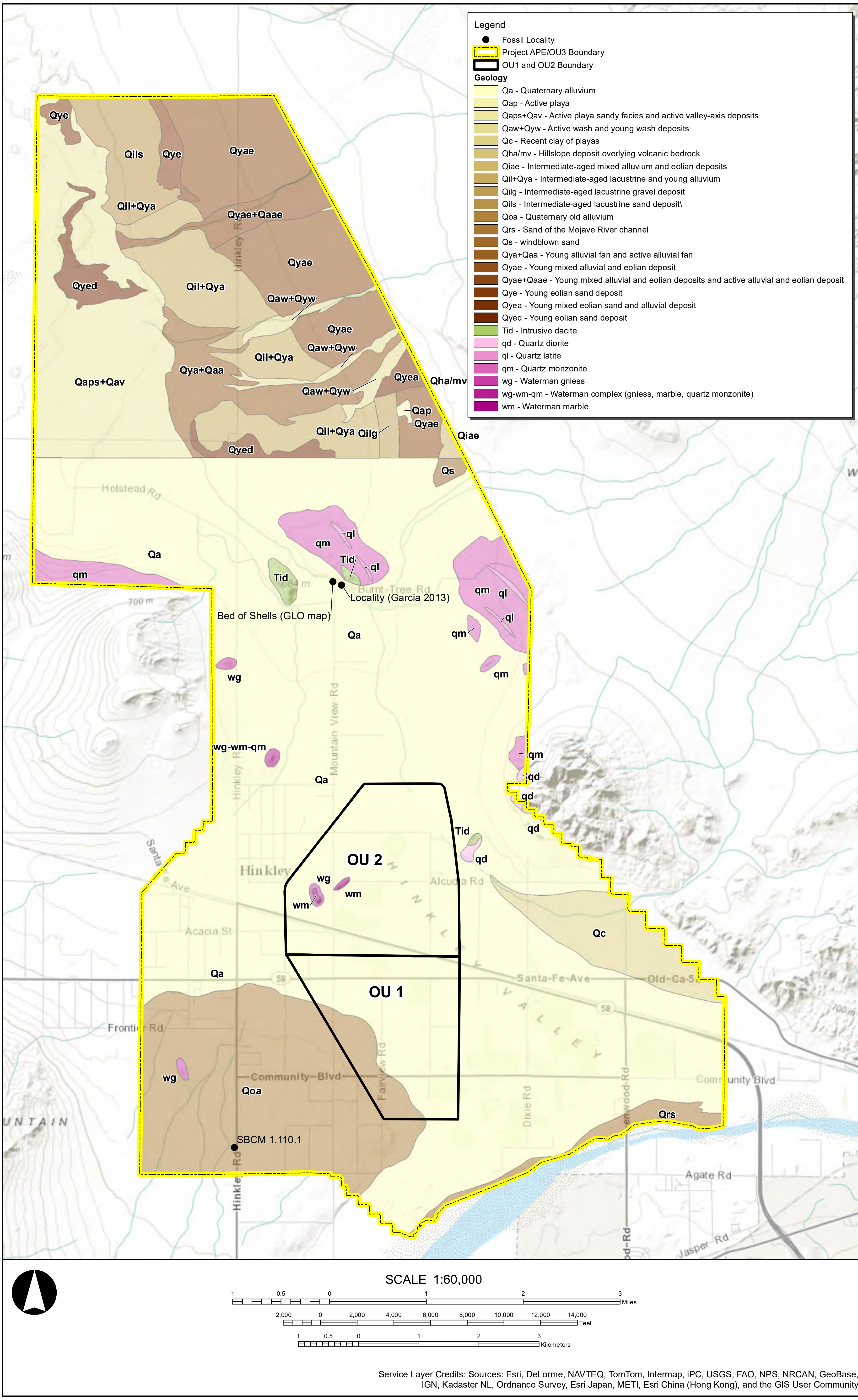

Figure A-1 Location of fossil localities in the Project area.

APPENDIX B

Records Search Results: SBCM Data

ACCREDITED by the AMERICAN ASSOCIATION OF MUSEUMS

SAN BERNARDINO COUNTY MUSEUM

2024 Orange Tree Lane • Redlands, California USA 92374-4560
(909) 307-2669 • Fax (909) 307-0539 • www.sbcountymuseum.org
TDD (909) 792-1462

COUNTY OF SAN BERNARDINO

ROBERT L. McKERNAN
Director

5 February 2014

Applied EarthWorks, Inc.
attn: Jessica DeBusk, Paleontology Program Manager
113 N. San Gabriel Blvd., Suite #201
Pasadena, CA 91104-0119

re: **PALEONTOLOGY LITERATURE AND RECORDS REVIEW, HINKLEY COMPRESSOR STATION PROJECT, MOJAVE DESERT, SAN BERNARDINO COUNTY, CALIFORNIA**

Dear Ms. DeBusk,

The Division of Geological Sciences of the San Bernardino County Museum (SBCM) has completed a literature review and records search for the above-named project southeast of Harper Dry Lake, San Bernardino County, California. The study area traverses portions of sections 5-8, Township 9 North, Range 2 West; sections 1-4 and 11-13, Township 9 North, Range 3 West; sections 19 and 29-32, Township 10 North, Range 2 West; sections 1-6, 9-16, 21-28, and 33-36, Township 10 North, Range 3 West; and sections 15-23 and 26-36, Township 11 North, Range 3 West, San Bernardino Base and Meridian, as seen on the Barstow, California (1971 edition), the Hinkley, California (1971 edition), the Hodge, California (1971 edition), and the Water Valley, California (1988 provisional edition) 7.5' United States Geological Survey topographic quadrangle maps.

Previous geologic mapping of this part of the Mojave Desert (Jennings and others, 1962; Bortugno and Spittler, 1986; Cox and others, 2003) indicates that the proposed study area encompasses multiple rock and sedimentary formations of varying geologic ages. Of these, the most common and widely distributed is Holocene alluvium [= unit **Qal** of Jennings and others (1962), **Q** of Bortugno and Spittler (1986)]. This alluvium overlies subsurface Pleistocene sediments, considered by Cox and others (2003) to derive from the ancestral Mojave River, that is also present at the surface in the southern portion of the study area. Other rocks present within the study area include rocky outcrops of Jurassic and/or Cretaceous quartz monzonite (= **KJqm**), Miocene intrusive dacitic rocks (= $\mathbf{Mi^d}$), and Holocene dune sand (= **Qs**), as well as metasedimentary rocks of uncertain age (= **ms**).

Of these rock units, the surface and subsurface Pleistocene sediments have high potential to contain fossil resources, and so are assigned high paleontologic sensitivity. Published reports on the paleontologic resources of this area (Lander and Reynolds, 1985; Jefferson, 1991; Scott and Cox, 2008) demonstrate that excavation into Pleistocene sediments in this region may have high potential to adversely impact significant fossil resources. Lithologically-similar sediments throughout the Barstow and Lenwood regions to the east, and Victorville to the south, have also been repeatedly demonstrated to have high paleontologic sensitivity (Lander and Reynolds, 1985; Jefferson, 1991; Reynolds, 1991; Scott and Cox, 2008).

For this review, I conducted a search of the Regional Paleontologic Locality Inventory (RPLI) at the SBCM. The results of this search indicate that two previously-recorded paleontologic resource localities are known from within the boundaries of the proposed project area, near the southern border of the property. These localities, SBCM 1.110.9 and 1.110.11, yielded indeterminate vertebrate bones, as well as root casts. *Confidential* locality data are appended. Because no time-diagnostic taxa are identified from these localities, the presumed Pleistocene age of these fossils cannot be verified.

Recommendations

The results of the literature review and the check of the RPLI at the SBCM demonstrate that excavation in conjunction with development has high potential to adversely impact significant nonrenewable paleontologic resources present within the boundaries of the proposed development property. A qualified professional vertebrate paleontologist must develop a plan to mitigate adverse impacts to paleontologic resources present in these geologic units, including curation of recovered resources (Scott and others, 2004). This mitigation program would need to be consistent with the provisions of the California Environmental Quality Act (Scott and Springer, 2003), as well as with regulations implemented by the County of San Bernardino.

The County of San Bernardino (Development Code §82.20.040) defines a qualified vertebrate paleontologist as meeting the following criteria:

<u>Education</u>: An advanced degree (Masters or higher) in geology, paleontology, biology or related disciplines (exclusive of archaeology).

<u>Professional experience</u>: At least five years professional experience with paleontologic (not including cultural) resources, including the collection, identification and curation of the resources.

The County of San Bernardino (Development Code §82.20.030) requires that paleontologic mitigation programs include, but not be limited to:

(a) <u>Field survey before grading</u>. In areas of potential but unknown sensitivity, field surveys before grading shall be required to establish the need for paleontologic monitoring.

(b) <u>Monitoring during grading</u>. A project that requires grading plans and is located in an area of known fossil occurrence, or that has been demonstrated to have fossils present in a field survey, shall have all grading monitored by trained paleontologic crews working under the direction of a qualified professional, so that fossils exposed during grading can be recovered and preserved. Paleontologic monitors shall be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors shall be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring is not necessary if the potentially-fossiliferous units described for the property in question are not present, or if present are determined upon exposure and examination by qualified paleontologic personnel to have low potential to contain fossil resources.

(c) Recovered specimens. Qualified paleontologic personnel shall prepare recovered specimens to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Preparation and stabilization of all recovered fossils is essential in order to fully mitigate adverse impacts to the resources.

(d) Identification and curation of specimens. Qualified paleontologic personnel shall identify and curate specimens into the collections of the Division of Geological Sciences, San Bernardino County Museum, an established, accredited museum repository with permanent retrievable paleontologic storage. These procedures are also essential steps in effective paleontologic mitigation and CEQA compliance. The paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities. Mitigation of adverse impacts to significant paleontologic resources is not considered complete until curation into an established museum repository has been fully completed and documented.

(e) Report of findings. Qualified paleontologic personnel shall prepare a report of findings with an appended itemized of specimens. A preliminary report shall be submitted and approved before granting of building permits, and a final report shall be submitted and approved before granting of occupancy permits. The report and inventory, when submitted to the appropriate Lead Agency along with confirmation of the curation of recovered specimens into the collections of the San Bernardino County Museum, will signify completion of the program to mitigate impacts to paleontologic resources.

References

Bortugno, E.J. and T. E. Spittler, 1986. Geologic map of California, San Bernardino sheet, scale 1:250,000. California Division of Mines and Geology Regional Geologic Map Series, Map 3A.

Cox, B.F., J.W. Hillhouse and L.A. Owen, 2003. Pliocene and Pleistocene evolution of the Mojave River, and associated tectonic development of the Traverse Ranges and Mojave Desert, based on borehole stratigraphy studies and mapping of landforms and sediments near Victorville, California. *In* Y. Enzel, S.G. Wells and N. Lancaster (eds.), Paleoenvironments and paleohydrology of the Mojave and southern Great Basin Deserts. Boulder, Colorado: Geological Society of America Special Paper #368, p. 1-42.

Jefferson, G.T., 1991. A catalogue of late Quaternary vertebrates from California: Part Two, mammals. Natural History Museum of Los Angeles County Technical Reports, Number 7.

Jennings, C.W., J.L. Burnett and B.W. Troxel, 1962. Geologic map of California, Trona sheet. California Division of Mines and Geology, scale 1:250,000.

Lander, E. B. and S.F.B. Reynolds, 1985. Fossil vertebrates from the Calico Mountains area, central Mojave Desert, San Bernardino County, California. *In* S.F.B. Reynolds (ed.), Geologic Investigations along Interstate 15, Cajon Pass to Manix Lake, California, SBCM Association Special Publication, p. 153-156.

Reynolds, S.F.B., 1989. Mid-Pleistocene faunas of the west-central Mojave Desert. *In* J. Reynolds (ed.), The west-central Mojave Desert: Quaternary studies between Kramer and Afton Canyon. Redlands, SBCM Association Special Publication, p. 44-50.

Scott, E. and S.M. Cox, 2008. Late Pleistocene distribution of *Bison* (Mammalia; Artiodactyla) in the Mojave Desert of southern California and Nevada. *In* X. Wang and L.G. Barnes (eds.), Geology and Vertebrate Paleontology of Western and Southern North America, Contributions in Honor of David P. Whistler. Natural History Museum of Los Angeles County Science Series No. 41, p. 359 - 382.

Scott, E. and K. Springer, 2003. CEQA and fossil preservation in southern California. The Environmental Monitor, Fall 2003, p. 4-10, 17.

Scott, E., K. Springer and J.C. Sagebiel, 2004. Vertebrate paleontology in the Mojave Desert: the continuing importance of "follow-through" in preserving paleontologic resources. *In* M.W. Allen and J. Reed (eds.) The human journey and ancient life in California's deserts: Proceedings from the 2001 Millennium Conference. Ridgecrest: Maturango Museum Publication No. 15, p. 65-70.

Please do not hesitate to contact us with any further questions you may have.

Sincerely,

Eric Scott, Curator of Paleontology
Division of Geological Sciences
San Bernardino County Museum

Two pages attached to the February 5, 2014 letter are omitted from this public version of this Paleontological Evaluation Report. The two pages contain confidential information as described on page 2 of the letter and are Confidential Pursuant To Declaration Dated March 4, 2025. The confidential version of full report is provided to the CPUC under separate cover.

APPENDIX C

Records Search Results: UCMP Data

UCMP UC Museum of Paleontology Localities

Number of matches: 47

- Download your results (tab-delimited text file with .xls file extension, 47 lines, file size = 5.9 K)
- Map localities with a US county

Query: SELECT FROM ucmp_loc2 WHERE ucmp_coll like "%V%" and county_std = "San Bernardino County" and epoch = "Pleistocene" ORDER BY loc_prefix,cast(loc_num as unsigned integer),loc_suffix

Click on the Loc ID to see the full locality record

Loc ID	Coll	Locality Name	County	State / Province	Country	Cont	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna
-791	V	Mojave River	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6709	V	Manix GTJ 1-1	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6710	V	Manix GTJ 2-1	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6711	V	Manix GTJ 2-2	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6712	V	Manix GTJ 2-3	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6713	V	Manix GTJ 2-4	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6714	V	Manix GTJ 2-5	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6715	V	Manix GTJ 7-25	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6716	V	Manix GTJ 2-7	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	

RV6717	V	Manix GTJ 2-8	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6718	V	Manix GTJ 3-1	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6719	V	Manix GTJ 3-3	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6721	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6723	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6727	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6730	V	Manix GTJ 8-3	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Pleistocene	
RV6731	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6733	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6734	V	Manix GTJ 9-2	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6735	V	Manix GTJ 9-3	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6736	V	Manix GTJ 9-4	San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6738	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	

RV6746	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6751	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6752	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6754	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene			Rancholabrean	
RV6758	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6763	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV6767	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7021	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7051	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7053	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7054	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7057	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	Upper Dome Spring
RV7063	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	

RV7104	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7109	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7131	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7132	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7139	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
RV7140	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	Warren
RV69123	V		San Bernardino County	California	United States	North America	Quaternary	Pleistocene	Manix		Rancholabrean	
V3625	V	Old Spring	San Bernardino County	California	United States	North America	Quaternary	Pleistocene			Rancholabrean	
V3864	V	Mescal Cave	San Bernardino County	California	United States	North America	Quaternary	Pleistocene			Rancholabrean	
V5930	V	Silver Creek Canyon	San Bernardino County	California	United States	North America	Quaternary	Pleistocene			Rancholabrean	
V92103	V	Manix Lake General	San Bernardino County	California	United States	North America	Quaternary	Pleistocene			Rancholabrean	
V99366	V	Tortoise Foot	San Bernardino County	California	United States	North America	Quaternary	Pleistocene			Irvingtonian	

UCMP UC Museum of Paleontology Specimens

Number of matches: 3725

next 100

- Download your results (tab-delimited text file with .xls file extension, 3725 lines, file size =518.0 K)
- Map specimens with a US county

QUERY: SELECT FROM ucmp WHERE ucmp_coll = "V" and county_std = "San Bernardino County" and epoch = "Pleistocene" ORDER BY cast(specno as unsigned integer)

Click on the Spec # to see the full specimen record

Spec #	Collection	Class	Genus species ssp	Other Name	Type Status	Period	Epoch	Loc ID#	Locality Name	County	State/Prov	Country
23839	Vertebrates	Mammalia				Quaternary	Pleistocene	-791	Mojave River	San Bernardino County	California	United States
23842	Vertebrates	Mammalia				Quaternary	Pleistocene	-791	Mojave River	San Bernardino County	California	United States
23843	Vertebrates	Mammalia				Quaternary	Pleistocene	-791	Mojave River	San Bernardino County	California	United States
23846	Vertebrates	Mammalia	Ovis canadensis			Quaternary	Pleistocene	-791	Mojave River	San Bernardino County	California	United States
77135	Vertebrates	Mammalia	Marmota flaviventris			Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States
77136	Vertebrates	Mammalia	Marmota flaviventris			Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States
77137	Vertebrates	Mammalia	Marmota flaviventris			Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States
77138	Vertebrates	Mammalia	Marmota flaviventris			Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States
77139	Vertebrates	Mammalia	Marmota flaviventris			Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States
77140	Vertebrates	Mammalia	Marmota flaviventris			Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States
77141	Vertebrates	Mammalia	Bassariscus			Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States
77142	Vertebrates	Mammalia		tribe: Microtini		Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States
77143	Vertebrates	Mammalia	Ochotona			Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States
77144	Vertebrates	Mammalia	Ochotona			Quaternary	Pleistocene	V3864	Mescal Cave	San Bernardino County	California	United States

Speciman records abbreviated for clarity

UCMP UC Museum of Paleontology Localities

Number of matches: 248

next 100

- Download your results (tab-delimited text file with .xls file extension, 248 lines, file size = 32.0 K)
- Map localities with a US county

Query: SELECT FROM ucmp_loc2 WHERE county_std = "San Bernardino County" and formation like "%Barstow%" ORDER BY loc_prefix,cast(loc_num as unsigned integer),loc_suffix

Click on the Loc ID to see the full locality record

Loc ID	Coll	Locality Name	County	State / Province	Country	Cont	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna
-284	V	Black Canyon 1	San Bernardino County	California	United States	North America	Tertiary	Miocene	Barstow		Barstovian	
-1307	V	Barstow General	San Bernardino County	California	United States	North America	Tertiary	Miocene	Barstow		Barstovian	
-1357	V	Barstow General	San Bernardino County	California	United States	North America	Tertiary	Miocene	Barstow		Barstovian	
-1390	V	Lava Butte 1	San Bernardino County	California	United States	North America	Tertiary	Miocene	Barstow		Barstovian	
-1391	V	Lava Butte 2	San Bernardino County	California	United States	North America	Tertiary	Miocene	Barstow		Barstovian	
-1392	IV	Lava Butte 3	San Bernardino County	California	United States	North America	Tertiary	Miocene	Barstow		Barstovian	
-1393	V	Lava Butte 4	San Bernardino County	California	United States	North America	Tertiary	Miocene	Barstow		Barstovian	
-1394	V	Short Ravine 1	San Bernardino County	California	United States	North America	Tertiary	Miocene	Barstow		Barstovian	

Locality records abbreviated for clarity

UCMP UC Museum of Paleontology Specimens

Number of matches: 3802

next 100

- Download your results (tab-delimited text file with .xls file extension, 3802 lines, file size =481.4 K)

Query: SELECT spec_id,specno,ucmp_coll,class,genus,species,subspecies,epoch,period,loc_ID_num,loc_name,county_std,state_prov_std,country_std,pic FROM ucmp2 WHERE ucmp_coll = "V" and county_std = "San Bernardino County" and formation = "Barstow" ORDER BY cast(specno as unsigned integer)

UCMP Catalog No.	UCMP Coll.	Class	Genus	Species	Subspecies	Epoch	Period	Loc. Number	Locality Name	County	State/Province	Country
1349	Vertebrates	Mammalia	Merychippus			Miocene	Tertiary	-1307	Barstow General	San Bernardino County	California	United States
11612	Vertebrates	Mammalia	Merychippus			Miocene	Tertiary	-1400	Rodent Hill Basin	San Bernardino County	California	United States
11620	Vertebrates	Mammalia	Merychippus			Miocene	Tertiary	-1307	Barstow General	San Bernardino County	California	United States
11623	Vertebrates	Mammalia	Merychippus			Miocene	Tertiary	V2301	Rodent Hill Basin General	San Bernardino County	California	United States
11624	Vertebrates	Mammalia	Merychippus			Miocene	Tertiary	-1307	Barstow General	San Bernardino County	California	United States
11650	Vertebrates	Mammalia	Merychippus			Miocene	Tertiary	-1307	Barstow General	San Bernardino County	California	United States
11775	Vertebrates	Mammalia	Merychippus			Miocene	Tertiary	-1398	Rodent Hill Basin	San Bernardino County	California	United States
11780	Vertebrates	Mammalia	Merychippus			Miocene	Tertiary	-1401	Hellgate 1	San Bernardino County	California	United States
11787	Vertebrates	Mammalia	Merychippus	seversus		Miocene	Tertiary	-1400	Rodent Hill Basin	San Bernardino County	California	United States

Specimen records abbreviated for clarity

Appendix F
Potential for Contaminated Soils Technical Memorandum

Potential for Contaminated Soils Technical Memorandum

Date: January 28, 2025
Project name: S-238 Hinkley Compressor Station Electrical Upgrades
Project no: D31321EO
Client: Pacific Gas and Electric Company
Prepared by: Julie Eakins
Project Manager: Colleen Taylor

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This report was prepared by a California Professional Engineer.

Julie Eakins, PE
C47243

1. Purpose

Pacific Gas and Electric Company (PG&E) is planning electrical system upgrades at its Hinkley Compressor Station at 35863 Fairview Road in the community of Hinkley, California, in San Bernardino County. This memorandum supplements Section 5.9, Hazards, Hazardous Materials, and Public Safety, of the Proponent's Environmental Assessment (PEA) for PG&E's S-238 Hinkley Compression Station Electrical Upgrades Project (project). The PEA is an exhibit to PG&E's project Certificate of Public Convenience and Necessity application to the California Public Utilities Commission.

2. Scope

As described in Section 5.9, Hazards, Hazardous Materials, and Public Safety, of the PEA, there is the potential for contaminated soils to be encountered during project construction. This memorandum discusses the potential soil contamination that could be encountered in soil during project construction.

The reader is referred to the PEA for the project description, evaluation of alternatives, and all other project aspects. This memorandum does not modify information in the PEA or address any other topics. The evaluation and applicant-proposed measures for Hazards, Hazardous Materials, and Public Safety are likewise not modified in this memorandum.

This memorandum does not address the following:

- Hazardous materials used during implementation of the project, such as fuel, grease, and fluids needed for construction equipment operation
- Management of asbestos in demolished structures, such as concrete foundations
- Management of solid and liquid wastes generated from construction
- Electrical shock hazards

- Dust, erosion, and runoff controls during construction

3. Identification of Known Contaminated Sites at or Near Hinkley Compressor Station

Consistent with the PEA, this evaluation reviewed publicly available information about known soil and groundwater contamination sites within 0.5 mile of the project location. Sources of information for this memorandum were: (1) the California Department of Toxic Substances Control's (DTSC's) Envirostor database, and (2) the State Water Resources Control Board's (SWRCB's) GeoTracker database.

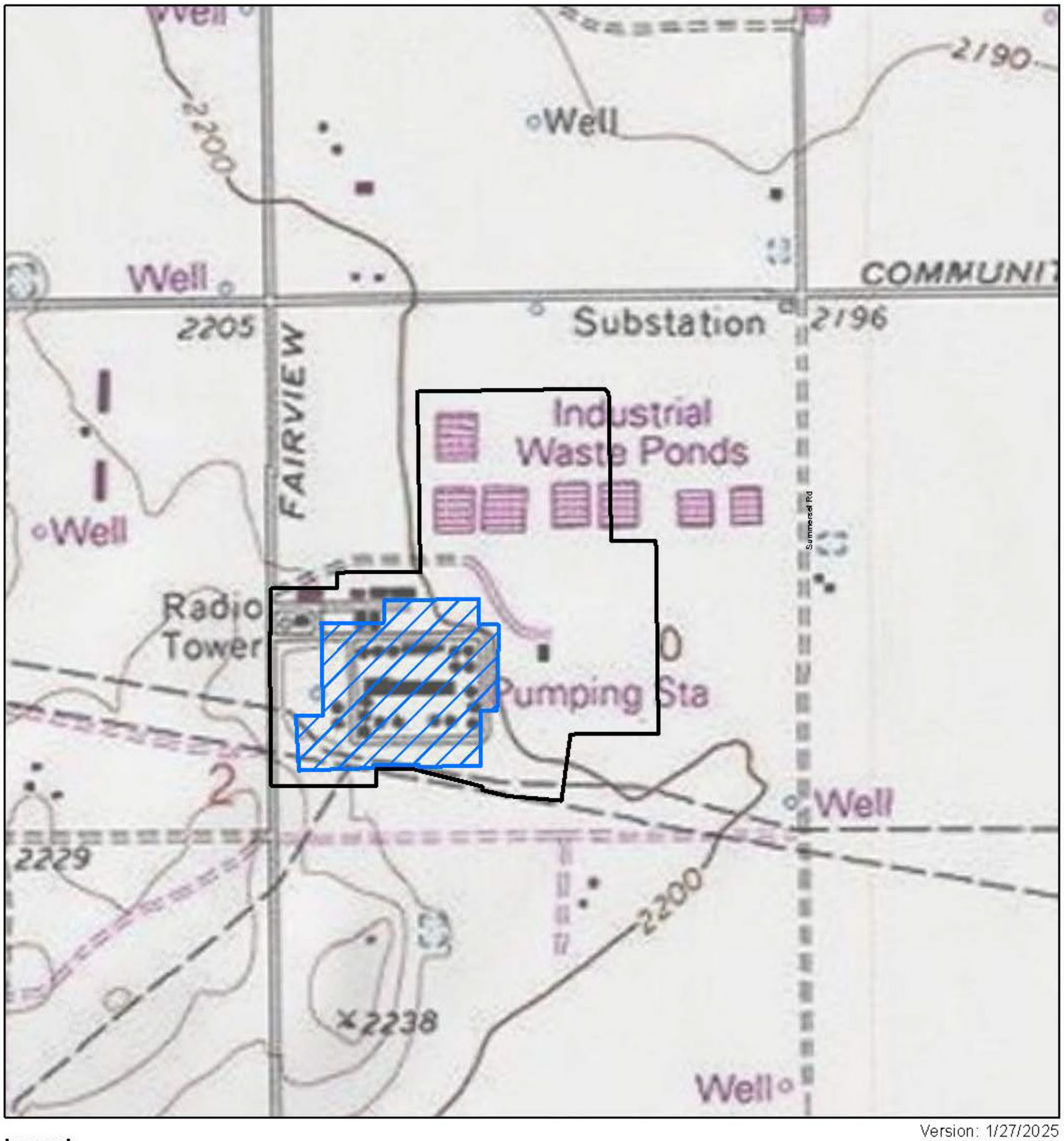
No DTSC-regulated sites were identified in the Envirostor database within 0.5 mile of the project. The SWRCB's GeoTracker database identifies PG&E Hinkley Compressor Station as corresponding to the project location. The following summarizes key information from the GeoTracker database about PG&E Hinkley Compressor Station as it may pertain to soil that could be encountered during project construction.

Hinkley Compressor Station is identified on GeoTracker as having a closed leaking underground storage tank (LUST) cleanup site. The Geotracker webpage identifies the potential contaminant of concern as gasoline and the potential medium of concern is soil. The case was opened in October 1987; it was completed and closed in March 1995. No documents or details are available about the LUST cleanup site on the GeoTracker site. Provided here is a link to the Hinkley Compressor Station LUST cleanup site.

Hinkley Compressor Station is also identified on GeoTracker as having a cleanup program site. The Geotracker webpage identifies the potential contaminant of concern as chromium and the potential medium of concern is groundwater. The case was opened in November 1987; it remains open. Provided here is a link to the Hinkley Compressor Station cleanup program site on GeoTracker.

A large volume of information is available on the GeoTracker site related to the Hinkley Compressor Station cleanup program site. The groundwater cleanup is associated with the historic use of chromium to prevent corrosion from the cooling tower water. Between 1952 and 1964, untreated cooling tower water was discharged to unlined ponds at the station. As a result of the prior practices, the cooling tower water percolated through soil to the groundwater table beneath, creating chromium contamination in groundwater. PG&E is implementing remediation activities to address the chromium in groundwater in accordance with Cleanup and Abatement Order (CAO) No. R6V-2015-0068-A1 WDID No. 6B369107001, issued by the Lahontan Regional Water Quality Control Board (LRWQCB).

Figure 1 shows the location of the former unlined ponds where cooling tower water was discharged, which is the source of the chromium contamination of groundwater. The figure shows that the ponds are located approximately 335 feet north from the edge of the project work area with expected ground disturbance. Exhibit 1 from CAO No. R6V-2015-0068-A1 WDID No. 6B369107001 shows the location of the areas being addressed by the groundwater cleanup activities relative to Hinkley Compressor Station. As shown, the areas being addressed by the groundwater cleanup activities extend beyond and to the north of the station and former ponds.



Legend

Hinkley Compressor Station Perimeter Fence Line

Work Area

N

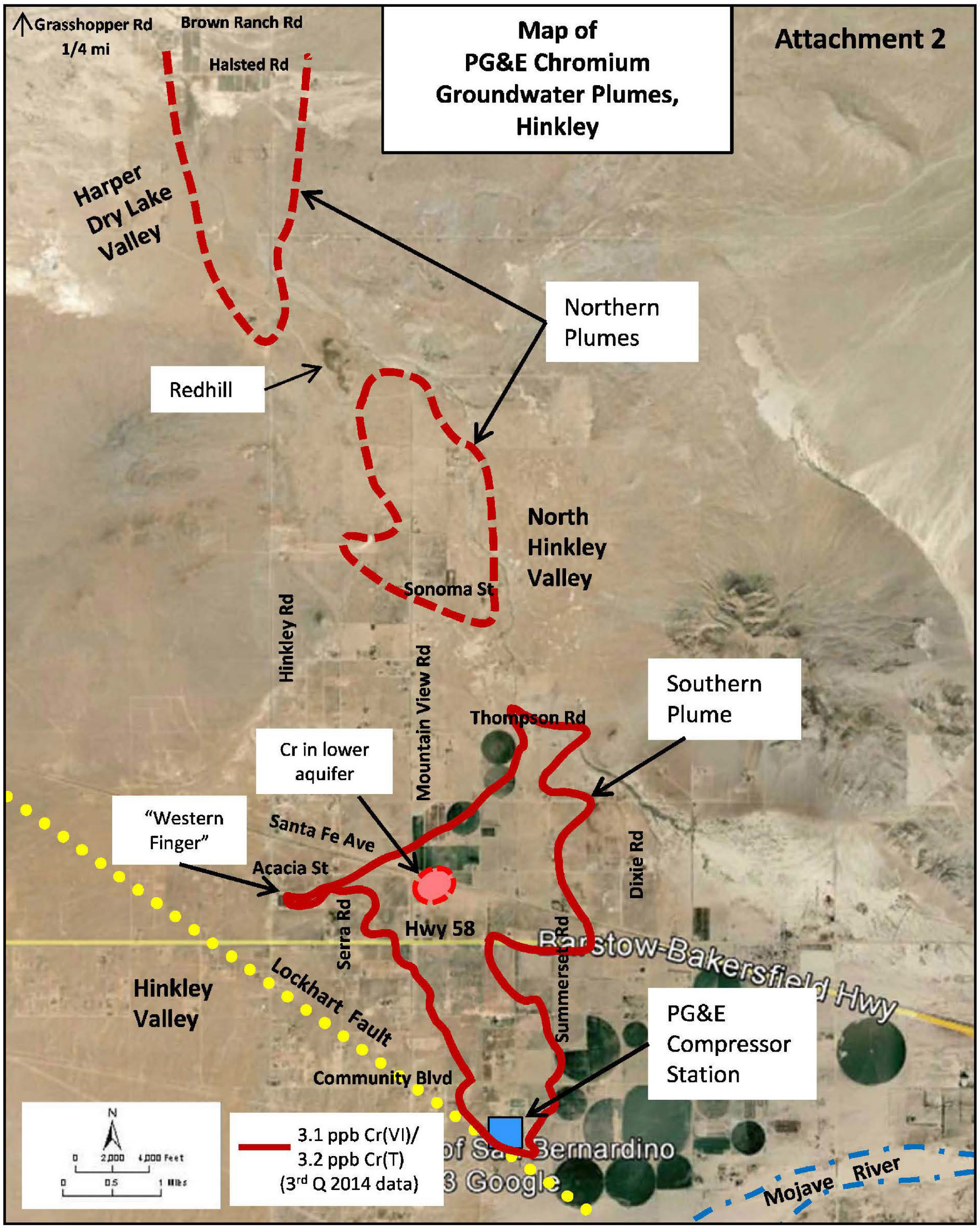
0 375 750

Feet

Figure 1
Potential for Contaminated Soils Technical Memorandum
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Jacobs

\\Dc1vs01\gisproj\P\PGE\Hinkley_PEA\MapFiles\Soils_Tech_Memo\Figure_1_250127.mxd kgrant1 1/27/2025 4:16:42 PM



Source:
Cleanup and Abatement Order (CAO) No. R6V-2015-0068-A1 WDID No. 6B369107001
issued by the Lahontan Regional Water Quality Control Board (LRWQCB).

Exhibit 1
Potential for Contaminated Soils
Technical Memorandum
S-238 Hinkley Electrical Upgrades
Pacific Gas & Electric Company

Jacobs

\\Dc1vs01\gisproj\P\PGE\Hinkley_PEA\MapFiles\Soils_Tech_Memo\Exhibit_1_250127.mxd kgrant1 1/27/2025 4:48:59 PM

Extensive investigation efforts during the past 30 years have delineated the chromium impacts in groundwater and characterized the complex hydrogeological setting. As described in the CAO, the hydrogeology beneath the station consists of an upper, unconfined aquifer and a lower, confined aquifer separated by a clay layer that forms a regional aquitard. Within the upper aquifer, two water-bearing zones are recognized as the shallow and deep zones. The depth to groundwater ranges from 75 to 95 feet below ground surface (bgs), and the general groundwater flow direction is to the north (LRWQCB 2024).

Since 1992, PG&E has been actively remediating chromium-impacted groundwater. Remedial actions to address the chromium in groundwater have included several technologies, including hydraulic containment, pumping and land application for crop production, freshwater injection, and in-situ treatment methods. Extensive infrastructure has been constructed for the remedial systems. The document, *Four-Year Comprehensive Cleanup Status and Effectiveness Report (2020 to 2023), Hinkley Compressor Station, Hinkley, California,* provides a relatively recent summary of the remedial systems and evaluation of the effectiveness of those systems to meet cleanup requirements (Arcadis 2024). Remedial infrastructure, including injection wells, extraction wells, in-situ reactive zone remediation wells, monitoring wells, and pipelines, has been installed in a wide area extending about 0.5 mile south of the station to more than 3 miles north of the station (Arcadis 2024).

4. Summary – Potential Soil Contamination Encountered During Construction

As outlined in the PEA, approximately 443 cubic yards of soil will be excavated during implementation of the project. Excavation areas and depths are described in the PEA, Section 3, Proposed Project Description. Excavation and trenching are proposed to a depth of 5 feet bgs. Figure 1 shows the project work area where excavation and trenching will occur.

As discussed previously, a review of publicly available information in the DTSC's Envirostor database and the SWRCB's GeoTracker database did not provide details about potential contamination in the soil to be encountered during implementation of the project. The location of the ponds that are the source of groundwater contamination is approximately 335 feet north from the project work area where ground disturbance will occur. Groundwater is approximately 80 feet bgs and, therefore, is not expected to be encountered during project excavation and trenching to a depth of 5 feet bgs.

While there is no detailed information in the public databases about the soil to be encountered during implementation of the project, the project is within the boundaries of an operating industrial station. The station has been in operation since 1952, and station operations likely used fuels and hazardous substances over time. The applicant-proposed measures are, therefore, appropriate for protection of workers, the public, and the environment during construction and to appropriately manage soils excavated during construction in compliance with waste management regulations.

5. References

Lahontan Regional Water Quality Control Board (LRWQCB). 2024. *Amended Cleanup and Abatement Order No. R6V-2015-0068-A1, Requiring Pacific Gas and Electric Company to Clean Up and Abate Waste Discharges of Total and Hexavalent Chromium to the Groundwaters of the Mojave Hydrologic Unit, San Bernardino County*. May.

Arcadis. 2024. *Four-Year Comprehensive Cleanup Status and Effectiveness Report (2020 to 2023*), *Hinkley Compressor Station, Hinkley, California*. Cleanup and Abatement Order R6V-2015-0068. March 29.