DRAFT INITIAL STUDY AND
MITIGATED NEGATIVE DECLARATION

PERMITS TO DRILL – CREH BUENA VISTA HILLS 4 AND 6 DEVELOPMENT PROJECT

California
Department of Conservation
Geologic Energy Management

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List of Abbreviations and Acronyms

14 CCR	Title 14 of the California Code of Regulations
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AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ALUCP	Airport Land Use Compatibility Plan
AMBA	American Badger
ANSI/ASME	American National Standards Institute/American Society of Mechanical Engineers Standards
API	American Petroleum Institute
AQP	Air Quality Plan
BACT	Best Available Control Technology
BLM	Bureau of Land Management
BMP	Best Management Practices
BNLL	Blunt-Nosed Leopard Lizard
BPS	Best Performance Standards
BSA	Biological Survey Area
Cal Fire	California Department of Forestry and Fire Protection
CalGEM	California Geologic Energy Management Division
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act

CGS	California Geological Survey
CNDDB	California Natural Diversity Database
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CREH	California Resources Elk Hills, LLC
CSOSCP	California State Oil Spill Contingency Plan
CVRWQCB	Central Valley Regional Water Quality Control Board
dBA	A-weighted Decibels
EA	Environmental Assessment
EOP	Emergency Operations Plan
EOR	Enhanced Oil Recovery
EPA	Environmental Protection Agency
FHSZ	Fire Hazard Severity Zone
GC	Government Code
GHG	Greenhouse Gas
HAPs	Hazardous Air Pollutants
HCP	Habitat Conservation Plan
HP	Horsepower
HSC	Health and Safety Code
IS	Initial Study
KCGP	Kern County General Plan
KWH	Kilowatts per Hour
Lbs/yr	Pounds per Year

MDB&M	Mount Diablo Base and Meridian
MM	Mitigation Measure
MND	Mitigated Negative Declaration
MPO	Metropolitan Planning Organization
Msl	Mean Sea level
$MTCO_2e$	Metric Tons of CO_2e
MW	Megawatts
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHD	National Hydrography Dataset
NO_2	Nitrogen Dioxide
NOA	Notice of Applicability
NOI	Notice of Intention
NWI	National Wetlands Inventory
NOx	Nitrogen Oxides
O_3	Ozone
OSCP	Oil Spill Contingency Plan
Pb	Lead
PM_{10}	Particulate Matter less than 10 microns in diameter
$PM_{2.5}$	Particulate Matter less than 25 microns in diameter
PRC	Public Resources Code
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board

SB	Senate Bill
SJAS	San Joaquin Antelope Squirrel
SJKF	San Joaquin Kit Fox
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	Sulfur Dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SRA	State Responsibility Area
SWRCB	State Water Resources Control Board
TAP	Toxic Air Pollutants
UIC	Underground Injection Control
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	Volatile Organic Compounds
WDR	Waste Discharge Requirements
WEBO	Western Burrowing Owl
WKWD	West Kern Water District

SECTION 1 - INTRODUCTION

California Resources Elk Hills, LLC (CREH) proposes the CREH Buena Vista Hills 4 and 6 Development Project (Project) to construct and operate six new wells within the California Geologic Energy Management Division (CalGEM) designated Buena Vista Oilfield in Kern County, California. The proposed Project involves the development of wells and associated infrastructure (well pads, pipelines, and electrical lines) within the Buena Vista Oilfield.

The proposed wells are located on federal surface lands and will produce from federal minerals managed by BLM (Bureau of Land Management), Bakersfield Field Office. CREH submitted applications for a permit (APD) to drill to the BLM for review and approval. In accordance with NEPA (National Environmental Policy Act), BLM completed three Environmental Assessments (EA) for the proposed project. A Finding of No Significant Impact was decided for all three NEPA documents resulting in environmental impact statements not being needed. BLM approved the six APDs with Conditions of Approval (COAs) for the proposed wells on June 24, 2019, Feb. 28, 2022, and June 30, 2022.

The Project sites associated with BV Hills 4 and 6 are located on public land managed by the BLM within unincorporated Kern County, California. The proposed Project would occur entirely within the CalGEM Administrative Boundary of the Buena Vista Oilfield. The Project sites are located within the Kern County, California USGS 7.5-minute Taft topographic quadrangle map in Section 6 and 8 of Township 32 South, Range 24 East of the MDB&M.

Throughout this Initial Study/Mitigated Negative Declaration (IS/MND), the term "Project site" is used to represent the construction footprint (area of disturbance). The term "Project area" also includes surrounding lands outside but adjacent to the Project site. The term "Project vicinity" denotes a more expansive landscape context.

1.1 - Purpose

This IS/MND assesses whether the proposed Project's implementation would result in a significant impact(s) on the environment, determines if any such impact(s) can be avoided or reduced to a less than significant level through mitigation, and identifies mitigation measures that would be required if CalGEM approves the Project. The IS/MND also serves as the environmental analysis required to comply with the California Department of Fish and Wildlife (CDFW) regulations implementing the California Endangered Species Act (CESA).

The purpose of the proposed Project is to authorize the development of six wells within the existing CalGEM-designated Buena Vista Oilfield. The proposed Project requires CalGEM Notice of Intention (NOI) approvals to drill the six wells.

1.1.1 - *REGULATORY SETTING*

Adopted regulations, legislation, and policies of regulatory agencies responsible for enforcing standards that affect the proposed Project's implementation are described below. Note that all six proposed wells are located on federal land with federal mineral rights as outlined in Section 2.1.

BLM prepared Environmental Assessments (EAs) and issued Conditions of Approval (COAs) for the BV Hills 4 and BV Hills 6 wells under NEPA. CalGEM is conducting an environmental analysis for portions of the project that were not fully addressed under CEQA.

Bureau of Land Management (BLM)

Gas exploration, permitting, development, and production of onshore oil and gas deposits on federal leased land is regulated and administered by the BLM. Regulations for onshore oil and gas deposits on federal leases are found under Title 43 Code of Federal Regulations (CFR) § 3100 et seq. An application for permit to drill (APD) can be sought once an oil and gas deposit on a federal lease is identified. An APD cannot be approved until the operator meets the requirements of certain laws and regulations including the National Environmental Policy Act (NEPA), the National Historic Preservation Act, and the Federal Endangered Species Act (FESA).

To comply with NEPA and other federal laws and regulations, BLM prepared three Environmental Assessments (EA) for BV Hills 4 and BV Hills 6 (Appendix A). The EAs concluded a Finding of No Significant Impact and were approved with a Decision Record and conditions of approval documents. Those Conditions of Approval (COAs) were implemented as design features of the Project and included conditions for biological, cultural, and paleontological resources. Overall, the BLM regulatory processes are intended to promote the orderly and efficient exploration, development, and production of oil and gas on federal leased land.

For further details and discussion on the NEPA Documents relied upon in this document please refer to Section 2.1 Project Description.

Federal Endangered Species Act

The FESA, 16 U.S.C. § 1531 et seq., protects plant and animal species listed by the U.S. Fish and Wildlife Service (USFWS) as being threatened or endangered. "Take"

of listed wildlife species is prohibited unless take authorization is first obtained from the USFWS. "Take" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." (16 U.S.C. § 1532.) "Harm" means "an act which actually kills or injures wildlife" and includes activities that cause significant habitat modification or degradation resulting in the killing or injuring of wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. (50 CFR § 17.3.) Permits to take a federally listed species may be obtained through a Section 7 consultation or a Section 10 Habitat Conservation Plan (HCP).

California Endangered Species Act

CESA (Fish & G. Code, § 2050 et seq.) protects plant and animal species listed by the Fish and Game Commission as being threatened or endangered or designated by the Commission as candidates for listing. "Take" of listed species is prohibited unless incidental take authorization is first obtained from the CDFW. Take means to "hunt, pursue, catch, capture, kill, or attempt to hunt, pursue, catch, capture, or kill." (Fish & G. Code, § 86.) The prohibition on take of listed species also extends to any species designated as a candidate species pursuant to Fish and Game Code section 2085.

Under Fish and Game Code section 2081(b) and (c), CDFW may issue an Incidental Take Permit (ITP) for a State-listed species if the following criteria are met:

- The authorized take is incidental to an otherwise lawful activity.
- The impacts of the authorized take are minimized and fully mitigated.
- The measures required to minimize and fully mitigate the impacts of the authorized take are capable of successful implementation.
- The measures required to minimize and fully mitigate the impacts of the authorized take maintain the applicant's objectives to the greatest extent possible.
- Adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures.
- Issuance of the permit will not jeopardize the continued existence of State-listed species.

The taking or possession of species listed as fully protected and under CESA generally must be avoided unless in certain limited circumstances (e.g., scientific take or authorization under the Natural Communities Conservation Planning Act) a permit is obtained.

California Geologic Energy Management Division

CalGEM regulates the drilling, operation, maintenance, plugging, and abandonment of wells according to PRC § 3000 et seq. and 14 CCR § 1710 et seq. The CalGEM regulations include well design and construction standards, surface production equipment, pipeline replacements, and well abandonment procedures and guidelines. CalGEM's regulatory program is intended to promote the sensitive development of oil, natural gas, and geothermal resources in California through sound engineering practices, pollution prevention, and public safety programs. Currently, CREH operates enhanced oil recovery (EOR) wells under their existing underground injection control (UIC) permit No. 08006009 issued by CalGEM.

Kern County General Plan

The Project area is located entirely within Kern County's current jurisdictional boundaries; and, thus, is subject to the Kern County General Plan (KCGP).

The KCGP is a policy document with planned land use maps and related information designed to give long-range guidance to County officials making decisions affecting the growth and resources of unincorporated Kern County, excluding the metropolitan Bakersfield planning area. This document helps ensure that day-to-day decisions are in conformance with the long-range program designed to protect and further the public interest related to Kern County's growth and development. The KCGP also serves as a guide to the economy's private sector in relating its development initiatives to the public plans, objectives, and policies of the County.

San Joaquin Valley Air Pollution Control District

The Project is in the San Joaquin Valley Air Basin (SJVAB) in western Kern County, California. Regulatory oversight authority for air quality matters rests at the local level with the San Joaquin Valley Air Pollution Control District (SJVAPCD), at the State level with the California Air Resources Board (CARB), and at the federal level with the US Environmental Protection Agency (EPA), Region IX.

The SJVAPCD is a public health agency responsible for regulating air quality in San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare counties and the San Joaquin Valley Air Basin portion of Kern County. At the local level, the responsibilities of the SJVAPCD include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, reviewing air quality-related sections of environmental documents required by CEQA, and developing plans

and implementing control measures that will help the region achieve attainment with State and federal air quality standards.

The proposed Project would operate under CREH's existing SJVAPCD Title V permit S-8282. Some of the wells included in permit No. S-8282 have already been constructed; other wells, like those associated with the proposed Project, have not yet been constructed or are not currently in operation. The proposed Project would operate under existing SJVAPCD permits numbers listed below for production fluid separation:

Well	**SJVAPCD Permit No.**
603H-1-6D	S-8282-53(T-2)
658UH-36-6D	S-8282-53(T-2)
674UH-6-8D	S-8282-88-3(T-01)
675H-6-8D	S-8282-88-3(T-01)
616-12D	S-8282-88
4-5H-6D	S-8282-9, S-8282-11, S-8282-78, S-8282-86

1.2 - Intended Uses of this Document

This IS/MND was prepared on behalf of CalGEM in accordance with CEQA to evaluate the proposed Project's environmental impacts. The IS/MND is intended to inform CalGEM and the public of the nature and scope of the proposed Project, determine if implementation of the proposed Project could result in a significant environmental impact, and recommend measures to avoid, minimize, or mitigate the impacts. This IS/MND provides environmental information that may be required in granting approval by CalGEM and other Responsible and/or Trustee Agencies pursuant to CEQA.

1.3 - Document Organization and Contents

The IS/MND is organized into five sections. A summary of each section is provided below:

- Section 1 – Introduction: This section provides an overview of the Project, including the purpose of the Project, the Regulatory Setting, the intended uses of the IS/MND, and document organization.
- Section 2– Project Description: This section describes the Project and provides data on the site's location.

- Section 3 – Evaluation of Environmental Impacts: This section contains the evaluation of environmental resource factors contained in Appendix G of the CEQA Guidelines. Each environmental resource factor is analyzed to determine whether the proposed Project would have an impact. A Mitigated Negative Declaration is appropriate where one of the following three findings is made for each impact associated with an environmental factor: (1) no impact, (2) less than significant impact, or (3) less than significant with the incorporation of mitigation. If the evaluation were to result in a finding that an impact for any environmental factor would be significant and unavoidable, additional analysis is required.
- Section 4 – Preparers List: This section identifies the lead agency for the Project and contains a list of the operator staff and consultants.
- Section 5 – References: This section contains a list of references that were used in the preparation of this IS/MND.
- Section 6 – Mitigation Monitoring Reporting Program (MMRP): This section contains a MMRP which is table of fully enforceable mitigation measures CalGEM found to be feasible and imposed as conditions of project approval.

SECTION 2 - PROJECT DESCRIPTION

2.1 - Project Description

CREH submitted six NOIs to add six new production wells within the CalGEM administrative boundaries of the Buena Vista Oilfield to conduct primary oil recovery operations within the Project Area. A total of four wells are associated with BV Hills 4 and two wells associated with BV Hills 6. CREH proposes the BV Hills 4 and BV Hills 6 Development Project (Project) construct, drill, and operate oil production wells within the CalGEM designated Buena Vista Oilfield in Kern County, California (see Figures 2-1 through 2-6). The proposed Project involves the development of associated oil well infrastructure (such as well pads, production pipelines and electrical power lines).

The proposed Project would include the oil and gas-related activities. The list below is a summary of the six proposed wells in BV Hills 4 and BV Hills 6 and their well names and locations.

The construction, operation, and maintenance of four oil producers and associated infrastructure, including well pads, pipelines, and electrical lines, within BV Hills 4 are:

BV Hills 4 Wells	**Form ID**	**Latitude**	**Longitude**
603H-1-6D (federal surface/minerals)	327528	35.168394°	-119.433945°
658UH-36-6D (federal surface/minerals)	326787	35.168902°	-119.433784°
674UH-6-8D (federal surface/minerals)	326910	35.163752°	-119.413339°
675H-6-8D (federal surface/minerals)	327669	35.163701°	-119.412136°

The construction, operation, and maintenance of two oil producers and associated infrastructure, including well pads, pipelines, and electrical lines, within BV Hills 6 are:

BV Hills 6 Wells	**Form ID**	**Latitude**	**Longitude**
616-12D (federal surface/minerals)	345375	35.155405°	-119.357312°
4-5H-6D (federal surface/minerals)	362342	35.173446°	-119.445226°

The proposed wells are located on federal surface lands and will produce from federal minerals managed by the BLM, Bakersfield Field Office. CREH submitted applications for a permit to drill to the BLM for review and approval. BLM completed three EAs in accordance with NEPA for the proposed project. The wells for BV Hills 4 were approved on March 8, 2022, in NEPA document number: DOI-BLM-CA-C060-2022-0024-EA, Programmatic Project #124.

The wells for BV Hills 6 were approved on April 25, 2022, using NEPA document number: DOI-BLM-CA-C060-2022-0089-EA, Programmatic Project #133, and on June 24, 2019, using NEPA document number: DOI-BLM-CA-C060-2019-0108-EA, Programmatic Project #68. The NEPA document for Project #68 also referenced a fourth EA document's analysis, which was similar in magnitude and scope and located within the same geographical area. That document was approved on September 11, 2018, as NEPA number: DOI-BLM-CA-C060-2018-0130-EA, Programmatic Project #032,

NEPA Document for BV Hills 4

- DOI-BLM-CA-C060-2022-0024-EA was prepared for wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, and 675H-6-8D.

NEPA Documents for BV Hills 6

- DOI-BLM-CA-C060-2022-0089-EA was prepared for well 4-5H-6D.
- DOI-BLM-CA-C060-2019-0108-EA was prepared for well 616-12D, and used analysis from DOI-BLM-CA-C060-2018-0130-EA

These NEPA environmental assessments documents are provided in Appendix A.

2.1.1 - CONSTRUCTION ACTIVITIES

The following construction activities are anticipated to implement the Project, as discussed below. Prior to construction, a preliminary plat of the proposed well pads and access road would be prepared for the proposed Project.

Pipeline and Electrical Line Installation: Fluids produced through Project operations would be transmitted via pipelines (see Figures 2-3 and 2-4) that connect the wells proposed within the Project site to existing oil and water production facilities within the oilfield (Further information can be found in the Geology and Soils Section). The proposed Project would utilize existing infrastructure for installation to the greatest extent possible, including existing access roads, well pads, and established pipeline corridors. An existing infrastructure system of gas flow, steam, gathering pipelines, casing vapor

recovery lines, and transmission lines would serve the proposed Project. New pipelines installed within the established pipeline corridors would be necessary to connect the new wells to the existing production infrastructure. Surface excavations would only be necessary for pipeline crossings of access roads. Existing access roads open to install pipelines will not be left open for more than 48 hours. The trench will be backfilled and compacted for use as an oilfield lease road.

Established pipe corridors range from 15 to 20 feet in width. Pipelines' rights of way would be minimally cleared of vegetation. The pipes would be placed on the ground or approximately six inches or more aboveground, supported by either sleepers or T-supports spaced approximately 20 feet apart. Sleepers would be installed on the surface and staked into place. T-supports are installed by auguring holes, placing, and then cementing the T-supports. Pipelines may be composite pipelines for vertical wells and carbon steel pipelines for directional wells; the composite pipelines would be placed on the ground surface, and the steel pipelines would be placed on the sleepers. All the pipelines will be buried at access road crossings. The Project would result in approximately 4,015 feet of pipeline associated with the operation of BV Hills 4 wells and 8,446 feet of pipeline for operations at BV Hills 6 wells.

All pipelines would be constructed and installed in accordance with American National Standards Institute/American Society of Mechanical Engineers Standards (ANSI/ASME) (ASME, 2001). Specifically, pipelines would adhere to ANSI/ASME Standard Code B31.1 (Power Piping: piping typically found in geothermal heating systems); group oil and water lines would adhere to ANSI/ASME Standard Code B31.4 (Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids); gas lines would adhere to ANSI/ASME Standard Code B31.8 (Gas Transportation and Distribution Piping Systems).

Overhead electrical lines would be installed concurrently with the pipelines within the pipeline corridor and other designated or pre-disturbed areas. New electrical poles are anticipated at a portion of the well sites and would be located within disturbed areas. Existing power poles would be utilized for the remaining well sites. Outdoor lighting will be directed downward towards the construction of the Project and would be removed once construction activities are complete. Pipeline installation would require the use of forklifts, cranes, and backhoes. Installation of overhead electrical distribution lines would require the use of bucket trucks, tensioners, and man lifts. The Project will need approximately 390 feet of overhead electrical lines for operation of new wells associated with BV Hills 4 and 2,217 feet of overhead electrical lines for operation of new wells associated with BV Hills 6.

Well Pad Construction and Sumps: During well pad construction, site preparation activities would consist of preconstruction biological surveys and vegetation clearing, grading, and compacting using a backhoe or front loader and grader. All disturbance areas, described in more detail in the section regarding biological resources, would remain unpaved. The site is flat to hilly, so grading will range from minor soil movement to moderate balances of cut and fill that will not result in excess soil. Any minor amounts of vegetation/soil mixture that were not compacted would be incorporated into the cut and fill slopes to aid in interim reclamation. During construction, the disturbed areas would be watered periodically to stabilize and control fugitive dust. Well pads are an average size of 200 feet by 100 feet with an adjacent temporary sump area per well pad of approximately 75 feet by 12 feet by 12 feet in depth. The sumps would be utilized for impoundment of boring wastes consisting of drilling mud and drill cuttings. Under the Notice of Applicability (NOA) issued by the CVRWQCB (Water Quality Order 2003-0003-DWQ-0090), the sumps will not contain the discharge of fluids associated with completion activities and would not discharge waste to surface waters or surface water drainage courses (RR-HYDRO-1). A copy of the NOA can be found in Appendix F. After well completion, the sump will be backfilled and reclaimed. The sump will be cleaned, backfilled, and a ripper used to break up the soil to a minimum depth of 12 inches, and re-contoured to match the surrounding topography. All drilling water will be contained within the permitted sump and would be allowed to evaporate prior to sump closure activities. The construction of new well pads is considered a permanent habitat disturbance throughout the productive life of the well, an estimate of the total amount of ground disturbance is included in Section 3.4.4, Biological Resources. The sumps are considered a temporary habitat disturbance since they are cleaned out and removed upon well completion. CREH would maximize the use of existing access roads, pipeline corridors, and well pads to co-locate the new proposed wells and associated infrastructure.

The use of sumps is regulated by the State Water Resources Control Board (SWRCB) and CVRWQCB under the *Statewide General Waste Discharge Requirements (WDRs) for Discharges to Land with a Low Threat to Water Quality (General WDRs)* (SWRCB Order No. 2003-0003-DWQ). CREH will comply with requirements established by the General WDRs for the use of sumps related to Project development. If the RWQCB determines that a site regulated under the General WDRs is or may be causing water quality impacts, additional measures may be imposed through a separate order issued by the RWQCB or the SWRCB.

It is anticipated that the well pads for wells 4-5H-6D and 616-12D would take approximately nine days each to construct. The remaining wells are anticipated to be developed in pairs on one well pad. Wells 603H-1-6D and 658UH-36-6D will be developed on one well pad and wells 64UH-6-8D and 675H-6-8D will be

developed on one well pad. Well pad construction associated with the paired wells are anticipated to take approximately 11 days to construct. Therefore, an estimated 40 days of construction activities related to well pad construction is anticipated.

Well Drilling & Completion: Within the Project, drilling and completion operations for new production wells would be conducted in accordance with CalGEM Buena Vista Hills Field Rules [1](Appendix B). CalGEM Field Rules provide information and guidance on geologic data and location of water zones, if any, and establish criteria for the casing and blowout prevention equipment programs. The Project will comply with CalGEM's regulations for well casing design and blowout prevention equipment. (See Cal. Code Regs., tit. 14, §§1722.2-1722.6.) CalGEM engineers would be present for the required tests and other operations during well drilling and completion.

Drilling equipment includes the drilling rig that includes a power system, a hoisting system, rotating equipment, a circulation system, a blowout prevention system, backhoe, forklifts, and trucks. Staging areas for well drilling and construction may include approximately one each of the following temporary facilities: portable tanks, generators, equipment trailers, and staff trailers located within graded and compacted surface areas of the Project site. Temporary outdoor lighting for drilling and completion activities will be installed. No permanent tanks, offices, outdoor lighting, or parking would be required on the Project site.

One well would be directionally or vertically drilled at a time, and drilling operations would be conducted 24 hours a day. All drilling activities for each well would occur on a well pad that has been constructed to support drilling the well. The drilling rig would include a power system, a hoisting system, rotating equipment, and a circulation system. A diverter system would be installed on the conductor pipe to divert fluids to the sump. As drilling progresses and the well is deepened, a steel casing would be installed and cemented from the oil and gas production zone to the surface of the well to prevent the sides of the well bore

[1] Pursuant to California Code of Regulations (CCR) Title 14, Division 2, Chapter 4, Section 1722 (k), the State Supervisor of Oil and Gas may establish Field Rules for any oil and gas pool or zone in a field when sufficient geologic and engineering data is available from previous drilling operations. Field Rules supplement more broadly applicable statutory and regulatory requirements. Each Field Rule is specific to a field, and in many cases, specific to Areas and Zones or Pools within a field.
The Geologic Energy Management Division (CalGEM, formerly DOGGR) has established Field Rules for those fields where geologic and engineering information is available to accurately describe subsurface conditions. These Field Rules identify downhole conditions and well construction information that oil and gas operators should consider when drilling and completing onshore oil and gas wells.
Field Rules are continually reviewed and updated as ongoing field operations generate new technical information, including geologic data.

from collapsing or caving, to protect the well bore against abnormal pressure, and to protect underground water and mineral-bearing formations.

After the wells are drilled, a clean-out run-on pump rig would move in to run the tubing, pump, and rods to complete the well (this takes approximately eight hours). A hydro crane would be used to set the small pumping unit (setting the unit takes approximately eight hours). The actual well pumps would be constructed having concrete pads and footings for stabilization. The area surrounding the pumps (well pad sites) would remain graded and compacted to stabilize the soil surrounding each well pad. The well completion activities would follow the CalGEM regulations (14 CCR 1776) and the Statewide General WDRs for Discharges to Land with a Low Threat to Water Quality (General Order 2003-0003-DWQ) (RR-HYDRO-2). During well completion, any free liquid would be removed from the associated temporary sump and transferred to the location of the next well to be drilled. The sumps are closed by mixing non-hazardous solids with drying material and then backfilling the excavation using stockpiled soil material. Liquids within the sump would be allowed to evaporate prior to sump closure activities. Sump closure would begin about two days after drilling is finished and requires about one day to complete.

It is anticipated that wells 4-5H-6D and 616-12D would take approximately eight days to drill and five days to complete. Wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, and 675H-6-8D would take 18 days to drill and five days to complete. Therefore, an estimated 118 days of drilling and completion activities is anticipated.

2.1.2 - Operation and Maintenance Activities

Operation and maintenance of facilities associated with the Project (i.e., wells, pipelines, electrical lines, etc.).

Production: Other than the wells (pumping units), well testing and monitoring equipment, pipelines, and electrical lines serving the wells, no permanent facilities would remain on the Project site.

Maintenance: All the following maintenance activities would take place in existing disturbed areas:

Well/Pipeline Surveillance: During production, each well would be visited at least once a month for visual inspection and service as 14 CCR § 1777 requires. If downhole components such as tubing, safety valves, or electrical submersible pumps malfunction, a workover of the well may be necessary. A workover rig typically removes the wellhead and replaces the completion string during a workover. Pipeline corridors would also be surveyed regularly during production,

and general maintenance would occur, including vegetation removal from pipeline corridors. Minor facility and pipeline modifications may also occur to maintain efficient production.

Hydrotesting, Pigging Pipelines, and Other Non-Destructive Testing of Pipelines: Pipelines would be hydrostatically tested to meet regulatory pressure requirements. Pigging, a tool that is sent down a pipeline propelled by the pressure of the product flow in the pipeline itself, is usually done to clean and maintain pipelines. Fluid disposal would follow the requirements of the RWQCB and the CDFW, including Title 27 CCR Section 20090(g), or General Order 2003-003-DWQ.

Vegetation Removal/Elimination of Potential Fire and Safety Hazards: To prevent the proliferation of vegetation that would create a fire hazard, vegetation along roadsides and critical facilities such as wells, pipelines, and power poles would be controlled by hand clipping and trimming, per Title 14, Division 1.5, Chapter 7, Section 1299, guidelines.

Pipeline Replacement: Replacement and maintenance of pipelines would occur periodically as needed. Pipelines are inspected in regular intervals as described in program details contained in Title 14, Division 2, Chapter 4, Section 1774, of the CCR. Where pipelines are determined to be deficient, replacement of pipelines, a linear corridor type project, would occur. Equipment used in the replacement of pipelines may include a crane, backhoe, flatbed trucks, welding equipment, pickup trucks, and a number of personnel. The duration of the replacement of pipelines varies with the length of the pipeline being replaced or repaired.

2.1.3 - EMERGENCY ACTIVITIES

The proposed Project's oil drilling and production activities would be subject to spill prevention measures. Mechanical containment, chemical and biological management practices, and physical containment are some of the spill prevention techniques that would be used for the proposed Project (see RR-HAZ-1, RR-HAZ-2, and RR-HAZ-3). Oil spill prevention measures and cleanup plans are required in accordance with Federal Spill Prevention, Control, and Countermeasure (SPCC) regulations. The State of California, pursuant to Government Code (GC) § 8574.1 et seq., establishes State oil spill contingency plans for both marine and inland surface waterways and terrestrial environments. The current California State Oil Spill Contingency Plan (CSOSCP), as amended in January 2023, requires reporting and notification of oil spills of specified quantities to appropriate local, State, and federal agencies. The California State Warning Center, National Response Center, is the current State agency for reporting spills (California Office of Emergency Services, 2023). Specifically, the CSOSCP requires reporting unauthorized releases of oil of five barrels or more uncontained in

certain San Joaquin Valley oilfields if there is no threat to State waters and 10 barrels or more contained in certain San Joaquin Valley oilfields if there is no threat to State waters. However, any amount of unauthorized release of oil into or threatening State waters, whether inland, marine, or groundwater, must be reported.

The proposed Project is also required to adhere to CalGEM Regulations and the San Joaquin Valley Oil Spill Reporting criteria. CalGEM regulations 14 CCR § 1722 require spill contingency plans, and CREH developed and filed with the CalGEM district office a spill contingency plan for the Buena Vista Oilfield in the event an incident occurs. The San Joaquin Valley Oil Spill Reporting criteria established by and between CalGEM, the SRWCB, and CDFW require that spills in excess of 10 barrels within containment areas and one barrel or more not located within a containment area, be reported to the State Office of Emergency Services (California Governor's Office of Emergency Services, 2018). Finally, pursuant to 14 CCR § 1722(k), CalGEM maintains Field Rules related to oil spill reporting and cleanup that provide information and guidance in the event of an emergency, such as where an oil spill occurs from the release of drilling fluids, spill of produced water, fire, seismic activity or flood.

2.2 - Project Overview and Location

2.2.1 - *BV HILLS 4*

The Project area associated with BV Hills 4 are located on public land managed by the BLM within unincorporated Kern County, California. The Project area is generally located east and west of Airport Road, north of E. Cedar Street, and east, south, and west of Honolulu Road. The Project area is located within the Kern County, California USGS 7.5-minute Taft topographic quadrangle map in Section 6 and 8 of Township 32 South, Range 24 East of the MDB&M. The proposed Project would occur entirely within the CalGEM Administrative Boundary of the Buena Vista Oilfield. Regional access to the BV Hills 4 Project area is via State Route (SR) 119; local access to the Project site would occur via Airport Road to an oilfield access road that runs to the Project site. From these existing paved roads, ingress/egress would occur to and within the Project site via previously compacted, unpaved oilfield roads. CREH would be restricted to the use of existing roads and approved areas of disturbance.

2.2.2 - *BV HILLS 6*

The Project area associated with BV Hills 6 is located on public land managed by the BLM within unincorporated Kern County, California. Well 4-5H-6D is located east of SR 119 and north of E. Cedar Street. Well 616-12D is located east of Airport Road and north of Gardner Field Road. The Project area is located within the Kern

County, California USGS 7.5-minute Taft topographic quadrangle map in Section 6 and 12 of Township 32 South, Range 24 East of the MDB&M. The proposed Project would occur entirely within the CalGEM Administrative Boundary of the Buena Vista Oilfield. Regional access to the BV Hills 6 is via SR 119; local access to the Project area would occur via SR 119 and Gardner Field Road to an oilfield access road that runs to the Project site. From these existing paved roads, ingress/egress would occur to and within the Project site via previously compacted, unpaved oilfield roads. CREH would be restricted to the use of existing roads and approved areas of disturbance.

Portions of the overall Project area have already been developed and are currently being used for oil production and activities. The Project area consists of moderately disturbed lands with some vegetation. The Project site will be developed with well pads, pipelines, and electrical lines. During construction, all drilling equipment and materials would be placed on the proposed well pads and removed following well completion.

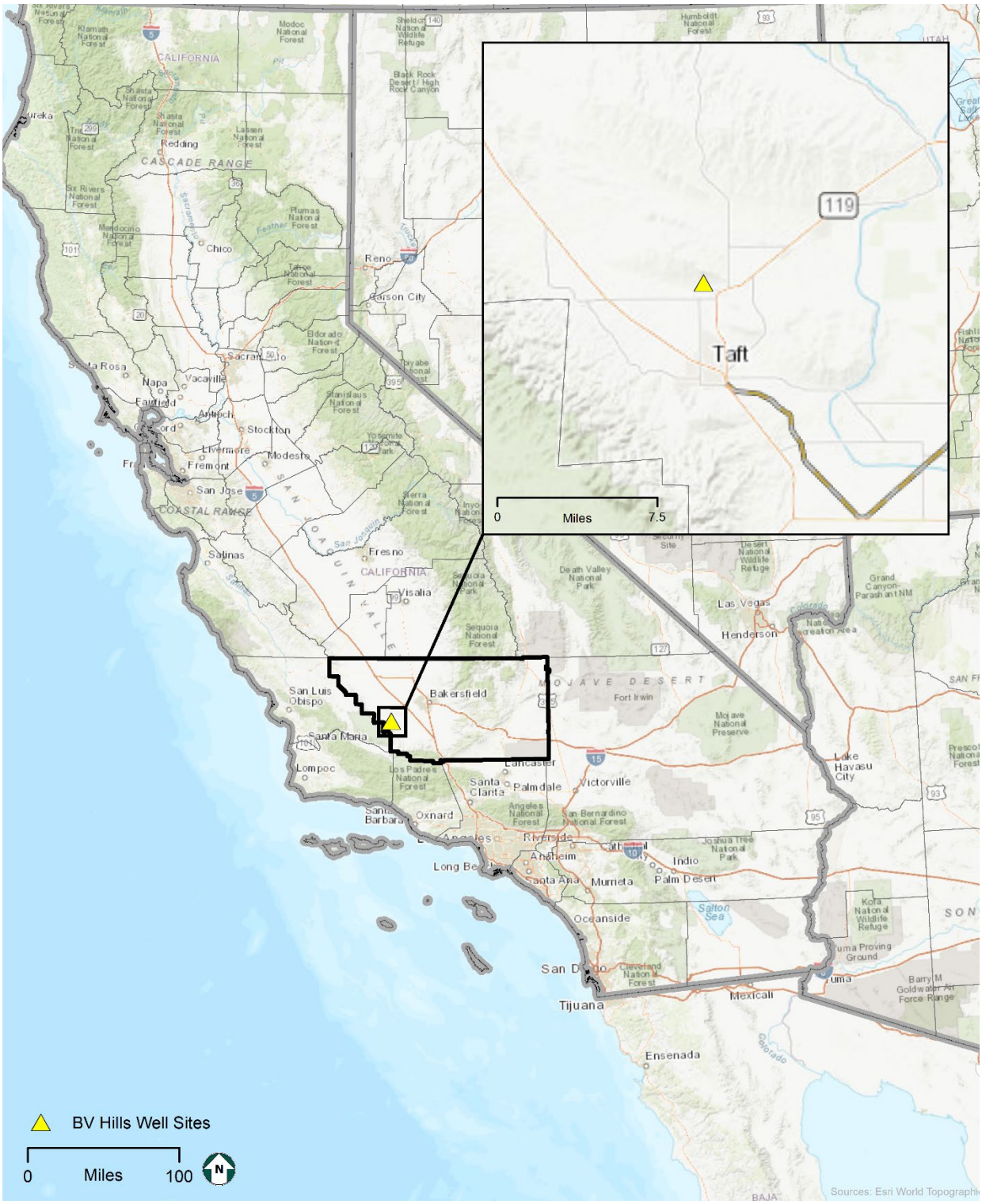

Figure 2-1
Regional Map
Buena Vista Hills 4 and 6, Kern County, California

Date Created: September 18, 2023

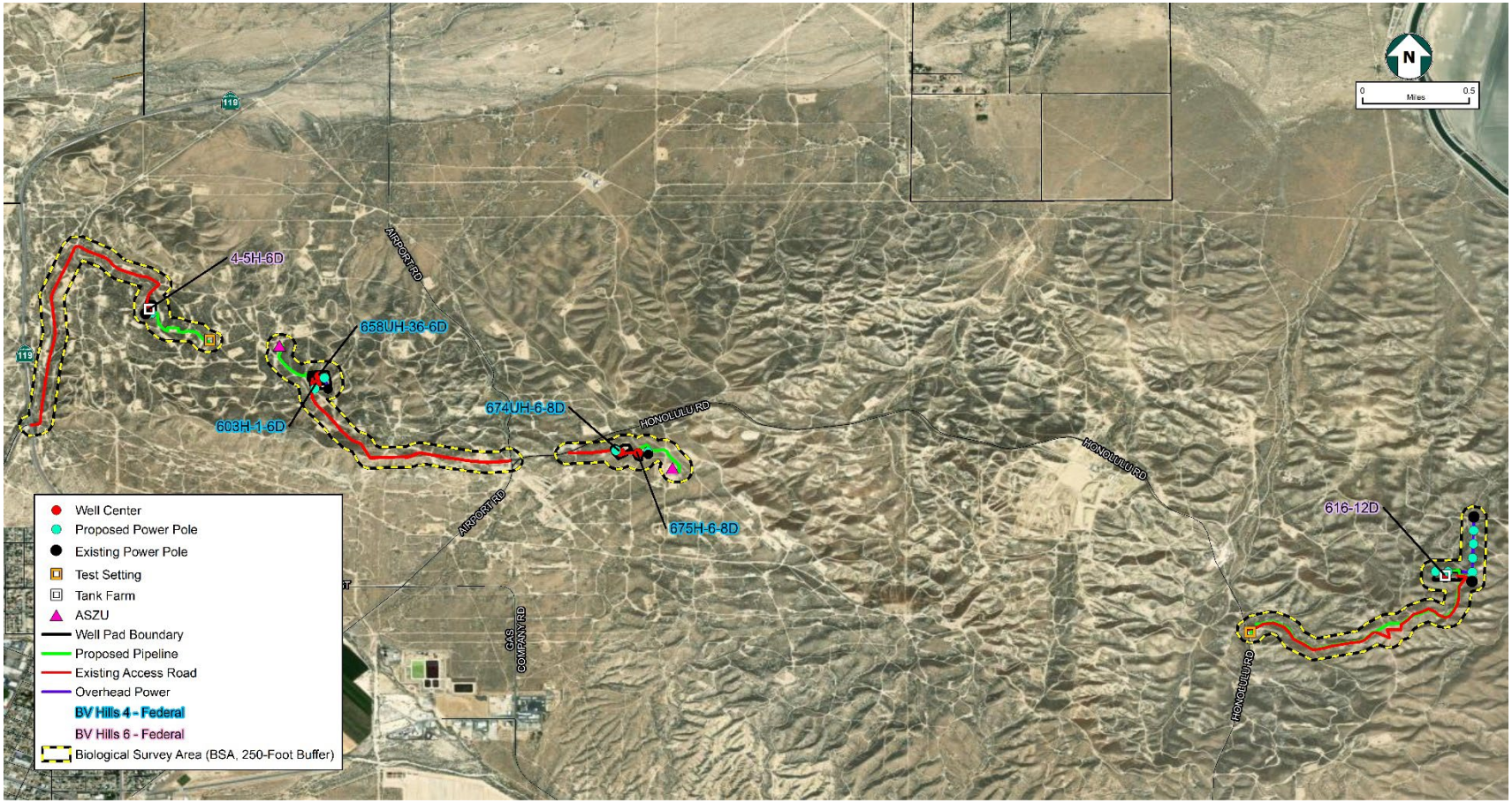

Figure 2-2
Overall Project Area
Buena Vista Hills 4 and 6, Kern County, California

Date Created: September 18, 2023

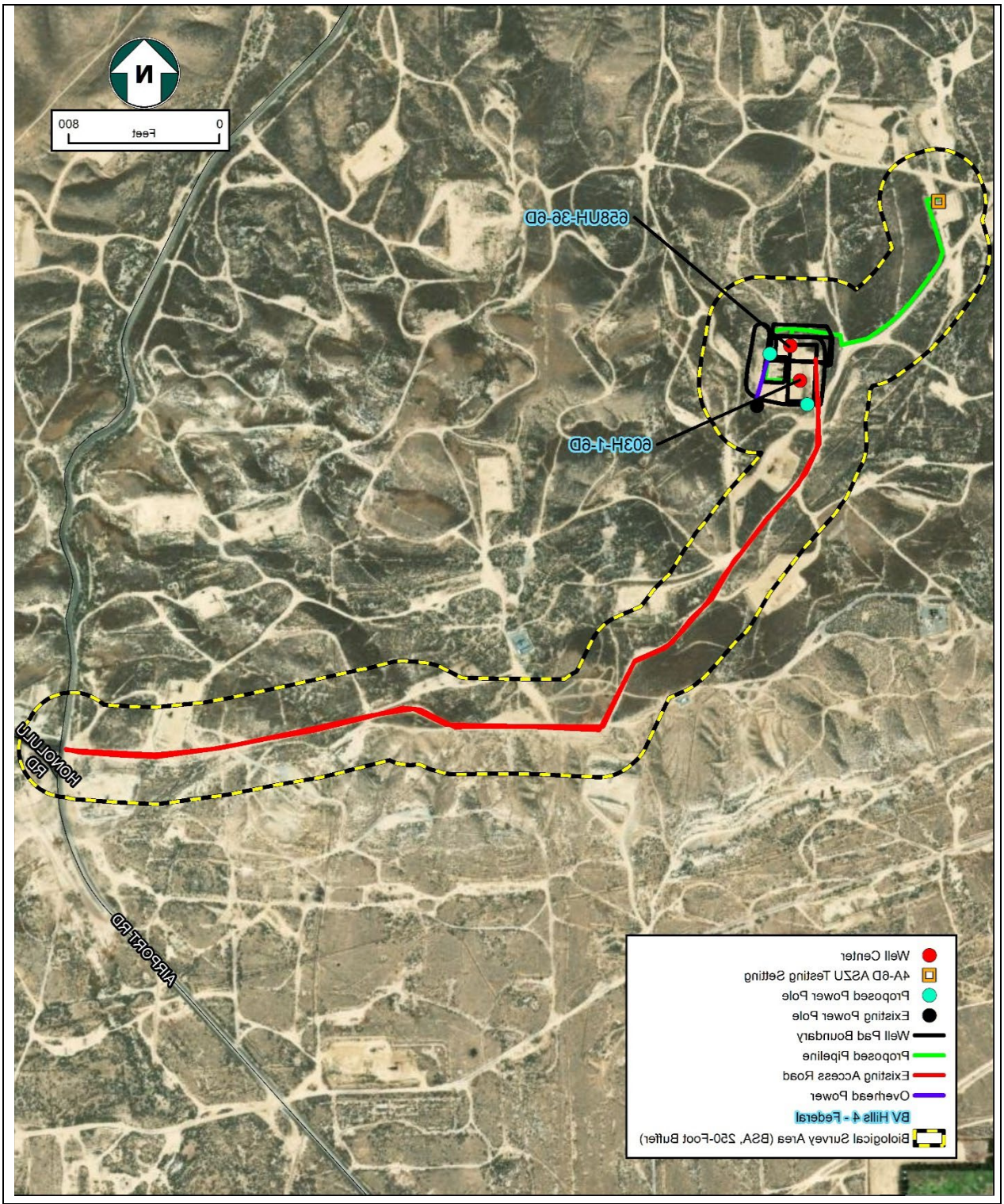

Figure 2-3
Project Area Buena Vista Hills 4
Kern County, California

Date Created: September 18, 2023

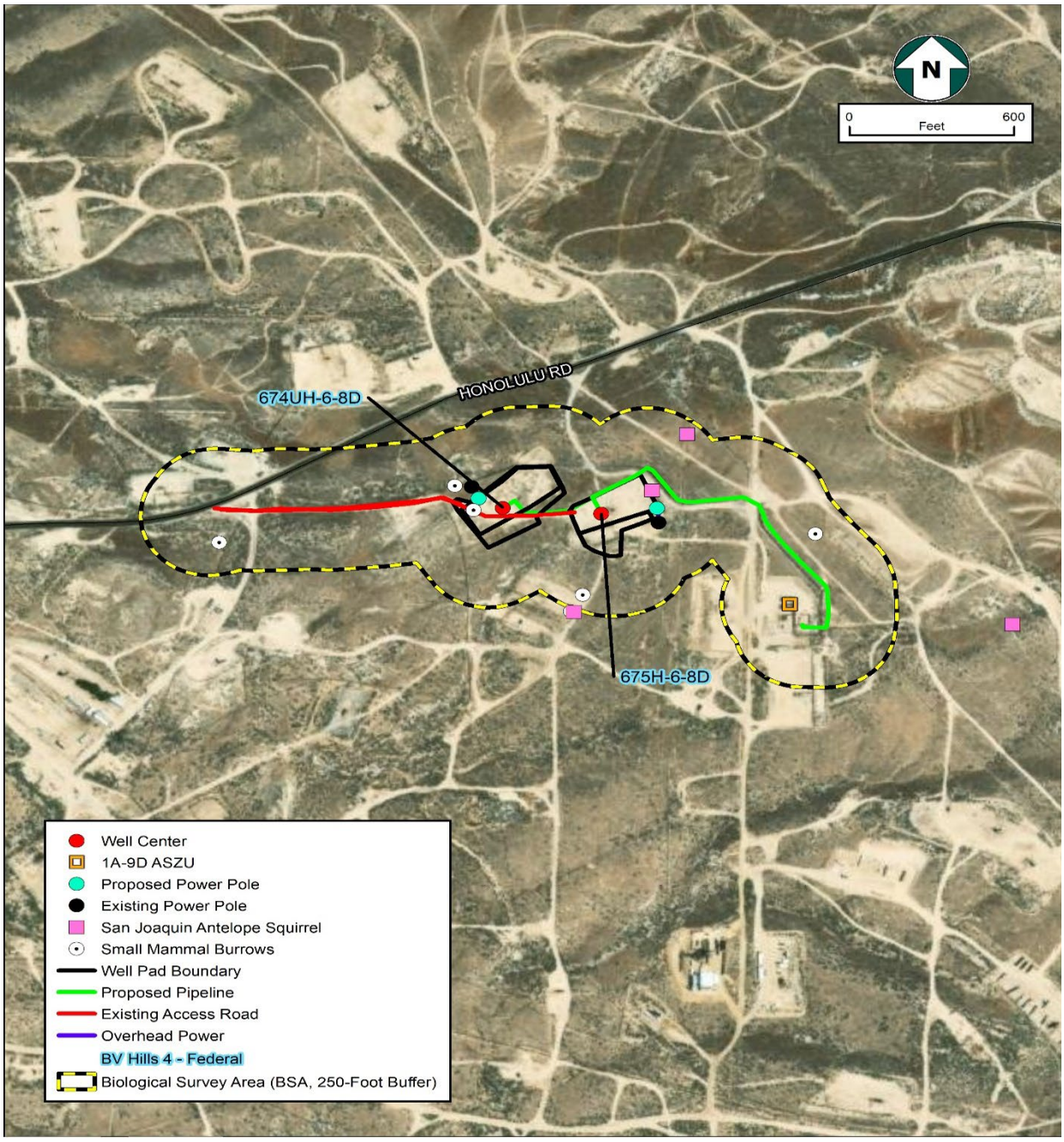

Figure 2-4
Project Area Buena Vista Hills 4
Kern County, California

Date Created: September 18, 2023

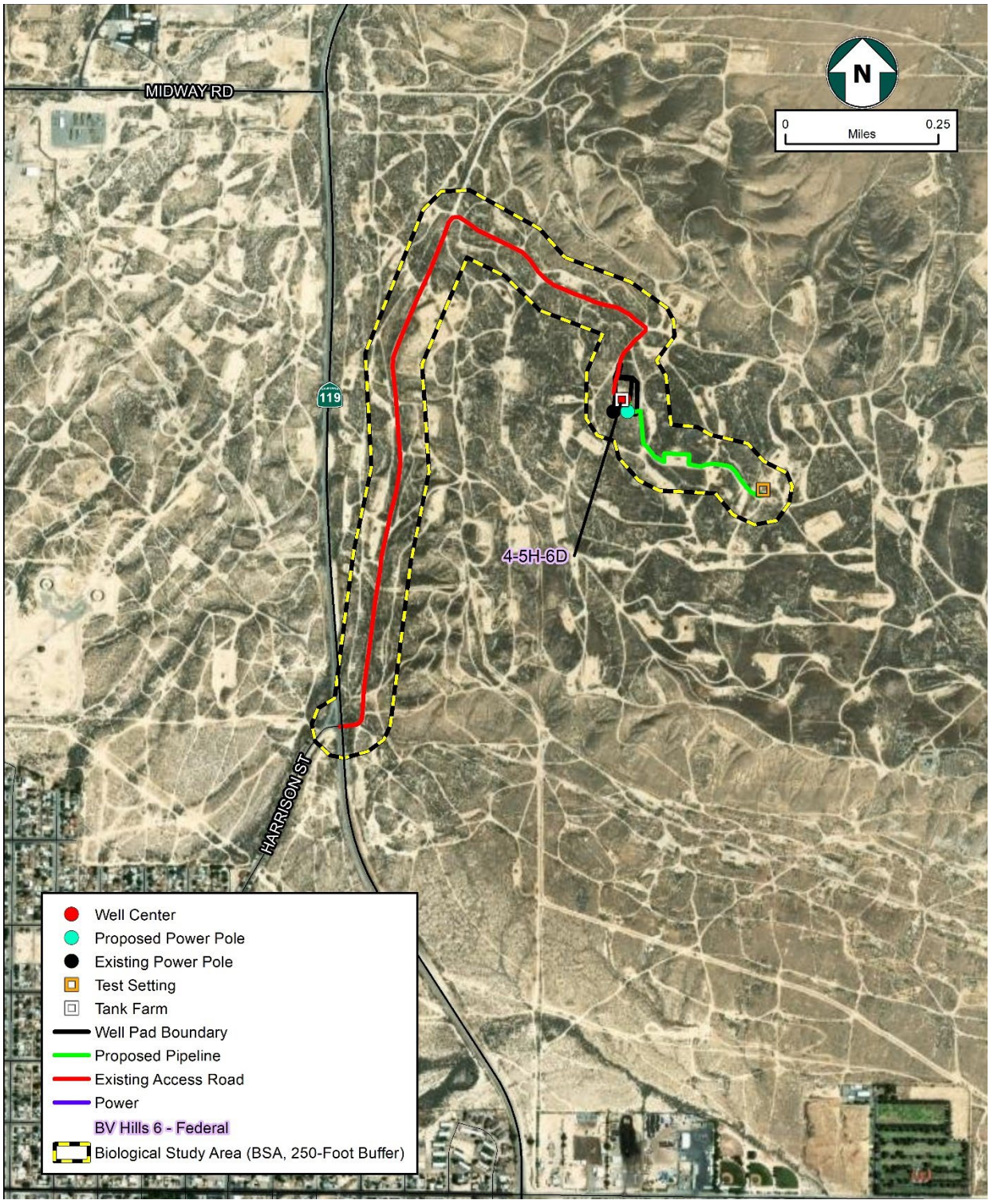

Figure 2-5
Project Area Buena Vista Hills 6
Kern County, California

Date Created: September 18, 2023

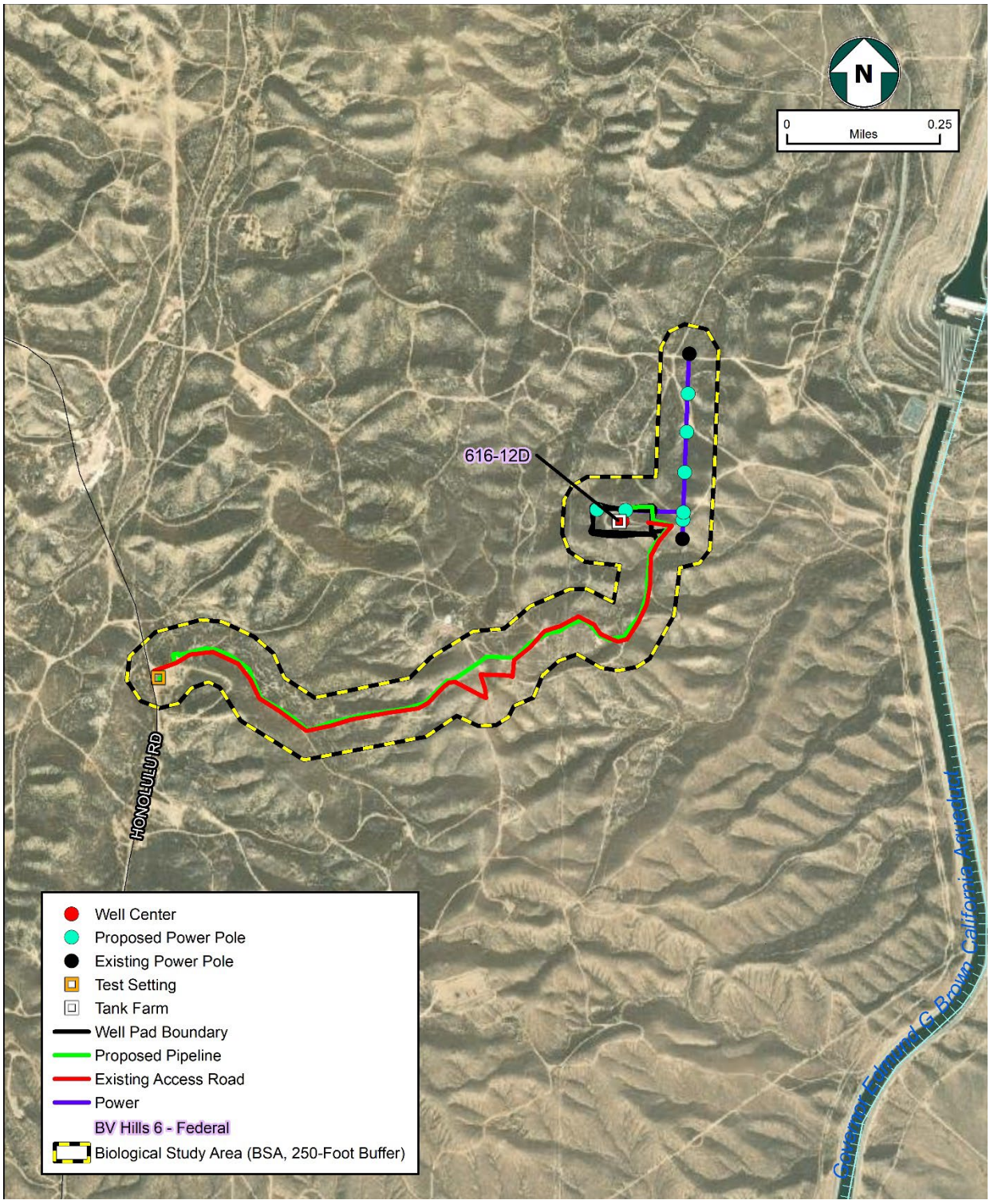

Figure 2-6
Project Area Buena Vista Hills 6
Kern County, California

Date Created: August 24, 2023

2.3 - Design Features and Regulatory Requirements

Table 2.2.2-1 presents the Project description design features and/or applicable regulatory requirements that contribute to minimizing the potential environmental impacts of the Project. BLM conditions of approval (BLM COA) are recognized as regulatory requirements (RR) throughout this document and the MMRP. Other regulatory requirements identified throughout this document and the MMRP include regulations, requirements, codes, rules, or other mandatory guidance from a lead or responsible agency. Please see the applicable issue area for full discussion.

Table 2.2.2-1 Project Design Features and Regulatory Requirements

Design Feature or Regulatory Requirement	Description	Potential Impact Category
DF-AES-1	Directional Lighting All lights would temporary, be shielded, directed inward, and downward to minimize potential light spill or create offsite impacts.	Aesthetics Biological Resources
RR-AES-1	Kern County Dark Skies Ordinance	Aesthetics
RR-AQ-1	Rule 2201 BACT Requirement	Air Quality
RR-AQ-2	Rule 2280 PERP Engines	Air Quality
RR-AQ-3	Rule 4409 Components of Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities	Air Quality
RR-AQ-4	Rule 4623 Storage of Organic Liquids	Air Quality
RR-AQ-5	Regulation VIII Fugitive PM_{10} Prohibitions Rule 8021, Rule 8031	Air Quality Geology and Soils
RR-AQ-6	Title V Operating Permits (Clean Air Act)	Air Quality
RR-BIO-1	BLM COA Construction and Interim Reclamation	Biological Resources

Design Feature or Regulatory Requirement	Description	Potential Impact Category
RR-BIO-2	BLM COA Final Reclamation	Biological Resources
RR-BIO-3	BLM COA Compensation Ratios, and Avoidance and Mitigation Actions 1-14 (*Full Text of Mitigation Actions 1-14 can be found in the MMRP*)	Biological Resources
RR-BIO-4	BLM COA Management of Noxious Weeds	Biological Resources
RR-CUL-1	BLM COA Discovery of cultural resources and human remains during project implementation	Cultural Resources Tribal Cultural Resources
RR-GEO-1	BLM COA Geology and Soils Discovery of Paleontological Resources	Geology & Soils
RR-GEO-2	BLM COA Paleontological Resource Monitoring and Mitigation Plan	Geology & Soils
RR-GEO-3	California Building Code Title 24 Part 2	Geology & Soils
RR-HAZ-1	Oil Spill Contingency Plan (OSCP, SPCC)	Hazards, Hydrology
RR-HAZ-2	CREH Emergency Response Plan	Hazards
RR-HAZ-3	Hazardous Materials Business Plan (HMBP)	Hazards
RR-HYDRO-1	Notice of Applicability Water Quality Order 2003-0003-DWQ-0090	Hydrology

SECTION 3 - EVALUATION OF ENVIRONMENTAL IMPACTS

3.1 - Environmental Checklist

1. **Project Title**:

   CREH Buena Vista Hills 4 and 6 Development Project

2. **Lead Agency Name and Address**:

   Department of Conservation
   715 P Street, MS 1803
   Sacramento, CA 95814

3. **Contact Person and Phone Number**:

   Chris Bacon
   Department of Conservation
   Environmental Scientist
   (916) 445-9686

   CEQA@conservation.ca.gov
   ATTN: CREH Buena Vista Hills 4 and 6 Development Project

4. **Project Location**:

   BV Hills 4

   The Project area is located on federal (BLM) surface and minerals within unincorporated Kern County, California. The Project area is located east and west of Airport Road, north of E. Cedar Street and south of Honolulu Road. The Project area is located within the Kern County, California USGS 7.5-minute Taft topographic quadrangle map in Section 6 and 8 of Township 32 South, Range 24 East of the MDB&M.

   BV Hills 6

   The Project area is located on federal (BLM) surface and minerals within unincorporated Kern County, California. The Project area is located within the Kern County, California USGS 7.5-minute Taft topographic quadrangle map in Section 6 and 12, Township 32, Range 24 of the MDB&M. Well 4-5H-6D is located east of SR 119 and north of E. Cedar Street. Well 616-12D is located east of Airport Road and north of Gardner Field Road.

5. Project Sponsor's Name and Address:

Daniel Padilla
California Resources Corporation
9600 Ming Avenue
Bakersfield, CA 93311

6. General Plan Designation:

BV Hills 4

1.1 (State and Federal Land) and 8.4/2.1 (Mineral and Petroleum/Seismic Hazard)

BV Hills 6

1.1 (State and Federal Land)

7. Zoning:

BV Hills 4

A-1 (Limited Agriculture)

BV Hills 6

A-1 (Limited Agriculture)

8. Description of Project:

See Section 2 - Project Description.

9. Surrounding Land Uses and Setting:

Surrounding land uses include ongoing and active oil and gas exploration and production operations. Existing operations are comprised of active wells and support infrastructure, including pipelines, access roads, and storage facilities. CREH estimates that 538 active CREH wells and 944 idle CREH wells are located throughout the Buena Vista Oilfield. These uses, along with the proposed Project, are located within the boundaries of the CalGEM administered Buena Vista Oilfields. Unless there are active construction activities, there is no lighting that might create glare or light pollution.

There are a few scattered residences, the closest dwelling from BV Hills 4 Project area is approximately one mile southwest from the Project area, and from BV Hills 6 Project area one mile southwest.

The Project area is predominantly disturbed by ongoing oilfield exploration and extraction operations, roadways, and infrastructure. There are scattered areas with saltbush scrub and non-native grasses; however, large portions of the Project footprint are devoid of vegetation.

10. Other Public Agencies Whose Approval is Required:

- BLM
- Regional Water Quality Control District
- San Joaquin Valley Air Pollution Control District

3.2 - Environmental Factors Potentially Affected

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

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

3.3 - Determination

On the basis of this initial evaluation:

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

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

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

☐ I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier

document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENT IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

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

Signature	Date
Printed Name	For

3.4 - Evaluation of Environmental Impacts

The evaluation of environmental impacts provided in this Initial Study is based in part on the impact questions contained in Appendix G of the State CEQA Guidelines; these questions, which are included in an impact assessment matrix for each environmental category (Aesthetics, Agriculture/Forest Resources, Air Quality, Biological Resources, etc.), are "intended to encourage thoughtful assessment of impacts." Each question is followed by a check-marked box with column headings that are defined below.

Potentially Significant Impact. This column is checked if there is substantial evidence that a Project-related environmental effect may be significant. If there are one or more "Potentially Significant Impacts," a Project Environmental Impact Report (EIR) would be prepared.

Less than Significant with Mitigation. This column is checked when the Project may result in a significant environmental impact, but the incorporation of identified Project revisions or mitigation measures would reduce the identified effect(s) to a less than significant level.

Less than Significant Impact. This column is checked when the Project would not result in any significant effects. The Project's impact is less than significant even without the incorporation of Project-specific mitigation measures.

No Impact. This column is checked when the category does not apply.

Detailed descriptions and analyses of impacts from Project activities and the basis for significance determinations are provided for each environmental factor on the following pages.

3.4.1 - *AESTHETICS*

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

Discussion

Both BV Hills 4 and 6 Project sites are located in an area that is predominated by existing oilfield exploration and production activities. No designated scenic roadways or significant scenic resources are located adjacent to or in the vicinity of the proposed Project sites. The closest residences are approximately one mile southwest of the nearest BV Hills 4 Project site and one mile west of the nearest BV Hills 6 Project site and are not likely to see the Project from their locations.

Impact #3.4.1a – Except as provided in Public Resources Code Section 21099, would the Project have a substantial adverse effect on a scenic vista?

The area is not located within a designated State or County scenic vista or scenic highway corridor (California Department of Transportation, 2022). According to the KCGP (Kern County, 2009a), there are no designated scenic views within the

County's limits; however, the California Scenic Highways Master Plan designates three State highways in Kern County as "Eligible State Scenic Highway."

- SR 14 and State Highway 395 in eastern Kern County.
- SR 58 between Mojave and Boron in eastern Kern County.
- SR 41 in northwest Kern County.

BV Hills 4

BV Hills 4 Project area are located approximately 57 miles south of the closest designated State scenic highway and is not located within a designated scenic vista. Therefore, the BV Hills 4 Project will have **no impact**.

BV Hills 6

BV Hills 6 Project area are located approximately 56 miles south of the closest designated State scenic highway and is not located within a designated scenic vista. Therefore, the BV Hills 6 Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.1b - Except as provided in Public Resources Code Section 21099, would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

BV Hills 4

No visual resources or important landforms, such as rock outcroppings, groupings of native trees, designed landscapes, or historic buildings, are present on or near the BV Hills 4 Project area. The KCGP does not list any aesthetic resources within the Project vicinity. As discussed in Section 3.11, *Land Use and Planning*, the proposed Project is consistent with land use and zoning designations for the area; and, therefore, is considered to be consistent with the associated visual resource for planning purposes and KCGP requirements (Kern County, 2009a).

BV Hills 6

No visual resources or important landforms, such as rock outcroppings, groupings of native trees, designed landscapes, or historic buildings, are present on or near the BV Hills 6 Project area. The KCGP does not list any aesthetic resources within the Project vicinity. As discussed in Section 3.11, Land Use and Planning, the proposed Project is consistent with land use and zoning designations for the area; and, therefore, is considered to be consistent with the associated visual resource for planning purposes and KCGP requirements (Kern County, 2009a).

As discussed in this section, the Project will have **no impact** on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.1c - Except as provided in Public Resources Code Section 21099, would the Project in non-urbanized areas substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?

The majority of the area surrounding the BV Hills Project area consists of previously disturbed land with existing oil well production equipment. These disturbed lands contain numerous existing oil well pumps and pads, pipelines, and access roads that connect well area to public rights-of-way. The area is degraded visually by the existing land use and ongoing oilfield activities.

As discussed in Impact #3.4.1a and b, both the BV Hills 4 and 6 Project area are not located within any designated scenic vista or scenic resource. The Project is also planned within an area designated as mineral and petroleum under the KCGP, with the closest urbanized area located approximately a mile southwest of the Project site. Therefore, the Project will not conflict with applicable zoning and other regulations governing scenic quality and will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.1d - Except as provided in Public Resources Code Section 21099, would the Project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

According to the KCGP and the Kern County Dark Skies Ordinance, Chapter 19.81, policies and requirements are developed to minimize light and glare from discretionary new development projects in rural and urban areas by using low-glare lighting to minimize nighttime glare effects on neighboring properties (RR-AES-1). The Ordinance applies to new and existing outdoor lighting. During the construction phase, the Project will used temporary outdoor lighting for both BV Hills 4 and 6. Per 19.81.050 Exemptions, all temporary lighting used for construction is exempt from Chapter 19.81.

During drilling activities, lighting will be used, as this activity will be continued until the well is completed. Therefore, night lighting would be required during the drilling phase. Lighting will be placed around the drilling rig area to provide illumination for the crew. The lights would be shielded, directed inward and downward to minimize potential light spill or create offsite impacts. This is recognized as a Design Feature (DF-AES-1) discussed in Section 2.1.1. The area is sparsely populated, and the nearest residence is located approximately a mile west of the Project. It is unlikely that any sensitive receptor would be impacted by the temporary presence of night lighting during the drilling phase of Project construction.

Development of the site would include temporary outdoor lighting for safety purposes but would generally not be out of character with the existing rural environment and would not rise to a level of being significant. Outdoor lighting is only planned for use during construction of the wells during construction hours. These activities are short-term and would be located approximately one mile away from the nearest sensitive receptor. Once development is complete, temporary outdoor lighting will be removed. There is no permanent lighting on proposed for BV Hills 4 and 6. Therefore, the Project will have a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

3.4.2 - *AGRICULTURE AND FORESTRY RESOURCES*

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:

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

Discussion

BV Hills 4

The proposed BV Hills 4 Project sites are located on properties designated as 1.1 (State and Federal Land) and 8.4 (Mineral and Petroleum) by the KCGP and within the A-1 (Limited Agriculture) zone district. There are no active agricultural activities in close proximity to the BV Hills 4 Project sites.

BV Hills 6

The proposed BV Hills 6 Project sites are located on properties designated as 1.1 (State and Federal Land) by the KCGP and within the A-1 (Limited Agriculture) zone district. There are no active agricultural activities in close proximity to the BV Hills 6 Project sites.

Impact #3.4.2a – 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 non-agricultural use?

BV Hills 4

According to the Department of Conservation - Farmland Mapping and Monitoring Program (FMMP) (California Department of Conservation, 2022), BV Hills 4 Project sites are designated as Vacant and Disturbed Land and are not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The BV Hills 4 Project sites are within the boundaries of an identified oilfield, and the intent of the BV Hills 4 Projects are to develop oil and gas activities. There is no agricultural production located within the area. Therefore, the BV Hills 4 Project will have **no impact**.

BV Hills 6

According to the Department of Conservation - Farmland Mapping and Monitoring Program (FMMP) (California Department of Conservation, 2022), the BV Hills 6 Project sites are designated as Vacant and Disturbed Land and is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The BV Hills 6 Project sites are within the boundaries of an identified oilfield, and the intent of the Project is to develop oil and gas activities. There is no agricultural production located within the area. Therefore, the BV Hills 6 Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.2b – Would the Project conflict with existing zoning for agricultural use or a Williamson Act Contract?

BV Hills 4

The BV Hills 4 Project sites are not subject to a Williamson Act contract and are not in agricultural production. The BV Hills 4 sites and surrounding areas are within the Kern County zone district A-1. Resource extraction is a permitted use in the A-1 zone district as outlined in the Kern County Zoning Ordinance Chapter 19.14.020.E.

BV Hills 6

The BV Hills 6 Project sites are not subject to a Williamson Act contract and are not in agricultural production. The BV Hills 6 sites and surrounding areas within Kern County are zoned A-1 (Limited Agriculture). Resource extraction is a permitted use in the A-1 zone district as outlined in the Kern County Zoning Ordinance Chapter 19.14.020.E.

Both BV Hills 4 and 6 Project sites are currently within an active oilfield and are not available for agricultural production. Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract and have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.2c – Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

Neither BV Hills 4 and 6 Project sites are identified as forest land or timberland. Therefore, the Project will not conflict with existing zoning for or cause rezoning of forest land, timberland, or timberland zoned Timberland Production. The Project would have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.2d – Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

The BV Hills 4 and 6 Project areas do not include "forest land" as defined in PRC Section 12220(g). Therefore, there would not be a loss or conversion of forest land as a result of the Project. The Project would have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.2e – Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

As discussed in Impact #3.4.2a and b, both the BV Hills 4 and 6 Project areas are not designated as Farmland under CEQA and will not result in the conversion of farmland to non-agricultural use. As previously noted, the Project sites and surrounding properties are not utilized for agricultural or timberland purposes and, therefore, will not result in the conversion of Farmland or forest land.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

3.4.3 - AIR QUALITY

	Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the Project:	**Potentially Significant Impact**	**Less than Significant 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 non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c.	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d.	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

The analyses in this section are based on EAs prepared for BV Hills 4 and 6 (Bureau of Land Management, 2022a; Bureau of Land Management, 2022b; Bureau of Land Management, 2019), an CREH Buena Vista 4 and 6 CalEEMod Emissions Update (Quad Knopf, Inc., 2025a), CREH Buena Vista 4 and 6 Project Health Screening Assessment, (Quad Knopf, Inc., 2025b) attached as Appendix C.

Discussion

Both BV Hills 4 and 6 Project sites lie within the southern portion of the SJVAB, which is the second largest air basin in the State. The SJVAB encompasses eight counties: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and the western portion of Kern. The SJVAB is managed by the SJVAPCD and is defined by the Sierra Nevada's in the east, the Coast Ranges in the west, and the Tehachapi Mountains in the south.

Impact #3.4.3a – Would the Project Conflict with or obstruct implementation of the applicable air quality plan?

Kern County is located in the SJVAB. Air Quality monitoring has been conducted in the SJVAB for many years. The region is not in attainment for numerous criteria air pollutants, and the air basin still has poor air quality. Ozone (O3) and particulate matter are the two largest contributors to the Valley's poor air quality. The causes and effects of these and other air pollutants are discussed in the next section.

CARB operates a regional network of air pollution monitoring stations that provide information on ambient concentrations of criteria air pollutants and toxic air contaminants. In Kern County, CARB measures certain air pollutants from motor vehicles, such as carbon monoxide (CO), O3, nitrogen dioxide (NO2), and particulate matter less than 2.5 microns in diameter (PM2.5). Federal and State laws require emission control measures in areas where air pollution exceeds standards. The San Joaquin Valley is one of these areas. The federal government, primarily through the EPA and the federal Clean Air Act (CAA), sets standards, oversees state and local actions, and implements programs for toxic air pollutants, heavy-duty trucks, locomotives, ships, aircraft, off-road diesel equipment, and some types of industrial equipment. Currently, EPA and CARB have established standards for criteria air pollutants: ozone (O3); (CO); (NO2); sulfur dioxide (SO2); suspended particulate matter (PM10 and PM2.5); and lead (Pb). To determine consistency with an air quality plan's (AQP) assumption and the applicable General Plan, the Project's population density and land use for the air basin in the General Plan must be consistent with the growth assumptions used in the AQPs.

The proposed Project is within the EPA Pacific Southwest Region 9 Planning Area and a State Implementation Plan (SIP) was prepared for the planning area, identifying emissions sources and control measures to reduce emissions. In 2017, CARB updated the State Strategy for achieving emissions reductions toward bringing these areas into attainment with federal standards for O3 and PM2.5. A San Joaquin Valley Supplement to the 2016 State Strategy for the SIP was adopted in October 2018. The SIP mainly addresses stationary sources that have been identified as major contributors affecting regional air quality, such as power plants, facilities, etc. The attainment status of San Joaquin Valley area basin is shown in Table 3.4.3-1.

Table 3.4.3-1 San Joaquin Valley Attainment Status

Pollutant	Designation/Classification	Designation/Classification
	Federal Standards[a]	**State Standards[b]**
Ozone - One hour	Revoked[f]	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme[e]	Nonattainment
PM 10	Attainment[c]	Nonattainment
PM 2.5	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

a See 40 CFR Part 81
b See CCR Title 17 Sections 60200-60210
c On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the 2007 PM10 Maintenance Plan.
d The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).
e Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
f Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the District as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). The District Governing Board adopted the 2023 Maintenance Plan and Redesignation Request and submitted to EPA in June of 2023. Although the standard is revoked, anti-backsliding provisions can be terminated upon final approval of the Maintenance Plan from EPA.
Source: San Joaquin Valley Air Pollution Control District, Web Site, Accessed 2/7/24.

District AQPs that are relevant to the proposed Project include the SJVAPCD 2016 Ozone Plan, 2013 Plan for the Revoked 1-Hour Ozone Standard, 2018 $PM_{2.5}$ Plan, and 2007 PM_{10} Maintenance Plan, including any amendments to these plans. These plans outline the strategy for achieving federal air quality standards by specific dates and identify control measures to reduce criteria pollutant emissions. Control measures identified in the 2007 Ozone Plan reduce O_3 precursor emissions, Nitrogen Oxides (NOx), and Volatile Organic Compounds (VOCs). Particulate matter attainment strategies include control measures to reduce dust from unpaved roads and construction activities.

Existing and future pollutant emissions computed in the AQP are based on land uses from area General Plans. AQPs detail the control measures and emission reductions required to attain the air standards.

The following examples of SJVAPCD rules that may be applicable to the proposed Project are described below:

These Rules have been discussed in this document as Regulatory Requirements:

- Rule 2201 (New and Modified Stationary Source Review Rule): The rule provides for the review new and modified stationary sources of air pollution and to provide mechanisms including emission trade-offs by which authorities to construct such sources may be granted, without interfering with attainment or maintenance of Ambient Air Quality Standards (see RR-AQ-1).
- Rule 2280 (Portable Equipment Registration): The rule establishes standards for registering certain portable emissions units for operation and related requirements. Portable emissions units would be required for well drilling, service or workover rigs, pumps, compressors, generators, and field flares (see RR-AQ-2).
- Rule 4409 (Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities): The rule limits the VOC emissions from leaking components at light crude oil production facilities, natural gas production facilities, and natural gas processing facilities (see RR-AQ-3).
- Rule 4623 (Storage of Organic Liquids): The rule limits VOC emissions from the storage of organic liquids (see RR-AQ-4).
- Regulation VIII (Fugitive PM_{10} Prohibitions): Regulation VIII reduces ambient concentrations of particulate matter less than 10 microns in diameter (PM_{10}) by requiring actions to prevent, reduce, or mitigate anthropogenic fugitive dust emissions (see RR-AQ-5). Regulation VIII rules pertinent to the proposed Project include, but are not limited to:
  - Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities): This rule limits fugitive dust emissions (PM_{10}) from construction, demolition, excavation, extraction, and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel onsite, and travel on access roads to and from the site.
  - Rule 8031 (Bulk Materials): The rule limits fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials.

These Rules have not been discussed in this document:

- Rule 4101(Visible Emissions): The rule prohibits the emissions of visible air contaminants to the atmosphere.
- Rule 4102 (Nuisance): The rule prohibits an individual to discharge from any source quantities of air contaminants or other materials which cause injury or nuisance to any number of persons or the public, or which endanger their health or safety.
- Rule 4402 (Crude Oil Production Sumps): The rule limits VOC emissions from sumps.

The SJVAPCD has established Thresholds of Significance: Criteria for Determining Environmental Significance under Section 4.3 of the February 2015 *Guide for Assessing and Mitigating Air Quality Impacts* (San Joaquin Valley Air Pollution Control District, 2015). These thresholds separate a project's short-term emissions from its long-term emissions. Short-term emissions are mainly related to the construction phase of the Project and are recognized to be short in duration. Long-term emissions are primarily related to activities that would occur indefinitely as a result of Project operations.

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. The SJVAPCD defines sensitive receptors as locations where there are human populations and where there is a reasonable expectation of continuous human exposure according to the averaging period of the ambient air quality standards (AAQS). The most sensitive portions of the population are children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. The closest sensitive receptors to this project include a residence located approximately one mile from the closest portion of BV Hills 4 and another residence located approximately one mile from the closest portion of BV Hills 6.

Short-Term Emissions

Construction of the proposed Project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, dust emissions, and combustion pollutants from offsite construction equipment and from water trucks and offsite trucks hauling construction materials to and from the Project site. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing

weather conditions. Fugitive dust emissions would primarily result from grading and site preparation activities. NOx and CO emissions would primarily result from the use of construction equipment and motor vehicles.

Long-Term Emissions

A producing well will result in operational emissions, which have the potential to contribute to the possible violation of an existing air quality standard or an existing or projected air quality violation. Sources of operational emissions include fugitive emissions from the well, some storage tanks, piping, separators, and loading racks, and point source emissions from the emergency flare (Table 3.4.3-10). Note that in an emergency, excess gaseous well emissions will be routed to the emergency flare. Indirect operational emissions include vehicle trips associated with employees and contractors needed to operate and maintain the oil production operation. Rule 2201 (RR-AQ-1) requires that the best available control technology (BACT) be used to minimize emissions before a permit is issued. This rule further requires that emissions above certain annual thresholds must be offset. The threshold for offsets is 20,000lbs/yr for NOx and VOCs and 29,200 lbs/yr for PM_{10}. Collectively, the use of BACT and emission offset requirement effectively limits emissions from producing wells to the maximum extent possible. This determination is confirmed by the finding that SJVAPCD regulations either exempt the action as having emissions below applicability thresholds or impose controls sufficient to maintain compliance with Air Quality standards.

Clean Air Act regulations also address the release of hazardous air pollutants (HAPs): chemicals that are known or suspected to cause cancer or other serious health effects, such as reproductive effects, birth defects, or adverse environmental effects. Some compounds of this type are regulated as Toxic Air Pollutants (TAPs) by the State of California. EPA currently lists 189 compounds as HAPs, some of which can be emitted from oil and gas development operations, such as benzene, toluene, and formaldehyde. National Ambient Air Quality Standards (NAAQS) have not been set for HAPs; rather, HAP emissions are controlled by source type or industrial sector-specific regulations. Hydrogen sulfide (H_2S) gas is not regulated under the NAAQs or as a HAP. However, it is known to be hazardous and is monitored for health and safety at oil and gas sites.

The exact HAP compounds and the amounts of these compounds emitted depend on the HAP content of the produced oil as well as the management techniques employed. Oil and gas production NESHAP rules have been adopted and periodically amended. To date, only one type of oil exploration and production equipment, glycol dehydrators, has been identified as a significant source of HAP emissions requiring regulation. No glycol dehydrators are proposed as part of the proposed action.

The associated EA (Bureau of Land Management, 2022a) discussed the EPA rulemaking and data on HAP emissions from representative single oil wells and found that in each case, HAP emissions were below the threshold requiring controls under the NESHAP. Therefore, the impact of potential HAP emissions from this action is not considered significant. Based on the emissions estimates reviewed, it was determined that direct criteria pollutant emissions from this action would have no significant impact.

The Project will implement appropriate BMPs as required by SJVAPCD rules and regulations, including Rule 4409 (RR-AQ-3), and Regulation VIII (RR-AQ-5). Therefore, it would be consistent with the applicable AQPs. These requirements include the use of best available control technology and measures to reduce fugitive dust and other emissions. SJVAPCD requirements Rule 4409 requires maintenance standards for equipment, leak detection and SJVAPCD inspection of leaks and repairs, and approval and use of an Operation Management Plan (RR-AQ-3). Rule 4623 pertains to the storage of organic liquids and requires the implementation and compliance of VOC control system standards on tanks storing such liquids, SJVAPCD inspections, and regular record keeping for availability to SJVAPCD (RR-AQ-4). Measures associated with Regulation VIII include BMPs for reducing potential fugitive dust emissions resulting from construction and operation activities, including the use of water to unpaved surface areas and speed limitations for onsite vehicular traffic (RR-AQ-5). As a result, the Project will not conflict with or obstruct the implementation of any AQPs and, therefore, would have a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.3b – Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or State ambient air quality standard?

Kern County is designated as non-attainment for federal and State air quality standards for O_3, in attainment of federal standards and non-attainment for State standards for PM_{10}, and non-attainment for federal and State standards for $PM_{2.5}$. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM_{10} Maintenance Plan, and 2012 $PM_{2.5}$ Plan to achieve federal and State standards for improved air quality in the SJVAB regarding O_3 and PM. Inconsistency with any of the plans would be considered a cumulatively adverse air quality impact. As

discussed above under Impact #3.4.3a, the Project is expected to be consistent with all federal, State, and local standards with approval of the appropriate permits and implementation of conditions associated with standard air quality requirements such as those listed above.

Short-Term Impacts

Construction of the proposed Project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, dust emissions, and combustion pollutants from onsite construction equipment and from water trucks and offsite trucks hauling construction materials to and from the Project site. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. Fugitive dust emissions would primarily result from grading and site preparation activities. NOx and CO emissions would primarily result from the use of construction equipment and motor vehicles.

BV Hills 4

Table 3.4.3-2 depicts the type, number, and estimated operational duration of equipment used during construction activities and the number of employees related to BV Hills 4 construction activities. The number of employees is estimated based on equipment counts. Table 3.4.3-3 depicts BV Hills 4 equipment usage and employees for the drilling phase of one well. Table 3.4.3-4 indicates the BV Hills 4 equipment and employee usage for the facility construction of one well. Criteria pollutant emissions were estimated using the calculated emissions for the construction of one well site and two wells per site (Table 3.4.3-5 based on the equipment usage and employee counts summarized in Table 3.4.3-2 through 3.4.3-4 (Quad Knopf, Inc., 2025a).

Table 3.4.3-2
BV Hills 4 Equipment Used During Site Preparation Phase for one (1) Well Site with two (2) Wells

Onsite Equipment	Number	Horsepower	Days of Operation	Hours Operation Daily	Total Phase Operating Hours	Ratioed Daily Operating Hours (9 days)
Grader (140H)	1	185	2	8	16	1.45
Front Loader (966H)	1	286	5	8	40	3.64

Onsite Equipment	Number	Horsepower	Days of Operation	Hours Operation Daily	Total Phase Operating Hours	Ratioed Daily Operating Hours (9 days)
Excavator (Cat 225)	1	135	4	8	32	2.91
Water Truck	1	300	5	8	40	3.64
Mobile Sources	**Number**	**Roundtrip Distance**	**Duration (days)**	**One-way Trips**	**Total Miles Driven**	**Ratioed Miles per Trip**
Passenger Car/Pickup Trucks Roundtrips	8	100 miles	11	16	8,800	50
Heavy Truck/Semi	1	100 miles	1	2	100	4.55

Source: Appendix C

Table 3.4.3-3
BV Hills 4 Equipment Usage for Drilling Phase per Well

Onsite Equipment	Number	Horsepower	Days of Operation	Hours Operation Daily	Total Phase Operating Hours	Ratioed Daily Operating Hours (8 days)
Forklift	1	300	18	4	72	4.00
Drill Rig Generator Motor #1 (Tier 4)	1	1,354	18	15.3	275.4	15.30
Drill Rig Generator Motor #2 (Tier 4)	1	1,354	18	17.9	322.2	17.90
Drill Rig Generator Motor #3 (Tier 4)	1	1,354	18	12	216	12.00
Small Generators (Cummings QSB-G3)	1	145	2	4	8	0.44

Onsite Equipment	Number	Horsepower	Days of Operation	Hours Operation Daily	Total Phase Operating Hours	Ratioed Daily Operating Hours (8 days)
Small Generators (light tower)	2	12	18	12	216	6.00
Water Truck	1	300	18	8	144	8.00
Vacuum Truck	1	300	18	24	432	24.00
Mobile Sources	**Number**	**Roundtrip Distance**	**Duration (days)**	**One-way Trips**	**Total Miles Driven**	**Ratioed Miles per Trip (8 days)**
Passenger Cars/Pickup Trucks (Light Duty)	6	100 miles/day	18	12	10,800	50.00
Heavy Duty Trucks (Normal Operations)	2	80 miles/day	18	4	2,880	40.00
Heavy Duty Trucks (24 hr Operations)	1	100 miles/day	19	2	1,900	52.78
Heavy Duty Trucks (Mobilization and Demobilization of Equipment	2	100 miles/day	1	4	200	2.78

Source: Appendix C

Table 3.4.3-4
Equipment Used for Facilities Construction Phase Per Well Site (All Wells)

Onsite Equipment	Number	Horsepower	Days of Operation	Hours Operation Daily	Total Phase Operating Hours	Ratioed Daily Operating Hours (5 days)
Backhoe	1	74	5	8	40	8.00
Water Trailer	2	6	5	1	5	0.50
Welding Machine	1	23	1	8	8	1.60
Mobile Sources	**Number**	**Roundtrip Distance**	**Duration (days)**	**One-Way trips**	**Total Miles Driven**	**Ratioed Miles per Trip (5 days)**
Passenger Car/Pickup Truck Roundtrips (electrical crew)	2	13 miles	3	4	78	3.90
Heavy Truck/Semi (electrical crew)	1	13 miles	3	2	78	7.80
Passenger Car/Pickup Trucks Roundtrips (mechanical crew)	3	13 miles	5	6	195	6.50
Heavy Truck/Semi (mechanical crew)	1	13 miles	2	2	26	2.60

Source: Appendix C

Table 3.4.3-5
BV Hills 4 Criteria Pollutant Emissions Rates – Construction

Regulated Pollutant	*SJVAPCD Criteria Pollutant Thresholds of Significance* for Construction(tons/year)	Per Well Emission Estimate (tons)	Emission Estimate Project (tons)
ROG	10	0.05	0.19
NOx	10	1.48	5.92
CO	100	1.72	6.88
Sox	27	<0.005	0.01

Regulated Pollutant	*SJVAPCD Criteria Pollutant Thresholds of Significance* for Construction(tons/year)	Per Well Emission Estimate (tons)	Emission Estimate Project (tons)
PM10	15	0.03	0.11
PM2.5 (Direct emissions, SO2, NOx, VOC, or ammonia)	15	0.02	0.08

Source: Appendix C

Using the data provided in Appendix C and shown in Table 3.4.3-4, the per well emission estimates were multiplied by the number of wells associated with the Project. Therefore, the per well estimate was multiplied by four wells associated with the BV Hills 4 Project.

BV Hills 6

Construction of BV Hills 6 would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, dust emissions, and combustion pollutants from onsite construction equipment and from water trucks and offsite trucks hauling construction materials to and from the BV hills 6 Project site. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. Fugitive dust emissions would primarily result from grading and site preparation activities. NOx and CO emissions would primarily result from the use of construction equipment and motor vehicles. Table 3.4.3-6 depicts the type, number, and estimated operational duration of equipment used during construction activities and the number of employees related to these BV Hills 6 construction activities. Table 3.4.3-7 depicts equipment usage and employees for the drilling phase of one well. Table 3.4.3-8 indicates the equipment and employee usage for the facility construction of one well. Criteria pollutant emissions were estimated using the calculated emissions for the construction of one well site and one well (Table 3.4.3-8) based on the equipment usage and employee counts summarized in Table 3.4.3-6 through 3.4.3-8 (Quad Knopf, Inc., 2025a).

Table 3.4.3-6
BV Hills 6 Equipment Usage for Drilling Phase per Well

Onsite Equipment	Number	Horsepower	Days of Operation	Hours Operation Daily	Total Phase Operating Hours	Ratioed Daily Operating Hours (9 days)
Grader (140H)	1	185	2	8	16	1.78
Front Loader (966H)	1	286	5	8	40	4.44
Excavator (Cat 225)	1	135	2	8	16	1.78
Water Truck	1	300	5	8	40	4.44
Mobile Sources	**Number**	**Roundtrip Distance**	**Duration (days)**	**One-way Trips**	**Total Miles Driven**	**Ratioed Miles per Trip (9 days)**
Passenger Car/Pickup Truck Roundtrips	8	100 miles	9	4	1,800	50
Heavy Truck/Semi	1	100 miles	1	2	100	5.56

Source: Appendix C

Table 3.4.3-7
BV Hills 6 Equipment Usage for Drilling Phase per Well

Onsite Equipment	Number	Horsepower	Days of Operation	Hours Operation Daily	Total Phase Operating Hours	Ratioed Daily Operating Hours (8 days)
Forklift	1	300	7	4	28	3.50
Drill Rig Generator Motor #1 (Tier 4)	1	1,354	7	15.3	107.1	13.39
Drill Rig Generator	1	1,354	7	17.9	125.3	15.66

Motor #2 (Tier 4)						
Drill Rig Generator Motor #3 (Tier 4)	1	1,354	7	12	84	10.50
Small Generators (Cummings QSB-G3)	1	145	2	4	8	1.00
Small Generators (light tower)	2	12	7	12	84	5.25
Water Truck	1	300	7	8	56	7.00
Vacuum Truck	1	300	8	24	192	24.00
Mobile Sources	**Number**	**Roundtrip Distance**	**Duration (days)**	**One-way trips**	**Total Miles Driven**	**Ratioed Miles per Trip (8 days)**
Passenger Car/Pickup Trucks	6	100 miles/day	7	12	9,000	93.75
Heavy Duty Trucks (Normal Operation)	2	80 miles/day	7	4	2,400	75.00
Heavy Duty Trucks (24 hr Operations)	1	100 miles/day	8	2	1,300	81.25
Heavy Duty Trucks (Mobilization and Demobilization of Equipment)	2	100 miles/day	1	4	200	6.25

Source: Appendix C

Table 3.4.3-8
Equipment Used for Facilities Construction Phase Per Well Site (All Wells)

Onsite Equipment	Number	Horsepower	Days of Operation	Hours Operation Daily	Total Phase Operating Hours	Ratioed Daily Operating Hours (5 days)
Backhoe	1	74	5	8	40	8.00
Water Trailer	2	6	5	1	5	0.50
Welding Machine	1	23	1	8	8	1.60
Mobile Sources	**Number**	**Roundtrip Distance**	**Duration (days)**	**One-way trips**	**Total Miles Driven**	**Ratioed Miles per Trip (5 days)**
Passenger Car/Pickup Truck Roundtrips (electrical crew)	2	13 miles	3	4	78	3.90
Heavy Truck/Semi (electrical crew)	1	13 miles	3	2	78	7.80
Passenger Car/Pickup Truck Roundtrips (mechanical crew)	3	13 miles	5	6	195	6.50
Heavy Truck/Semi (mechanical crew)	1	13 miles	2	2	26	2.60

Source: Appendix C

Table 3.4.3-9
BV Hills 6 Criteria Pollutant Emission Rates - Construction

Regulated Pollutant	*SJVAPCD Criteria Pollutant Thresholds of Significance for Construction* (tons/year)	Per Well Emission Estimate (tons)	Emission Estimate Project (tons)
ROG	10	0.02	0.04
NOx	10	0.60	1.21
CO	100	0.69	1.38
Sox	27	<0.005	<0.005
PM10	100	0.01	0.03
PM2.5 (Direct emissions, SO2, NOx, VOC, or ammonia)	100	0.01	0.02

Source: Appendix C

Using the data provided in Appendix C and shown in Table 3.4.3-9, the per well emission estimates were multiplied by the number of wells associated with the Project. Therefore, the per well estimate was multiplied by two wells associated with the BV Hills 6 Project.

The total annual emissions from both BV Hills 4 and 6 construction phases are summarized in Table 3.4.3-10 below and is anticipated to be less than the applicable SJVAPCD emission thresholds for criteria pollutants. Therefore, temporary construction emissions associated with the Project are considered less than significant.

Table 3.4.3-10
Total Criteria Pollutant Emissions Rates for Construction

	ROG (tons/yr)	NOx (tons/yr)	CO (tons/yr)	SOx (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$(tons/yr)
BV Hills 4	0.19	5.92	6.88	0.01	0.11	0.08
BV Hills 6	0.04	1.21	1.38	<0.005	0.03	0.02
Project Totals	0.23	7.13	8.26	0.01	0.14	0.10
SJVAPCD Threshold	10	10	100	27	15	15

	ROG (tons/yr)	NOx (tons/yr)	CO (tons/yr)	SOx (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$(tons/yr)
Is Threshold Exceeded?	No	No	No	No	No	No

Long-Term Impacts

A producing well will result in operational emissions that have the potential to cumulatively contribute to the possible violation of an existing air quality standard or an existing or projected air quality violation. Sources of operational emissions include fugitive emissions from the well, some storage tanks, piping, separators, and loading racks, and point source emissions from the emergency flare. Note that in an emergency, excess gaseous well emissions will be routed to the emergency flare. Indirect operational emissions include vehicle trips associated with employees and contractors needed to operate and maintain the oil production operation.

Rule 2201 requires that BACT be used to minimize emissions before a permit is issued (RR-AQ-1). This rule further requires that emissions above certain annual thresholds must be offset. The threshold for offsets is 20,000 lbs/yr for NOx and VOCs and 29,200 lbs/yr for PM_{10}. Collectively, the use of BACT and emission offset requirement effectively limits emissions from producing wells to the maximum extent possible. This determination is confirmed by the finding that SJVAPCD regulations either exempt the action as having emissions below applicability thresholds or impose controls sufficient to maintain compliance with Air Quality standards. Additionally, engines and generators used during implementation of the proposed Project will be registered under the CARB Portable Engine Registration Program. This program was implemented in March 1997 and was reviewed and approved under CEQA prior to implementation. The program was revised in December 1998, February 2004, and February 2011. All engines used shall be maintained in compliance with the EPA and the CARB engine standards. SJVAPCD Rule 2280 Portable Equipment Registration (RR-AQ-2) for certain portable emissions units shall be required for well drilling, service, or work-over rigs, pumps, compressors, generators, and field flares.

Fugitive emissions are subject to the following regulatory compliance standards:

- Compliance with its Title V (Federal Major Source) permit for the Buena Vista Hills Oilfield, which incorporates requirements for compliance with federal, State, and SJVAPCD rules and regulations, including:
  - Performance standards and facility-wide requirements regarding inspection and maintenance of components to detect and minimize potential leaks of Reactive Organic Gases (ROG), VOCs and GHGs (RR-AQ-6).

Fugitive emissions resulting from existing equipment are not expected to increase, given that the processing equipment in these fields are closed systems under vapor control. Emissions would change if an increase in infrastructure (tanks and vessels) increased the number of fugitive components associated with equipment. The Project does not propose additional storage or processing equipment. Table 3.4.3-11 below depicts the equipment type and estimated VOC emissions generated per well. The Project is anticipated to generate approximately 11.41 lbs/yr of VOC emissions per well. As noted, the equipment is under permit and in compliance with SJVAPCD rules and regulations. Tank production throughputs are not limited on SJVAPCD permit. VOC emissions for the associated permits are limited by tank vapor recovery (TVR) efficiency irrespective of the number of wells or production throughput. All Buena Vista Hills light oil tank facilities are regulated under SJVPACD Rule 4623 (Storage of Organic Liquids) and have appropriate and permitted TVR systems (RR-AQ-4).

Compliance with Rule 4409 (Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities), which applies to components at light crude oil production facilities, limits the ROG emissions by establishing the requirements for an inspection and maintenance program to detect and repair leaks discovered at aboveground components on wells and their associated systems (RR-AQ-3).

Table 3.4.3-11
Estimated Fugitive Emission Rates

Equipment Type	Component Count	*VOC Emissions (lbs/day)*
Valves	24	0.00
Pump Seals	0	0.00
Other	9	0.02
Connectors	71	0.01
Flanges	12	0.00
Open-ended Lines	0	0.00
Total VOC Emissions		0.03 lbs/day / 11.41 lbs/yr

Source: Appendix C

CREH will be required to comply with applicable SJVAPCD rules and regulations. Applicable rules and regulations established by the SJVPACD and discussed in

Section #3.4.3a require the review and permit of emission-producing equipment and indirect emission sources to ensure less than significant impacts on air quality.

Emissions from long-term operations generally represent a Project's most substantial air quality impact. However, the proposed wells are anticipated to be powered electrically and would not result in direct criteria pollutant generation. Mobile sources, including maintenance trips, will occur on a scheduled basis and would not generate criteria pollutants in excess of SJVAPCD thresholds of significance. Table 3.4.3-12 provides a summary of equipment used during workovers per well site related to operation of the Project and Table 3.4.3-13 provides a summary of equipment used during maintenance of a well site.

Table 3.4.3-12
Equipment Used During Workovers per Well Site

Onsite Equipment	Number	Days of Operation	Daily Operating Hours	Total Workover Operating Hours	Ratioed Daily Operating Hours
Production Rig	1	7	10	70	10
Mud Pump	1	7	4	28	4
Vacuum Truck	1	7	6	42	6
Power Swivel	1	4	4	16	2.29
Accumulator Trailer	1	7	1	7	1
Bulk Truck	1	1	4	4	0.58
Cement Pump	1	1	4	4	0.58
Mobile Sources	**Number**	**Days of Operation**	**One-way Trips**	**Total Workover Miles**	**Ratioed Miles per Trip**
Pickup Truck	1	7	2	490	35
Heavy Duty Truck	1	7	2	70	5

Source: Appendix C

Table 3.4.3-13
Equipment Used During Maintenance per Well Site

On site equipment	Number	Days of Operation	Daily Operating Hours	Total Annual Operating Hours	Ratioed Daily Operating Hours (4 days)
Small Bobcat Tractor	1	4	4	16	4
Backhoe	1	4	4	16	4
Mobile Sources	**Number**	**One-way Trips**	**Days of Operation**	**Total Annual Miles**	**Ratioed Miles per Trip (4 days)**
Pickup Truck	1	2	4	280	35

Source: Appendix C

Table 3.4.3-14 below summarizes the Project's operational criteria pollutant emission rates resulting from operation and maintenance. Operation and maintenance activities include monthly inspection and servicing of wells and pipelines. These activities typically include offsite travel on paved and unpaved oilfield roads to conduct field operations and maintenance activities.

As noted in Table 3.4.3-14 the per well emission estimates were multiplied by the number of wells associated with the Project. Therefore, the per well estimate was multiplied by six wells associated with both BV Hills 4 and 6 Project and is reflected in Table 3.4.3-14. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants. Therefore, operational emissions associated with the Project are considered less than significant.

The Project will develop six new oil and gas wells within an existing oilfield. As such, the direct and indirect air emissions from the proposed Project are considered minimal at the local scale, and impacts would be inconsequential at the regional and global scale due to the small scale of the Project.

Table 3.4.3-14
BV Hills 4 and 6 Criteria Pollutant Emissions Rates – Annual Operations

Regulated Pollutant	SJVAPCD Threshold of Significance (tons/year)	Workovers Emission Estimate for Project (tons/year)	Maintenance Emission Estimate for Project (tons/year)
ROG	10	0.03	<0.005
NOx	10	0.21	0.01
PM_{10}	100	0.22	0.06
$PM_{2.5}$ (Direct emissions, SO_2, NOx, VOC, or Ammonia)	100	0.03	0.01
CO	100	0.24	0.02
SOx	100	<0.005	<0.005
Fugitive Emissions	N/A	0.005	

Source: Appendix C

Project operation includes oil production and future plugging and abandonment of wells if they are no longer productive. During well plugging and abandonment, the associated equipment and facilities would be disassembled, salvaged, and stored; rehabilitation of the site would follow if there were no other wells around a particular well pad. Production and plugging and abandonment activities would be infrequent and would require fewer hours of heavy equipment operation and fewer heavy-duty haul truck trips and worker trips; therefore, this activity would not result in an increase in construction activity intensity compared to what is anticipated for Buena Vista Hills implementation.

For these reasons, the operation of the Project would not generate pollutant emissions that would exceed the SJVAPCD significance thresholds for annual emissions of criteria pollutants. Therefore, the proposed Project would have a less than significant operations-related air quality impact. Thus, with implementation of appropriate Project BMPs as required by the KCGP and the SJVAPCD (RR-AQ-3 to RR-AQ-5), there would be no significant cumulative increase of any criteria pollutant, and impacts would be considered less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.3c – Would the Project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses with the greatest potential to attract these sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities.

The SJVAPCD adopted the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) and it recommends that lead agencies consider situations wherein a new or modified source of toxic air contaminants (TAC) is proposed for a location near an existing residential area or other sensitive receptors when evaluating potential impacts related to TACs. A Health Screening Assessment (HSA) was prepared for the Project to determine if a full Health Risk Assessment (HRA) for the Project's health risk is necessary. The prioritization score is calculated based on the potency, toxicity, quantity, and volume of hazardous materials released from a facility, as well as the proximity of the facility to potential receptors. The HSA is attached as Appendix C. A projects priority status is determined using the prioritization thresholds as follows:

- Low Priority: Less than or equal to 1
- Intermediate Priority: More than 1 but less than or equal to 10
- High Priority: More than 10

The HSA, based on criteria pollutant emissions found that the Project would release toxic emissions from the burning of diesel fuel and fugitive volatile organic compound emissions from the wells. Each well site received its own prioritization score based on TAC emissions and its distance to the nearest receptor. Although some well sites have different receptors for the maximum prioritization scores, all the scores are added together to determine an overall Project prioritization score. The prioritization scores are listed in Table 3.4.3-15 below.

Table 3.4.3-15
Prioritization Scores

Well ID	Short-Term Prioritization Score	Long-Term Prioritization Score	Max Prioritization Score
BV Hills 4			
603H-1-6D	1.62E-01	6.29E-01	7.91E-01
658UH-36-6D	1.62E-01	6.29E-01	7.91E-01
674UH-6-8D	5.39E-02	2.03E-01	2.57E-01
675H-6-8D	5.39E-02	2.03E-01	2.57E-01
BV Hills 6			
616-12D	5.39E-02	8.64E-02	1.40E-01
4-5H-6D	1.62E-01	2.59E-01	4.21E-01
Project Total	**6.47E-01**	**2.01E+00**	**2.66E+00**

Source: Appendix C

Each individual well site has a prioritization score of less than 1.0, which is categorized as a low priority. However, combined together the Project's prioritization score is 2.66, which is categorized as an intermediate priority. The majority of risk generated by this Project is from short-term emission impacts. Once the short-term related activities of site preparation, drilling and construction are complete, the Project's operational score is below 1.0 and is considered a low priority. Based on the conservative analysis approach used to determine TAC emissions and by combining prioritization scores from different receptors, which is accepted by the SJVAPCD, it is determined that the Project has a **less than significant impact** as it relates to health risk and an HRA is not warranted. From a health risk perspective, the proposed Project is not located within an area that would place sensitive receptors in the vicinity of existing sources, as the Project is located in southwestern Kern County, with the nearest sensitive receptor (residences) at least one mile away from either of the proposed Buena Vista Hills well sites.

Moreover, the implementation of appropriate Project BMPs and compliance with the goals, policies, and implementation measures of the KCGP, applicable AQPs, and existing permits further support that any impacts of the proposed Project on sensitive receptors would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.3d – Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

Generators – Projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate.

The Project will potentially generate odorous emissions. However, as analyzed under Impact #3.4.3a through c, emissions as a result of the Project were identified as producing less than significant impacts, and the nearest sensitive receptors are located more than a mile from the nearest well site for BV Hills 4 and 6. SJVAPCD GAMAQI screening levels for odor sources include a distance of one to two miles (based on use) from potential odor sources. As noted, the nearest sensitive receptor to the closest Project site is located approximately one mile away, the proposed use does not did not require further review under SJVAPCD screening levels related to odors. Therefore, it is determined that the odors generated from the development because of additional vehicles would also be considered a **less than significant impact**.

Receivers – Residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

Construction of the proposed Project would use typical construction techniques in compliance with SJVAPCD rules and regulations, which would also minimize odors. There are no residences located in close proximity to any of the BV Hills 4 or 6 Project sites. Any odors associated with construction activities are not anticipated to affect persons offsite. The Project operator maintains logs and odor complaints for the currently existing oil field operations. To date, no odor-related complaints have been received. Additionally, an existing Odor Complaint Management Plan for the oil field includes procedures established in the event that a complaint is received. If an odor complaint is received, an inspection of the area is conducted. If an odor cannot be confirmed by the operator, the complainant is directed to the SJVAPCD to log a complaint through the SJVAPCD complaint process. Therefore, impacts associated with odors during construction would be considered **less than significant.**

Based on the assessment above, the Project will not generate potential odorous emissions or attract receivers and other sensitive receptors near existing odor sources. Therefore, impacts are **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

3.4.4 - BIOLOGICAL RESOURCES

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

Literature Search

A database search of the CDFW California Natural Diversity Database (California Department of Fish and Wildlife, 2022) was conducted to identify reported historical occurrences of special-status plant and wildlife species and sensitive natural communities within the Taft USGS 7.5-minute topographic quadrangle, which encompasses both BV Hills 4 and 6, and the eight surrounding quadrangles: East Elk Hills, Tupman, West Elk Hills, Elkhorn Hills, Pentland, Mouth of Kern, Fellows, and Maricopa.

Results of the CNDDB query provided background information for evaluation of the potential for the occurrence of special-status plant and wildlife species within or near the Project site. The online edition of the Inventory of Rare and Endangered Plants, produced by the California Native Plant Society (Calflora, 2022), was also reviewed to provide information for rare plants anticipated to occur in the nine quadrangles. In addition, a species list was obtained from the USFWS website for special-status species potentially occurring within the Project site and the surrounding area. Literature searches included a review of QK company project files from previous projects in the vicinity of the Project sites. Information on the potential presence of wetlands and waters was obtained from the National Wetlands Inventory (NWI), National Hydrography Database (NHD), and Federal Emergency Management Agency (FEMA). Information regarding the presence of Critical Habitat in the Project vicinity was obtained from the United States Fish and Wildlife Service's Critical Habitat Mapper database. The results of the database inquiries were subsequently reviewed to evaluate the potential for occurrence of special-status species and other sensitive biological resources known to occur on or near the Project site prior to conducting the biological survey.

Field Surveys

The Project is located in the region known as Buena Vista Hills, Kern County, California (see Figure 3.4.4-1). A reconnaissance survey was conducted on the Project site and a 250-foot buffer, where feasible, also called the Biological Survey Area (BSA). The BSA included the well pad sites, pipeline routes, and new power pole placement sites (see Figure 3.4.4-2, 3.4.4-3, 3.4.4-4, and 3.4.4-5). The survey for BV Hills 4 was conducted by qualified biologists on July 20 and 22, 2022. The survey for BV Hills 6 sites was conducted on October 30, 2022.

The surveys consisted of walking meandering pedestrian transects through the BSA to achieve 100 percent visual coverage of the Project site and to identify existing plant communities and any sensitive habitats, the presence and potential for occurrence of special-status plant and wildlife species, and to identify any other sensitive biological resources within the BSA. Locations of sensitive biological

resources were documented using the ArcGIS Collector application installed on an iPad. Photographs were taken to document the existing landscape and sensitive biological resources. Detailed notes of observed plant and wildlife species and site conditions were taken and recorded while conducting the survey.

The impact analysis in this section is also based in part on the Sensitive Species Review Form (SSRF) prepared by CRPC under the BLM Oil and Gas Programmatic Biological Opinion (BO 1-1-01-F-0063), which is included in Appendix C. The mitigation measures outlined in the analysis below are consistent with those measures as identified in the BO 1-1-01-F-0063.

Environmental Setting

This IS/MND considers BV Hills 4 and BV Hills 6 separately in evaluating the proposed Project's potential impacts to sensitive biological resources. BV Hills 4 and 6 Project areas are moderately disturbed with ongoing oilfield exploration and extraction operations, roadways, and infrastructure. There are scattered areas with saltbush scrub and non-native grassland habitat, but substantial portions of the Project footprint are devoid of vegetation (see representative photos 1-12 below).

BV Hills 4

The BV Hills 4 Project proposes four new wells and associated infrastructure. Two new wells, 603H-1-6D and 658UH-36-6D, are located west of Airport Road and north of Honolulu Road (Figure 3.4.4-2). Two new wells, 674UH-6-8D and 675H-6-8D are located east of Airport Road and south of Honolulu Road (Figure 3.4.4-3). The four wells will be located on existing well pads. The well pads are devoid of vegetation and contain areas of established access roads and oilfield infrastructure. The well pad locations are generally flat, and the surrounding topography contains rolling hills and moderately steep slopes with elevations ranging from 830 to 1,055 feet above mean sea level (msl). Fragments of moderate vegetative cover of allscale (*Atriplex polycarpa*) saltbush scrub habitat are outside of and adjacent to the well pads. The surrounding area is characterized by oilfield infrastructure interspersed with saltbush scrub and non-native grassland habitat. The associated proposed pipeline routes are located either on existing pipeline corridors or existing road shoulders. Table 3.4.4-1 lists the amount of anticipated new disturbance at each existing well site.

Table 3.4.4-1
Proposed Well Site Disturbance

Well Site	New Permanent Disturbance (Acres)
674UH-6-8D	0.217
675H-6-8D	0.013
603H-1-6D	0.05
658UH-36-6D	0.796

674UH-6-8D:

Well will be located on an existing, previously disturbed well pad located on federal surface; new disturbance of 0.101 acres (4,400 square feet) is anticipated for the well pad expansion. One new power pole and one new bank pole will be installed. The bank pole will be placed in the previously disturbed well pad. An associated new 4-inch fluids pipeline and new 4-inch gas line will be installed, (2,000-feet each; 4,000-feet total) and will be placed on sleepers within an existing pipeline route and roadways to the 1A-9D Tank Setting located in Sec 9D, T32S, R24E. Approximately 800 feet of each pipeline and gas line (1,600-feet total) will be located on federal surface. The total new disturbance for the placement of pipelines will be approximately 0.116 acres of permanent disturbance. No temporary off-road travel will be required to install the associated ancillary facilities; the pipelines will be pulled or pushed into place. Existing bluelines within 100 ft of the proposed project areas will be avoided or spanned over at established pipeline crossing points.

675H-6-8D:

Well will be located on existing, previously disturbed well pad located on federal surface; no new disturbance is anticipated for the well pad. One new bank pole will be installed on the previously disturbed well pad. An associated new 4-inch fluids pipeline and new 4-inch gas line will be installed, (1,600-feet each; 3,200-feet total) and will be placed on sleepers within an existing pipeline route and roadways to the 1A-9D Tank Setting located in Sec 9D, T32S, R24E. Approximately 500 feet of each pipeline and gas line (1,000-feet total) will be located on the federal surface. The total new disturbance for the placement of pipelines will be approximately 0.013 acres of permanent disturbance. No temporary off-road travel will be required to install the associated ancillary facilities; the pipelines will be pulled or pushed into place. Existing bluelines within 100 ft of the proposed project areas will be avoided or spanned over at established pipeline crossing points.

Total permanent habitat disturbance for wells 674UH-6-8D and 675H-6-8D, including well pad expansion and ancillary facilities, is 0.230 acres.

603H-1-6D:

Well will be located on existing, previously disturbed multi-well pad located on federal surface; 0.040 acre will require disturbance of regrowth vegetation for areas that were previously disturbed in 2012. One new service pole will be installed on the existing well pad. An associated new 4-inch production pipeline and new 4-inch gas line will be installed, (2,200-feet each; 4,400- feet total) and will be placed on sleepers (every 20 ft) within an existing pipeline corridor and along existing roadways to the 4A-6D Tank Setting located in Sec 6D, T32S, R24E. The total new disturbance for the placement of pipelines will be approximately 0.010 acres of permanent disturbance. No temporary off-road travel will be required to install the associated ancillary facilities; the pipelines will be pulled or pushed into place. Existing bluelines within 100 ft of the proposed project areas will be avoided or spanned over at established pipeline crossing points.

658UH-36-6D:

Well will be located on existing, previously disturbed multi-well pad located on federal surface; new disturbance of 0.728 acres is anticipated for well pad expansion (sump). A new access road 90 ft by 25 ft will also be required (0.052 acre of disturbance). One new service pole will be installed and placed within the existing well pad. An associated new 4-inch production pipeline and new 4-inch gas line will be installed, (1,800-feet each; 3,600-feet total) and will be placed on sleepers (every 20 ft) within an existing pipeline corridor and along existing roadways to the existing 4A-6D Tank Setting located in Sec 6D, T32S, R24E. The total new disturbance for the placement of pipelines will be approximately 0.016 acres of permanent disturbance. No temporary off-road travel will be required to install the associated ancillary facilities; the pipelines will be pulled or pushed into place. Existing bluelines within 100 ft of the proposed project areas will be avoided or spanned over at established pipeline crossing points.

Total permanent habitat disturbance for wells 603H-1-6D and 658UH-36-6D, including well pad expansion and ancillary facilities, is 0.846 acres.

A full inventory of plant and wildlife species observed sites associated with BV Hills 4 during site surveys are provided in Table 3.4.4-2 below. Five observations of (*Ammospermophilus nelsoni*; SJAS) were recorded during the previous and site-specific surveys in the vicinity, within habitat fragments near well sites 674UH-6-8D, and 675H-6-8D, and along proposed pipeline routes (see Figures 3.4.4-2 and 3.4.4-3). Several small mammal burrows, potentially kangaroo rat species, were observed in the habitat fragments within the BSA. A few small mammal burrows

were observed within the 674UH-6-8D western well pad boundary (see Figure 3.4.4-4). No other small mammal burrows were observed within the other well pad locations. Two inactive stick nests were observed on an existing oilfield structure adjacent to 658UH-36-6D and 603H-1-6D well pads (see Figure 3.4.4-3). No potential San Joaquin kit fox (*Vulpes macrotis mutica*; SJKF) dens or burrowing owl (*Athene cunicularia*, WEBO) burrows were observed during the site surveys at any of the well pad sites.

Table 3.4.4-2
Plant and Wildlife Species Observed During Site Survey
Buena Vista Hills 4, Kern County, California

Scientific Name	Common Name	Status
Plant		
Amsinckia sp.	Fiddleneck	Native
Atriplex polycarpa	Allscale	Native
Brassica nigra	black mustard	Introduced; Cal-IPC: Moderate
Bromus rubens	red brome	Introduced; Cal-IPC: High
Erodium cicutarium	red stemmed filaree	Introduced; Cal-IPC: Limited
Salsola tragus	Russian thistle	Introduced; Cal-IPC: Limited
Wildlife		
Ammospermophilus nelsoni	San Joaquin antelope squirrel	Native - ST
Canis latrans	Coyote	Native
Corvus brachyrhynchos	American crow	Native
Lepus californicus	Black-tailed jackrabbit	Native
Uta stansburiana	side-blotched lizard	Native

* Indicates only sign (e.g., dens or burrows, scat, prey remains, tracks) of the species was observed.
ST: State Threatened; FE: Federally Endangered

Cal-IPC: California Invasive Plant Council
Rating system: High = several ecological impacts; Moderate = substantial but not severe ecological impacts; Limited = minor ecological impacts or not enough information to justify higher score.

BV Hills 6

Two new wells are associated with BV Hills 6. Well, 4-5H-6D, is located southeast of the intersection of Midway Road and Harrison Street and east of SR 119 (SR 119; Figure 3.4.4-4). The second well, 616-12D, is located north of Lake Station Road and east of SR 119 (Figure 3.4.4-5). Well 4-5H-6D is located on an existing well pad that contains areas of established access roads and oilfield infrastructure. The well pad contains small patches of non-native grasses and a few scattered shrubs but is predominantly devoid of vegetation. Fragments of moderate vegetative cover of allscale (*Atriplex polycarpa*) saltbush scrub habitat is outside of and adjacent to the well pad. Well 616-12D is located within an area partially enclosed by wildlife exclusionary fencing. Habitat within the enclosure and surrounding area is relatively undisturbed and consists of contiguous herbaceous vegetation with varying cover of moderately dense to sparse valley saltbush scrub.

The associated proposed pipeline routes are predominantly located either on existing pipeline corridors or existing road shoulders. The surrounding area is characterized by oilfield infrastructure interspersed with saltbush scrub and non-native grassland habitat. The well pad locations are generally flat, and the surrounding topography contains rolling hills and moderately steep slopes with elevations ranging from 520 to 860 feet above msl. Table 3.4.4-3 lists the amount of anticipated new disturbance at each existing well site.

Table 3.4.4-3
Proposed Well Site Disturbance

Well Site	New Permanent Disturbance (Acres)
4-5H-6D	0.742
616-12D	2.61

4-5H-6D:

CRPC proposed to drill new well 4-5H-6D and install the proposed associated ancillary facilities for the well in the Buena Vista Field, Kern County, CA. Expansion of an existing well pad will be required to accommodate drilling operations. Approximately 0.742 acres of permanent habitat disturbance will result from this expansion. Power will include a wreck out reroute of an existing line and the installation of a service pole and anchor. No habitat disturbance is anticipated for power installation. Approximately 2,000-ft of 3-inch pipeline will

be installed along an existing pipeline R.O.W and dirt roadway to the 3-6D header. No habitat disturbance is anticipated for flowline installation.

616-12D:

The proposed well has been renamed and is the previously approved 645H-12D well that CREH did not drill prior to the expiration of the CalGEM NOI. The project was reviewed and approved by the BLM under: DOI-BLM-CA-C060-2019-0108-EA, Programmatic Project #68. CREH is requesting review and approval of the proposed project based on compliance with the original EA and Programmatic project approval. The proposed project has been updated to reduce the disturbance associated with the pipeline and has adjusted the well pad that will still be limited to the original project area within the area enclose by the exclusionary fencing. Updated project details: total well pad footprint will be: 3.26 acres including 0.65 acres in pre-disturbed areas and 2.61 acres will be new disturbance. Nine power poles will be required, 4 of which will occur on the new well pad. Four production pipelines will be required, all of which will occur on the new well pad and connect to the existing production pipelines located immediately adjacent to the existing access road. The production pipelines will consist of two 6-inch steel production pipelines, one 4-inch gas steel pipeline; and one 3-inch oil production pipeline. Also added to the well pad, will be one header for future oil and gas field development, one pooling tank; and a pump pad to assist with the transportation for production gas and fluids downstream.

A full inventory of plant and wildlife species observed at the BV Hills 6 sites during the site survey is provided in Table 3.4.4-2 below. Eleven observations of SJAS were recorded from previous and site surveys in the vicinity, within habitat fragments near well sites 674UH-6-8D, and 675H-6-8D, and along proposed pipeline routes (see Figures 3.4.4-4 and 3.4.4-5). Several small mammal burrows, that could potentially support kangaroo rat species, SJAS and blunt-nosed leopard lizard species, were observed in the habitat fragments within the BSA and within the existing wildlife exclusionary fence at well pad 616-12D. The exclusion fence surrounding 616-12D is currently open to allow for ingress and egress of any wildlife located within the Project area. One potential SJKF den was observed within the BSA during the site survey of well 616-12D. No small mammal burrows or potential SJKF dens were observed within the existing well pad location of well 4-5H-6D.

Table 3.4.4-4
Plant and Wildlife Species Observed During Site Survey
Buena Vista Hills 6, Kern County, California

Scientific Name	Common Name	Status
Plant		
Ambrosia salsola	Burrobush	Native
Amsinckia sp.	Fiddleneck	Native
Astragalus sp.	Milkvetch	Native
Atriplex polycarpa	Allscale	Native
Avena fatua	Wild oat	Native
Brassica nigra	black mustard	Introduced; Cal-IPC: Moderate
Bromus rubens	red brome	Introduced; Cal-IPC: High
Cleome isomeris	bladder pod	Native
Croton setiger	turkey-mullein	Native
Eriogonum sp.	Buckwheat	Native
Erodium cicutarium	red stemmed filaree	Introduced; Cal-IPC: Limited
Lepidium sp.	Peppergrass	Native
Schismus sp.	Mediterranean grass	Introduced; Cal-IPC: Limited
Wildlife		
Ammospermophilus nelsoni	San Joaquin antelope squirrel	Native - ST
Buteo jamaicensis	red-tailed hawk	Native
Canis latrans	Coyote	Native
Corvus corax	common raven	Native
Dipodomys sp.	kangaroo rat*	Native
Eremophila alpestris	horned lark	Native
Lepus californicus	black-tailed jackrabbit	Native
Uta stansburiana	side-blotched lizard	Native
Vulpes macrotis mutica*	San Joaquin kit fox	Native – ST and FE
Zenaida macroura	mourning dove	Native

* Indicates only sign (e.g., dens or burrows, scat, prey remains, tracks) of the species was observed.
ST: State Threatened; FE: Federally Endangered
Cal-IPC: California Invasive Plant Council
Rating system: High = several ecological impacts; Moderate = substantial but not severe ecological impacts; Limited = minor ecological impacts or not enough information to justify higher score.

BLM Permit Conditions of Approval

The BLM Conditions of Approval included in the NEPA Documents apply to the project and help reduce potential impacts. Those specific to biological resources are listed here as context for the mitigation measures for biological resources. These BLM COAs are also in Table 2.1 and in the MMRP as regulatory requirements (RR-BIO-1 to RR-BIO-4). Mitigation measures described in this document are in addition to compliance with the BLM COAs and other RRs.

- RR-BIO-1 BLM COA Construction and Interim Reclamation.
- RR-BIO-2 BLM COA Final Reclamation.
- RR-BIO-3 BLM COA Compensation Ratios and, Avoidance and Mitigation Actions 1-14; further detailed as context and comparison to the Mitigation Measures 1-14 are:
    - 1. A biological monitor will be present during initial ground disturbance and will be on-call and notified (661) 448-3131 if listed species are observed in the project area subsequent to initial ground disturbance.
    - 2. A Threatened and Endangered Species training session will be given to construction personnel prior to project implementation.
    - 3. A San Joaquin Kit Fox (SJKF) pre-activity survey will be conducted 14-days pre-construction and if potential kit fox den discovered, CRC will implement monitoring measures from the USFWS Standardized Recommendations for Protection of SJKF prior or during construction.
    - 4. Project site boundaries shall be clearly delineated by stakes, flagging and/or rope to minimize inadvertent degradation or loss of adjacent habitat during well pad and pipeline installation activities.
    - 5. All construction equipment, staging areas, material and personnel shall be restricted to previously disturbed areas (roads, well pads, and other non-habitat areas).
    - 6. All construction pipes, culverts, or similar structures stored at the construction site overnight having a diameter of two (2) inches or greater shall be inspected thoroughly for wildlife species before being buried, capped, or otherwise used or moved in any way. Pipes laid in trenches overnight shall be capped. If during construction a wildlife species is discovered inside a pipe, that section of pipe shall not be moved or, if necessary, moved only once to remove it from

the path of construction activity, until the wildlife species has escaped.

- 7. A speed limit of 10 mph (MAX) will be enforced to avoid incidental take of wildlife along roadways.
- 8. All excavated steep-walled holes or trenches in excess of three feet in depth left open for more than one (1) workday shall be provided with one or more escape ramps constructed of earth fill or other material to prevent entrapment of endangered species or other animals. Ramps shall be located at no greater than 1,000-foot intervals (for pipelines etc.) and at not more than 45-degree angles.
- 9. All food related trash such as wrappers, cans, bottles, and food scraps shall be disposed of into closed containers and be removed daily from the site.
- 10. Feeding of wildlife is strictly prohibited.
- 11. CRC staff and/or its contractors should designate a specific individual as a contact representative between CRC and all applicable federal, state, and local agencies to oversee compliance with these avoidance mitigation measures.
- 12. Firearms are prohibited on site.
- 13. Pets are prohibited on site.
- 14. Follow BLM General Guidelines for Conserving Habitat and Minimizing Project Impacts.

- RR-BIO-4 BLM COA Management of Noxious Weeds

Discussion

Impact #3.4.4a – 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 U.S. Fish and Wildlife Service?

Special-Status Plants

BV Hills 4

No special-status plant species were identified within the Project sites or survey buffer for BV Hills 4, but the survey was not conducted during the optimum blooming periods for the detection of sensitive plant species. Based on historical disturbance to the Project sites, current conditions, and high level of continued disturbance from human activities, no special-status plant species are expected to occur. No further analysis of special-status plant species is warranted for BV Hills 4 Project sites.

BV Hills 6

No special-status plant species were identified within the Project sites or survey buffer for BV Hills 6 Project sites, but the survey was not conducted during the optimum blooming period for the detection of sensitive plants. Based on historical disturbance and current conditions, no special-status plant species are expected to occur within the Project area or buffer of well 4-5H-6D. Well 616-12D is less disturbed and contains large contiguous areas of herbaceous vegetation and moderately dense to sparse undisturbed habitat which may contain special status plant species. Based on the literature review, 14 special-status plant species have the potential to occur within the subject quadrangle and eight surrounding quadrangles. Due to lack of suitable habitat (soil type, elevation, known range, habitat type, etc.), 12 of the identified special-status plant species do not have the potential to occur on the Project site. According to the database search, two special-status plant species, Kern mallow (*Eremalche parryi*) and oil neststraw (*Stylocline citroleum*), have the potential to occur within the BV Hills 6 well 616-12D Project site and have the potential to be affected by the Project.

Kern Mallow

This is an annual herb that starts to bloom in January, sometimes February or March, and continues until May. It occurs on dry, open sandy to clay soils, often at the edges of balds in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland. It occurs at elevations ranging from approximately 230 to 4,230 feet. It has been documented in the southern San Joaquin Valley and Carrizo Plain and surrounding foothills and mountains. This species is threatened by agriculture and development, and possibly non-native plants.

There are multiple Kern mallow CNDDB occurrences within 10 miles of the BV Hills 6 BSA. The nearest CNDDB occurrence (EONDX 102869) is located approximately 3.5 miles west of well site 616-12D. It is from 2016 when 100 plants were observed within allscale scrub habitat near State Route 119.

Oil Neststraw

This is an annual herb endemic to California that blooms from March to April. It occurs on clay substrates in chenopod and coastal scrub, and valley and foothill grasslands. It occurs at elevations from approximately 164 to 1,312 feet and is possibly threatened by energy development and urbanization.

There are multiple oil neststraw CNDDB occurrences within 10 miles of the BV Hills 6 BSA. The nearest CNDDB occurrence (EONDX 57373) is located approximately 1.9 miles northwest of well site 616-12D. It is from 1998 when 500 plants were observed within Valley saltbush scrub habitat near the intersection of Midway Road and Ricardo Street.

Mitigation Measure (MM) BIO-1 will require special-status plant surveys be conducted prior to any ground disturbance associated with the development of well 616-12D. If special-status plant species are found during the survey, they will be avoided as outlined in MM BIO-2. With implementation of MM BIO-1 and BIO-2, impacts of the Project to special-status plant species would be **less than significant**.

Special-Status Wildlife

BV Hills 4

Based on the State and federal database review and 10-mile radius, 36 special-status wildlife species are known or suspected to occur in the vicinity of the BV Hills 4 Project. After reviewing habitat requirements, known ranges and current site conditions, it was determined that six of the identified 36 special-status wildlife species have the potential to occur in the Project site (Table 3.4.4-4).

BV Hills 6

Based on a 10-mile literature review of the BV Hills 6 Project area, the CNDDB identified 36 special-status wildlife species known to occur in the vicinity of the BV Hills 6 BSA. Seven of the identified 36 special-status wildlife species have the potential to occur in the Project site. Twenty-nine of the identified special-status wildlife species do not have a potential to occur on the Project due to lack of suitable foraging, denning, burrowing, or nesting habitat, or due to the highly disturbed and current conditions of the Project (Table 3.4.4-4).

Table 3.4.4-5
Special-Status Wildlife Species that do Not Have the Potential to Occur on BV Hills 4, Kern County, California

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
Invertebrates			
***Bombus crotchii* / Crotch bumble bee**	SCE/-	This bee occurs in relatively warm and dry environments, including the inner Coast Range of California and the margins of the Mojave Desert. It inhabits grassland and scrub habitats, where it nests in abandoned rodent burrows, occasionally nesting above ground in tufts of grass, rock piles, or cavities in dead trees. This species is a short-tongued species, whose food plants include *Asclepias*, *Chaenactis*, *Lupinus*, *Medicago*, *Phacelia*, and *Salvia*. The species is threatened by habitat loss and degradation, including agricultural intensification and rapid urbanization.	The preferred food source for this species is absent within the Project site. The nearest CNDDB record (EONDX 98854) is from 1957 and located approximately 8.4 miles northwest of the BSA.
***Branchinecta lynchi* /vernal pool fairy shrimp**	-/FT	This species occurs in a variety of vernal pool habitats that range from small, clear sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. It occurs more commonly in pools less than 0.05-acre, typically as part of larger vernal pool complex. Adults are active from early December to early May. Pools must hold water for	No vernal pool habitat is present within the BSA.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		at least 18 days, the minimum time necessary to complete its life cycle during optimal conditions. Eggs are laid in spring and persist through dry season as cysts. The current California distribution includes the Central Valley and coast ranges. This species is threatened by habitat loss, degradation, fragmentation, and interference with vernal pool hydrology.	
***Danaus plexippus plexippus* pop. 1/ monarch - California overwintering population**	-/FC	This butterfly occurs in various open habitats including fields, meadows, weedy areas, marshes, and roadsides. Adults make massive migrations from August to October, flying thousands of miles south to hibernate along the California coast and in central Mexico. Eggs are laid and larvae feed on plants in the milkweed family, primarily *Asclepias* sp., but also other genera including *Calotropis*, *Cynanchum*, *Gonolobus*, and *Sarcostemma*. Adult butterflies typically live from two to six weeks, but overwintering individuals may live as long as nine months. Overwintering migratory adults will roost in large colonies in forested sites in California and Mexico, which must provide protection from the elements and assist with thermoregulation.	This species host plant is absent within the BSA.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
***Euproserpinus Euterpe* / Kern primrose sphinx moth**	-/FT	This species occurs in open scrub habitats, particularly associated with washes and where wildflowers provide nectar for adults. Adults are active from late February to early April. Eggs are laid on evening primrose and filaree. Metamorphosis occurs underground and can be delayed during drought conditions. It is known from the south end of the Central Valley at Walker Basin and in the Carrizo Plain west of Walker Basin.	The Project site is within heavy oilfield production, including compacted well pads and well-traveled access roads with extremely fragmented vegetated areas. Suitable habitat, such as sandy washes, are absent from the Project site.
***Lytta hoppingi* / Hopping's blister beetle**	-/-	This beetle species occurs in the foothills of the southern end of the Central Valley. Adults have often been found on flowers and have been collected from late March through June. Like other members of the Lytta genus, females excavate shallow burrows to oviposit. Lytta larvae are nest parasites of solitary bees.	Suitable foraging plants, including those in the Asteraceae, Leguminosae, and Solanaceae families, are absent from the Project site.
Reptiles			
***Anniella alexanderae* / Temblor legless lizard**	SCE/-	These lizards are only found in two sites, separated by continuous suitable habitat west of Highway 33, within the Temblor Range. The two sites are in areas of sandy soil at the southeast base of the Temblor Range between McKittrick and Taft on the west side of the Southern San Joaquin Valley in Kern County. They occur in moist warm	The BSA is outside of the current known range of the species, which is west of Highway 33 between Taft and McKittrick. Additionally, the Project site is predominantly denuded of vegetation and contains compacted soil. Suitable habitat (moist warm loose soil

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		loose soil with vegetation cover on beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Can be found under rocks, boards, driftwood, logs, and leaf litter under bushes and trees. Breeding occurs between early spring and July with the young born between September and November.	with leaf litter) is absent within the Project site. The nearest CNDDB occurrence (EONDX 124059) is from 2023 and is located approximately 5.2 miles west of BSA. Two specimens were collected in a drainage crossing at this location.
***Anniella grinnelli* / Bakersfield legless lizard**	SSC/-	This species occurs in moist warm loose soil with sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. It can be found under leaf litter from trees and bushes or under objects such as rocks, boards, driftwood, and logs. This species requires moisture in the soil. Breeding occurs between early spring and July with young born between September and November.	The Project site is predominantly denuded of vegetation and contains compacted soils. Suitable habitat (moist warm loose soil with leaf litter) is absent within the Project site. No CNDDB records within 10 miles.
***Anniella* ssp. / California legless lizard**	SSC/-	This species occurs in moist, loose soils with sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. It can be found under leaf	The Project site is predominantly denuded of vegetation and contains compacted soils. Suitable habitat (moist warm loose soil with leaf litter) is absent within the Project site. No

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		litter from trees and bushes or under objects such as rocks, boards, driftwood, and logs. This species requires moisture in the soil. Breeding occurs between early spring and July with young born between September and November.	CNDDB records within 10 miles.
***Arizona elegans occidentalis* / California glossy snake**	SSC/-	This subspecies of glossy snake occurs from the eastern part of the San Francisco Bay south to northwestern Baja, California. It prefers microhabitats of open areas with soil loose enough for easy burrowing. It inhabits arid scrub, rocky washes, grasslands, and chaparral. This species is nocturnal and hides under rocks, in existing burrows, or creates its own burrow during daylight hours. It is usually active from late February until November.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area. Limiting foraging and sheltering opportunities for the species. There are six CNDDB recorded occurrences within ten miles of the Project site. The closest CNDDB occurrence (EONDX 105455) is from the 1960s and is approximately 1.03 miles southwest of 603H-1-6D and mapped generally in the vicinity of Taft, California.
***Emys marmorata* / western pond turtle**	SSC/FS	This species is highly aquatic and diurnally active. It is found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with vegetation and rocky or muddy bottoms in a wide variety of habitats. It	No wetland features that could support this species are present within the Project site.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		needs basking areas near water (logs, rocks, vegetation mats, banks). This species may enter brackish water and even seawater, and it digs a nest on land near water. It ranges from north of the San Francisco Bay area to south, including the Central Valley.	
***Gambelia sila* / blunt-nosed leopard lizard (BNLL)**	SE, SFP/FE	This large lizard occurs in semiarid habitats within the southern Central Valley, Cuyama Valley, and Panoche Valley, at elevations between 100 and 2,400 feet. Preferred habitats are typically flat, sparsely vegetated grasslands with large open areas with scattered shrubs for cover and sandy washes. The species spends most of the year underground in abandoned small mammal burrows, with adults surfacing in the spring and early summer to breed and feed. The young hatch in July and August, and both adults and young recede to refugia between August and November. Individuals feed primarily on grasshoppers and smaller lizards. The species is threatened mainly by habitat loss and fragmentation.	Suitable habitat for this species is of poor quality due to the development and fragmentation of habitat from dense oilfield production in the area. Thus, significantly limiting foraging and sheltering opportunities for the species. Most of the surrounding topography is moderately to steep terrain and is not conducive to this species to be present. One unnamed intermittent streambed that intersects the western boundary of the BSA near 658UH-36-6D well pad, there was no evidence that BNLL was present, there were no appropriate small mammal burrows, or suitable habitat observed on the well pads. The SSRF for the Project wells indicate that protocol surveys

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
			were conducted in 2014, but no BNLL were identified and are not anticipated to occur in the area. The nearest CNDDB occurrence (EONDX 65831) is from 1992 and is located approximately 1.2-miles northeast of the 658-UH-36-6D pad site. This CNDDB record contains multiple observations spread over a large area. The majority of the observations were within the 'Fellows' USGS quad located west of the USGS quad in which the Project site is located ('Taft').
***Masticophis flagellum ruddocki* / San Joaquin coachwhip**	SSC/-	This species occurs in open, dry, treeless areas with little or no cover. They are found in valley grassland and saltbush scrub habitats and avoid areas that are densely vegetated. They are found from the Sacramento Valley in Colusa County southward to the Grapevine in Kern County and westward to the inner South Coast Ranges. They are threatened by habitat loss and fragmentation, conversion of large suitable habitats to agricultural use in the San Joaquin Valley, and urban development in the inner Coast Ranges.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area, limiting foraging and sheltering opportunities for the species. There are only three CNDDB occurrences within ten miles of the Project site in the last decade, the closest CNDDB occurrence (EONDX 66290) is from 1997 and is approximately 2.4-mile northwest of

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
			658UH-36-6D well pad.
***Spea hammondii* / western spadefoot**	SSC/-	This species relies on vernal pools for breeding where predators cannot become established. It occurs in open areas with sand or gravelly soils in a variety of habitats: grasslands, coastal scrub, woodlands, chaparral, sandy washes, lowland river floodplains, alkali flats, foothills, and mountains. This species is endemic to California and northern Baja California with a distribution from Redding south throughout Central Valley and foothills, throughout the South Coast Mountain range into coastal southern California to Transverse mountains and Peninsular mountains. This species occurs at elevations ranging from sea level to 4,500 feet.	Wetland habitat that supports this species is absent from the Project site.
***Thamnophis gigas* / giant garter snake**	ST/FT	This is a highly aquatic snake found in marshes and sloughs, drainage canals, and irrigation ditches and prefers sloughs to be flooded in summer and dry in winter. It prefers vegetation close to the water for basking and typically does not venture more than 200 feet from the aquatic habitat. It ranges in elevation from sea level to 400 feet. It is endemic to California and currently ranges from Glenn County	Wetland habitat that supports this species is absent from the Project site.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		to the southern edge of the San Francisco Bay-Delta and from Merced County to northern Fresno County.	
Birds			
***Agelaius tricolor* / tricolored blackbird**	ST/-	This species is a year-round resident that is a colonial breeder. It occurs in freshwater, emergent wetlands with tall, dense cattails or tule, but also thickets of willow, blackberry, wild rose, and tall herbs. Breeding colonies consist of a minimum of approximately 50 pairs. This species forages mostly for insects and spiders and less often seeds and cultivated grains in pastures, grain fields, cropland, and similar habitats near breeding areas.	Suitable habitat (wetland features or irrigated crop agricultural fields) that supports this species is absent from the Project area.
***Charadrius nivosus nivosus* /western snowy plover**	SSC/FT	This is a ground-nesting bird that occurs along sandy beaches, salt pond levees, and shores of large alkali lakes. It prefers to nest on bare open ground in loose colonies or isolated pairs. It builds nests on a natural or shallow scrape in the ground and is lined with bits of debris, pebbles, grass, and shell fragments. This species primarily feeds on terrestrial and aquatic invertebrates.	Suitable habitat (sandy beaches, levees, and lakes) is absent from the Project site.
***Coccyzus americanus occidentalis* / western yellow-billed cuckoo**	SE/FT	This migratory species nests in open riparian woodlands along broad lower flood bottoms of	Suitable riparian habitat that supports the species is absent from the Project site.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		larger river systems. It prefers willows, often mixed with cottonwood, with an understory of blackberry, nettles, or wild grape. Its nest is most often placed in willows with cottonwoods used extensively for foraging and also occasionally nests in orchards adjacent to river bottoms.	
***Dendrocygna bicolor* / fulvous whistling-duck**	SSC/-	This duck occupies freshwater wetlands, including marshes, marshy ponds, and flooded rice fields. It breeds from March to September in dense floating or flooded emergent vegetation. It is threatened by irregular species movements, pesticide contamination, habitat loss and degradation, and agricultural and hunting disturbances.	Suitable wetland habitat is absent from the Project site.
***Falco mexicanus* / prairie falcon**	SWL/-	This falcon is primarily found in annual grasslands, savannahs, rangeland, some agricultural fields, and desert scrub. It breeds throughout the open county in the West. Nests are built on bluffs and cliffs at elevations ranging from alpine habitat to 11,000 feet. Breeding occurs in grasslands, areas of fixed shrubs, or alpine tundra. It is threatened by pesticides (reproduction failure) and degradation of habitat due to agricultural development.	Suitable nesting habitat for this species is absent from the Project site; however, suitable foraging habitat is present, and this species could occur as a transient. One CNDDB occurrence within ten miles of the Project site (EONDX 18211), it is from 1989 and is mapped generally to a 39,500-acre polygon that is approximately 6.7-miles northwest of the well 658UH-36-6D.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
***Gymnogyps californianus* / California condor**	SE/FE	This condor has been documented in southern and northern California, northern Baja, California, Oregon, southern British Columbia, and Arizona, Utah, and Nevada where the three states come together. It is a rare visitor to the San Joaquin Valley, found at elevation ranges from sea level to 9,000 feet. Their main characteristics sought for a nest site are 1) partially sheltered from the weather and 2) located on a cliff, steep slope, or tall trees. Nests are located between 2,000 to 6,500 feet in elevation. They are threatened by lead poisoning, micro trash ingestion, collisions, electrocution by powerlines, drownings, and predation. More recent threats have been from shootings.	The BSA is below the known breeding range of the species and is not within habitat designated as critical to the species. There is a low potential the species may forage and disperse through the BSA, but no suitable nesting habitat is present, and the species is not anticipated to occur.
***Plegadis chihi* / white-faced ibis**	SWL/-	This bird occurs in freshwater wetlands, especially cattail and bulrush marshes. It rarely breeds in California and is an uncommon summer resident in some southern California localities. It nests in several marshes in the western United States and the Great Basin. This species forages in flooded hay meadows, agricultural fields, and estuarine wetlands. Its primary prey is insects, crustaceans, and earthworms.	Suitable wetland habitat, such as cattail and bulrush marshes, is absent from the Project site.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
***Vireo bellii pusillus* / Least Bell's vireo**	SE/FE	This migratory species is a locally common summer resident ranging from coastal southern California through the Sacramento and San Joaquin Valleys as far north as Red Bluff in Tehama County. It can also occur in the Sierra Nevada and Coast ranges, Owens and Death Valley, and scattered locations within the Mojave Desert. It typically occurs at low elevation, riparian habitats with dense shrub understory. Nests are typically constructed in willows, but mule fat, California wild rose, poison oak, mugwort, and cottonwoods may also be used. This species occurs below 2,000 feet in elevation. It primarily feeds on insects and is threatened by habitat loss and brood parasitism by the brown-headed cowbird.	Suitable riparian habitat is absent from the Project site.
***Xanthocephalus xanthocephalus* / yellow-headed blackbird**	SSC/-	This species is a migratory and summer resident in Central Valley from mid-April to late July. It occurs in marshes and pockets of habitat along rivers and tributaries, typically with tall emergent vegetation. Nearby water levels in nesting habitat are approximately 2.0 to 4.0 feet deep. This species forages on seeds and cultivated grain, but	Suitable wetland habitat, such as marshes, is absent from the Project site.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		during the breeding season, they may eat insects. It is susceptible to pesticides and threatened by loss due to wetland drainage for irrigation, flood control, or water diversions.	
Mammals			
***Dipodomys ingens* / giant kangaroo rat**	SE/FE	This species occurs in native annual grassland and shrubland habitats with vegetated annual grass and forbs and scattered desert shrubs. It is known only to six major geographic units: Panoche Region, Kettleman Hills, San Juan Creek Valley, western Kern County (Lokern, Elk Hills, McKittrick, Taft, and Maricopa), Carrizo Plain Natural Area, and Cuyama Valley and occurs at elevations between 280 to 2,800 feet. It excavates burrows on level or gentle slopes with friable, sandy, well-drained soils and is a nocturnal foraging species. It is threatened by habitat loss, fragmentation, degradation, and drought and also by land conversion to agricultural, industrial, and urban developments.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area. Limited foraging and sheltering opportunities for the species. No suitable burrows or key diagnostic burrow precincts were observed. There are several CNDDB occurrences within the vicinity of the Project site, the closest (EONDX 49010) of which is from 2002 and is located approximately 0.5-mile north of the pipeline route from well 658UH-36-6D. According to the CNDDB record this observation is considered extirpated. There are no CNDDB occurrences within ten miles of the Project site within the last decade. The

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
			species is not anticipated to occur.
***Dipodomys nitratoides brevinasus* / short-nosed kangaroo rat**	SSC/-	This is a subspecies of the San Joaquin kangaroo rat (*Dipodomys nitratoides*) that occurs on friable soils on flat or gentle slopes within grassland or desert scrub habitat. The current range is unknown, but there are fragmented populations in Pleasant Valley, Kettleman and Lost Hills, Lokern, Elk Hills, San Emigdio, Wheler Ridge, Carrizo Plain Natural Area, and Caliente Mountains. It excavates burrows on higher ground and is a nocturnal foraging species. It is threatened by random catastrophic events (i.e., drought, flooding, fire), overgrazing of rangeland, and extensive land conversion to agriculture from the 1960s through 1970s.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area, limiting foraging and sheltering opportunities for the species. While burrows were observed within the BSA, most were observed outside the existing well pad boundary. There is one CNDDB occurrence within ten miles of the Project site in the last decade. The CNDDB occurrence (EONDX 65346), from 2016 and is located approximately 6.0-miles east of well 675H-6-8D. The species is not anticipated to occur.
***Dipodomys nitratoides nitratoides* / Tipton kangaroo rat**	SE/FE	This is a subspecies of the San Joaquin kangaroo rat (*Dipodomys nitratoides*) that occurs in valley saltbush scrub, valley sink scrub, and grasslands. It is historically known to occur in the southern San Joaquin Valley from southern margins on Tulare Lakebed near Lemoore and Hanford,	The Project site is outside the known historical range of the species. Additionally, suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		and on the valley floor in Tulare and Kern counties but now is found only east of the California Aqueduct. Population distribution is not continuous and occurs only in small, isolated patches. It is a nocturnal foraging species that excavates burrows for temperature regulation, litter-rearing, shelter, and escape from predators. This species is threatened by habitat loss, fragmentation, degradation and by land conversions to agricultural, industrial, and urban developments, but it can quickly inhabit fallow agricultural fields if a source population is nearby.	area, limiting foraging and sheltering opportunities for the species. The nearest CNDDB occurrence (EONDX 65422) is from 1975 and was mapped generally (within a one-mile radius) approximately 0.2-miles from 658UH-36-6D well pad. The species is not anticipated to occur
***Eumops perotis californicus* / western mastiff bat**	SSC/-	This species occurs in open, semi-arid to arid habitats throughout southeastern San Joaquin Valley and Coast Ranges from Monterey County southward. It can also occur in urban areas. It feeds on insects captured in flight and roosts in cliff faces, high buildings, trees, and tunnels. The maternity season begins in March, with young typically volant by September. Nursery roosts most often occur in tight rock crevices or crevices in buildings.	No roosting or foraging habitat for this species is present.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
***Onychomys torridus tularensis* / Tulare grasshopper mouse**	SSC/-	This subspecies occurs in shrubland communities in hot, arid grassland and shrubland associations. These include blue oak woodlands, upper Sonoran subshrub scrub, alkali sink and mesquite associations on the Valley Floor, and grasslands associations on the sloping margins of the San Joaquin Valley and Carrizo Plain region. This subspecies occupies burrows and feeds primarily on invertebrates but may supplement its diet with seeds and other small mammals.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area, limiting foraging and sheltering opportunities for the species. The closest CNDDB occurrence (EONDX 55844) is from 2002 and is approximately 2.0-miles northeast of 658UH-36-6D well pad. There are only two CNDDB occurrences recorded in the last decade within ten miles of the Project site, the closest of which (EONDX 114686) is from 2016 and is located 5.8-miles northeast of the Project.
***Perognathus inornatus* / San Joaquin pocket mouse**	-/-	This nocturnal species is found in dry, open grasslands and scrublands on fine-textured soils in the Central (mostly west side) and Salinas Valleys at elevations from 1,100 to 2,000 feet. It digs its own burrows for cover, breeding, and seed caching.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area, limiting foraging and sheltering opportunities for the species. There are five CNDDB recorded occurrences within ten miles of the

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
			Project site, of which only two are from the last decade. The closest CNDDB record (EONDX 111268) is from 2017 and is approximately 4.4-miles east of 675H-6-8D well pad.
***Sorex ornatus relictus* / Buena Vista Lake ornate shrew**	SSC/FE	This shrew species occurs in moist soil conditions in marsh habitat with dense emergent vegetation and/or leaf litter and is often associated with cottonwoods, willows, alkali heath, wild rye grass, and Baltic rush. Historically, this species occurred in and around the Buena Vista Lake and Tulare Lake Basins and was once thought to be extinct but was rediscovered at Kern Lake Preserve in 1986. It is primarily insectivorous. Reproduction typically occurs from late February to September or early October, and the litter size varies.	No wetland features that could support this species are present. There are three CNDDB occurrences within ten miles of the Project site, none are from the last decade. The nearest CNDDB occurrence (EONDX 43157) is from 2010 and is located approximately 5.4-miles northeast of 675H-6-8D well pad, where it is mapped generally to the north side of Buena Vista Lake.

Federal Status
FT Federally Threatened
FE Federally Endangered
FC Federal Candidate Species

CDFW Status
ST State Threatened
SCE State Candidate Endangered
SE State Endangered
SC State Candidate
SSC State Species of Special Concern
SWL State Watch List

Table 3.4.4-6
Special-Status Wildlife Species that do Not have the Potential to Occur on BV Hills 6, Kern County, California

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
Invertebrates			
***Bombus crotchii* /** **Crotch bumble bee**	SCE/-	This bee occurs in relatively warm and dry environments, including the inner Coast Range of California and the margins of the Mojave Desert. It inhabits grassland and scrub habitats, where it nests in abandoned rodent burrows, occasionally nesting above ground in tufts of grass, rock piles, or cavities in dead trees. This species is a short-tongued species, whose food plants include Asclepias, Chaenactis, Lupinus, Medicago, Phacelia, and Salvia. The species is threatened by habitat loss and degradation, including agricultural intensification and rapid urbanization.	The preferred food source for this species is absent within the Project site. The nearest CNDDB record (EONDX 98854) is from 1957 and located approximately 8.4 miles northwest of the BSA.
***Danaus plexippus plexippus* pop. 1/ monarch - California overwintering population**	-/FC	This butterfly occurs in various open habitats including fields, meadows, weedy areas, marshes, and roadsides. Adults make massive migrations from August to October, flying thousands of miles south to hibernate along the California coast and in central Mexico. Eggs are laid and larvae feed on plants in the milkweed family, primarily *Asclepias* sp., but also other genera including *Calotropis*, *Cynanchum*, *Gonolobus*, and *Sarcostemma*. Adult butterflies typically live from two to six weeks, but overwintering individuals may live as long as nine months. Overwintering migratory adults will roost in large colonies in forested sites in California and Mexico, which must	This species host plant is absent within the BSA.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		provide protection from the elements and assist with thermoregulation.	
***Euproserpinus Euterpe* / Kern primrose sphinx moth**	-/FT	This species occurs in open scrub habitats, particularly associated with washes and where wildflowers provide nectar for adults. Adults are active from late February to early April. Eggs are laid on evening primrose and filaree. Metamorphosis occurs underground and can be delayed during drought conditions. It is known from the south end of the Central Valley at Walker Basin and in the Carrizo Plain west of Walker Basin.	The Project site is within heavy oilfield production, including compacted well pads and well-traveled access roads with extremely fragmented vegetated areas. Suitable habitat, such as sandy washes, are absent from the Project site.
***Lytta hoppingi* / Hopping's blister beetle**	-/-	This beetle species occurs in the foothills of the southern end of the Central Valley. Adults have often been found on flowers and have been collected from late March through June. Like other members of the Lytta genus, females excavate shallow burrows to oviposit. Lytta larvae are nest parasites of solitary bees.	Suitable foraging plants, including those in the *Asteraceae*, *Leguminosae*, and *Solanaceae* families, are absent or minimal on the Project site.
Reptiles			
***Anniella alexanderae* / Temblor legless lizard**	SCE/-	These lizards are only found in two sites, separated by continuous suitable habitat west of Highway 33, within the Temblor Range. The two sites are in areas of sandy soil at the southeast base of the Temblor Range between McKittrick and Taft on the west side of the Southern San Joaquin Valley in Kern County. They occur in moist warm loose soil with vegetation cover on beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Can be found under rocks, boards, driftwood, logs, and leaf litter under bushes and trees. Breeding occurs between early spring and July with the young born between September and November.	The BSA is outside of the current known range of the species, which is west of Highway 33 between Taft and McKittrick. Additionally, moist soil is absent from the BSA, and therefore suitable habitat to support this species is absent. The nearest CNDDB occurrence (EONDX 124059) is from 2023 and is located approximately 7.2 miles northwest of 4-5H-6D. Two

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
			specimens were collected in a drainage crossing at this location.
***Anniella grinnelli* / Bakersfield legless lizard**	SSC/-	This species occurs in moist warm loose soil with sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. It can be found under leaf litter from trees and bushes or under objects such as rocks, boards, driftwood, and logs. This species requires moisture in the soil. Breeding occurs between early spring and July with young born between September and November.	Suitable habitat (moist warm loose soil with leaf litter) is absent within the Project site. The nearest CNDDB occurrence (EONDX 106919) is from 2017 and is located approximately 9.3 miles south of 4-5H-6D.
***Anniella* ssp. / California legless lizard**	SSC/-	This species occurs in moist, loose soils with sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. It can be found under leaf litter from trees and bushes or under objects such as rocks, boards, driftwood, and logs. This species requires moisture in the soil. Breeding occurs between early spring and July with young born between September and November.	Suitable habitat (moist warm loose soil with leaf litter) is absent within the Project site. The nearest CNDDB occurrence (EONDX 108707) is from the 1950 and is located approximately 9.3 miles south of 4-5H-6D.
***Arizona elegans occidentalis* / California glossy snake**	SSC/-	This subspecies of glossy snake occurs from the eastern part of the San Francisco Bay south to northwestern Baja, California. It prefers microhabitats of open areas with soil loose enough for easy burrowing. It inhabits arid scrub, rocky washes, grasslands, and chaparral. This species is nocturnal and hides under rocks, in existing burrows, or creates its own burrow during daylight hours. It is usually active from late February until November.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area. Limiting foraging and sheltering opportunities for the species. There are six CNDDB recorded

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
			occurrences within ten miles of the Project site. The closest CNDDB occurrence (EONDX 105455) is from the 1960s and is approximately 2.08 miles northeast of 4-5H-6D and mapped generally in the vicinity of Taft, California.
***Emys marmorata* / western pond turtle**	SSC/FS	This species is highly aquatic and diurnally active. It is found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with vegetation and rocky or muddy bottoms in a wide variety of habitats. It needs basking areas near water (logs, rocks, vegetation mats, banks). This species may enter brackish water and even seawater, and it digs a nest on land near water. It ranges from north of the San Francisco Bay area to south, including the Central Valley.	No wetland features that could support this species are present within the Project site.
***Masticophis flagellum ruddocki* / San Joaquin coachwhip**	SSC/-	This species occurs in open, dry, treeless areas with little or no cover. They are found in valley grassland and saltbush scrub habitats and avoid areas that are densely vegetated. They are found from the Sacramento Valley in Colusa County southward to the Grapevine in Kern County and westward to the inner South Coast Ranges. They are threatened by habitat loss and fragmentation, conversion of large suitable habitats to agricultural use in the San Joaquin Valley, and urban development in the inner Coast Ranges.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area, limiting foraging and sheltering opportunities for the species. There are only three CNDDB occurrences within ten miles of the Project site in the last decade, the closest CNDDB occurrence (EONDX 66290) is

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
			from 1997 and is approximately 2.5-miles northwest of 4-5H-6D well pad.
***Spea hammondii* / western spadefoot**	SSC/-	This species relies on vernal pools for breeding where predators cannot become established. It occurs in open areas with sand or gravelly soils in a variety of habitats: grasslands, coastal scrub, woodlands, chaparral, sandy washes, lowland river floodplains, alkali flats, foothills, and mountains. This species is endemic to California and northern Baja California with a distribution from Redding south throughout Central Valley and foothills, throughout the South Coast Mountain range into coastal southern California to Transverse mountains and Peninsular mountains. This species occurs at elevations ranging from sea level to 4,500 feet.	Wetland habitat that supports this species is absent from the Project site.
***Thamnophis gigas* / giant garter snake**	ST/FT	This is a highly aquatic snake found in marshes and sloughs, drainage canals, and irrigation ditches and prefers sloughs to be flooded in summer and dry in winter. It prefers vegetation close to the water for basking and typically does not venture more than 200 feet from the aquatic habitat. It ranges in elevation from sea level to 400 feet. It is endemic to California and currently ranges from Glenn County to the southern edge of the San Francisco Bay-Delta and from Merced County to northern Fresno County.	Wetland habitat that supports this species is absent from the Project site.
***Arizona elegans occidentalis* / California glossy snake**	SSC/-	This subspecies of glossy snake occurs from the eastern part of the San Francisco Bay south to northwestern Baja, California. It prefers microhabitats of open areas with soil loose enough for easy burrowing. It inhabits arid scrub, rocky washes, grasslands, and chaparral. This species is nocturnal and	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		hides under rocks, in existing burrows, or creates its own burrow during daylight hours. It is usually active from late February until November.	area. Limiting foraging and sheltering opportunities for the species. There are six CNDDB recorded occurrences within ten miles of the Project site. The closest CNDDB occurrence (EONDX 105455) is from the 1960s and is approximately 2.08 miles northeast of 4-5H-6D and mapped generally in the vicinity of Taft, California.
Birds			
***Agelaius tricolor* / tricolored blackbird**	ST/-	This species is a year-round resident that is a colonial breeder. It occurs in freshwater, emergent wetlands with tall, dense cattails or tule, but also thickets of willow, blackberry, wild rose, and tall herbs. Breeding colonies consist of a minimum of approximately 50 pairs. This species forages most for insects and spiders and less often seeds and cultivated grains in pastures, grain fields, cropland, and similar habitats near breeding areas.	Suitable habitat (wetland features or irrigated crop agricultural fields) that supports this species is absent from the Project area.
***Charadrius nivosus nivosus* /western snowy plover**	SSC/FT	This is a ground-nesting bird that occurs along sandy beaches, salt pond levees, and shores of large alkali lakes. It prefers to nest on bare open ground in loose colonies or isolated pairs. It builds nests on a natural or shallow scrape in the ground and is lined with bits of debris, pebbles, grass, and shell fragments. This species primarily feeds on terrestrial and aquatic invertebrates.	Suitable habitat (sandy beaches, levees, and lakes) is absent from the Project site.
***Coccyzus americanus occidentalis* /**	SE/FT	This migratory species nests in open riparian woodlands along broad lower flood bottoms of larger river systems. It	Suitable riparian habitat that supports

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
western yellow-billed cuckoo		prefers willows, often mixed with cottonwood, with an understory of blackberry, nettles, or wild grape. Its nest is most often placed in willows with cottonwoods used extensively for foraging and also occasionally nests in orchards adjacent to river bottoms.	the species is absent from the Project site.
***Dendrocygna bicolor* / fulvous whistling-duck**	SSC/-	This duck occupies freshwater wetlands, including marshes, marshy ponds, and flooded rice fields. It breeds from March to September in dense floating or flooded emergent vegetation. It is threatened by irregular species movements, pesticide contamination, habitat loss and degradation, and agricultural and hunting disturbances.	Suitable wetland habitat is absent from the Project site.
***Falco mexicanus* / prairie falcon**	SWL/-	This falcon is primarily found in annual grasslands, savannahs, rangeland, some agricultural fields, and desert scrub. It breeds throughout the open county in the West. Nests are built on bluffs and cliffs at elevations ranging from alpine habitat to 11,000 feet. Breeding occurs in grasslands, areas of fixed shrubs, or alpine tundra. It is threatened by pesticides (reproduction failure) and degradation of habitat due to agricultural development.	Suitable nesting habitat for this species is absent from the Project site; however, suitable foraging habitat is present, and this species could occur as a transient. One CNDDB occurrence within ten miles of the Project site (EONDX 18211), it is from 1989 and is mapped generally to a 39,500-acre polygon that is approximately 6.1-miles northwest of the well 4-5H-6D.
***Gymnogyps californianus* / California condor**	SE/FE	This condor has been documented in southern and northern California, northern Baja, California, Oregon, southern British Columbia, and Arizona, Utah, and Nevada where the three states come together. It is a rare visitor to the San Joaquin Valley, found at	The BSA is below the known breeding range of the species and is not within habitat designated as critical to the species. There is a

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		elevation ranges from sea level to 9,000 feet. Their main characteristics sought for a nest site are 1) partially sheltered from the weather and 2) located on a cliff, steep slope, or tall trees. Nests are located between 2,000 to 6,500 feet in elevation. They are threatened by lead poisoning, micro trash ingestion, collisions, electrocution by powerlines, drownings, and predation. More recent threats have been from shootings.	low potential the species may forage and disperse through the BSA, but no suitable nesting habitat is present, and the species is not anticipated to occur.
***Plegadis chihi* / white-faced ibis**	SWL/-	This bird occurs in freshwater wetlands, especially cattail and bulrush marshes. It rarely breeds in California and is an uncommon summer resident in some southern California localities. It nests in several marshes in the western United States and the Great Basin. This species forages in flooded hay meadows, agricultural fields, and estuarine wetlands. Its primary prey is insects, crustaceans, and earthworms.	Suitable wetland habitat, such as cattail and bulrush marshes, is absent from the Project site.
***Vireo bellii pusillus* / Least Bell's vireo**	SE/FE	This migratory species is a locally common summer resident ranging from coastal southern California through the Sacramento and San Joaquin Valleys as far north as Red Bluff in Tehama County. It can also occur in the Sierra Nevada and Coast ranges, Owens and Death Valley, and scattered locations within the Mojave Desert. It typically occurs at low elevation, riparian habitats with dense shrub understory. Nests are typically constructed in willows, but mule fat, California wild rose, poison oak, mugwort, and cottonwoods may also be used. This species occurs below 2,000 feet in elevation. It primarily feeds on insects and is threatened by habitat loss and brood parasitism by the brown-headed cowbird.	Suitable riparian habitat is absent from the Project site.
***Xanthocephalus xanthocephalus* /**	SSC/-	This species is a migratory and summer resident in Central Valley from mid-April	Suitable wetland habitat, such as

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
Yellow-headed blackbird		to late July. It occurs in marshes and pockets of habitat along rivers and tributaries, typically with tall emergent vegetation. Nearby water levels in nesting habitat are approximately 2.0 to 4.0 feet deep. This species forages on seeds and cultivated grain, but during the breeding season, they may eat insects. It is susceptible to pesticides and threatened by loss due to wetland drainage for irrigation, flood control, or water diversions.	marshes, is absent from the Project site.
Mammals			
***Dipodomys ingens* / Giant kangaroo rat**	SE/FE	This species occurs in native annual grassland and shrubland habitats with vegetated annual grass and forbs and scattered desert shrubs. It is known only to six major geographic units: Panoche Region, Kettleman Hills, San Juan Creek Valley, western Kern County (Lokern, Elk Hills, McKittrick, Taft, and Maricopa), Carrizo Plain Natural Area, and Cuyama Valley and occurs at elevations between 280 to 2,800 feet. It excavates burrows on level or gentle slopes with friable, sandy, well-drained soils and is a nocturnal foraging species. It is threatened by habitat loss, fragmentation, degradation, and drought and also by land conversion to agricultural, industrial, and urban developments.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area, steep terrain, limited foraging and sheltering opportunities for the species. No suitable burrows or key diagnostic burrow precincts were observed. There are several CNDDB occurrences within the vicinity of the Project site, the closest (EONDX 49010) of which is from 2002 and is located approximately 0.73-mile northeast well 4-5H-6D. According to the CNDDB record this observation is considered extirpated. There are no CNDDB

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
			occurrences within ten miles of the Project site within the last decade.
***Dipodomys nitratoides brevinasus* / short-nosed kangaroo rat**	SSC/-	This is a subspecies of the San Joaquin kangaroo rat *(Dipodomys nitratoides*) that occurs on friable soils on flat or gentle slopes within grassland or desert scrub habitat. The current range is unknown, but there are fragmented populations in Pleasant Valley, Kettleman and Lost Hills, Lokern, Elk Hills, San Emigdio, Wheler Ridge, Carrizo Plain Natural Area, and Caliente Mountains. It excavates burrows on higher ground and is a nocturnal foraging species. It is threatened by random catastrophic events (i.e., drought, flooding, fire), overgrazing of rangeland, and extensive land conversion to agriculture from the 1960s through 1970s.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area, steep terrain, limiting foraging and sheltering opportunities for the species. There is one CNDDB occurrence within ten miles of the Project site in the last decade. The CNDDB occurrence (EONDX 49007), from 1998 and is located approximately 1.6-miles northwest of well 4-5H-6D.
***Dipodomys nitratoides nitratoides* / Tipton kangaroo rat**	SE/FE	This is a subspecies of the San Joaquin kangaroo rat (*Dipodomys nitratoides*) that occurs in valley saltbush scrub, valley sink scrub, and grasslands. It is historically known to occur in the southern San Joaquin Valley from southern margins on Tulare Lakebed near Lemoore and Hanford, and on the valley floor in Tulare and Kern counties but now is found only east of the California Aqueduct. Population distribution is not continuous and occurs only in small, isolated patches. It is a nocturnal foraging species that excavates burrows for temperature regulation, litter-rearing, shelter, and escape from predators. This species is threatened by habitat loss, fragmentation, degradation and by	The Project site is outside the known historical range of the species. The nearest CNDDB occurrence (EONDX 65422) is from 1975 and was mapped generally (within a one-mile radius) approximately 1.2-miles from 4-5H-6D well pad.

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
		land conversions to agricultural, industrial, and urban developments, but it can quickly inhabit fallow agricultural fields if a source population is nearby.	
***Eumops perotis californicus* / Western mastiff bat**	SSC/-	This species occurs in open, semi-arid to arid habitats throughout southeastern San Joaquin Valley and Coast Ranges from Monterey County southward. It can also occur in urban areas. It feeds on insects captured in flight and roosts in cliff faces, high buildings, trees, and tunnels. The maternity season begins in March, with young typically volant by September. Nursery roosts most often occur in tight rock crevices or crevices in buildings.	No roosting or foraging habitat for this species is present.
***Onychomys torridus tularensis* / Tulare grasshopper mouse**	SSC/-	This subspecies occurs in shrubland communities in hot, arid grassland and shrubland associations. These include blue oak woodlands, upper Sonoran subshrub scrub, alkali sink and mesquite associations on the Valley Floor, and grasslands associations on the sloping margins of the San Joaquin Valley and Carrizo Plain region. This subspecies occupies burrows and feeds primarily on invertebrates but may supplement its diet with seeds and other small mammals.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the area, steep terrain, limiting foraging and sheltering opportunities for the species. The closest CNDDB occurrence (EONDX 55844) is from 2002 and is approximately 2.5-miles northeast of 4-5H-6D well pad.
***Perognathus inornatus* / San Joaquin pocket mouse**	-/-	This nocturnal species is found in dry, open grasslands and scrublands on fine-textured soils in the Central (mostly west side) and Salinas Valleys at elevations from 1,100 to 2,000 feet. It digs its own burrows for cover, breeding, and seed caching.	Suitable habitat for this species is of poor quality due to development and habitat fragmentation from dense oilfield production in the

Scientific Name/Common Name	Status	Habitat Requirements	Rationale
			area, steep terrain, limiting foraging and sheltering opportunities for the species. There are five CNDDB recorded occurrences within ten miles of the Project site, of which only two are from the last decade. The closest CNDDB record (EONDX 111268) is from 2017 and is approximately 1.2-miles east of 616-12D well pad.
***Sorex ornatus relictus* / Buena Vista Lake ornate shrew**	SSC/FE	This shrew species occurs in moist soil conditions in marsh habitat with dense emergent vegetation and/or leaf litter and is often associated with cottonwoods, willows, alkali heath, wild rye grass, and Baltic rush. Historically, this species occurred in and around the Buena Vista Lake and Tulare Lake Basins and was once thought to be extinct but was rediscovered at Kern Lake Preserve in 1986. It is primarily insectivorous. Reproduction typically occurs from late February to September or early October, and the litter size varies.	No wetland features that could support this species are present. There are three CNDDB occurrences within ten miles of the Project site, none are from the last decade. The nearest CNDDB occurrence (EONDX 43157) is from 2010 and is located approximately 6.4-miles northeast of 616-12D well pad, where it is mapped generally to the north side of Buena Vista Lake.

Federal Status
FT Federally Threatened
FE Federally Endangered
FC Federal Candidate Species

CDFW Status
ST State Threatened
SCE State Candidate Endangered
SE State Endangered
SC State Candidate
SSC State Species of Special Concern
SWL State Watch List

Species that may occur on either or both BV Hills 4 and BV Hills 6 Project sites are described below. Justification, recent sightings, a brief biological life history, habitat requirements and proximity to each new well location(s) are provided for each species. Mitigation Measures (MM) are discussed below and will be required to reduce or eliminate impacts to sensitive species to a less than significant impacts to these species.

Blunt-nosed Leopard Lizard (BV Hills 6 only)

The blunt-nosed leopard lizard (BNLL) is a large lizard that occurs in semiarid habitats within the southern Central Valley, Cuyama Valley, and Panoche Valley, at elevations between 100 and 2,400 feet. Preferred habitats are typically flat, sparsely vegetated grasslands with large open areas with scattered shrubs for cover and sandy washes. The species spends most of the year underground in abandoned small mammal burrows, with adults surfacing in the spring and early summer to breed and feed. The young hatch in July and August, and both adults and young recede to refugia between August and November. Individuals feed primarily on grasshoppers and smaller lizards. The species is threatened mainly by habitat loss and fragmentation.

The nearest recorded CNDDB occurrence to well 4-5H-6D is located approximately 0.8 miles to the east (EONDX 52957). This record is from 2001, which is a single observation and presumed extant. Suitable habitat for this species is of poor quality due to the development and fragmentation of habitat from dense oilfield production in the area, thus significantly limiting foraging and sheltering opportunities for the species. Most of the surrounding topography is moderate to steep terrain and is not conducive to this species. There was no evidence that BNLL was present, and no appropriate small mammal burrows, or suitable habitat observed on well 4-5H-6D. The SSRF for well 4-5H-6D indicates that protocol surveys were conducted in the vicinity in 2014, but no BNLL were identified and are not anticipated to occur in the area.

Well 616-12D contains suitable habitat with appropriate small mammal burrows, dense vegetative cover of salt scrub habitat and little disturbance. A protocol level survey for BNLL was conducted in 2022 (West Kern Environmental Consulting, LLC., 2022). The results of the surveys indicated that no BNLL was observed within the exclusionary fence boundary for the proposed well location. Surveys consisted of 12 adult surveys beginning on April 27, 2022, and ending on June 9, 2022. An additional five surveys were conducted in an effort to identify juvenile hatchlings beginning on August 15, 2022, and ending on September 21, 2022.

Direct impacts and potential for take of this species from the project include vehicle strikes, disturbance to foraging habitat and burrowing habitat on undisturbed lands, and noise and dust created by construction activities. Protocol

level BNLL surveys will be conducted within the enclosed well 616-12D as stated in MM BIO-3, and appropriate buffers will be established to avoid disturbance if warranted. A qualified biologist will be on-site during initial ground disturbance to avoid take of the species (MM BIO-5). MM BIO-6 outlines the BMPs that would be implemented during construction and operations, including removing trash and food, restricting vehicular speeds to 10 mph at night and 20 mph during the day, covering trenches, capping pipes, etc. Mitigation Measure BIO-8 requires all crews to attend a Worker Environmental Awareness Training that provides information about the protection of biological resources known to be in the areas. Implementation of MM-BIO-3, MM-BIO-5, MM-BIO-6, and MM-BIO-8 are designed to eliminate or reduce direct impacts to biological resources to a **less than significant impact with mitigation incorporated.**

San Joaquin Kit Fox (BV Hills 4 and 6)

The SJKF is a subspecies of kit fox that is endemic to the San Joaquin Valley, Carrizo Plain, and Cuyama Valley, as well as other small valleys in the western foothills of the Central Valley of California. They are only found west of the Sierra Nevada crest. They occupy arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils. SJKF are well-established in some urban areas and are highly adaptable to human-altered landscapes. They generally avoid intensively maintained agricultural land but forage well into croplands from surrounding habitat. SJKF uses subterranean dens year-round for shelter and pup-rearing. They are nocturnally active but may be above ground near their dens during the day, particularly in the spring. They feed primarily on small mammals, but will consume a variety of prey, and will scavenge for human food.

There are multiple SJKF CNDDB occurrences within a mile of the BSA of BV Hills 4. The records are known dens and collected specimens. One of these records (EONDX 49009) overlaps with 658UH-36-6D and 603H-1-6D well pads. This record is from 2001 and is presumed extant. There were no SJKF or SJKF den observations made within the BSA of BV Hills 4 during the site survey. Suitable foraging and denning habitat are present within the BSA of BV Hills 4, and the species may also pass through the BV Hills 4 Project site as a transient.

The literature review identified one SJKF recorded occurrence (EONDX 49009) within the BSA of BV Hills 6. This historical record is from 2001 and is presumed extant. The record details observation of two SJKF dens, scat, and multiple individuals. One potential SJKF den was observed during the site-specific survey. The potential den was located within the BV Hills 6 BSA along proposed pipeline and existing access road (see Figure 3.4.4-4 and Figure 3.4.4-5). Suitable foraging and denning habitat are present within the BV Hills 6 BSA, and the species may also pass through the Project as a transient.

As noted in Impact #3.4.1 – Aesthetics (d), the Project will use lights during temporary well construction activities. The lights will comply with the County's Dark Skies Ordinance and will be shielded and directed downward toward the work area to avoid light trespassing off-site (DF-AES-1). These lights are not expected to impact any nocturnal species. Once the wells are constructed, no nighttime work is anticipated. Operational activities are also conducted during daytime hours, and no permanent lighting is required.

Direct impacts and potential for take of this species from the project include vehicle strikes, disturbance to foraging habitat and denning habitat on undisturbed lands, and noise and dust by construction activities. Potential dens on or near the Project site will be monitored according to survey protocols and, if unoccupied, will be sandbagged to deter future use by foxes until construction activities have ceased and the dens can be re-opened. If dens are occupied, appropriate buffers will be established to avoid disturbance as outlined in MM BIO-4. A qualified biologist will be on-site during initial ground disturbance to avoid take of the species (MM BIO-5). MM BIO-6 outlines the BMPs that would be implemented during construction and operations, including removing trash and food, restricting vehicular speeds to 10 mph at night and 20 mph during the day, covering trenches, capping pipes, etc. MM BIO-8 requires all crews to attend a Worker Environmental Awareness Training that provides information about the protection of biological resources known to be in the areas. Implementation of MM BIO-4, MM BIO-5, MM BIO-6, and MM BIO-8 are designed to eliminate or reduce direct impacts to biological resources to a ***less than significant impact with mitigation incorporated.***

San Joaquin Antelope Squirrel **(BV Hills 4 and 6)**

The SJAS is a small ground squirrel with small, rounded ears, short legs, and a short tail that is often held curled up over its back. The upperparts are buffy or tan color with a light striped along the sides, and the underparts are whitish; superficially resembles a chipmunk. Found primarily in arid annual grassland and shrubland communities in areas that are rarely subjected to flooding. The species prefers friable soils that are easy to dig in; common soil types for burrows are loam and sandy-loam soils.

There are multiple SJAS CNDDB occurrences within a mile of the BV Hills 4 BSA. The records are from 2001 and 2016 and are presumed extant. These records were for observed SJAS during various survey efforts. There were five observations of SJAS near the BV Hills 4 Project sites, and along proposed pipeline routes (Figures 3.4.4-3 and 3.4.4-4). Suitable foraging and burrowing habitats are present within the BV Hills 4 BSA, and the species may occur as a transient forager.

There are two SJAS CNDDB occurrences (EONDX 105475 and EONDX 105473) located within the BV Hills 6 BSA. These records are from 2016 and are presumed extant. These records were for 11 observed SJAS. There were six observations of SJAS on the BV Hills 6 Project along proposed pipeline routes and near proposed power pole locations (see Figure 3.4.4-5, Figure 3.4.4-6, and Figure 3.4.4-7). Suitable foraging and burrowing habitat are present within the BV Hills 6 BSA, and the species may occur as a transient forager.

Direct impacts and potential for take for this species from the project include vehicle strikes, disturbance to foraging habitat and burrowing habitat on undisturbed lands, and noise and dust by construction activities. Suitable SJAS burrows on or near the Project site can be avoided and, if unoccupied, closed for use by SJAS until construction activities have ceased, and the burrows can be re-opened. If burrows are occupied, complete avoidance will occur. A qualified biologist will be on-site during initial ground disturbance to minimize or avoid take of the species (MM BIO-5). Mitigation Measures BIO-3, BIO-4, BIO-5, BIO-6 and BIO-8 are designed to eliminate or reduce direct impacts to this species to a **less than significant impact with mitigation incorporated.**

***Western Burrowing Owl* (BV Hills 4 and 6)**

The WEBO is a small ground-dwelling owl that can be found throughout western North America. This species can be found in a variety of habitat types including grasslands, deserts, or other open habitats where food resources are available and contain treeless areas with low vegetation cover and gently sloping terrain. Burrowing owls use earthen burrows, typically relying on other fossorial mammals to construct their burrows such as California ground squirrels (*Otospermophilus beecheyi*), SJKF or American badger. They use a burrow throughout the year for temperature regulation, offspring rearing, shelter, and escape from predators. While burrows are most often earthen, they also use atypical burrows such as pipes, culverts, and other man-made structures, most often as shelter. Burrowing owls can have several burrows close to one other that they may frequently move among to avoid predators.

The nearest CNDDB occurrence (EONDX 49081) is located approximately 0.6 miles north of well site 658UH-36-6D (BV Hills 4). No burrowing owl or their sign (e.g., burrows, prey remains, or whitewash) were observed during the survey of BV Hills 4. Burrowing owls are present year-round in the Central Valley and typically use multiple burrows within their ranges. Their prey base (i.e., insects and lizards) within the BV Hills 4 Project site is minimal, however it is still possible that burrowing owls may become established in the area or pass through the Project sites as transients.

The nearest CNDDB occurrence (EONDX 49081) is located approximately 1.1 miles east of well site 4-5H-6D (BV Hills 6). No burrowing owl or their sign (e.g., burrows,

prey remains, or whitewash) was observed during the survey of BV Hills 6. Burrowing owls are present year-round in the Central Valley and typically use multiple burrows within their ranges. Their prey base (i.e., insects and lizards) within the BV Hills 6 Project site is minimal, however it is still possible that burrowing owls may become established in the area or pass through the Project sites as transients.

Direct impacts and potential for take of this species from the project include vehicle strikes, disturbance to foraging habitat and nesting habitat on undisturbed lands, and noise and dust by construction activities. Potential burrows on or near the Project site can be monitored according to survey protocols and, if unoccupied, closed for use by WEBO until construction activities have ceased, and the burrows can be re-opened. If burrows are occupied, appropriate buffers will be established to avoid disturbance, as outlined in MM BIO-4. A qualified biologist will be on-site during initial ground disturbance to minimize or avoid take of the species (MM BIO-5). Mitigation Measures BIO-4, BIO-5, BIO-6, and BIO-8 are designed to eliminate or reduce direct impacts to this species to a **less than significant impact with mitigation incorporated.**

Swainson's Hawk (BV Hills 4 and 6)

Swainson's hawk (*Buteo swainsoni*; SWHA) is a State Threatened species that occurs in grassland, desert, and agricultural landscapes throughout the Central Valley and Antelope Valley Some hawks may be resident, especially in the southern portion of their range, while others may migrate between winter and breeding habitats. They prefer larger isolated trees or small woodlots for nesting, usually with grassland or dryland grain fields nearby for foraging and have been known to nest in large eucalyptus trees (*Eucalyptus* sp.) along heavily traveled freeway corridors. Swainson's hawks forage in grassland, open scrub, pasture, and dryland grain agricultural habitats, primarily for rodents.

Swainson's hawk has potential to occur in the vicinity of the Project but is unlikely to be present within the Project footprint. Swainson's hawks forage in agricultural crops, shrublands, and grasslands, and typically nest in scattered trees or small groves. There is suitable foraging habitat in the vicinity of the Project, although the Project footprint itself does not provide suitable breeding or foraging habitat. The nearest CNDDB occurrence is from 1936 and located approximately 4.2 miles northeast of BV Hills 6 BSA (EONDX 91379).

The BSA does not contain suitable nesting habitat for SWHA and there is a limited prey base for the species in the BSA. Because the Project does not provide suitable foraging or nesting habitat, has a small footprint, and development of the Project would not result in a significant loss of habitat for the species. If the species were to be nesting within 0.5 mile of the Project during construction activities, normal reproductive or foraging behaviors could be affected.

Implementation of Mitigation Measures BIO-4, BIO-5, BIO-6, BIO-7 and BIO-8 are designed to reduce or eliminate direct impacts to this species to a less than significant level with mitigation incorporated.

American Badger (BV Hills 4 and 6)

The American badger (*Taxidea taxus;* AMBA) is an uncommon permanent resident at lower elevations throughout California except for the northern North Coast. They can typically be found in grasslands, deserts, and drier habitats. Badgers are typically nocturnal and hunt or forage at night while spending daylight hours below ground. Subterranean dens are usually found in friable soils, which are easier to dig in. American badgers spend most of their time near a den, but they may have multiple dens in an area that can be used intermittently. American badgers primarily feed on small mammals that they capture from digging out the prey's burrows. Such prey may include small mammals (pocket gophers, mice, and ground squirrels). Other prey may include birds, bird eggs, reptiles, invertebrates, and carrion.

The nearest CNDDB occurrence (EONDX 57244), approximately 1.0 mile south of the BV Hills 4 BSA, and is presumed extant. No AMBA or their sign (e.g., dens, scat, or prey remains) were observed during the survey of BV Hills 4. Since this species is a transient forager and highly mobile and it is possible that AMBA may become established in the existing burrows, dig new burrows or forage at the BV Hills 4 Project sites at any time.

The nearest CNDDB occurrence (EONDX 57484), approximately 2.2-miles south of the 4-5H-6D (BV Hills 6) and is presumed extant. No AMBA or their sign (e.g., dens, scat, or prey remains) were observed during the survey of BV Hills 6. Since this species is a transient forager and highly mobile, it is possible that AMBA may become established in the existing burrows, dig new burrows or forage at the BV Hills 6 Project sites at any time.

Direct impacts and potential for take of this species include vehicle strikes, disturbance to foraging habitat and burrowing habitat on undisturbed lands, and noise and dust by construction activities. Occupied burrows on or near the Project site can be avoided and, if unoccupied, closed for use by AMBA until construction activities have ceased and the dens can be re-opened. If dens are occupied, complete avoidance will occur as outlined in MM BIO-4. MM BIO-4, MM BIO-5, MM BIO-6, and MM BIO-8 are designed to eliminate or reduce direct impacts to this species to a **less than significant impact with mitigation incorporated**.

Nesting Birds (BV Hills 4 and 6)

Habitat within both the BV Hills 4 and 6 BSA supports nesting locations for native bird species, which are protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. The reconnaissance survey for BV Hills 4 was conducted during bird nesting season (February 1 to September 15). No stick or ground nests were observed in the BV Hills 4 BSA during the survey. However, the reconnaissance survey for BV Hills 6 was not conducted during bird nesting season (February 1 to September 15). There were no nests observed within the BV Hills 6 BSA during the survey. Various species of migratory birds, including LeConte's thrasher (*Toxostoma lecontei*) will construct nests in a variety of habitats and structures, and nests may be found in trees or shrubs, in man-made structures, and directly on the ground. Because both the BV Hills 4 and 6 BSA support several types of habitats suitable for nesting birds, it is likely that birds will nest within the BSA.

Direct impacts to nesting birds from the project include noise, dust, nearby to construction personnel, and vehicle strikes may cause injury or death, nest abandonment, and nest failure. As noted above, MM BIO-7 requires pre-construction surveys be conducted to identify if nesting birds inhabit the area. If none are observed, no future action is necessary. If active nests are observed, as required by MM BIO-7, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest. A biologist will also monitor the nest during construction activities, as necessary.

With implementation of the MM BIO-1 through BIO-8, Projects impacts to special-status wildlife species would be **less than significant with mitigation incorporated**.

MITIGATION MEASURE(S)

BIO-1: A qualified biologist knowledgeable on the identification of rare plant species shall conduct a pedestrian survey of areas of proposed disturbance within the project sites plus a 100-foot buffer to determine if any candidate, sensitive, or special-status plant species are present. These surveys shall be floristic in nature and shall be conducted during the optimal blooming periods of the target species prior to start of construction activities in this area in accordance with U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) protocols. Locations of any special-status plant species observed shall be mapped. If special-status plants are not identified during the survey(s), no further action is required.

Table 3.4.4-7
Blooming Period of Special-Status Plants with Potential to Occur

Special-Status Plant Species	Optimal Blooming Period
***Eremalche parryi* ssp. Kernensis / Kern mallow**	February/March - May
***Monolopia congdonii* / San Joaquin woolly threads**	February-May

CRPR (California Rare Plant Rank):
1A Presumed Extinct in California
1B Rare, Threatened, or Endangered in California and elsewhere
2A Plants presumed extirpated in California, but more common elsewhere
2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

BIO-2: If special-status plant species are found during the floristic surveys (BIO-1) or have been previously identified, then Ecologically Sensitive Area (ESA) fencing shall be established at a standard 50-foot radius around these individuals to ensure that they are not destroyed during Project activities. Pursuant to Section 1913 of the California Fish and Game Code, if Project activities cannot avoid those areas, then CDFW shall be notified and provided the opportunity to salvage any of these plants that would be removed. The CDFW may enter into agreement with the Project proponent to retain a qualified biologist for the relocation of sensitive plants to an approved location. Any salvage shall be undertaken in accordance with a salvage plan to be developed in consultation with CDFW. The plan shall include methods for transplanting and watering (if appropriate), success criteria for salvaged plants, monitoring the health and survivorship of salvaged plants during at least 5 years following salvage, and contingency measures if plant survivorship requirements are not satisfied.

BIO-3: Prior to construction in areas that contain suitable habitat for BNLL and if small mammal burrows cannot be avoided by ground-disturbing activities (e.g., excavation or grading) with a 50-foot buffer, qualified biologists shall conduct protocol-level surveys for blunt-nosed leopard lizard at disturbance locations within the 50-foot burrow buffer according to the approved Blunt-nosed Leopard Lizard Survey Methodology, as revised as of October 2019 (CDFW, 2019), or using another survey protocol approved by USFWS and CDFW. Project activity outside the specified 50-foot buffer may proceed while surveys are conducted. Overland travel not requiring ground disturbance may be permitted within the 50-foot buffer under the direct supervision of a qualified biologist. If no blunt-nosed leopard lizard is observed during the survey no further action is required. If blunt-

nosed leopard lizards are observed during the survey, then the measures below shall be implemented:

a. A pre-construction survey to search the proposed well for suitable burrows shall be conducted prior to ground-disturbing activities associated with Project activities. Surveys for burrows will occur no more than 30 days before the beginning of construction to ensure an up-to-date understanding of burrowing locations prior to actual siting. This would only be required in areas where blunt-nosed leopard lizards were determined to be present.

b. All construction activities occurring in areas where BNLL are determined to be present shall occur during the active BNLL season. On-site biological monitors shall be present at each site where activities are occurring within those areas.

c. If a BNLL is present within 50-feet of the construction activities, the monitor shall halt all activities until the BNLL leaves the 50-feet area on its accord.

BIO-4: Within 14 days prior to the start of Project ground-disturbing activities, a preconstruction survey with a 250-foot buffer, where land access is permitted, shall be conducted by a qualified biologist knowledgeable in the identification of these species. If dens/burrows/nests that could support any of these special-status species are discovered during the preconstruction survey, the avoidance buffers outlined below shall be established, and den or burrow monitoring will be conducted in accordance with the California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation (CDFW, 2012) and U.S. Fish and Wildlife Service (USFWS) Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS, 2011).

Den(s) or burrow(s) may be monitored using trail cameras or tracking mediums such as diatomaceous earth. If no species are detected for a minimum of four consecutive days/nights, the den or burrow may be burrow-scoped and plugged with a filled sandbag under the direct supervision of a qualified biologist. All tunnels must be examined for animal presence before plugging with a sandbag to ensure no burrowing owls, kit foxes, or other animals are hiding inside.

No work shall occur within these buffers unless the biologist approves and monitors the activity. A copy of the preconstruction survey report shall be submitted to CalGEM as evidence of compliance.

Table 3.4.4-8
Burrowing Owl (active burrows)

Location	Time of Year	Level of Disturbance	Level of Disturbance	Level of Disturbance
		Low	**Med**	**High**
Nesting Sites	April 1- Aug 15	200 m	500 m	500 m
Nesting Sites	Aug 16- Oct 15	200 m	200 m	500 m
Nesting Sites	Oct 16- Mar 31	50 m	100 m	500 m

American Badger/SJKF

- Potential or Atypical den – 50 feet
- Known den – 100 feet
- Natal Den –Contact CDFW for consultation

BIO-5: A qualified biological monitor shall be onsite during any initial ground-disturbing activities, including vegetation removal and well pad and pipeline installation. If a biological monitor is not onsite and special-status wildlife or their sign is observed on the Project site, the biologist shall be contacted immediately to determine whether biological monitoring or the implementation of avoidance buffers may be warranted. If at any time the qualified biologist determines that project activities could potentially have adverse impacts to listed species, project activities shall be halted, and the appropriate wildlife agencies shall be consulted prior to recommencement of activities.

BIO-6: The following measures shall be implemented during all phases of the Project to reduce the potential for impact from the Project. They are derived from the USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS, 2011).

a. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the construction or Project site.

b. Construction-related vehicle traffic shall be restricted to established roads and predetermined ingress and egress corridors, staging, and parking areas. Vehicle speeds shall not exceed 20 miles per hour within the Project

site. A 10-mile-per-hour speed limit shall be implemented during night-time construction activities.

c. To prevent inadvertent entrapment of kit fox or other animals during construction, the contractor shall cover all excavated, steep-walled holes or trenches more than two feet deep at the close of each workday with plywood or similar materials. If holes or trenches cannot be covered, one or more escape ramps constructed of earthen fill or wooden planks shall be installed in the trench. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for entrapped animals. All construction-related pipes, culverts, or similar structures with a diameter of four inches or greater that are stored on the Project site shall be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If at any time an entrapped or injured kit fox is discovered, work in the immediate area shall be temporarily halted, and USFWS and CDFW shall be consulted for guidance.

d. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS and CDFW have been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity until the fox has escaped.

e. No pets, such as dogs or cats, shall be permitted on the Project sites to prevent harassment, mortality of kit foxes, or destruction of dens.

f. No fueling of construction equipment will occur within 100 feet of a drainage, water crossing, or wetlands. If a spill or pipe break occurs within 100 feet of any water feature, adherence to the CREH Spill Prevention, Control, and Countermeasure (SPCC) Plan will be followed.

g. Use of anticoagulant rodenticides and herbicides in Project sites shall be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe labels and other restrictions mandated by the EPA, California Department of Food and Agriculture, and other State and federal legislation, as well as additional Project-related restrictions deemed necessary by the USFWS and CDFW. If rodent control must be

conducted, zinc phosphide shall be used because of the proven lower risk to kit foxes.

h. A representative shall be appointed by the Project proponent, who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative shall be identified during the employee education program, and their name and telephone number shall be provided to the USFWS.

i. The Sacramento Fish and Wildlife Office of USFWS and CDFW shall be notified in writing within three working days of the accidental death or injury to an SJKF during Project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The USFWS Sacramento office can be reached at 916-414-6464. The BLM will also be informed about those wells on the Split Estate property.

j. All sightings of the SJKF shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed shall also be provided to the USFWS at the address below.

k. Any Project-related information required by the USFWS or questions concerning the above conditions, or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at Endangered Species Division, 2800 Cottage Way, Suite W 2605, Sacramento, California 95825-1846, phone: (916) 414-6620 or (916) 414-6600.

l. A copy of the pre-construction survey report shall be submitted to the Lead Agency as evidence of compliance.

BIO-7: If Project construction activities are initiated during the nesting season (February 1 to September 15), a pre-construction nesting bird survey shall be conducted within 14 days prior to the start of construction. The surveys shall encompass the Project footprint and accessible areas or land visible from accessible areas within a 250-foot buffer for songbirds and a 500-foot buffer for raptors. If no active nests are found, no further action is required. However, existing nests may become active, and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress.

If active nests are found during the survey or at any time during the construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest or if breeding attempts have otherwise been unsuccessful. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress. A copy of the pre-construction survey report shall be submitted to the Lead Agency as evidence of compliance.

BIO-8: Prior to the initiation of construction activities, all construction personnel shall attend a Worker Environmental Awareness Training Program developed by CREH. It shall include the components described below:

a. Information on the life history and identification of special-status species that may occur or that may be affected by Project activities. The program shall also discuss the legal protection status of each such species, the definition of "take" under the FESA and CESA, measures the Project proponent/operator shall implement to protect the species, reporting requirements, and specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the CEQA mitigation measures and agency permit requirements.

b. Training records shall be maintained and available to CalGEM upon request.

Level of Significance

Impacts would be **less than significant with mitigation incorporated**.

Impact #3.4.4b – 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?

Sensitive natural communities are designated by various resource agencies, including the CDFW, USFWS, BLM, U.S. Forest Service, or are designated by local agencies through policies, ordinances, and regulations. Sensitive natural communities generally have important functions or values for plants and wildlife or are recognized as declining in extent or distribution and warrant some level of protection.

Based on the database search, Valley Sink Scrub and Valley Saltbush Scrub are the only natural communities occurring within 10 miles of the Project. The nearest Valley Saltbush Scrub CNDDB occurrence (EONDX 9741) is from 1998 and is located approximately 2.9 miles southeast of well site 675UH-6-8D. The nearest Valley Sink Scrub CNDDB occurrence (EONDX 25389) is from 1987 and is located approximately 8.68 miles northeast of well site 616-12D. Per available mapping data from NWI/NHD, the nearest creek and riparian habitat are located at Broad Creek located approximately one mile north of the nearest well site. None of the well sites associated with the Project sites contain riparian habitat. These communities do not have the potential to occur within the BSA because all areas have been highly disturbed with oil and gas development. There are no sensitive natural communities or riparian habitats observed to be present on the Project and therefore would be **less than significant impacts** to sensitive natural communities.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.4c – Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

BV Hills 4

The NHD/NWI identified one water feature that passes through the western boundary of the BSA near 658UH-36-6D and 603H-1-6D well pads (see Figure 3.4.4-6). NHD identified the unnamed drainage as an intermittent stream/river. No identified NHD or NWI water features were observed or found in the database searches that intersect any of the well pads, proposed pipeline routes, or existing access roads.

BV Hills 6

The NHD and NWI identified several water features with a Cowardin code of R4SBC that intersects the BSA. As shown in Figure 3.4.4-7, Figure 3.4.4-9 and listed in Table 3.4.4-9, there are drainages in several Project areas. Table 3.4.4-9 shows the crossing identification, the well identification, the type of crossing (i.e., existing road with a culvert, or pipeline), and the distance of the drainage to the construction area.

Table 3.4.4-9
Water Features and Crossing Identification

Crossing Number	Servicing Which Well Pad(s)	Crossing Feature Type	Approximate Distance to Well Site
Crossing 1	4-5H-6D	Existing Road Access	1,961 feet
Crossing 2	4-5H-9D	Existing Road Access	830 feet
Crossing 3	4-5H-6D	Proposed Pipeline	4,206 feet
Crossing 4	616-12D	Existing Road Access and Proposed Pipeline	947 feet
Crossing 5	616-12D	Existing Road Access and Proposed Pipeline	484 feet

BV Hills 4 and BV Hills 6 are located on an active oilfield with existing access roads where culverts have been previously installed, and construction activities will not impact these drainages. New pipelines that cross a drainage will be spanned using pipe supports that will be installed on either side of these features, and a steel casing will be used for pipeline protection. As required by MM BIO-9, no refueling will occur within 100 feet of these water features.

MITIGATION MEASURE(S)

BIO-9: No fueling of construction equipment shall occur within 100 feet of a drainage, water crossing, or wetlands. If a spill or pipe break occurs within 100 feet of any water feature, adherence to the CREH Spill Prevention, Control, and Countermeasure (SPCC) Plan shall be followed.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated.**

Impact #3.4.4d – 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?

BV Hills 4 only

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which wildlife can travel from one habitat or resource area to another. Wildlife movement corridors can be large tracts of land that connect regionally important habitats that support wildlife in general, such as stop-over habitat that supports migrating birds or large contiguous natural habitats that support wildlife with very large home ranges (e.g., coyotes, mule deer). They can also be small-scale movement corridors, such as riparian zones, which provide connectivity and cover to support movement at a local scale.

The Project sites are located within a wildlife core area for several species including SJKF, SJAS, BNLL, giant kangaroo rat, and several other species (see Figure 3.4.4-9, and Figure 3.4.4-10). SJKF, SJAS, and AMBA are known to occur in the vicinity of the Project site and were observed via camera surveys, and potential SJKF dens were observed within the BSA during the survey. It is not anticipated that kangaroo rat species would inhabit the Project. With the open landscape present at the well sites, it creates a foraging habitat that may be used from time to time by these species. With implementation of MM BIO-1 through MM BIO-8, impacts to fish or wildlife movement corridors, linkages, or nursey sites will be **less than significant**.

MITIGATION MEASURE(S)

Implementation of MM BIO-1 through MM BIO-7.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated**.

Impact #3.4.4e – Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

BV Hills 4 and BV Hills 6

See discussion-n under 3.4.1 – AESTHETICS (b). Kern County 2006 General Plan adopted an Oak Tree Conservation provision that provides basic standards, measures, and compliance requirements for the preservation and protection of oak trees and oak tree woodlands within the County. Since the Project sites do not contain any oak trees, nor are they located within a designated oak

woodland, as the sites are previously disturbed and void of any vegetation or trees, this provision does not apply to the Project.

Therefore, with respect to local policies and ordinances related to the protection of biological resources the impact would be **less than significant**

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.4f – 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?

According to the CDFW BIOS Map Viewer, the Project is not located within an area covered by HCP or Natural Community Conservation Plan (NCCP), or other approved local, regional, or state HCP (California Department of Fish and Wildlife, 2022). Therefore, no Project impacts related to adopted or approved plans would occur, no measures are warranted, and the impact would be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Figure 3.4.4-1
Overall Project Site Buena Vista Hills 4 and 6
Kern County, California

Date Created: August 24, 2023

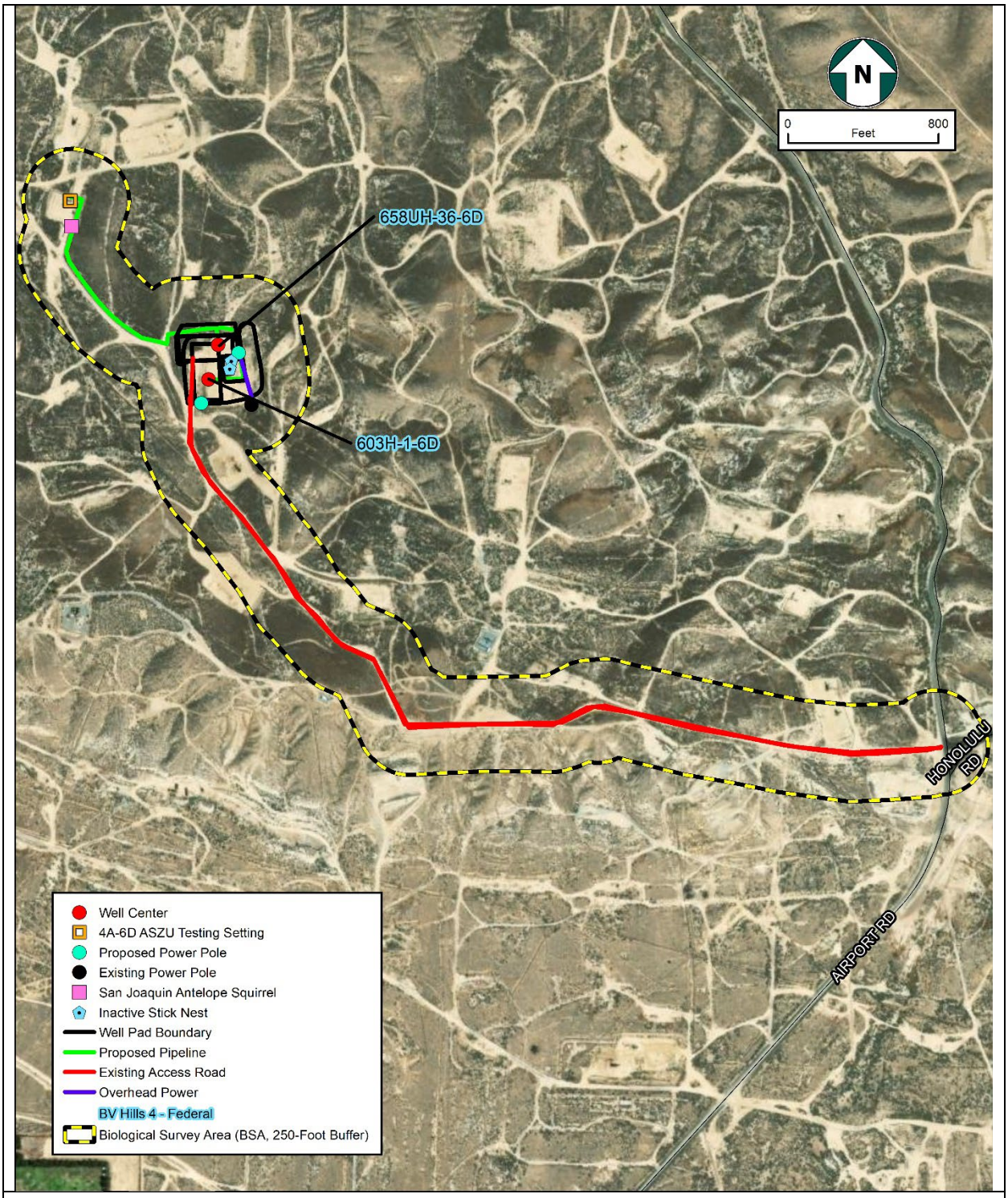

Figure 3.4.4-2
Biological Resources BV Hills 4
Kern County, California

Date Created August 24, 2023

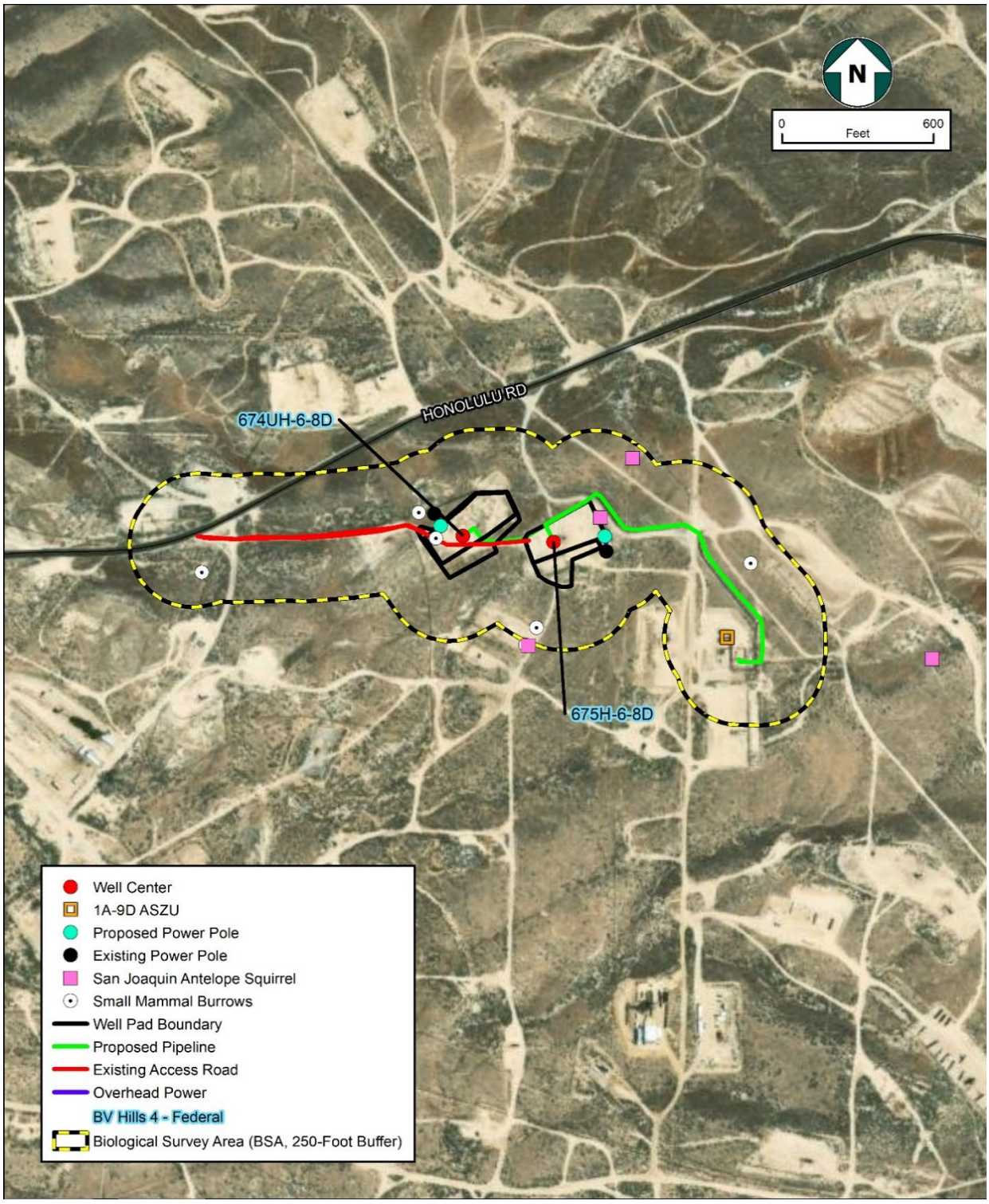

Figure 3.4.4-3
Biological Resources BV Hills 4
Kern County, California

Date Created: August 24, 2023

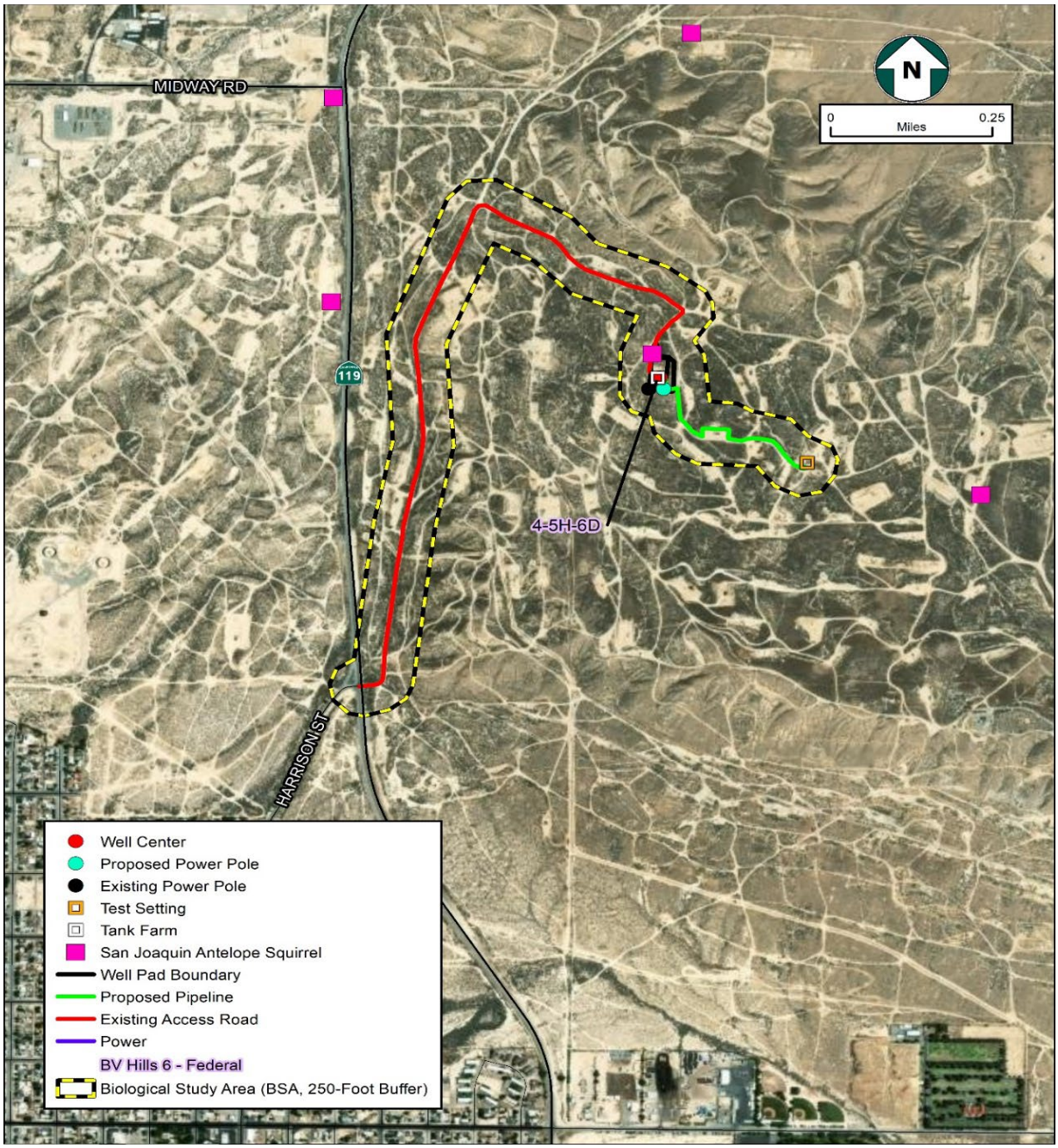

Figure .4.4- BV Hills 6 Wells Part 1 of 2
Biological Resources BV Hills 6
Kern County, California

Date Created: August 24, 2023

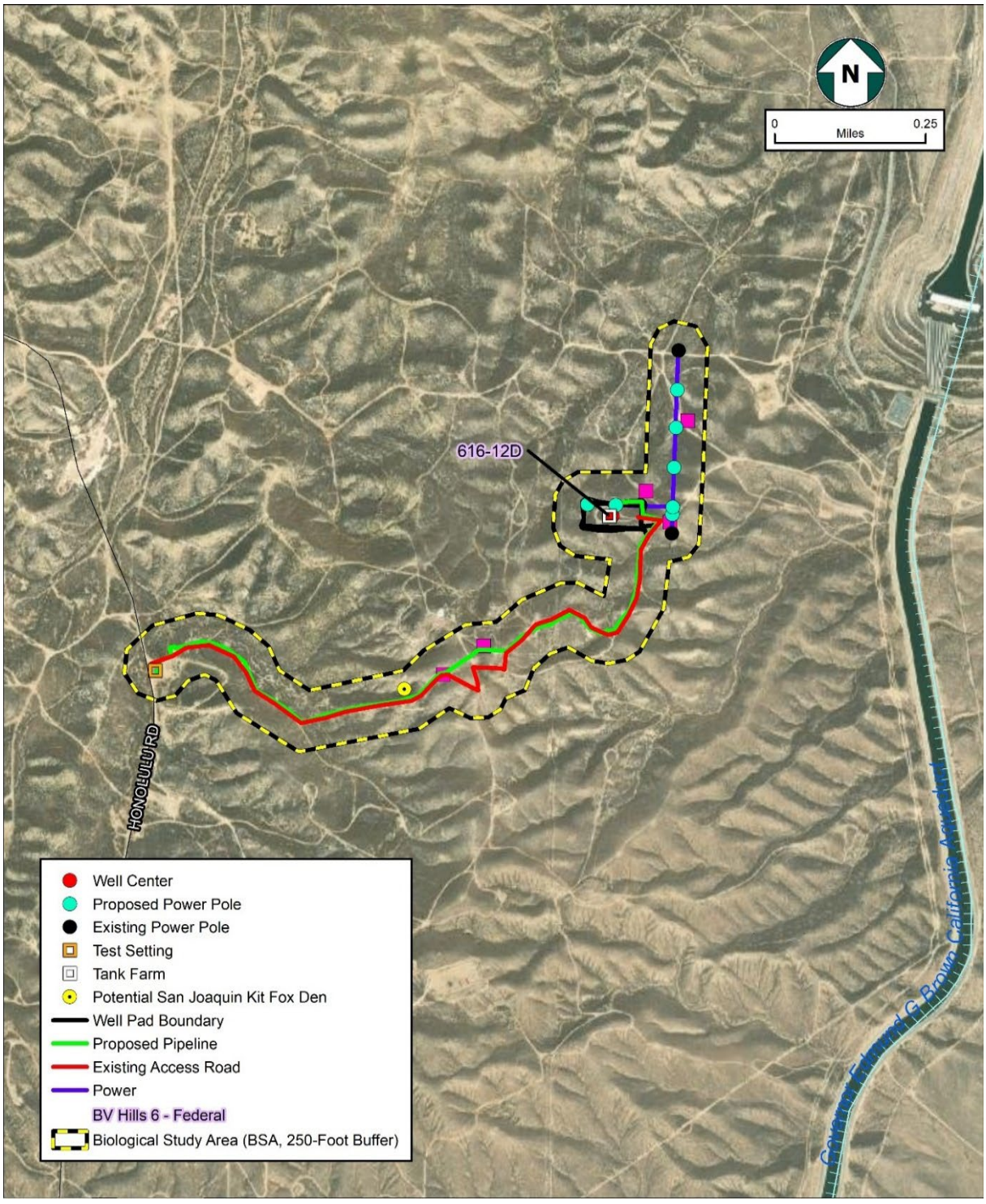

Figure 3.4.4-4
Biological Resources BV Hills 6
Kern County, California

Date Created: August 24, 2023

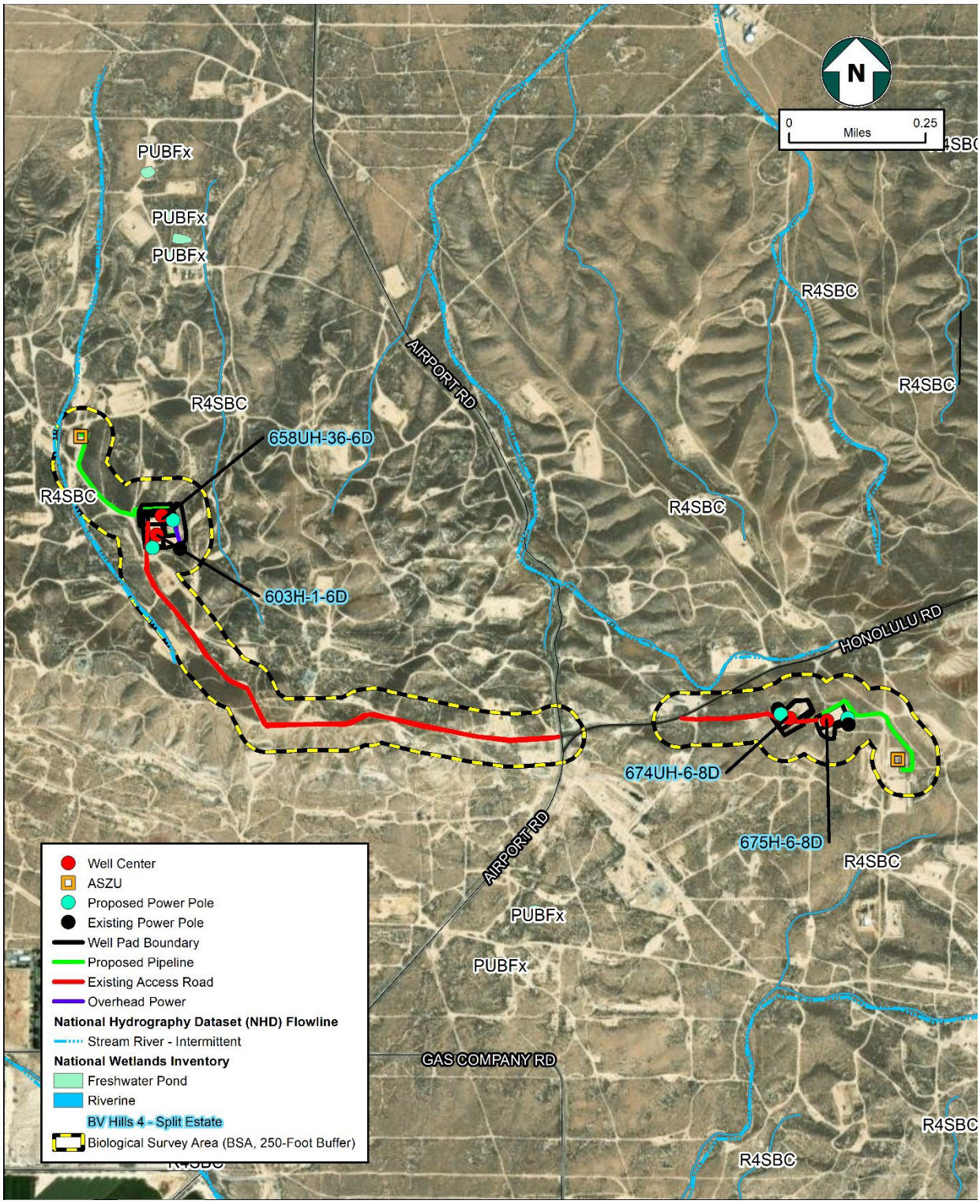

Figure 3.4.4-5
NHD and NWI BV Hills 4
Kern County, California

Date Created: August 24, 2023

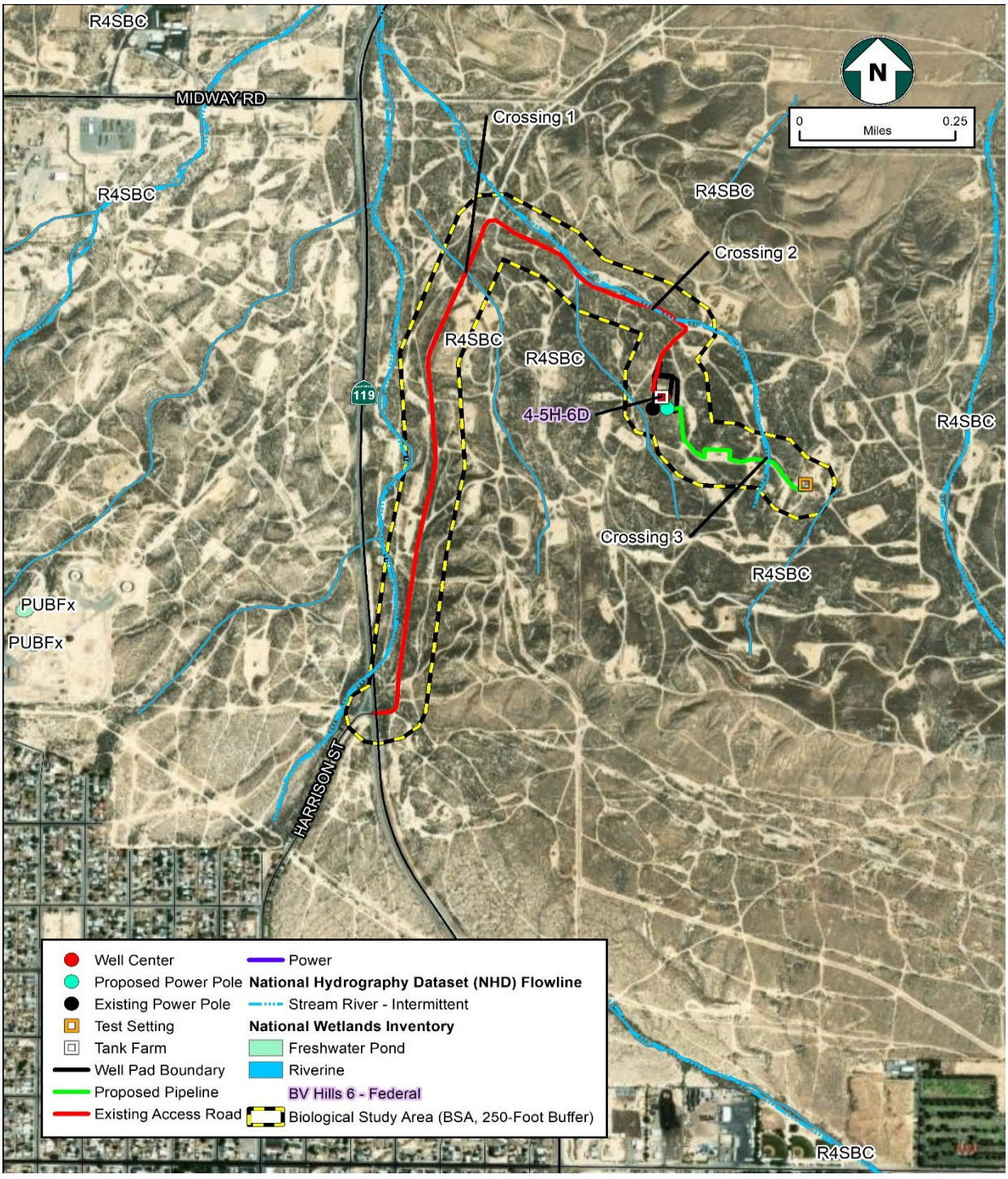

Figure 3.4.4-6
NHD and NWI BV Hills 6
Kern County, California

Date Created: August 24, 2023

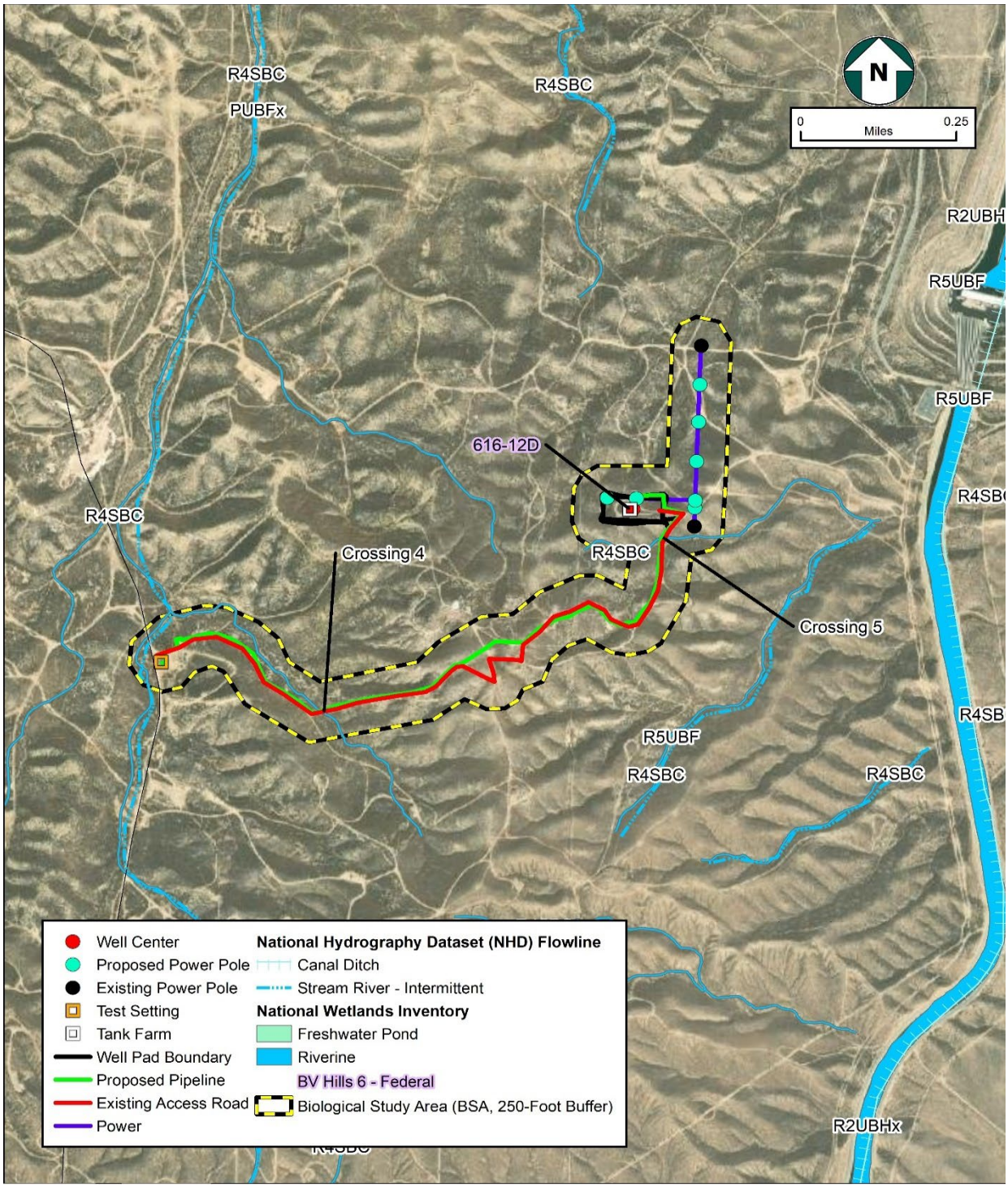

Figure 3.4.4-7
NHD and NWI BV Hills 6
Kern County, California

Date Created: August 24, 2023

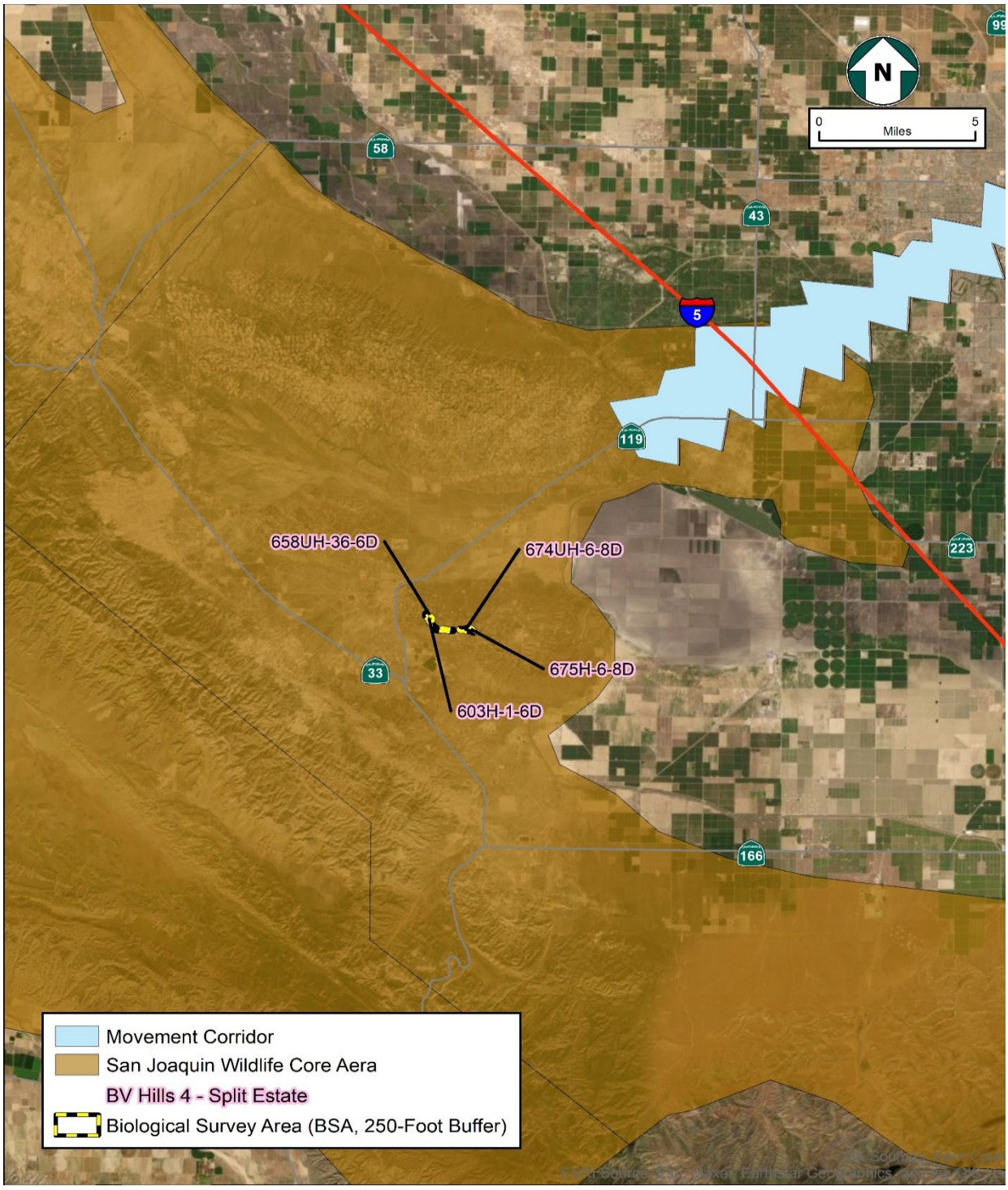

Figure 3.4.4-8
Corridors and Linkages BV Hills 4
Kern County, California

Date Created: August 24, 2023

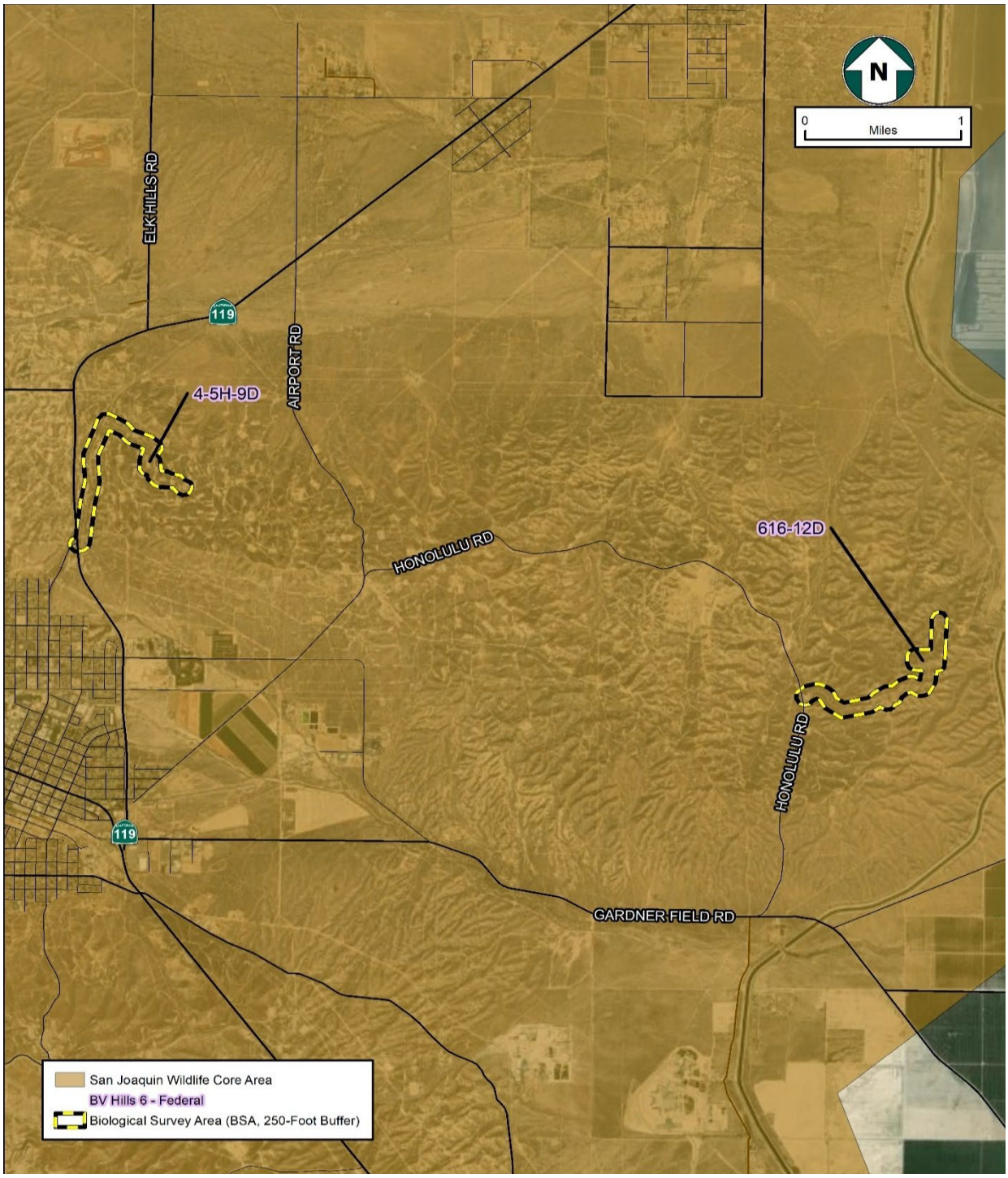

Figure 3.4.4-9
Corridors and Linkages BV Hills 6
Kern County, California

Date Created: August 24, 2023

Photo 1: View of disturbed well pad location 603H-1-6D and surrounding area.
GPS Coordinates: 35.168388, -119.433933, facing north.
Taken by Eric Madueno on July 22, 2022.

Photo 2: View of disturbed well pad location 603H-1-6D and surrounding area.
GPS Coordinates: 35.168388, -119.433933, facing north.
Taken by Eric Madueno on July 22, 2022.

Photo 3: View of disturbed well pad location 658UH-36-6D and surrounding area.
GPS Coordinates: 35.168800, -119.433845, facing east.
Taken by Eric Madueno on July 22, 2022.

Photo 4: View of disturbed well pad location 658UH-36-6D and surrounding area.
GPS Coordinates: 35.168800, -119.433845, facing south.
Taken by Eric Madueno on July 22, 2022.

Photo 5: View of disturbed well pad location 674UH-6-8D and surrounding area.
GPS Coordinates: 35.163691, -119.413336, facing north.
Taken by Eric Madueno on July 22, 2022.

Photo 6: View of disturbed well pad location 674UH-6-8D and surrounding area.
GPS Coordinates: 35.163733, -119.413494, facing east.
Taken by Eric Madueno on July 22, 2022.

Photo 7: View of disturbed well pad location 674UH-6-8D and surrounding area.
GPS Coordinates: 35.163608, -119.412147, facing north.
Taken by Eric Madueno on July 22, 2022.

Photo 8: View of representative small mammal burrows near 674UH-6-8D well pad.
GPS Coordinates: 35.163725, -119.413694, facing west.
Taken by Eric Madueno on July 22, 2022.

Photo 9: View of disturbed well pad location 4-5H-6D and surrounding area.
GPS Coordinates: 35.173432, -119.445266, facing south.
Taken by Karissa Denney on October 4, 2022.

Photo 10: View of disturbed well pad location 4-5H-6D and surrounding area.
GPS Coordinates: 35.173432, -119.445266, facing north.
Taken by Karissa Denney on October 4, 2022.

Photo 11: View of well pad location 616-12D and surrounding area.
GPS Coordinates: 35.155121, -119.357370, facing east.
Taken by Karissa Denney on October 4, 2022

Photo 12: View of well pad location 616-12D and surrounding area.
GPS Coordinates: 35.155121, -119.357370, facing east.
Taken by Karissa Denney on October 4, 2022.

3.4.5 - CULTURAL RESOURCES

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

The analyses in this section are based on the Cultural Resource Review Letter Reports (ASM Affiliates, June 22, 2022, and August 16, 2022) attached as Appendix D:

BV Hills 4

603H-1-6D, 658UH-36-6D, 674UH-6-8D, and 675H-6-8D, Cultural Resources Review, Four Buena Vista Hills Oil Field Federal Wells, Kern County, California (ASM Affiliates, 2022a).

BV Hills 6

616-12D and 4-5H-6D: Cultural Resources Review, Two Buena Vista Hills Oil Field Federal Wells, Kern County, California (ASM Affiliates, 2022b).

BLM Permit Conditions of Approval

The BLM Conditions of Approval included in the NEPA Documents apply to the project and help reduce potential impacts. Those specific to cultural resources are listed here as context for the mitigation measures for cultural resources. These BLM COAs are also in Table 2.1 and in the MMRP as regulatory requirements (RR-

CUL-1). Mitigation measures described in this document are in addition to compliance with the BLM COAs and other RRs.

- RR-CUL-1 BLM COA Discovery of cultural resources and human remains during project implementation

Discussion

Impact #3.4.5a – Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

BV Hills 4

Cultural Resource Review, Four Buena Vista Oil Field Federal Wells, Kern County, California

- 603H-1-6D, 658UH-36-6D, 674UH-6-8D, and 675H-6-8D

A cultural resources review for the listed wells was previously surveyed and determined that no cultural resources are located within the Project boundaries. Additionally, construction would be conducted within the partially developed and previously disturbed areas for these well sites. Therefore, the potential to uncover subsurface historical or archaeological deposits would be considered unlikely.

BV Hills 6

Cultural Resource Review, Two Buena Vista Oil Field Federal Wells, Kern County, California

- 616-12D and 4-5H-6D

A cultural resources review for these wells was previously surveyed and determined that no cultural resources are located within the Project boundaries. Additionally, construction would be conducted within the partially developed and previously disturbed areas for these well sites. Therefore, the potential to uncover subsurface historical or archaeological deposits would be considered unlikely.

However, there is still a possibility that historical or archaeological materials may be exposed during construction at both sites. Grading and trenching, as well as

other ground-disturbing actions, have the potential to damage or destroy these previously unidentified and potentially significant cultural resources within the project area, including historical or archaeological resources. Disturbance of any deposits that have the potential to provide significant cultural data would be considered a significant impact. To reduce the potential impacts of the Project on cultural resources if they are encountered, implementation of MM CUL-1/TCR-1 and CUL-2/TCR-2, the Project would have a **less than significant impact with mitigation incorporated** related to cultural resources.

MITIGATION MEASURE(S)

CUL/TCR -1: If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified archaeologist can evaluate the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock, as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. Implementation of the mitigation measure below would ensure that the proposed Project would not cause a substantial adverse change in the significance of a historical resource.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated**.

Impact #3.4.5b – Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

See Impact #3.4.5a.

Although considered unlikely since there is no indication of any historical or archaeological resources on the Project sites, subsurface construction activities associated with the proposed Project could potentially damage or destroy previously undiscovered archaeological resources. This is considered a potentially significant impact. Mitigation is proposed requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface historical and archaeological resources. To reduce the potential impacts of the Project on cultural resources, implementation of MM CUL-

1/TCR-1 and CUL-2/TCR-2, the Project would have a **less than significant impact** related to cultural resources.

MITIGATION MEASURE(S)

Implementation of Mitigation Measure CUL/TCR-1 and CUL/TCR-2.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated**.

Impact #3.4.5c – Would the Project disturb any human remains, including those interred outside of formal cemeteries?

See Impact #3.4.5a.

The records searches of both sites did not indicate the presence of any human remains, burials, or cemeteries within the Project area. No human remains have been discovered at the Project site, and no burials or cemeteries are known to occur within the area of the Project site. However, construction would involve earth-disturbing activities, and it is still possible that human remains may be discovered, possibly in association with archaeological sites. MM CUL-2/TCR-2 has been included in the unlikely event that human remains are found during ground-disturbing activities. Accordingly, this is a potentially significant impact. Mitigation is proposed to reduce this potentially significant impact to a level of **less than significant**.

MITIGATION MEASURE(S)

CUL/TCR-2: If human remains are discovered during construction or operational activities, the steps in 14 CCR § 15064.5(e) will be followed. Further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code (HSC). The specific protocol, guidelines, and channels of communication outlined by the NAHC, in accordance with Section 7050.5 of the HSC, Section 5097.98 of the PRC (Chapter 1492, Statutes of 1982, Senate Bill (SB) 297), and section 7050.5 shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of a discovery of human remains, at the direction of the county coroner.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated**.

3.4.6 - *ENERGY*

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Discussion

Impact #3.4.6a – Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation?

BV Hills 4 and BV Hills 6

The means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed Project would be considered "wasteful, inefficient, or unnecessary" if it were to violate State and federal energy standards and/or result in significant adverse impacts related to Project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The KCGP discusses the importance of Kern County's oil industry, as Kern County is well known for its petroleum resources and production. Energy development in California is subject to a complicated multi-level system of governmental regulations and programs. Kern County has direct control over many of the land use decisions concerning local energy development. Many other decisions concerning energy development in Kern County, however, are made by State and federal agencies.

As the Project is to develop six oil wells on previously disturbed land within an existing oilfield, the consumption of energy during the life of Project activities outweighs the potential production of energy that would occur with the potential production of the wells. Use of fuels (primarily gasoline and diesel) for the operation of construction equipment and vehicles to perform a variety of activities, including excavation, hauling, well installation, and vehicle travel (including offsite and commuter trips) are anticipated.

Tables 3.4.3-1 through 3.4.3-3 for BV Hills 4 and Tables 3.4.3-5 through 3.4.3-7 for BV Hills 6 detail the number of equipment and employees associated with construction activities and their anticipated hourly operations. Construction equipment, heavy-duty, medium-duty, or light-duty trucks, and passenger vehicles powered by combustion engines fueled by diesel or gasoline are necessary for construction but would not be used in an inefficient or wasteful manner. As discussed in the KCGP, Kern County's known petroleum resources are finite and will ultimately be depleted; however, exploration and development should continue for decades. Some fields and portions of fields will be depleted and abandoned, but new discoveries and technological advancements may add to presently known reserves. The Project's development of new wells will continue to support oil resources that are needed to fulfill energy development needs.

The Elk Hills Power Plant produces approximately 550 megawatts (MW) for the Buena Vista Hills Oilfield, with whatever excess energy is produced being sold to PG&E. The pump jacks for each well have 100 horsepower (HP) motors and generally run at 50 HP. This translates to approximately 38 kilowatts per hour (KWH) or 912 KWH a day per well. The anticipated operational power usage increase is not anticipated to exceed current power production from the Elk Hills Power Plant, nor would the operation result in the inefficient or wasteful use of produced power. Therefore, the Project will have a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.6b – Would the Project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

See Impact #3.4.6a.

Chapter 5, Energy Element of KCGP identified three primary objectives: (1) resource management and protection; (2) establishing development standards to provide for the protection of the environment, public health, and safety; and (3) promoting and facilitating energy development. KCGP acknowledges its role as a major oil, natural gas, and electricity producer. The Project would continue to be consistent with the goals, policies, and implementation measures of the Energy Element of the KCGP, including its efforts to identify cogeneration and renewable energy opportunities for placement within Kern County's oilfields. The Project will not conflict with or obstruct a State or local plan for renewable energy efficiency and will have a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

3.4.7 - *GEOLOGY & SOILS*

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
	Would the Project:				
a.	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
	ii. Strong seismic ground shaking?	☐	☐	☒	☐
	iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	iv. Landslides?	☐	☐	☒	☐
b.	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial 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 in areas 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?	☐	☒	☐	☐

Discussion

The analyses in this section are based on the EAs prepared for BV Hills 4 (DOI-BLM-CA-C060-2022-0024-EA, Programmatic Project #124) and 6 (DOI-BLM-CA-C060-

2022-0089-EA, Programmatic Project #133) (Bureau of Land Management, 2022a; Bureau of Land Management, 2022b) found in Appendix B.

Environmental Setting

BV Hills 4 and BV Hills 6

The proposed Project sites are located within previously disturbed areas that are currently used for oilfield production activities. The topography is generally flat, with good access to roads. The closest sensitive receptor is a residence located approximately one mile to the west.

Both Project sites are located in the Great Valley Geomorphic Province of California, which is an alluvial plain about 50 miles wide and 400 miles long. The Great Valley comprises the Sacramento Valley in the north and the San Joaquin Valley in the south. The alluvial plain is composed of thousands of feet of sedimentary deposits that have undergone periods of subsidence and uplifting over millions of years. Most of the surface of the Great Valley is covered with Recent (Holocene, i.e., 10,000 years ago) and Pleistocene (i.e., 10,000 years to 1,800,000 years ago) alluvium. This alluvium is composed of sediments from the Sierra Nevada to the east and the Coast Range to the west that were carried by water and deposited on the Valley floor. Siltstone, claystone, and sandstone are the primary types of sedimentary deposits. Surface elevations within the Great Valley generally range from several feet below msl to more than 1,000 feet above msl.

BLM Permit Conditions of Approval

The BLM Conditions of Approval included in the NEPA Documents apply to the project and help reduce potential impacts. Those COAs specific to geology and soil resources are listed here as context for the mitigation measures for biological resources. These BLM COAs are also in Table 2.1 and in the MMRP as regulatory requirements (RR-GEO-2 to RR-GEO-3). Mitigation measures described in this document are in addition to compliance with the BLM COAs and other RRs.

- RR-GEO-2 BLM COA Geology and Soils Discovery of Paleontological Resources
- RR-GEO-3 BLM COA Paleontological Resource Monitoring and Mitigation Plan

Impact #3.4.7a(i) – Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-

Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act) requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazard of fault rupture; however, surface fault rupture is not necessarily restricted to the area within the Alquist-Priolo Zone. The Alquist-Priolo Act prohibits the location of most structures for human occupancy across active fault traces. Within these zones, cities and counties must regulate certain development, which includes withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement.

BV Hills 4

According to the California Geological Survey (CGS) Information Warehouse Regulatory Map online viewer, BV Hills 4 well sites are located in close proximity to the Buena Vista Fault, which is a very localized fault. The San Andreas fault system is approximately 11 miles south of the BV Hills 4 Project area.

BV Hills 6

According to the California Geological Survey (CGS) Information Warehouse Regulatory Map online viewer, Well 4-5H-6D is located in close proximity of the Buena Vista Fault, which is a very localized fault. Well 616-12D is not located near the Alquist-Priolo fault zone. The San Andreas fault system is approximately 11 miles west of the BV Hills 6 Project area.

Strong seismic activity could damage current and/or future oil and gas exploration and production activities, such as drilling. In addition, well and production infrastructure could be damaged, resulting in the degradation of well casing or seals, as well as plugs of abandoned wells. Pipelines transporting oil, gas, waste gas, and/or produced oil could crack and begin to leak. CREH is not proposing to conduct any SB 4 well stimulation treatment activities.

The Project does not include any habitable structures, and only routine maintenance would be needed on a sporadic basis. Furthermore, many small capacity drilling rigs and/or production rigs are anchored via guy wires for stability, while most large capacity (deep drilling) rigs have a low center of gravity with heavy base sub-structures that taper up to smaller top members. With low centers of gravity, this design effectively allows the rig to withstand shaking and movement without falling over. Therefore, the proposed Project will not expose people or structures to potential adverse effects from strong seismic ground

shaking or seismic-related ground failure. Therefore, impacts related to earthquakes are **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.7a(ii) – Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Ground movement during an earthquake can vary depending on the overall moment magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. As a rule, the greater the earthquake magnitude and the closer the fault rupture to the site, the greater the intensity of ground shaking. However, different geologic materials respond differently to earthquake waves. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking.

The CGS and USGS conduct Probabilistic Seismic Hazard Analysis based on historical earthquakes, slip rates on major faults and deformation throughout the region, and the potential for amplification of seismic waves by near-surface geologic materials. The resulting earthquake shaking potential is used in developing building code design values, estimating future earthquake losses, and prioritizing earthquake retrofit.

According to the KCGP, Kern County is located in one of the more seismically active areas of California and may, at any time, be subject to moderate-to-severe ground shaking. The closest Project site is approximately 0.1 miles west of the Buena Vista fault and 11 miles east of the San Andreas fault. These faults could produce moderate-to-severe ground shaking. However, as noted above, the Project does not include any habitable structures, and only routine maintenance would be needed on a sporadic basis. With implementation of applicable federal, State, and local standards, including the Uniform Building Code (UBC) published by the International Conference of Building, California Building Code (CBC), as contained in Title 24 CCR Part 2, (RR-GEO-3) and permitting standards established by CalGEM for well development, impacts are considered **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.7a(iii) – Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

See Impact #3.6.2a(i-ii).

Liquefaction occurs when saturated, loose materials are weakened and transformed from a solid to a near liquid state due to increased pore water pressure caused by strong ground motion from an earthquake. The susceptibility of liquefaction is dependent on soil type and the depth of the water table, as well as the amount of rainfall, excavation, or seismic activities.

BV Hills 4

The Soil Survey of Kern County, California, indicates that the Project sites for BV Hills 4 consist of Elkhills sandy loam at 5-15 percent slope, Elkhills sandy loam 15-30 percent slope, and Kimberlina gravelly sandy loam 5-9 percent slope. Elkhills sandy loam at 5-15 and 15-30 percent slopes are comprised of well-drained soils consisting of alluvium derived from sedimentary rock and/or granitoid rock. Kimberlina gravelly sandy loam consists of alluvium derived from granitoid and/or sedimentary rock and is well drained. (Natural Soils Conservation Service, 2022).

BV Hills 6

The Soil Survey of Kern County, California, indicates that the Project sites for BV Hills 6 consist of Elkhills sandy loam at 5-15 percent slope and Elkhills sandy loam 15-30 percent slope, Elkhills sandy loam at 5-15 and 15-30 percent slopes are comprised of well-drained soils consisting of alluvium derived from sedimentary rock and/or granitoid rock (Natural Soils Conservation Service, 2022).

Poorly drained fine-grained soils such as sandy, silty, and gravelly soils are the most susceptible to liquefaction. The KCGP indicates that young alluvium deposits where the groundwater table is higher than 50 feet below the ground surface are where liquefaction is most likely to occur. As noted in the EA, the Buena Vista Hills Oilfield area is not within the boundary of any groundwater basin established by

the California Department of Water Resources (Bureau of Land Management, 2022a). The Project does not include any habitable structures, and only routine maintenance would be needed on a sporadic basis. Therefore, with consideration of the soil composition, absence of groundwater basins within the Project sites, and absence of habitable structures, the Project would not result in significant exposure of people or structures to substantial adverse effects involving seismic-related ground failure, including liquefaction. Therefore, Project impacts would be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.7a(iv) – Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

BV Hills 4 and 6

Landslides occur due to a number of natural and man-made factors. In general, most landslides occur in connection with other major natural disasters such as earthquakes, volcanic eruptions, wildfires, and floods. Landslides also are caused by other factors such as the strength of underlying material surface and groundwater conditions, surface vegetation, seasonal rainfall (i.e., soil saturation), and areas of steep slopes (generally greater than 30 percent). They can also occur from anthropogenic practices such as vegetation removal. Landslides caused by Project activities are not expected as the area of disturbance for each well pad is relatively small (<3 acres). There is no evidence at or in the vicinity of the Project sites of hazards such as landslides or slopes in excess of 15 percent that could result in slope failure. The KCGP indicates that the Project sites are not located in identified landslide hazard areas. The Project sites are located in an area of msl. The Project activities will be conducted on primarily previously disturbed land within an existing oil field, where slope stability is not anticipated to be affected by the Project, and the potential for landslides is minimal. Therefore, impacts are considered **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.7b – Would the Project result in substantial soil erosion or the loss of topsoil?

BV Hills 4 and 6

Soil erosion occurs when soil is removed by wind and water at a greater rate than it is formed. Soil erosion removes the topsoil first and can continue to transport lower layers. Future development and the creation of new impervious surfaces also have the potential to contribute to increased stormwater runoff, which could make soil erosion more severe if stormwater is not handled properly. Soil erosion at construction sites can increase sedimentation in nearby streams and drainage channels.

Construction activities associated with the proposed Project will disturb surface soils and expose these disturbed areas to erosion by wind and water.

Soil disturbance would occur as a result of well pads, roads, staging site construction, and drilling operations. Topsoil and soil horizons would be removed and/or mixed, changing soil water dynamics and removing nutrients from the project site. In addition, soils would be compacted, which could lead to surface runoff, sediment carry, and erosion concerns. The potential for water erosion is moderate as increased impervious surface development would occur and increase surface runoff potential, while there is a relatively low potential for erosion from wind at the Project site. However, impacts would be minimized by conducting interim reclamation utilizing site-specific topsoil on the temporary staging areas, cut and fill slopes, and the sump subsequent to drilling operations. The above practicable measures to minimize erosion and stabilize disturbed soils would be implemented. Additionally, the Project would be subject to conducting final reclamation at the Project site when the wells are abandoned. In addition, the Project would comply with all applicable federal, State, and local air quality rules and regulations in order to reduce emissions of particulate matter originating from soil disturbance at the Project site. Measures to reduce fugitive PM_{10} (dust) emissions include implementing applicable SJVAPCD Regulation VIII reduction measures for all Projects, such as watering exposed areas three times per day and reducing vehicle speed to less than 15 miles per hour. This is recognized as a Regulatory Requirement (RR-AQ-5) discussed in Impact 3.4.3.a.

Based on the anticipated activity levels during construction and operations, the proposed Project's activities would not exceed adopted thresholds and impacts

to soil erosion or the loss of topsoil at the Project site will be reduced to **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.7c – Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

BV Hills 4 and 6

See above discussions under Impact #3.4.7a(i) - (iv) & b. The Project sites are in a flat area with little to no topography. The area has been previously disturbed with the development of well pump sites, access roads, and additional infrastructure. Neither Project sites under BV Hills 4 or 6 are within a geologic unit or soil that has been identified as unstable. The Project is not anticipated to result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. The Project will have a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.7d – Would the Project 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?

BV Hills 4 and 6

The Project proposes the use of existing roads and approved areas of disturbance for all activities associated with new well development on previously disturbed land within existing oilfields. Available resources, including KCGP, did not identify the presence of expansive soils within the BV Hills 4 or 6 Project sites. There are no habitable structures on the Project site, and there are only sporadic maintenance

activities at the well sites during operation. The Project must comply with all federal, State, and local standards including applicable building and development standards regarding oil well drilling and structure/equipment development established by responsible entities, including CalGEM and California Building Code. Impacts related to expansive soil are considered **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.7e – Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

BV Hills 4 and 6

The proposed Project does not involve the construction of any facilities requiring the use of septic tanks or any waste disposal systems. Production water is the only potential wastewater that will be generated during Project activities, and production water along with oil and gas will be transported offsite via pipeline to CREH Buena Vista central processing facility. That water will go to the existing CREH Buena Vista central processing facility to either be cleaned for reuse (typically agriculture or industrial water pursuant to permit or policy [placeholder]) or disposed at disposal wells managed by Valley Water Management Company, a third-party contractor. Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.7f – Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

BV Hills 4 and 6

Paleontological resources are the mineralized (fossilized) remains of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and leaves are found in geologic deposits (rock formations) where they were originally buried. Fossil remains are considered to be important as they provide indicators of the earth's chronology and history. These resources are afforded protection under CEQA and are limited and nonrenewable, and they provide invaluable scientific and educational data.

A paleontological resources field survey was conducted for the Buena Vista Hills CREH Master Development Plan (Appendix F) (PaleoServices - SDNHM, 2016) and encompasses both BV Hills 4 and 6 Project sites. The results of this survey indicate that the well site area is underlain by the Tulare Formation, which is identified to have a high potential for fossil resources, as well as older alluvium, which has an unknown potential for fossil resources. As a result, direct impacts to paleontological resources could occur during any excavation and earthwork in the area.

However, the work being proposed would be in areas previously disturbed by ground disturbance activities and would not be expected to uncover any unknown fossil resources. The Project anticipates the drilling of exploration and production wells and the addition of electrical poles and pipeline crossings at access roads. Ground disturbance related to infrastructure development (electrical poles and pipeline crossings in access roads) would not exceed a depth of three feet. The use of helical augers smaller than 24 inches or drills to construct the wells are known to produce spoils of pulverized sedimentary rock and thus destroy any fossil remains that may have been encountered. With ground disturbance proposed, implementation of MM GEO-1 would require an onsite paleontological monitor during the initial ground disturbance and provide additional educational opportunities for Project Operators. A paleontological monitor would allow a qualified expert to be present during ground-disturbing activities, and address resources should they be unearthed during Project construction and reduce impacts of the Project to less than significant levels. Additionally, educational opportunities for development staff would further improve resource identification and procedure for addressing a resource and reduce potential impacts to paleontological resources to a **less than significant impact**. Implementation of MM GEO-2 throughout the construction of the Project would provide direction in the event a resource is identified and allows further protection of the resource at the discretion of the qualified paleontologist, which would reduce impacts to less than significant levels. CREH has implemented a Worker Environmental Awareness Program to provide information regarding initial steps to take should a potential paleontological resource be found during Project-related ground-disturbing activities. The Worker Environmental Awareness Program has been included as Appendix F.

MITIGATION MEASURE(S)

GEO-1: In areas where there has been no previous ground disturbance prior to the start of construction, the Project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (SVP, 2010), to carry out all mitigation measures related to paleontological resources.

a. Prior to the start of any ground-disturbing activities, the qualified paleontologist shall conduct a Paleontological Resources Awareness Training program for all construction personnel working on the Project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training Guide shall be submitted to -CalGEM. The training guide may be presented in video form.

b. Paleontological Resources Awareness Training may be conducted in conjunction with the biological resources training required by Mitigation Measure BIO-8.

c. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources.

d. The Project operator shall ensure all new employees who have not participated in earlier Paleontological Resources Awareness Trainings shall meet the provisions specified above.

e. The Paleontological Resources Awareness Training Guide shall be kept available for all personnel to review and be familiar with as necessary.

GEO-2: The Project operator shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbance activities, all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines whether the resources require further study. The operator shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall notify CalGEM and the Project operator of the procedures that must be followed to minimize impacts on the identified resource before construction is allowed to resume at the location of the find.

If the Paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. The BLM will also be informed about those wells on federal property.

If the find is determined to be significant and the Lead Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with the applicable standards. The plan shall be submitted to CalGEM for review and approval. Upon approval, the plan shall be incorporated into the Project.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated**.

3.4.8 - GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
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 adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The analyses in this section are based on EAs prepared for BV Hills 4 and 6 (Bureau of Land Management, 2022a; Bureau of Land Management, 2022b), the CREH Buena Vista 4 and 6 CalEEMod Emissions Update Memo (Quad Knopf, Inc., 2025a), the CREH Buena Vista 4 and 6 Project Health Screening Assessment, (Quad Knopf, Inc., 2025b) attached as Appendix B.

Discussion

Global warming refers to an increase in the earth's average temperature as a result of increased concentrations of GHGs in the atmosphere. GHGs include any gas that absorbs infrared radiation in the atmosphere. GHGs include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), halogenated fluorocarbons (HCFC), O_3, perfluorinated carbons (PFC), hydrofluorocarbons (HFC), and sulfur hexafluoride (SF_6).

Federal, state, and local regulations, laws, and policies pertaining to air quality relevant to the Project are included below.

- SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a Sustainable Communities Strategy (SCS) or Action Plans (APS) that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Kern County Council of Governments (Kern COG) region, CARB set targets a nine percent per capita decrease in 2020 and a 15 percent per capita decrease in 2035 from the base year of 2005.

- Executive Order B-30-15 establishes a California GHG reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. MPOs must implement measures that will achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets.

Impact #3.4.8a – Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

On April 17, 2012, the EPA issued final regulations to reduce harmful air pollution from the oil and natural gas industry. On August 5, 2013, the EPA issued final updates to its 2012 VOC performance standard for storage tanks used in crude oil and natural gas production and transmission. On May 12, 2016, the EPA issued final rules to reduce emissions of methane, smog-forming VOCs, and TAPs from new, reconstructed, and modified oil and gas sources; these final rules established updates to the New Source Performance Standards (NSPS) and the Source Determination Rule. The EPA also requires reporting of GHGs from large GHG emissions sources in the United States through the Greenhouse Gas Reporting Program. Each owner or operator of onshore petroleum and natural gas production wells and related equipment reports under the program.

California passed the California Global Warming Solutions Act of 2006, also known as AB 32. The act requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB adopted regulations to reduce GHGs emissions to meet specified emissions reductions targets. CARB also adopted and periodically revises a Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. As authorized by AB 32, CARB also developed a Cap-and-Trade Program as a mechanism to help reduce emissions.

In August 2008, the SJVAPCD adopted the Climate Change Action Plan (CCAP), which directed the SJVAPCD to develop guidance to assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of Project-specific GHG emissions on global climate change. In December 2009, the SJVAPCD developed *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and *District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*, intended to be applied to CEQA analyses. The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess the significance of the Project-specific GHG emissions on global climate change during the environmental analysis as required by CEQA. The use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be

determined to have a **less than significant impact**. Otherwise, a demonstration of a 29 percent reduction in GHG emissions from "business-as-usual" (BAU) is required to determine that a project would not have a less than cumulatively significant impact. The guidance does not limit a Lead Agency's authority in establishing its own process and guidance for determining the significance of project-related impacts on global climate change.

The CARB has implemented a cap-and-trade type program, as per the AB 32 directed Scoping Plan, applicable to specific industries that emit more than 25,000 MTCO2e annually. The AB 32 Scoping Plan identifies a Cap-and-Trade Program as one of the strategies California will employ to reduce GHG emissions.

The proposed Project would result in emissions of GHGs that are known to contribute to global climate change. These emissions are associated with combustion sources such as diesel drill and completion/workover rig engines, drill pad construction equipment (i.e., dozers, backhoes, graders, etc.), equipment trucks, water trucks, drill rig crew trucks/vehicles, and portable lift equipment. Emissions of GHGs could also occur through venting or fugitive losses from valves and fittings, pumps, compressors, and the wellhead.

BV Hills 4

A detailed list of equipment usage and numbers of employees traveling to the site can be seen in Table 3.4.3-1 through Table 3.4.3-3 for the construction of the four wells associated with BV Hills 4. The GHG emission estimates are shown in Table 3.4.8-1 below and were estimated utilizing the proposed development schedule associated with the BV Hills 4 Project for two well pad sites and four wells proposed to be drilled on the well pad site and provide a total Project estimate of 1,385.38 tons per year of CO_2 emissions for activities.

Table 3.4.8-1
BV Hills 4 Summary of Greenhouse Gas Emissions

End Use GHG Emissions (Reference)	CO_2 Emissions Construction Phase (metric ton/year)
One Well	348
Total (four wells)	1,392

Source: Appendix C

BV Hills 6

A detailed list of equipment usage and numbers of employees traveling to the site can be seen in Table 3.4.3-5 through Table 3.4.3-7 for the construction of the two wells associated with BV Hills 6. The GHG emission estimates are shown in Table 3.4.8-2 below and were multiplied by the two well pad sites and two wells

proposed for drilling. The total BV Hills 6 estimate is 290 metric tons per year of CO_2 emissions for construction activities.

Table 3.4.8-2
BV Hills 6 Summary of Greenhouse Gas Emissions

End Use GHG Emissions (Reference)	CO_2 Emissions Construction Phase (metric ton/year)
One Well	145
Total (two wells)	290

Source: Appendix C

It is estimated that the Project (both BV Hills 4 and 6) would emit 1,682 metric tons of carbon dioxide equivalent (CO_2e) during Project construction. Put into perspective, in 2019, the CARB estimated a total of 424.10 million metric tons of CO_2e ($MTCO_2e$) emitted into the atmosphere in 2017, while this project would result in 1,682 metric tons. In mathematical format, this perspective would be:

- 1,682 MT of CO_2e from project / 424,100,000 MT of CO_2e in California in 2017 = 0.00000397 metric tons of CO_2e

As the large majority of GHG emissions from the Project come from diesel fuel and gasoline, which are covered under the Cap-and-Trade Program, the Project can be considered in compliance. In consideration of implemented BPS regulated by the SJVAPCD through their standards and permitting/approval of the Project, the direct GHG emissions from the action is anticipated to comply with local and state GHG reduction goals and would not have a significant impact.

With respect to the estimate of end-use CO_2 emissions, it should be noted that it is difficult to discern with certainty how transport would occur and what end uses for the fuels extracted from a particular lease might be reasonably foreseeable. For instance, some end uses of fossil fuels extracted from federal leases include the combustion of transportation fuels, fuel oils for heating or industrial use, as well as production of asphalt and road oil, and the feedstocks used to make chemicals, plastics, and synthetic materials. The estimate provided above is based on an approximation of these end uses on a national basis using the references cited. While these estimates were based on State-specific transport and national data about the typical end-use of produced oil and gas, it is important to note that the Project developer does not exercise control over the specific end use of the oil and gas produced from any individual federal lease.

Project operation activities include oil production and future plugging and abandonment of wells if they are no longer productive. Emissions generated from these activities are low and for plugging and abandonment, would be infrequent

and temporary. In the decade after SJVAPCD adopted their Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA, several new laws and executive orders were adopted that require additional reductions in years after 2020. SB 32 requires that GHG emissions be 40% less than 1990 levels by 2030, SB 100 requires 100% zero-carbon electricity by 2045. Therefore, the 2009 SJVAPCD Guidance may be lacking in producing a meaningful comparison by today's standards. The most recent updates to the AB 32 Scoping Plan, objectives of the AB 32 Scoping Plan affect all sectors of the economy and no longer makes sense to evaluate GHG emissions on a project level. The Project's largest contributors to GHG emissions are from electricity and exhaust from transportation fuels. Electricity and transportation fuels are, in effect, regulated by requiring providers and importers of electricity and fuel to participate in the GHG Cap-and-Trade Program and other programs. Each sector-wide program exists within the framework of AB 32 and its descendent laws, the purpose of which is to achieve GHG emissions reductions consistent with the AB 32 Scoping Plan. Expected GHG emissions from electricity use and combustion of gasoline/diesel fuels, each of which are regulated near the top of the supply-chain are regulated in a way acceptable to the California market. Therefore, the Project will be consistent with the relevant plan (i.e. AB 32 Scoping Plan). Compared to total GHG emissions in the State, the emissions from the proposed Project as described in this section would have a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.8b – Would the Project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

See Impact #3.4.8a.

BV Hills 4 and BV Hills 6

The Cap-and-Trade Program set a Statewide limit of sources responsible for 85 percent of California's GHG emissions and established a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The Project, as a covered entity under the Cap-and-Trade Program, is expected to comply with the program and implement the lowest-cost options to reduce

emissions. Further, existing and proposed equipment within the BV Hills Oilfield are permitted through the SJVAPCD. These permits include compliance with Rule 4409 and Rule 4623 to limit VOC emissions from onsite equipment. Through continued compliance, the Project would be compliant with emissions reductions rules and regulations.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth and that designate locations for land uses to regulate growth. Kern Council of Governments uses the growth projections and land use information in adopted General Plans to estimate future average daily trips and then vehicle miles traveled (VMT), which are then provided to SJVAPCD to estimate future emissions in the AQPs.

The Project would be consistent with the KCGP adopted policies regarding Kern County's position as California's leading energy producer by encouraging safe and orderly energy development within the County, as referenced under Section 5.2 *Importance of Energy to Kern County General Plan*, Policies 1 through 10. Therefore, the Project is consistent with the oil and gas development assumptions, and impacts were accounted for as adopted by the General Plan's associated EIR.

Based on the analysis herein, the Project will not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG, and impacts would be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

3.4.9 - HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Be located on a site that 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, either directly or indirectly, to a significant risk	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
of loss, injury, or death involving wildland fires?				

Discussion

The proposed BV Hills Project sites are located in an area historically used for oil production. Project activities, with the exception of production, require minimal transportation, use or storage of hazardous materials, including fuels, oils, lubricants, hydraulic fluids, and solvents used at the proposed Project sites.

Impact #3.4.9a – Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

BV Hills 4 and BV Hills 6

There is potential for accidental releases of hazardous materials during Project operations, also including the potential for an accidental release during drilling operations if there were blowout. As noted in Section 2.1.4- *Emergency Activities*, oil spill prevention measures, and cleanup plans are required in accordance with SPCC regulations. GC §8670.7 establishes State oil spill contingency plans for marine and inland surface waterways and terrestrial environments. The current CSOSCP, as amended on March 26, 2014 (CCR, Title 14, Division 1, Subd. 4, Chapter 3), requires reporting and notification of oil spills of specified quantities to appropriate local, State, and federal agencies.

The adopted California Resources Production Corporation San Joaquin Valley Operations, Oil Spill Contingency Plan (OSCP) provides procedures for the notification, response measures, spill cleanup, and waste removal associated with a discharge incident (RR-HAZ-1). The referenced OSCP received approval from CDFW on June 3, 2021. The OSCP identifies specific incident types, including tank failure, tank overfill, pipeline leak/rupture, and transfer equipment (California Resources Production Corporation, 2021). Standard equipment monitoring and notification procedures are implemented throughout the Project. Potential discharge incidents are notified to the designated supervisor. Actions taken to address discharge incidents include containment of the spill, flow shutdown to failing equipment, and recovery/cleanup. Containment actions include the construction of earthen berms to contain spills or divert spills to an identified containment area and/or inception trench/barrier to contain the oil. If a trench is excavated, the bottom and downgradient would be covered with plastic.

Additional efforts for containment include storm drain and culvert blocking. The use of sorbents to recover oil is also addressed. Lastly, the nearest sensitive receptor is located approximately one mile away from the nearest Project site and in consideration of implemented containment features, are not likely to be impacted during a spill event.

Also, as required by CalGEM regulations, the surface casing will be set, cemented, and blowout prevention equipment will be installed at the wellheads and tested to minimize the potential releases associated with blowouts. Potential impacts associated with the accidental release of these materials depend on the quantity and type, the location where it is used, the toxicity or other hazardous characteristics of the material, and whether it is transported, stored, and used in a solid, liquid, or gaseous form.

The applicable emergency response plans for the area are the Kern County Multi-Hazard Mitigation Plan and Kern County Multi-Jurisdictional Natural Hazard Plan, which are both operated under the oversight of the Kern County Emergency Management Department. The Project proponent also has its own internal emergency response plans for the associated oil well sites and oilfields. The Project proponent coordinates with the Kern County Emergency Management Department in developing and updating emergency response plans, , ensuring compatibility between plans prepared by the Project proponent and those prepared for the protection of the community (RR-HAZ-2).

The Project does not propose the use of chemicals associated with activities such as acidization or hydraulic fracturing regulated under SB 4. Per the California HSC and CCR, a business is required to provide a Hazardous Materials Business Plan (HMBP), RR-HAZ-3, to the California Environmental Reporting System (CERS) should they handle a listed hazardous material above a certain threshold. The material threshold for this program is 55 gallons of liquid, 500 pounds of solid, 200 cubic feet of compressed gas, and/or applicable state/federal threshold quantity for extremely hazardous material. CREH has submitted and received approval for their HMBP. The Kern County Public Health Services Division is the local Certified Unified Program Agency (CUPA) and reports to the California Environmental Protection Agency. Specific hazardous chemicals reported to the California Environmental Reporting System and Certified Unified Program Agency and procedures specified in the SPCC, would provide a system of addressing hazardous materials handled by the Project and would have a **less than significant impact** on sensitive receptors (RR-HAZ-1).

With implementation of standard federal, State, and local laws and requirements regarding the handling of hazardous materials, the Project would have a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.9b – 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?

BV Hills 4 and BV Hills 6

As discussed in Impact #3.4.4c, the Project will not impact any of the drainages found on or near the area due to the implementation of measures required under their SPCC and due to their distance from sensitive receptors. Hazardous materials handling on the Project site or accidental spills events may result in soil and groundwater contamination. As outlined in Impact #3.4.9, the adopted OSCP indicates that containment efforts through the development of earthen berms or trenches can be utilized. The proposed Project's oil drilling activities and oil production activities would be subject to spill prevention measures. Mechanical containment, chemical and biological management practices, and physical containment such as berms are some of the controlling techniques that apply to Buena Vista Oilfield operations and would be used for the proposed Project. Oil spill prevention measures and cleanup plans are required in accordance with SPCC regulations. Other measures include closure or blockage of storm drains and culverts so that the discharge does not create significant hazards to the public where the nearest receptor is approximately one mile away from the nearest Project site. Project impacts related to the accidental release of hazardous materials would be **less than significant** with implementation of standard federal, State, and local laws and requirements.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.9c – Would the Project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The nearest school to both the BV Hills 4 and 6 Project sites is Jefferson Elementary School, approximately one mile south. Therefore, the Project would have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.9d – Would the Project be located on a site that 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?

According to the Department of Toxic Substances Control EnviroStor website, BV Hills 4 and 6 Project sites are not included on a list of hazardous materials sites compiled pursuant to GC Section 65962.5 (Department of Toxic Substances Control, 2022).

As such, the Project sites will not create a significant hazard to the public or the environment. Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.9e – 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?

BV Hills 4

The BV Hills 4 Project site is located approximately one mile north of the Taft-Kern County Airport and is not located within the Kern County Airport Land Use Compatibility Plan (ALUCP) (Kern County, 2012).

BV Hills 6

The BV Hills 6 Project site is located approximately two miles north of the Taft-Kern County Airport and is not located within the ALUCP (Kern County, 2012).

The Project does not involve development of habitable structures and only involves temporary construction work. The Project would not result in a safety hazard or excessive noise for people residing or working in the Project area, the nearest residences are one mile away from any well location. Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.9f – Would the Project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

BV Hills 4 and BV Hills 6

The KCGP provides guidance on the development of an emergency response plan, which was developed as the Emergency Operations Plan (EOP). The EOP provides for the integration and coordination of planning efforts of the County/Operational Area with those of its cities, special districts, and the State. The content is based on guidance provided by the California Emergency Management Agency, the Federal Emergency Management Agency, and the Department of Homeland Security (RR-HAZ-2). The intent of the plan is to facilitate emergency response and short-term recovery by providing a framework for response to all significant emergencies, regardless of the nature of the event.

BV Hills 4 and 6 Project sites are not located within any designated flood hazard area. The Project sites are both outside of the Lake Isabella Dam Failure Evacuation Plan (Kern County, 2009b) area and is further located outside of any evacuation route identified in the plan.

It is noted that the Project proponent has their own emergency response/evacuation plan associated with their oil and gas activities and would not conflict with or impair any existing plans for the local area. Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.9g – Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

BV Hills 4

According to the California Department of Forestry and Fire Protection (Cal Fire) State Responsibility Area (SRA) Map Viewer, BV Hills 4 Project sites are located within an SRA and Federal Responsibility Area (FRA), which indicates that Cal Fire is the primary response agency responsible for fire suppression and prevention in SRA, and the BLM is the primary response agency responsible for fire suppression and prevention in FRAs. The Project sites are located within Moderate designation for Fire Hazard Severity Zone (FHSZ) according to the Cal Fire FHSZ Map Viewer.

BV Hills 6

According to the Cal Fire, BV Hills 6 Project sites are located within an FRA. The Project sites are located within Moderate designation for FHSZ according to the Cal Fire FHSZ Map Viewer.

With implementation of State and local emergency procedures, Project activities are not expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts would be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

3.4.10 - HYDROLOGY AND WATER QUALITY

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:					
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?	☐	☐	☒	☐
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 offsite;	☐	☐	☒	☐
	ii. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or offsite;	☐	☐	☒	☐
	iii. 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; 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	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
control plan or sustainable groundwater management plan?				

The analyses in this section are based on the *EAs* prepared for both BV Hills 4 and 6 (Bureau of Land Management, 2022a; Bureau of Land Management, 2022b) attached as Appendix A.

Discussion

Both BV Hills 4 and 6 Project sites are located outside the boundary of any groundwater basin established by the California Department of Water Resources, Groundwater Management Bulletin 118. The target formation, Antelope Shale, does not contain an underground source of drinking water. In addition, there is no record of freshwater in the Buena Vista/McKittrick Oilfield – Main Area (California Department of Conservation - Division of Oil, Gas, and Geothermal Resources, 1998). There are no perennial rivers, lakes, or streams in the Project area.

Impact #3.4.10a – Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

BV Hills 4 and BV Hills 6

The well bore during drilling and production operations is improved with a combination of steel casing(s), cement sheath(s), and other mechanical isolation devices installed as a part of the well construction process. As such, well construction is conducted in a manner to prevent migration and transportation of fluids between the subsurface layers. There is no surface water available in this oilfield, and natural drainages in the area are intermittent and dry for the majority of the year. As noted in Section 3.4.4, the proposed construction activities will not impact any of these water features. Project activities would avoid modification of existing drainage on the existing oilfield sites.

The Project sites are located away from known waterways (see Figure 3.4.4-6 for BV Hills 4 and Figures 3.4.4-7 and 3.4.4-8 for BV Hills 6) and would not modify existing waterways. The adopted OSCP (RR-HAZ-1) addresses potential discharge incidents and containment measures necessary to avoid impacts to waterways.

Surface waters are not expected to be directly or indirectly impacted as the Project activities would avoid modification of existing drainage on the existing oilfield sites. The Project would implement all applicable measures required by federal, State, and local laws and regulations to avoid erosion, sediment carry, and other impacts to drainage. Therefore, the potential for the proposed Project to violate water quality standards is **less than significant impact**.

The Project would require approximately 0.129 acre-feet per well of freshwater for dust abatement and drilling; all water would be obtained from the WKWD and trucked to the Project sites. Therefore, the Project would result in a combined approximately 0.774 acre-feet of water usage for dust abatement and drilling activities for the Project. An additional 0.064 acre-feet of water per well for operations is anticipated and would result in a total 0.384 acre-feet for the Project. The production fluids (post-drilling and completion) will be transported offsite via pipeline along with oil and gas. That water will go to the Operator's central processing facility to either be cleaned for reuse (typically ag or industrial water pursuant to Uniform State Recycling Criteria) or disposed of at approved disposal wells (Class II Injection wells) managed by Valley Water Management Company, a third-party contractor under existing water quality order Water Quality Order 2003-0003-DWQ-0090(RR-HYDRO-1). The use of water in construction, drilling, and completion activities would not result in the violation of water quality standards or waste discharge requirements. These processing and disposal activities are existing permitted operations and regulated by the RWQCB, CalGEM, and WKWD. Therefore, the Project would not result in the violation of a water quality standard, waste discharge requirement, or degradation of surface or groundwater quality.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.10b – 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?

BV Hills 4 and BV Hills 6

As discussed under Impact #3.4.10. a, the Project will follow all applicable federal, State, and local laws and regulations, including the RWQCB WDRs and CalGEM's UIC regulations. Compliance with the WDRs would ensure that waste discharge

resulting from the Project would meet State standards and reduce impacts to groundwater quality. The Project will not degrade groundwater supplies or interfere with groundwater recharge or deplete groundwater resources in a manner that will impede sustainable groundwater management. All water required will be provided to the proposed Project site from the West Kern Water District. The West Kern Water District (WKWD) Management Area Groundwater Sustainability Plan (GSP) states that impacts to groundwater supply by petroleum producing areas are continuously monitored and evaluated (Kern County Subbasin GSAs, 2025) .

In compliance with CalGEM's regulations, the Project will install cement surface casings to prevent blowouts and contamination of underlying groundwater. Division regulations specify that the base of freshwater must be protected with cemented casing to prevent any contamination from migrating fluids encountered in oil and gas zones. The regulations also specify that oil and gas zones must be protected with cemented casing to prevent any contamination from infiltrating water. Water is planned to be delivered to the Project site and would have little impact on the reduction of groundwater supplies. Therefore, the Project will not be expected to impact groundwater because the water is obtained from the West Kern Water District. Impacts are considered to be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.10c(i) – 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 that would result in substantial erosion or siltation on or offsite?

See Impact #3.4.10a.

BV Hills 4 and BV Hills 6

The Project does not propose to alter any current drainage patterns of the sites. The Project will create minimal runoff during construction activities, and standard erosion control procedures will be applied through Project design features as previously discussed under Impact 3.4.10a. Impervious surfaces and runoff associated with the developed well could potentially result in erosion and siltation; however, the topography of the Project sites and well designs would not result in

substantial erosion or siltation onsite or offsite. Therefore, Project impacts are considered to be **less than significant**

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.10c(ii) – 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 that would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite?

See Impact #3.4.4c, Impact #3.4.10a, Impact #3.4.10b and Impact #3.4.10c(i).

BV Hills 4 and BV Hills 6

No significant drainages or other water bodies are present on the Project site (see Figure 3.4.4-6 for BV Hills 4 and Figures 3.4.4-7 and 3.4.4-8 for BV Hills 6). Impervious surface areas, including new well pads, would increase surface runoff; however, the amount of impervious surface being introduced is not significant. Therefore, the development of the site would not change the course of any such drainages that may potentially result in onsite or offsite flooding, and impacts are considered **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.10c(iii) – 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 that would 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?

See Impacts #3.4.10c(i-ii).

BV Hills 4 and BV Hills 6

The Project does not propose to alter existing drainage patterns or involve the development of a stormwater drainage system. Runoff produced as a result of the Project would not be significant and would follow existing drainage systems. Runoff is not anticipated to be generated in amounts where a significant flooding event would occur. The adopted SPCC (RR-Haz-1) would reduce the chance of an accidental spill and would address a materials spill if it occurred. Therefore, impacts are considered **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.10c(iv) – 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 that would impede or redirect flood flows?

See Impacts #3.4.10a –c(iii).

BV Hills 4

Per FEMA FIRM Panel 06029C2650E, BV Hills 4 Project sites are not located within a *100-year flood zone (A) and would not affect flood flows.*

BV Hills 6

Per FEMA FIRM Panel 06029C2650E and 06029C2675E, the Project sites are not located within the FEMA A flood hazard zone and would not affect flood flows.

Project construction activities would not alter the course of the existing drainage pattern onsite and the Project is not located within a flood zone. Therefore, the Project is not anticipated to result in the impedance or redirection of flood flows.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.10d – Would the Project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?

BV Hills 4 and BV Hills 6

As noted above, the Project sites are not located within the 100-year flood zone and are not located near an ocean or large body of water; therefore, it would not be affected by a tsunami or seiche. As noted in Impact #3.4.9f, the Project is located outside of the Lake Isabella Dam Failure Evacuation Plan (Kern County, 2009b) an area that is susceptible to inundation if the Lake Isabella dam were to fail.

Thus, the potential for the inundation of the Project site by seiche is **less than significant**. Therefore, the Project would not contribute to inundation by flood hazard, tsunami, or seiche zones. The Project would have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.10e – Would the Project conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan?

See Impact #3.4.9a.

BV Hills 4 and BV Hills 6

The Project sites are located within the WKWD Groundwater Sustainability Agency (GSA). The Project does not anticipate the use of groundwater for construction or operation of the proposed use. The Project is subject to the Groundwater Sustainability Plan (GSP) adopted by the GSA. Water for the construction of the Project wells would be obtained from the GSA and trucked to the Project sites. The operation of a production well does not require water; however, water could potentially be used for maintenance activities or cleaning, therefore, the Project will use a minimal amount of water once constructed. With implementation of applicable federal, State, and local laws and regulations, the Project will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, the Project will have a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant.**

3.4.11 - LAND USE AND PLANNING

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
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?	☐	☐	☐	☒

Discussion

BV Hills 4

The proposed Project sites for BV Hills 4 are zoned A-1. The Project is consistent with the A-1 zoning classifications of the Kern County Zoning Ordinance, which allow oil and gas drilling.

BV Hills 6

The proposed Project sites for BV Hills 6 are zoned A-1. The Project is consistent with the A-1 zoning classifications of the Kern County Zoning Ordinance which allow oil and gas drilling.

The proposed Project is consistent with the land use designation and zoning classification for the area. The KCGP land Use, Open Space and Conservation Element states that petroleum exploration and extraction are consistent uses with agricultural designations.

Impact #3.4.11a – Would the Project physically divide an established community?

BV Hills 4 and BV Hills 6

The Project sites are located within the administrative boundaries of the Buena Vista Oilfields and are surrounded by a combination of existing oilfields or barren land. The nearest residences are located approximately one mile south of the nearest BV Hills 4 Project site and approximately one mile south of the nearest BV Hills 6 Project site.

The Project would not increase or in any way impact an established community within the area, as the activities would be limited to the development of six new oil production wells and associated infrastructure in an existing oilfield. The Project proposes the development of six new oil production wells that would be connected via existing access roads within an established oilfield. These existing access roads eventually connect to public rights-of-way. The Project is proposed to be developed within the existing oilfield and would not create any physical barrier between an established community.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.11b – 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?

BV Hills 4 and BV Hills 6

As noted above, Project sites are zoned A-1, is consistent with the land use and zoning designation for this specific site location within the Buena Vista Oilfield and is therefore considered consistent with associated agricultural resource planning purposes and KCGP requirements. Chapter 1.9 Policy No. 15 of the Land Use, Open Space, and Conservation Element states that petroleum exploration and extraction are consistent uses with agricultural designations. Implementation Measure K of the Land Use, Open Space, and Conservation Element of the KCGP additionally states protection of oilfields would occur "through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction)." Per the Kern County Zoning Ordinance, section 19.14.020.E, oil and gas exploration is a permissible use. The Project sites are not located within any specific plan boundaries. Therefore, the Project does not conflict with any land use plan, policy, or regulation, and there are **no impacts**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

3.4.12 - MINERAL RESOURCES

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☒	☐
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☒	☐

Discussion

The objective of this Project is to identify and develop further mineral resources. If the Project is not successful, the well or wells would be plugged and abandoned in accordance with 14 CCR §§1723-1723.8, and the sites restored.

Impact #3.4.12a – 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?

BV Hills 4 and BV Hills 6

Kern County serves as an important regional source of oil and natural gas. Oil and natural gas facilities and transmission pipelines are located throughout the general Project area. According to the CalGEM's Online Mapping System (Well Finder), the Project is within the Buena Vista Oilfield. No other mineral resources have been identified within the proposed Project area. Per the California Department of Conservation, CGS, the Project sites are located within land designated Mineral Resource Zone (MRZ)-3, where areas containing mineral deposits, the significance of which cannot be evaluated from available data.

The objective of the Project is to further develop oil and gas mineral resources. If successful, its impacts will enhance rather than negatively impact the realization of the values and policies protected in the KCGP and other applicable State plans for the protection of mineral resources. If the Project is not successful, the

wells will be plugged and abandoned according to CalGEM and other local requirements, and the site will be restored with no negative impact. Therefore, the Project will have a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **less than significant**.

Impact #3.4.12b – 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?

See Impact #3.4.12a.

BV Hills 4 and BV Hills 6

The Project sites associated with BV Hills 4 are primarily designated *1.1* – State and Federal Land*, AND* 8.4- Mineral and Petroleum, and sites associated with BV Hills 6 are designated 1.1 – State and Federal Land by the KCGP. The Project intends to further develop oil and gas exploration facilities within an existing oilfield. The Project goal is to enhance the collection of the known mineral resource and not negatively impact it. The Project is consistent with the General Plan designation. The proposed Project is consistent with the KCGP Land Use, Open Space, and Conservation Element, which states that petroleum exploration and extraction are consistent uses with the existing land use designation and as such, there would be a **less than significant impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **less than significant**.

3.4.13 - NOISE

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project result in:					
a.	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b.	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c.	For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Discussion

Site preparation, drilling, testing and completion, installation of production equipment, and plugging and abandonment activities would result in short-term noise impacts and would use the following types of equipment: drilling equipment, truck-mounted crane, pumps, pneumatic tools, loaders, and a variety of miscellaneous equipment including air compressors. The number and type of equipment used during drilling, testing, and completion activities would vary from day to day.

Impact #3.4.13a – Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

BV Hills 4 and BV Hills 6

Noise is often described as an unwanted sound. Sound is defined as any pressure variation in the air that the human ear can detect. The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment.

The Project proposes to construct six wells in an area that is predominantly used for ongoing oil and gas exploration and extraction. Drilling operations are anticipated to occur during the day and nighttime periods.

The nearest sensitive receptor is located approximately one mile south of the closest of the Project sites because the construction site is not within 1,000 feet of an occupied residential dwelling Kern County Municipal Code 8.36 – Noise Control section 8.36.020 (H) does not apply A list of equipment used during construction activities is shown in Table 3.4.3-1 through 3.4.3-3 for BV Hills 4 and Table 3.4.3-5 through 3.4.3-7 for BV Hills 6. Based on the anticipated work and equipment use, Table 3.4.13-1 below reveals a 90 A-weighted decibels (dBA) contour of construction and operation activities. The farthest contour is at 92 feet and is associated with well-drilling activities. With multiple existing well sites in operation, noise generation is anticipated to result in minimal increases once the development of the six proposed wells is completed.

Table 3.4.13-1
Attenuation Distances from Project Noise Sources to 90 dBA Noise Contour

Scenario	Distance (feet)
Land Preparation	83
Well Drilling	92
Well Workover	81
Production Operations	42

Source: (Kern County, 2004)

The closest sensitive receptor is located approximately one mile south of the nearest well site. The Project is in an area with changing topography characterized by hills and flat, barren land. These topographic features, along with the distance from the noise source, will allow the noise and vibration from construction to dissipate and be reduced by the intervening topography.

Table 3.4.13-1 shows that anticipated noise levels from land preparation, well drilling, well workovers, and production operations at the nearest sensitive land

uses are below the 65 dBA day-night sounds level threshold adopted by Kern County (Kern County, 2004). The highest noise levels associated with the Project would occur during well drilling. Well drilling is expected to generate noise levels of 90 dBA at a distance of 92 feet from the equipment source. Wells are expected to be drilled no less than 110 feet from the boundary of each well pad. With consideration of these anticipated construction and operation scenarios, the nearest sensitive receptor is located approximately one mile away from the nearest Project site. Therefore, as noise dissipates over distance, the likelihood of the nearest sensitive receptor being negatively impacted by Project construction and operation is minimal. As such, noise levels exceeding the 90 dBA threshold for Project development and operation would not extend beyond the well site boundaries. The Project will not significantly impact sensitive receptors.

Therefore, noise impacts from construction and operation at the nearest sensitive land use receptors are **less than significant**. Noise levels at the existing Central Project Facility are not anticipated to change as a result of the proposed Project. The noise levels will not be exceeding the existing baseline. Therefore, with implementation of applicable federal, State, and local laws and regulations for the Project activities, noise impacts are considered **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.13b – Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

See Impact #3.4.13a.

BV Hills 4 and BV Hills 6

As the Project sites are located within an existing, developed oilfield, and as the well sites are located approximately one mile from the nearest sensitive receptor with intervening topography as an additional buffer, it is expected that the Project would not result in the exposure of persons to excessive ground borne vibration levels at proposed sites of the Project; therefore, this impact is **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.13c – Would the Project result in 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?

BV Hills 4

The nearest BV Hills 4 Project site is located approximately one mile from Taft-Kern County Airport.

BV Hills 6

The nearest BV Hills 6 Project site is located approximately two miles north from the Taft-Kern County Airport.

The Project is not located within or near a designated ALUCP safety zone that would expose people residing or working to excessive noise levels (Kern County, 2012). Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

3.4.14 - POPULATION AND HOUSING

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Induce substantial population unplanned 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?	☐	☐	☐	☒

Discussion

The proposed Project sites are located in an unincorporated area of Kern County. The closest residential structure is approximately one mile to the west of the nearest BV Hills 4 site and approximately one mile southwest of the nearest BV Hills 6 site.

Impact #3.4.14a – Would the Project induce substantial population unplanned 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)?

BV Hills 4 and BV Hills 6

No residential or commercial development will occur as a result of the Project activities. The proposed Project is for six new wells in an existing oil field. The work force necessary to drill a well is not significant enough to cause any impact to population and housing and is proposed to be from the Taft and Kern areas. The project does not propose any roads or non-oil well infrastructure. Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.14b – Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

See Impact #3.4.14a.

BV Hills 4 and BV Hills 6

The Project does not intend to construct residential or commercial structures in the proposed Project area. The nearest residences are located approximately one mile south of BV Hills 4 Project and one mile southwest of BV Hills 6 Project. The Project would occur entirely within the existing oil field boundaries. Therefore, the Project will not displace people or housing and will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

3.4.15 - PUBLIC SERVICES

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

Discussion

Impact #3.4.15a(i) – 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 to other performance objectives for any of the public services - Fire Protection?

BV Hills 4

The closest Kern County Fire Department Station (Kern County Fire Department Station 21) is approximately 2.4 miles southwest of the nearest BV Hills 4 site.

BV Hills 6

The closest Kern County Fire Department Station (Kern County Fire Department Station 21) is approximately 2.3 miles south of the nearest BV Hills 6 site.

Fire protection services for the Project area are provided by the Kern County Fire Department. The proposed Project would be compatible with existing oil and gas operations that currently surround the Project area, and the proposed Project workforce is anticipated to be served from the local Taft and Kern County area. Potential impacts from drilling, construction, and production operations may result in impacts to fire protection in the form of unanticipated fires or explosions; however, it is not anticipated that these activities would require additional public fire protection in order to maintain acceptable fire service ratios. The Project is subject to site maintenance requirements established by the Kern County Fire Department for fire hazard reduction, in addition to applicable State Fire Code standards for site development and operation. An adopted safety manual is available to provide safety procedures in the event of a fire and the use of firefighting equipment in the incipient stages of the fire.

The fire service ratios, response time, and other performance objectives for public services related to fire protection are within acceptable levels. Therefore, the Project would not result in provision of or need of new or physically altered governmental facilities that the construction of which would cause a significant environmental impact. Therefore, the impact is **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.15a(ii) – 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 to other performance objectives for any of the public services – Police Protection?

BV Hills 4

The Kern County Sheriff's Department provides law enforcement services in the Project area. The nearest Sheriff's station is located approximately two miles from the nearest site at 315 N. Lincoln, Taft, California.

BV Hills 6

The Kern County Sheriff's Department provides law enforcement services in the Project area. The nearest Sheriff's station is located approximately 1.6 miles from the nearest Project site at 315 N. Lincoln, Taft, California.

The proposed Project workforce is anticipated to be served from the local Taft and Kern County area. Therefore, there will be no population increase that would require additional police facilities. The proposed Project does not include any residential development or other component that will substantially increase population growth and demand for public services. The drilling, construction, and production operation activities could potentially result in additional police service calls due to theft. However, the Project sites would be located in remote, privately-owned areas with limited access. Any anticipated calls for police protection would not likely require the need for additional police protective services. Construction impacts associated with the Project would not result in substantial adverse physical impacts with the provision of newly constructed or physically altered governmental facilities. Police protection would continue to be carried out, and acceptable service ratios, response times, and other performance objectives for the Kern County Sheriff's Department would be maintained. Therefore, the Project will have **no impact** as related to police protection.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.15a(iii) – 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 to other performance objectives for any of the public services – Schools?

BV Hills 4 and BV Hills 6

The proposed Project workforce is anticipated to be served from the local Taft and Kern County area. Therefore, there will be no population increase that would increase the student population or require additional schools. The proposed Project does not include any residential development or other component that will substantially increase population growth and demand for public services.

Construction impacts associated with the Project would not result in substantial adverse physical impacts with the provision of newly constructed or physically altered governmental facilities. The City of Taft would continue to maintain performance objectives for school services surrounding the Project sites. Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.15a(iv) – 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 to other performance objectives for any of the public services – Parks?

BV Hills 4 and BV Hills 6

The proposed Project workforce is anticipated to be served from the local Taft and Kern County area. Therefore, there will be no population increase that would require additional park facilities. The proposed Project does not include any residential development or other component that will substantially increase population growth and demand for public services. Impacts associated with the Project are not anticipated to result in substantial adverse physical impacts with the provision of newly constructed or physically altered park facilities. Additionally, construction impacts are not anticipated to cause significant environmental impacts on public services. Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.15a(v) – 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 to other performance objectives for any of the public services – Other Public Facilities?

BV Hills 4 and BV Hills 6

The proposed Project workforce is anticipated to be served from the local Taft and Kern County area. The proposed Project would create no demand on other public facilities which can be reasonably foreseen. Therefore, no impacts are anticipated to public facilities, such as libraries.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

3.4.16 - RECREATION

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

Discussion

The proposed Project sites are located on private land that is used primarily for oil and gas exploration and production activities. This land does not provide recreational activities for the public.

Impact #3.4.16a – 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?

The Kern County Parks and Recreation Department manages 40 neighborhood parks. The California Department of Parks and Recreation owns, maintains, and operates Red Rock Canyon State Park in eastern Kern County, two State historic parks (Fort Tejon and Tomo-Kahni) in southern and eastern Kern County, and the Tule Elk Reserve State Park.

BV Hills 4

The nearest public recreational facility to the proposed Project area is the Franklin Field recreational area near the City of Taft, which is approximately one mile south of the closest proposed BV Hills 4 well site.

BV Hills 6

The nearest public recreational facility to the proposed Project Area is Franklin Field recreational area near the City of Taft, which is approximately one mile south of the closest proposed BV Hills 6 well site

The Project would be constructed by existing employees who live in the area and would not increase the use of the existing recreational facilities in Kern County.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be **no impact**.

Impact #3.4.16b – Would the Project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

See #3.4.16a.

BV Hills 4 and BV Hills 6

The Project does not include recreational facilities or require the construction or expansion of recreational facilities due to a large increase in new employees. The proposed Project workforce is anticipated to be served from the local Taft and Kern County area. Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There will be **no impact**.

3.4.17 - TRANSPORTATION AND TRAFFIC

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
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?	☐	☐	☐	☒

Discussion

BV Hills 4

Regional Transportation System

The regional circulation system serving the BV Hills 4 Project sites consists of SR 119.

SR 119, also known as Taft Highway, is designated as a State highway by the Circulation Element of the KCGP. It is a limited access two-lane highway that runs southerly and connects with SR 33 and runs north and eventually intersects with Interstate 5.

There are no dedicated bicycle or pedestrian facilities in the immediate vicinity of the Project site or along the surrounding roadways.

Project Primary Site Access

There are two main access routes to the various BV Hills 4 Project sites: Airport Road and Honolulu Road. All access routes are two-lane roads.

Offsite Disposal Facility - Solids

Non-hazardous drill mud and cuttings generated by drilling operations would be transported offsite to the Avenal Landfill near Avenal, California for disposal.

BV Hills 6

Regional Transportation System

The regional circulation system serving BV Hills 6 Project sites consists of SR 119. SR 119, also known as Taft Highway, is designated as a highway in the Circulation Element of the KCGP. It is a limited access two-lane highway. SR 119 runs southerly and connects with SR 33 and runs northerly and eventually intersects with Interstate 5.

There are no dedicated bicycle or pedestrian facilities in the immediate vicinity of the Project site or along the surrounding roadways.

Project Primary Site Access

There are two main access routes to the two Project sites, SR 119 and Gardner Field Road. All access routes are two-lane roads.

Offsite Disposal Facility – Solids

Non-hazardous drill mud and cuttings generated by drilling operations would be transported offsite to the Avenal Landfill near Avenal, California for Disposal.

Impact #3.4.17a – Would the Project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

BV Hills 4 and BV Hills 6

There are no dedicated bicycle or pedestrian facilities in the immediate vicinity of any of the Project sites or along the surrounding roadways. There are also no direct mass transit facilities in the immediate vicinity of the Project sites.

Both construction and operation of the proposed Project would generate traffic. Oversized or heavy construction equipment may be used on the site during certain construction activities. The proposed Project is expected to rely mostly on Kern County's skilled labor pool for its construction workforce and consist of predominantly existing CREH employees.

Construction traffic is considered temporary, as short-term increases in local traffic would result from the construction related workforce traffic (employee travel to

and from the site), heavy equipment delivery (e.g., cranes, bulldozers), and material deliveries (e.g., gravel, concrete, piping for infrastructure). Construction activities would generally occur between 6:00 a.m. and 9:00 p.m., Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturdays and Sundays, as required.

Project activities will utilize existing roads, accessing BV Hills 4 well sites from Airport Road and Honolulu Road and BV Hills 6 well sites from SR 119 and Gardener Road. The roads are in sparsely populated areas that are primarily used by oilfield crews. The construction period will add a minimal amount of daily traffic that is not anticipated to exceed the capacity of the identified circulation system.

The Project sites and surrounding areas are located within a large existing group of developed oilfields and would not conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, the Project will have **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There will be **no impact**.

Impact #3.4.17b – Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

BV Hills 4 and BV Hills 6

The Project will develop six oil wells on previously disturbed land utilizing existing roads within existing oilfields. The construction crew will include up to five people. Maximum daily trips for the associated activities for each well were estimated in Table 3.4.17-1 below.

Table 3.4.17-1
Maximum Daily Vehicle Trip Generation During the Construction Phase for One Well

Vehicle Type / Number	One Way Trips
Car and Pickup Trucks Roundtrips / 19	38
Heavy Truck/Semi - Mobilization and Demobilization of Equipment / 8	16
Total Trips for One Well	**54**

Source: (Quad Knopf, Inc., 2025a)

The number of total trips associated with well drilling and production of BV Hills 4 and BV Hills 6 would be considered minimal and impacts to the existing roadways would be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.17c – 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)?

BV Hills 4 and BV Hills 6

No public roads will be constructed or improved as part of this Project. Therefore, the Project is not expected to increase the hazards due to a design feature. incompatible uses of a roadway, or cause and incompatible use, therefore **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There will be **no impact**.

Impact #3.4.17d – Would the Project result in inadequate emergency access?

See Impact #3.4.9f.

BV Hills 4 and BV Hills 6

The proposed Project sites have adequate emergency access utilizing existing roads and proposes no expansion to existing access roads. Mobilization/demobilization of oilfield-related equipment utilizing public roadways for site access are common in the Project vicinity and are a compatible use of the roadways. Therefore, the Project has **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There will be **no impact**.

3.4.18 - TRIBAL CULTURAL RESOURCES

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

BLM Permit Conditions of Approval

The BLM Conditions of Approval included in the NEPA Documents apply to the project and help reduce potential impacts. Those specific to tribal cultural resources are listed here as context for the mitigation measures for tribal cultural resources. These BLM COAs are also in Table 2.1 and in the MMRP as regulatory

requirements (RR-CUL-1). Mitigation measures described in this document are in addition to compliance with the BLM COAs and other RRs.

- RR-CUL-1 BLM COA Discovery of cultural resources and human remains during project implementation

Discussion

Impact #3.4.18a(i) – Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is 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)?

BV Hills 4 and BV Hills 6

In accordance with Assembly Bill 52 on July 15, 2024, CalGEM sent notification letters to fifteen Tribes from a list provided by the Native American Heritage Commission (NAHC). The Coastal Band of Chumash Nation responded on July 17, 2024, that they, "currently do not have any Tribal/Cultural Resource concerns, however if at any time Tribal Cultural Resources are discovered [to let them know]." The yak tityu tityu yak tiłhini - Northern Chumash Tribe responded with a request of a project map, which was sent for their review on July 18, 2024. CalGEM reached out on August 12, 2024, but a response a response was not received.

The notification period ended September 19, 2024. CalGEM will continue to send meaningful notification of project milestones (public review of the draft initial study/MND, adoption of the document, and issuance of the first permit) to the Tribe as the project moves forward. `

As noted in Impact #3.4.5a-b, *Cultural Resources*, a cultural resources survey was previously conducted for both BV Hills 4 and 6. Results for the survey indicated that there were no known cultural resources identified in the well site areas.

Although considered unlikely, since there is no indication of any tribal cultural resources on the Project site, subsurface construction activities associated with the proposed Project could potentially damage or destroy previously undiscovered tribal cultural resources. This is considered a potentially significant impact.

With implementation of MM CUL-1/TCR-1 and CUL-2/TCR-2, the Project would not cause a substantial adverse change in the significance of a tribal cultural

resource that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources and therefore impacts would be considered **less than significant**.

MITIGATION MEASURE(S)

CUL-1/TCR-1: If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified archaeologist can evaluate the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock, as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. Implementation of the MM CUL-1/TCR-1 would ensure that the proposed Project would not cause a substantial adverse change in the significance of a historical resource.

CUL-2/TCR-2: If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California HSC. The specific protocol, guidelines, and channels of communication outlined by the NAHC, in accordance with Section 7050.5 of the HSC, Section 5097.98 of the PRC (Chapter 1492, Statutes of 1982, Senate Bill (SB) 297), and SB 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of a discovery of human remains, at the direction of the county coroner.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated.**

Impact #3.4.18a(ii) – Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the Lead Agency shall consider the significance of the resource to a California Native American tribe?

See discussion in - Impact #3.14.18(i).

BV Hills 4 and BV Hills 6

With implemented MM CUL-1/TCR-1 and CUL-2/TCR-2, the Project would not cause a substantial adverse change in the significance of a tribal cultural resource. Therefore, impacts are considered less than significant with mitigation measures incorporated.

MITIGATION MEASURE(S)

Implementation of MM CUL-1/TCR-1 and MM CUL-2/TCR-2.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated**.

3.4.19 - *UTILITIES AND SERVICE SYSTEMS*

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
	WOULD THE PROJECT:				
a.	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would 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 that 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?	☐	☐	☒	☐

Discussion

Impact #3.4.19a – Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects?

BV Hills 4 and BV Hills 6

The proposed Project would not exceed wastewater treatment requirements of the applicable RWQCB WDR. The sumps would be utilized for impoundment of boring wastes consisting of drilling mud and drill cuttings. Under the NOA issued by the RWQCB, the sumps will not contain the discharge of fluid associated with completion and would not discharge waste to surface waters of the surface water drainage course (RR-HYDRO-1). After well completion, the sump will be backfilled and reclaimed. The sump will be cleaned, backfilled, ripped to a minimum depth of 12 inches, and re-contoured to match the surrounding topography. All drilling water will be contained within the permitted sump and would be allowed to evaporate prior to sump closure activities. Therefore, no impacts to wastewater treatment would occur.

The Project is located on an existing oilfield with utilities already in place; no new utility or service systems expansion will be required to support the drilling or operation of the wells or other aspects of the Project. Electrical connections of the proposed wells to the existing Elk Hills Power Plant are anticipated and would result in an overall increase in electrical demand for the operating oilfield. The plant produces approximately 550 MW with excess power generated, and sold to PG&E. The wells will have pump jacks with 100 HP motors that would typically run at 50 HP. The amount of HP used translates to 38 KWH or 912 KWH a day per well. The Project does not anticipate the construction of new or expanded electrical facilities to meet increased demand as a result of the Project with the existing Elk Hills Power Plant generating the amount of power necessary to accommodate the Project. Therefore, the Project will comply with all applicable federal, State, and local requirements and standards for general utilities. The Project does not require or result in the relocation or construction of new or expanded public utilities, and impacts will be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.19b – Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?

See Impact #3.4.10a.

BV Hills 4 and BV Hills 6

The Project would require a total approximately 0.129 acre-feet of freshwater for dust abatement and drilling activities per well and 0.064 acre-feet of freshwater for completion operations per well; all water would be obtained from the West Kern Water District. As the Project will utilize minimal amounts of water during initial drilling and production phases, impacts would be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be ***less than significant***.

Impact #3.4.19c – Would the Project result in a determination by the wastewater treatment provider that 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?

See Impact #3.4.19a.

BV Hills 4 and BV Hills 6

The Project as proposed will not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities; therefore, no such construction or expansion would be required that could cause significant environmental effects.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There will be **no impact**.

Impact #3.4.19d – 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?

BV Hills 4 and BV Hills 6

Solid waste generally refers to garbage, refuse, sludge, and other discarded solid materials that come from residential, industrial, and commercial activities.

Construction, demolition, and inert wastes are also classified as solid waste. Such wastes include nonhazardous building materials such as asphalt, concrete, brick, drywall, fencing, metal, packing materials, pallets, pipe, and wood. The general waste classifications used for California waste management units, facilities, and disposal sites are outlined below.

Nonhazardous solid waste consists of organic and nonorganic solid, semi-solid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes, and other discarded waste, provided that such wastes do not contain hazardous materials or soluble pollutants in concentrations that would exceed applicable water quality objectives or cause a degradation of waters of the State.

California State law regulates the types of waste that can be disposed of at the different classes of landfills. Class I landfills may accept hazardous and nonhazardous wastes. Class II landfills may accept designated and nonhazardous waste, and Class III landfills may accept nonhazardous wastes.

Nonhazardous construction refuse and solid waste would be either collected and recycled per the construction waste management plan or disposed of at a local Class III landfill, while any hazardous waste generated during construction would be disposed of at an approved off-site location. The closest Class III municipal landfill is the Taft Recycling and Sanitary Landfill. The Taft Landfill has a remaining capacity of 7,380,708 cubic yards, with an anticipated closure date of December 31, 2076. (Cal Recycle, 2023a)

The McKittrick Waste Treatment facility is a permitted Class II landfill disposal area (or landfill) owned by the County of Kern. This facility can accept scrubber waste, oily waste, drilling muds, brines, etc. that are generated during routine oil drilling and well operations and has capacity to accept waste until 2059 (Cal Recycle, 2023b). The Project will take any appropriate waste materials to this facility for proper disposal as needed.

Therefore, solid waste from the site would be transported to this landfill for disposal. It is not anticipated that the amount of solid waste generated by the proposed project would exceed the capacity of local landfills needed to accommodate the waste.

Therefore, impacts will be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts will be **less than significant**.

Impact #3.4.19e – Would the Project comply with federal, State, and local statutes and regulations related to solid waste?

See discussion under Impact #3.4.19d, above.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts will be **less than significant**.

3.4.20 - WILDFIRE

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
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?	☐	☐	☒	☐

Discussion

Impact #3.4.20a – Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

Access for emergency vehicles to the site would be maintained throughout the construction period. The Project would not interfere with any local or regional emergency response or evacuation plans and would not result in a substantial alteration to the adjacent area circulation system. The County has established emergency response and evacuation plans based on the Kern County EOP. Further, the Project proponent is required by existing laws and regulations to maintain emergency response plans related to their oil and gas activities. Therefore, impacts related to fire hazards and emergency response plans would be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.20b – 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?

The potential for fire hazard is largely dependent on the extent and type of vegetation, known as surface fuels, which exists within the region. As discussed under Impact #3.4.9g, the Project sites associated with BV Hills 4 are located within Federal and SRA, and the Project sites for BV Hills 6 are located within Federal Responsibility Area, which indicates that the Bureau of Land Management and Cal Fire are the primary response agency responsible for fire suppression and prevention, The sites are located within Moderate designation for FHSZ according to the Cal Fire FHSZ Map Viewer.

In addition, the County requires that any construction comply with the Uniform Fire Code provisions and is subject to review and approval by the County's Fire Department. As stated under Impact #3.4.20(a), the Project proponent is required by existing laws and regulations to maintain emergency response plans related to their oil and gas activities and potential fire impacts. With implementation of State and local emergency procedures, Project activities would be **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

Impact #3.4.20c – 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?

See discussion in Impact #3.4.20a-c. The well sites are located within an existing developed oilfield, and the Project will utilize existing roads and developed

utilities. There will be no extra maintenance of the infrastructure required. Therefore, there is **no impact**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There will be **no impact**.

Impact #3.4.20d – 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?

See discussion in Impact #3.4.20a-c. The topography of the site contains minimal topographic variation, and no water features are present within the vicinity of the Project area. The surrounding area is predominantly developed with existing oilfields and vacant land. Therefore, there is minimal risk of landslides.

The Project area is located in an area identified as an Undetermined Area of Flood Hazard according to FEMA flood maps. As the Project is located within areas of minimal topographic variation and is not located near a water feature, impacts would be considered **less than significant**.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant**.

3.4.21 - MANDATORY FINDINGS OF SIGNIFICANCE

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

Discussion

Impact #3.4.21a – Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

As evaluated in this IS/MND, the proposed Project would not 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; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major period of California history or prehistory including paleontological resources. Mitigation measures have been included to reduce the significance of potential impacts. Similar mitigation measures would be expected of other projects in the surrounding areas, most of which share similar cultural, paleontological, and biological resources. Consequently, the incremental effects of the proposed Project, after mitigation, would not contribute to an adverse cumulative impact on these resources. Therefore, the Project would have a **less than significant impact with mitigation incorporated**.

MITIGATION MEASURE(S)

Implementation of MM BIO-1 through MM BIO-9, MM CUL-1/TCR-1 and MM CUL-2/TCR-2, MM GEO-1 and MM GEO-2.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated**.

Impact #3.4.21b - Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are significant when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects.)?

As described in the impact analysis in Sections 3.4.1 through 3.4.20 of this IS/MND, any potentially significant impacts of the proposed Project would be reduced to a less than significant level following incorporation of the mitigation measures listed in Appendix A – Mitigation Monitoring and Reporting Program. All planned projects in the vicinity of the proposed Project would be subject to review in separate environmental documents and required to conform with the applicable General Plan. The Project would be required to mitigate Project-specific impacts and provide appropriate engineering to ensure the Project meets all applicable federal, State, and local regulations and codes. As currently designed, and with compliance of the recommended mitigation measures, the proposed Project would not contribute to a cumulative impact. Thus, the cumulative impacts of past, present and reasonably foreseeable future projects would be less than cumulatively considerable.

MITIGATION MEASURE(S)

Implementation of MM BIO-1 through MM BIO-9, MM CUL-1/TCR-1 and MM CUL-2/TCR-2, MM GEO-1 and MM GEO-2.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated**.

Impact #3.4.21c - Does the Project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

The ways which people can be subject to substantial adverse effects from Projects include potential exposure to significant levels of local air pollutants; potential exposure to significant levels of local air pollutants; potential exposure to seismic and flooding hazards; potential exposure to hazardous materials; potential exposure to traffic hazards; and potential exposure to excessive noise levels. The risks from these potential hazards would be avoided or reduced to less than significant levels through compliance with existing laws, regulations, or requirements. All the Project's impacts, both direct and indirect, that are attributable to the Project were identified and mitigated to a less than significant level. As shown in the Mitigation Monitoring and Reporting Program, the Project proponent has agreed to implement mitigation substantially reducing or eliminating impacts of the Project.

Therefore, the proposed Project would not either directly or indirectly cause substantial adverse effects on human beings because all potentially adverse direct impacts of the proposed Project are identified as having **no impact**, **less than significant impact**, or **less than significant impacts with mitigation incorporated.**

MITIGATION MEASURE(S)

Implementation of MM BIO-1 through MM BIO-9, MM CUL-1/TCR-1 and MM CUL-2/TCR-2, MM GEO-1 and MM GEO-2.

LEVEL OF SIGNIFICANCE

Impacts would be **less than significant with mitigation incorporated**.

SECTION 4 - MITIGATION MONITORING AND REPORTING PROGRAM

Project

Project Title: CREH Buena Vista

Project Applicant: California Resources Elk Hills, LLC

Project Location: Kern County, Buena Vista Oilfield; Section 6 and 8/Township 32 South/Range 24 East; Section 6 and 12/Township 32 South/Range 24 East

Lead Agency: California Geologic Energy Management Division (CalGEM)

Environmental Document: Draft Initial Study and Mitigated Negative Declaration (IS/MND) Permits to Drill – CREH Buena Vista Hills 4 and 6 Development Project.

Mitigation Requirements

The California Environmental Quality Act (CEQA) requires lead agencies to impose feasible mitigation measures in approving a project that could have significant adverse environmental effects.[2] The purpose of the mitigation is to substantially lessen or avoid those significant effects.[3] All mitigation measures must be fully enforceable in a mitigation monitoring and reporting program (MMRP).[4]

This is the MMRP for CREH Beuna Vista. The table in this MMRP identifies the mitigation that CalGEM found to be feasible and imposed as conditions of project approval. In addition, the BLM EAs included conditions of approval for biological, cultural, and paleontological resources. Those conditions of approval were implemented as Regulatory Requirements of the project and included as conditions for the MMRP. Therefore, mitigation may consist of Regulatory Requirements (RR), Design Features (DF) or mitigation measures (MM). The table sets forth the mitigation plan as follows:

[2] Cal. Code Regs., tit. 14, §§ 15002(a)(3), 15070(b)(1), 15097(a), 15126.4(a)(1).
[3] Pub. Resources Code, § 21081.6; Cal. Code Regs., tit. 14, §§ 15041, 15370.
[4] Pub. Resources Code, § 21081.6; Cal. Code Regs., tit. 14, §§ 15074(d), 15097(a), 15126.4(a)(2).

- Regulatory Requirement/Design Feature/Mitigation Number/Title. Tracks the numbering sequence and titles in the Initial Study/Mitigated Negative Declaration.
- Mitigation Description. Describes what actions the operator must take to avoid or mitigate the environmental effect(s).
- Timing & Method of Verification. Specifies the mitigation monitoring schedule and verification method or documentation.
- Reporting. Identifies the report(s) required, if applicable.
- Responsible Agency. Names the agency or agencies responsible for overseeing the mitigation measure.

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
Section 3.4.1 Aesthetics				
DF-AES-1 Directional Lighting	All lights would temporary, be shielded, directed inward, and downward to minimize potential light spill or create offsite impacts.	During construction Photograph verification	Submittal of photographic verification	BLM
RR-AES-1 Kern County Dark Skies Ordinance	Compliance with Kern County Zoning Ordinance, Chapter 19.81 – Outdoor Lighting "Dark Sky" Ordinance	Prior to project construction and operation activities	- -	Kern County
Section 3.4.3 Air Quality				
RR-AQ-1 Rule 2201 BACT Requirement	CREH will comply with Rule 2201 and confirm the best available control technology (BACT) will be used to minimize emissions before a permit is issued.	Prior to project construction activities	Confirm with SJVAPCD	SJVAPCD
RR-AQ-2 Rule 2280 PERP Engines	CREH will register all drill rig engines under the CARB's PERP Program.	Prior to project construction activities	Register with PERP Program	CARB; SJVAPCD
RR-AQ-3 Rule 4409 Components of Light	CREH will comply with Rule 4409 to limit Volatile Organic Compound (VOC) emissions from	Prior to project construction activities	- -	SJVAPCD

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities	leaking components at light crude oil production facilities, natural gas production facilities, and natural gas processing facilities.			
RR-AQ-4 Rule 4623 Storage of Organic Liquids	CREH will comply with Rule 4623 to limit Volatile Organic Compound (VOC) emissions from the storage of organic liquids. This rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored, and any tank used in crude oil or natural gas production operations with a potential to emit six (6) tons of VOC or greater per year.	Prior to project construction activities	- -	SJVAPCD
RR-AQ-5 Regulation VIII Fugitive PM_{10} Prohibitions Rule 8021, Rule 8031	CREH will comply with Regulation VIII Fugitive PM_{10} Prohibitions to reduce ambient concentrations of fine particulate matter (PM10) by requiring actions to prevent, reduce or mitigate anthropogenic fugitive dust emissions.	Prior to project construction activities	- -	SJVAPCD
RR-AQ-6 Title V Operating Permits (Clean Air Act)	CREH will comply with Title V Operating Permits that control requirements from federal or state regulations that apply to a source.	- -	- -	SJVAPCD
Section 3.4.4 Biological Resources				
MM BIO-1 Biological Rare Plant Surveys	A qualified biologist knowledgeable on the identification of rare plant species shall conduct a pedestrian survey of areas of proposed disturbance within well 616-12D plus a 100-foot buffer to determine if any special-status plant species are present. These surveys shall be floristic in nature and shall be conducted during the optimal blooming periods of the target species prior to start of construction activities in this area in accordance with U.S. Fish and	Prior to the start of Project ground-disturbing activities and during optimal blooming period.	Prior to the start of any ground-disturbing activities and during optimal blooming period, a preconstruction survey shall be performed by a qualified biologist.	California Geologic Energy Management Division (CalGEM); U.S. Fish and Wildlife Service, if necessary;

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) protocols. Locations of any special-status plant species observed shall be mapped. If special-status plants are not identified during the survey(s), no further action is required.		If necessary, the qualified biologist shall contact CDFW and USFWS to determine next steps. The project proponent shall submit evidence of compliance to CalGEM to verify compliance	and California Department of Fish and Wildlife if necessary
MM BIO-2 Biological Rare Plant Fencing and Avoidance	If special-status plant species are found during the floristic surveys (BIO-1) or have been previously identified, then Ecologically Sensitive Area (ESA) fencing shall be established at a 50-foot radius around these individuals to ensure that they are not destroyed during Project activities. Pursuant to Section 1913 of the California Fish and Game Code, if Project activities cannot avoid those areas, then CDFW shall be notified and provided the opportunity to salvage any of these plants that would be removed. The CDFW may enter into agreement with the Project proponent to retain a qualified biologist for the relocation of sensitive plants to an approved location. Any salvage shall be undertaken in accordance with a salvage plan to be developed in consultation with CDFW. The plan shall include methods for transplanting and watering (if appropriate), success criteria for salvaged plants, monitoring the health and survivorship of salvaged plants during at least 5 years following salvage, and contingency	During Project ground-disturbing activities	If necessary, the qualified biologist and project proponent shall coordinate the establishment of the Ecologically Sensitive Area (ESA) fencing buffer. If necessary, the qualified biologist shall contact CDFW and USFWS to determine next steps. If necessary, the qualified biologist shall implement next steps in consultation with the wildlife agencies.	CalGEM; U.S. Fish and Wildlife Service, if necessary; and California Department of Fish and Wildlife if necessary.

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	measures if plant survivorship requirements are not satisfied.		The project proponent shall submit evidence of compliance to CalGEM to verify compliance.	
MM BIO-3 Blunt-nosed Leopard Lizard Avoidance	Prior to construction in areas that contain suitable habitat for BNLL and If small mammal burrows cannot be avoided by ground-disturbing activities (e.g., excavation or grading) with a 50-foot buffer, qualified biologists shall conduct protocol-level surveys for blunt-nosed leopard lizard at disturbance locations within the 50-foot burrow buffer according to the approved Blunt-nosed Leopard Lizard Survey Methodology, as revised as of October 2019 (CDFW 2019), or using another survey protocol approved by USFWS and CDFW. Project activity outside the specified 50-foot buffer may proceed while surveys are conducted. Overland travel not requiring ground disturbance may be permitted within the 50-foot buffer under the direct supervision of a qualified biologist. If no blunt-nosed leopard lizard is observed during the survey no further action is required. If blunt-nosed leopard lizards are observed during the survey, then the measures below shall be implemented: A pre-construction survey to search the proposed well for suitable burrows shall be conducted prior to ground-disturbing activities associated with Project activities. Surveys for burrows will occur no more than 30 days before the beginning of construction to ensure an up-to-date understanding of burrowing locations prior to actual siting. This would only be required	Prior to the start of Project ground-disturbing activities and during Project ground-disturbing activities.	Prior to the start of ground-disturbing activities, a preconstruction survey shall be performed by a qualified biologist. If Blunt nosed Leopard Lizard are observed, a qualified biologist shall survey and monitor suitable burrows no more than 30 days before the beginning of construction. The project proponent shall submit evidence of compliance to CalGEM to verify compliance.	CalGEM; U.S. Fish and Wildlife Service, if necessary; and California Department of Fish and Wildlife if necessary.

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	in areas where blunt-nosed leopard lizards were determined to be present. All construction activities occurring in areas where BNLL are determined to be present shall occur during the active BNLL season. On-site biological monitors shall be present at each site where activities are occurring within those areas. If a BNLL is present within 50-feet of the construction activities, the monitor shall halt all activities until the BNLL leaves the 50-feet area on its accord.			
MM BIO-4 Special-status Species Survey and Avoidance Buffers	Within 14 days prior to the start of Project ground-disturbing activities, a preconstruction survey with a 250-foot buffer, where land access is permitted, shall be conducted by a qualified biologist knowledgeable in the identification of these species. If dens/burrows/nests that could support any of these special-status species are discovered during the preconstruction survey, the avoidance buffers outlined below shall be established, and den or burrow monitoring will be conducted in accordance with the California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation (CDFG 2012) and U.S. Fish and Wildlife Service (USFWS) Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance. Den(s) or burrow(s) may be monitored using trail cameras or tracking mediums such as diatomaceous earth. If no species are detected for a minimum of four consecutive days/nights, the den or burrow may be burrow-scoped and plugged with a filled sandbag under the direct supervision of a qualified biologist. All tunnels	Within 14 days prior to the start of Project ground-disturbing activities.	Steps to Compliance: Within 14 days prior to the start of any ground-disturbing activities, a preconstruction survey shall be performed by a qualified biologist. If necessary, the qualified biologist shall contact CDFW and USFWS to determine next steps. If necessary, the qualified biologist shall implement next steps in consultation with the wildlife agencies.	California Geologic Energy Management Division (CalGEM); U.S. Fish and Wildlife Service, if necessary; and California Department of Fish and Wildlife if necessary.

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	must be examined for animal presence before plugging with a sandbag to ensure no burrowing owls, kit foxes, or other animals are hiding inside. No work shall occur within these buffers unless the biologist approves and monitors the activity. A copy of the preconstruction survey report shall be submitted to the Lead Agency as evidence of compliance. Refer to Table 3.4.4-X.		The qualified biologist shall prepare a brief report to be submitted to the wildlife agencies within 5 working days of completion of the preconstruction survey. The project proponent shall submit evidence of compliance to CalGEM to verify compliance.	
MM BIO-5 Biological Monitor Onsite	A qualified biological monitor shall be onsite during any initial ground-disturbing activities, including vegetation removal and well pad and pipeline installation. If a biological monitor is not onsite and special-status wildlife or their sign is observed on the Project site, the biologist shall be contacted immediately to determine whether biological monitoring or the implementation of avoidance buffers may be warranted. If at any time the qualified biologist determines that project activities could potentially have adverse impacts to listed species, project activities shall be halted, and the appropriate wildlife agencies shall be consulted prior to recommencement of activities.	During initial ground-disturbance activities.	Steps to Compliance: A qualified biologist shall be present during initial ground-disturbing activities. The project proponent shall submit evidence of compliance to CalGEM to verify compliance.	CalGEM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
MM BIO-6 San Joaquin Kit Fox Avoidance	The following measures shall be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the construction or Project site. Construction-related vehicle traffic shall be restricted to established roads and predetermined ingress and egress corridors, staging, and parking areas. Vehicle speeds shall not exceed 20 miles per hour within the Project site. A 10 miles per hour speed limit shall be implemented during night-time construction activities to reduce potential impacts to small mammals and SJKF. To prevent inadvertent entrapment of kit fox or other animals during construction, the contractor shall cover all excavated, steep-walled holes or trenches more than two feet deep at the close of each workday with plywood or similar materials. If holes or trenches cannot be covered, one or more escape ramps constructed of earthen fill or wooden planks shall be installed in the trench. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for entrapped animals. All construction-related pipes, culverts, or similar structures with a diameter of four inches or greater that are stored on the Project site shall	Throughout all phases of the Project	The project proponent shall submit evidence of compliance to CalGEM to verify compliance with the measures listed in the mitigation measure throughout construction activities.	CalGEM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If at any time an entrapped or injured kit fox is discovered, work in the immediate area shall be temporarily halted, and USFWS and CDFW shall be consulted for guidance. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS and CDFW have been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity until the fox has escaped. No pets, such as dogs or cats, shall be permitted on the Project sites to prevent harassment, mortality of kit foxes, or destruction of dens. No fueling of construction equipment will occur within 100 feet of a drainage, water crossing, or wetlands. If a spill or pipe break occurs within 100 feet of any water feature, adherence to the CREH Spill Prevention, Control, and Countermeasure (SPCC) Plan will be followed. Use of anticoagulant rodenticides and herbicides in Project sites shall be restricted. This is necessary to prevent primary or secondary			

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe labels and other restrictions mandated by the EPA, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional Project-related restrictions deemed necessary by the USFWS and CDFW. If rodent control must be conducted, zinc phosphide shall be used because of the proven lower risk to kit foxes. A representative shall be appointed by the Project proponent, who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative shall be identified during the employee education program, and their name and telephone number shall be provided to the USFWS. The Sacramento Fish and Wildlife Office of USFWS and CDFW shall be notified in writing within three working days of the accidental death or injury to an SJKF during Project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact can be reached at (559) 243-4014 and R4CESA@wildlifeca.gov. The BLM will also be informed for those wells on Split Estate property.			

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	All sightings of the SJKF shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed shall also be provided to the USFWS at the address below. Any Project-related information required by the USFWS or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at Endangered Species Division, 2800 Cottage Way, Suite W 2605, Sacramento, California 95825-1846, phone: (916) 414-6620 or (916) 414-6600. A copy of the preconstruction survey report shall be submitted to the lead agency as evidence of compliance.			
MM BIO-7 Pre-Disturbance Active Bird Survey	If Project construction activities are initiated during the nesting season (February 1 to September 15), a pre-construction nesting bird survey shall be conducted within 14 days prior to the start of construction. The surveys shall encompass the Project footprint and accessible areas or land visible from accessible areas within a 250-foot buffer for songbirds and a 500-foot buffer for raptors. If no active nests are found, no further action is required. However, existing nests may become active, and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. MM BIO-7: If Project construction activities are initiated during the nesting season (February 1 to September 15), a pre-construction nesting bird survey shall be conducted within 14 days prior to the start of	Nesting season (February 1 to September 15)	The project proponent shall be responsible for a preconstruction survey, which shall be performed by a qualified biologist. The project proponent shall submit evidence of compliance to CalGEM to verify compliance. If active nests are found during the breeding season, then a sufficient buffer shall be	CalGEM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	construction. The surveys shall encompass the Project footprint and accessible areas or land visible from accessible areas within a 250-foot buffer for songbirds and a 500-foot buffer for raptors. If no active nests are found, no further action is required. However, existing nests may become active, and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. If active nests are found during the survey or at any time during the construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest or if breeding attempts have otherwise been unsuccessful. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress. A copy of the pre-construction survey report shall be submitted to the Lead Agency as evidence of compliance.		established until the nests are vacated, juveniles have fledged, and there is no evidence of a subsequent attempt at nesting. If necessary, the qualified biologist shall act as a construction monitor. If necessary, the qualified biologist shall prepare a brief report to be submitted to CalGEM and CDFW within 30 days of completion of the preconstruction survey. The project proponent shall submit evidence of compliance to CalGEM to verify compliance.	
MM BIO-8 Worker Environmental Awareness Training Program (WEAP)	Prior to the initiation of construction activities, all construction personnel shall attend a Worker Environmental Awareness Training program developed by CREH. It shall include the components described below:	Prior to the initiation of construction activities	The project proponent shall ensure all construction workers complete	CalGEM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	Information on the life history and identification of special-status species that may occur or that may be affected by Project activities. The program shall also discuss the legal protection status of each such species, the definition of "take" under the FESA and CESA, measures the Project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the CEQA mitigation measures and agency permit requirements.		the Worker Environmental Awareness Training program, which shall be performed by a qualified biologist prior to construction. A sign-in sheet verifying compliance shall be submitted to CalGEM to verify compliance. An acknowledgement form signed by each worker indicating that environmental training has been completed shall be kept on record. A copy of the training materials, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgement forms shall be submitted to	

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
			CalGEM. A copy of the training transcript, training video or informational binder for specific procedures shall be kept available for all personnel to review and be familiar with, as necessary.	
MM BIO-9 Construction Fueling Buffer & SPCC Plan Compliance	No fueling of construction equipment shall occur within 100 feet of a drainage, water crossing, or wetlands. If a spill or pipe break occurs within 100 feet of any water feature, adherence to the CREH Spill Prevention, Control, and Countermeasure (SPCC) Plan shall be followed.	During construction	The project proponent shall be responsible for compliance and shall provide verify of compliance to CalGEM.	CalGEM
RR-BIO-1 BLM COA Construction and Interim Reclamation (DOI-BLM-CA-C060-2022-0024-EA, 2022, COA's, p. 3; DOI-BLM-CA-C060-2022-0089-EA COA's p 3. ; DOI-BLM-CA-C060-2019-0108-EA, 2019, COA's p. 9)	Wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, 675H-6-8D, 4-5H-6D Reclamation activities will be initiated in the fall, starting no earlier than October to maximize use of the wet season. All reclamation areas will be monitored for a minimum of five years, or until the BLM determines the locations have been successfully reclaimed. Reclamation progress will be reviewed annually in the fall season to determine if additional re-seeding activities are required or if fencing and signage need to be repaired. All permanent above-ground structures (e.g., production equipment, etc.) not subject to safety requirements shall be painted to blend with the natural color of the landscape. The	Initiated in early October and monitored annually for a minimum of five years Well 616-12D – Reclamation activities timed to coincide with precipitation events Prior to implementation of reclamation activities, CREH will consult with BLM to the timing for construction and removal of fencing	Gound Monitor will submit reports to BLM annually	BLM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	paint used will be a color which simulates "Standard Environmental Colors." The colors selected for the project location are Covert Green or Carlsbad Canyon. At the beginning of construction, topsoil (approximately the top four inches of soil) shall be removed from the project area and stockpiled on an existing pad or previously disturbed surface in close proximity to the project site. Subsequent to well completion, topsoil will be re-applied to the cut and fill slopes, as well as the sump. "Well completion" is a technical term used to describe the final phase of well drilling; "well completion" is not synonymous with the final phase of project implementation. Prior to applying topsoil to the sump, it will be cleaned, ripped to a minimum depth of 12 inches, and re-contoured to match the surrounding topography. Remaining topsoil will be stockpiled on an existing well pad or other previously disturbed surface and retained for future reclamation. Topsoil will be retained for no more than one year. All practicable measures will be taken to minimize erosion and stabilize disturbed soils. The following types of interim stabilization or similar methods may be used if necessary: jute netting, hydro-mulch, straw wattles, or crimped straw mulch. In addition, for Well 616-12D Prior to applying topsoil to the sump, it will be cleaned, ripped to a minimum depth of 18 inches, and re-contoured to match the surrounding topography.			

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	Reclamation activities will be timed to coincide with precipitation events, if possible, to promote growth of vegetation and ensure timely restoration. The project occurs in an inactive portion of a BLM grazing allotment and protective fencing of reclamation may be necessary. CREH shall consult BLM as to the need, design, and timing for construction and removal of fencing prior to implementation of reclamation activities.			
RR-BIO-2 BLM COA Final Reclamation (DOI-BLM-CA-C060-2022-0024-EA, 2022, COA's, p. 4-5; DOI-BLM-CA-C060-2022-0089-EA COA's p 4-5; DOI-BLM-CA-C060-2019-0108-EA, 2019, COA's p. 10)	Wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, 675H-6-8D, 4-5H-6D, 616-12D Disturbed lands shall be re-contoured to conform with existing undisturbed topography unless the BLM determines that re-contouring would result in negative impacts to special status species. No depressions shall be left that trap water or form ponds. All portions of final reclamation may be subject to additional cultural resources and paleontological inventory and may require a permit. The reclaimed landscape shall have characteristics that approximate the visual quality of the adjacent area with regard to location, scale, shape, color and orientation of major landscape features and meet the needs of the planned post disturbance land use. Final reclamation shall specifically achieve the following: 1. The reclaimed area shall be stable and exhibit none of the following characteristics: a. Large rills or gullies (greater than 6 inches deep).	Post Construction	CREH consult with BLM	BLM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	b. Perceptible soil movement or head cutting in drainages. c. Slope instability on, or adjacent to, the reclaimed area in question. 2. The soil surface must be stable and have adequate surface roughness to reduce runoff and capture rainfall and snow melt. Additional short-term measures, such as the application of mulch, shall be used to reduce surface soil movement 3. Vegetation production and species diversity (including shrubs) shall approximate the surrounding undisturbed area (50-150% of the adjacent species composition and cover). The vegetation shall stabilize the site and support the planned post disturbance land use, provide for natural plant community succession and development, and be capable of renewing itself. This shall be demonstrated by: a. Successful onsite establishment of species included in the planting mixture or other desirable species. b. Evidence of vegetation reproduction, either spreading by rhizomatous species or seed production. 4. Habitat Restoration: a. Restoration will be required on unused portions, including abandoned, unused, or unnecessary roads, of the project area or oil and gas lease when deemed necessary by the BLM to maintain or improve habitat values. Restoration will be required when reserve area (Red Zone) and habitat corridor (Green Zone) limits are exceeded and when a project or lease is abandoned. Restoration activities will be supervised by an onsite monitoring biologist.			

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	b. The following are examples of actions that may be required as part of restoration: i. All trash will be removed from the site and disposed of properly. ii. All cement, asphalt, and oil-contaminated soils will be removed from the site and disposed of properly. iii. All pipelines and other oilfield infrastructure no longer in use will be removed from the site and disposed of properly. iv. Topographic contours will be restored to the maximum extent possible. v. Non -compacted soils or areas previously deep ripped will be disked to a depth of approximately 8 inches. vi. Compacted sites will be deep ripped to a depth of 12 to 18 inches. vii. Slopes greater than 30 per cent will be treated by erosion control methods such as disking along the contour, imprinting, mulching, or installing wattles. viii. Sites will be seeded using methods such as drill or broadcast seeding with a site-appropriate seed mix, approved by the BLM Botanist. Exact seeding mixes and rates will depend on the site characteristics, the species chosen, and the current availability of native seed. Seed mixes will include dominant shrubs and native grasses and herbs compatible with the adjacent plant community. The best time for seeding is generally late summer to early fall prior to the onset of the rainy season. ix. Sites will be considered restored when it can be documented that they support functional, native habitat. Evidence of attainment of this goal will be provided by the			

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	project applicant. Restoration in drainages, streambeds, and similar habitats where water is a substantial component may require conformance with conditions of a CDFWS Streambed Alteration Agreement or other state or local permit. Demonstration of restoration may include documentation of: 1. Visual continuity or similarity with adjacent native, undisturbed habitat or a designated reference site. 2. Topography that follows natural contours and allows for the natural flow of water across the landscape. 3. Indiscernible boundary lines or areas between the disturbed and undisturbed areas. 4. Presence of habitat that supports threatened and endangered species. 5. Vegetation community composition within the normal or desired range. Ratios of native and non-native plants within normal or desired parameters. Presence and abundance of reproducing plants. Presence and abundance of biological soil crusts. 6. Evidence or presence of animals or animal sign on the site. Presence and abundance of desired species. Evidence, presence, and abundance of reproducing species. 7. Evidence of species diversity for both plants and animals. 8. Evidence of soil stability (minimal erosion). 9. Absence of signs of vehicle or other trespass. Absence of trash and contaminated soils. In addition, for Well 616-12D, the project occurs in an inactive portion of a BLM grazing allotment			

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	and protective fencing of reclamation may be necessary. CREH shall consult BLM as to the need, design, and timing for construction and removal of fencing prior to implementation of reclamation activities.			
RR-BIO-3 BLM COA Biological Resources Compensation Ratios and Avoidance and Mitigation Actions (DOI-BLM-CA-C060-2022-0024-EA, 2022, COA's, p. 1-2; DOI-BLM-CA-C060-2022-0089-EA COA's p 1-2. ; DOI-BLM-CA-C060-2019-0108-EA, 2019, COA's p. 8)	This project would be covered as project #133 under the 2017 Oil and Gas Programmatic Biological Opinion (08ESMF00-2016-F-0683). The 2017 Oil and Gas Programmatic Biological Opinion provides take coverage for authorization of individual projects occurring on surface and subsurface lands administered by the BLM in Kings and Kern Counties that disturb less than 10 acres of habitat or that encompass linear actions less than 10 miles long. This project occurs in Kern County and disturbs a total of 7.324 acres (3.63 acres for wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, 675H-6-8D; 1.276 acres for well 4-5H-6D; 2.685 acres for well 616-12D) acres of habitat, thus satisfying both requirements for coverage under the 2017 Oil and Gas Programmatic Biological Opinion. Compliance with the Project Specific Provisions (Attachment 1) of this Opinion is required. Specific compensation requirements for group wells For wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, 675H-6-8D, A preliminary estimate of compensation is 11.474 compensation acres (3.363 permanent acres compensated at 3:1 = 10.089 + 1.385 replacement acres). For well 4-5H-6D, a preliminary estimate of	Prior to ground disturbance; During construction Training Records CRC Compliance Representative	CRC Compliance Representative submit evidence to BLM or USFWS	BLM; USFWS

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	compensation is 4.421 compensation acres (1.155 permanent acres compensated at 3:1 = 3.465 + 0.121 temporary acre compensated at 1.1:1 = 0.133 + 0.823). For well 616-12D, a preliminary estimate of compensation is 9.697 compensation acres (2.136 permanent acres compensated at 3:1 6.408 + 0.549 temporary acres compensated at 1.1:1 = 0.604 + 2.136 replacement acres). In addition, CREH shall comply with all of the "Avoidance & Mitigation Actions" recommended by consulting Biologist by Kimberly Fiehler (West Kern Environmental Consulting, LLC) in her April 20th, 2022, Sensitive Species Review Form: 1. A biological monitor will be present during initial ground disturbance and will be on-call and notified (661) 448-3131 if listed species are observed in the project area subsequent to initial ground disturbance. 2. A Threatened and Endangered Species training session will be given to construction personnel prior to project implementation. 3. A pre-activity survey shall be conducted on the project site within 14-days of project construction. Should a potential kit fox den be observed during the 14-day preconstruction survey, CRC will implement monitoring measures based on guidelines in the USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011).			

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	4. Project site boundaries shall be clearly delineated by stakes, flagging and/or rope to minimize inadvertent degradation or loss of adjacent habitat during well pad and pipeline installation activities. 5. All construction equipment, staging areas, material and personnel shall be restricted to previously disturbed areas (roads, well pads, and other non-habitat areas). 6. All construction pipes, culverts, or similar structures stored at the construction site overnight having a diameter of two (2) inches or greater shall be inspected thoroughly for wildlife species before being buried, capped, or otherwise used or moved in any way. Pipes laid in trenches overnight shall be capped. If during construction a wildlife species is discovered inside a pipe, that section of pipe shall not be moved or, if necessary, moved only once to remove it from the path of construction activity, until the wildlife species has escaped. 7. A speed limit of 10 mph (MAX) will be enforced to avoid incidental take of wildlife along roadways. 8. All excavated steep-walled holes or trenches in excess of three feet in depth left open for more than one (1) workday shall be provided with one or more escape ramps constructed of earth fill or other material to prevent entrapment of endangered species or other animals. Ramps shall be located at no greater than 1,000-foot intervals (for pipelines etc.) and at not more than 45-degree angles. Trenches shall be inspected for entrapped wildlife each morning prior to onset of construction activities and immediately			

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	prior to the end of each working day. Before such holes or trenches are filled, they shall be inspected thoroughly for entrapped animals. Any animals discovered shall be allowed to escape voluntarily without harassment before construction activities resume or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded. 9. All food related trash such as wrappers, cans, bottles, and food scraps shall be disposed of into closed containers and be removed daily from the site. 10. Feeding of wildlife is strictly prohibited. 11. CRC staff and/or its contractors should designate a specific individual as a contact representative between CRC and all applicable federal, state, and local agencies to oversee compliance with these avoidance mitigation measures. 12. Firearms are prohibited on site. 13. Pets are prohibited on site. 14. Follow BLM General Guidelines for Conserving Habitat and Minimizing Project Impacts.			
RR-BIO-4 BLM COA Management of Noxious Weeds (DOI-BLM-CA-C060-2022-0024-EA, COA's, pgs. 3-4; DOI-BLM-CA-C060-2022-0089-EA; COA's, p. 42; DOI-BLM-CA C060-2019-0108-EA; COA's, p. 9)	For wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, 675H-6-8D: A site-specific weed control Environmental Assessment (EA) and a Pesticide Use Permit (PUP) must be completed before any use of pesticides on BLM lands. This can be a lengthy process and requires specific information, public notification, and review by the BLM State Office. Currently, the applicant does not have these approvals in place. Therefore, no herbicide treatment is authorized at this time.	PUR completed with 48 hours of all herbicide and pesticide application records	Applications submitted annually	BLM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	For well 616-12D: A site-specific weed control Environmental Assessment (EA) and a Pesticide Use Permit (PUP) must be completed before any use of pesticides on BLM lands. This can be a lengthy process and requires specific information, public notification, and review by the BLM State Office. In addition, any use of pesticides shall comply with all applicable Federal and State laws. Pesticides shall only be used in accordance with their registered uses, must be on the list of pesticides approved for use on California BLM lands, and used within limitations imposed by the Secretary of the Interior. Applicators of herbicides must have completed pesticide certification training and have a Certified Pesticide Applicator's License. A Pesticide Use Report (PUR) must be completed within 48 hours of all herbicide applications and pesticide application records for the areas and acres treated must be submitted to the Authorized BLM Officer each year.			
Section 3.4.5 Cultural Resources				
MM CUL-1/TCR-1 Discovery of Previously Unknown Cultural or Tribal Cultural Resources	If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified archaeologist can evaluate the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock, as well as historic resources such	During Construction If necessary, work shall cease, and the project proponent shall retain a qualified archaeologist and/or paleontologist to assess finds and	The project proponent shall submit evidence of compliance to CalGEM to verify compliance.	CalGEM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	as glass, metal, wood, brick, or structural remnants. If the qualified archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. Implementation of the mitigation measure below would ensure that the proposed Project would not cause a substantial adverse change in the significance of a historical resource.	recommended procedures. The qualified cultural resources specialist shall assess the significance of the find and determine next steps.		
MM CUL-2/TCR-2 Discovery of Human Remains	If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the NAHC, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the PRC (Chapter 1492, Statutes of 1982, Senate Bill (SB) 297), and SB 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of a discovery of human remains, at the direction of the county coroner.	During construction and operation In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. If required, the project proponent shall contact the County Coroner to assess the find. If required, the County Coroner shall contact the Native American Heritage Commission to assess the find.	The project proponent shall submit evidence of compliance to CalGEM to verify compliance.	CalGEM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
RR-CUL-1 BLM COA Discover of Cultural Resources and Human Remains (DOI-BLM-CA-C060-2022-0024-EA, COA's, pgs. 2-3; DOI-BLM-CA-C060-2022-0089-EA, COA's, pgs. 2-3; DOI-BLM-CA-C060-2019-0108-EA; COA's, pgs. 8-9)	Wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, 675H-6-8D, 4-5H-6D, 616-12D In the event of inadvertent discovery of cultural resources during project implementation, personnel responsible for the project shall immediately notify the BLM Bakersfield Field Office Cultural Resource Staff and Field Manager (661-391-6000). All work at the site of discovery, and in any other locations where damage to the discovery could occur, shall cease until written approval is received from the BLM. If human remains are inadvertently discovered on BLM surface land, all activity will immediately cease surrounding the unanticipated discovery. The holder will ensure that the discovery is secured and protected and will immediately notify the BLM Field Manager (661-391-6000). The BLM will adhere to current regulations regarding the treatment of human remains (Native American Graves Protection and Repatriation Act, 43 CFR 10). Access and use of the area can proceed with written approval from the Field Manager once the appropriate level of review has been determined and completed. In addition to the text above for Well 616-12D, the BLM will adhere to current regulations regarding the treatment of human remains (see BLM California Information Bulletin No. CAIB-2016-012).	During project implementation	Project Proponent will notify BLM Bakersfield Field Office	BLM
Section 3.4.7 Geology and Soils				
MM GEO-1	In areas where there has been no previous ground disturbance prior to the start of	Prior to construction	A copy of the training materials	CalGEM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
Paleontologist and Paleontological Resources Awareness Training program	construction, the Project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (SVP, 2010), to carry out all mitigation measures related to paleontological resources. a. Prior to the start of any ground disturbing activities, the qualified paleontologist shall conduct a Paleontological Resources Awareness Training program for all construction personnel working on the Project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training Guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form. a. Paleontological Resources Awareness Training may be conducted in conjunction with the archaeological resources training required by Mitigation Measure BIO-8. a. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources. a. The Project operator shall ensure all new employees who have not participated in earlier	CalGEM shall ensure a qualified paleontologist conducts the Paleontological Resource Awareness Training. An acknowledgement form signed by each worker indicating that Paleontological Resource training has been completed shall be kept on record.	and attendee list shall be sent to CalGEM to verify compliance.	

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	Paleontological Resources Sensitivity Trainings shall meet the provisions specified above. a. The Paleontological Resources Awareness Training Guides shall be kept available for all personnel to review and be familiar with as necessary.			
MM GEO-2 Discovery of a Paleontological Resource	The Project operator shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbance activities, all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines whether the resources require further study. The operator shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall notify the Lead Agency (CalGEM) and the Project operator of the procedures that must be followed to minimize impacts on the identified resource before construction is allowed to resume at the location of the find. If the Paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. The BLM will also be informed about those wells on federal property. If the find is determined to be significant and the Lead Agency determines avoidance is not feasible, the paleontologist shall design and implement a	During ground disturbance activities In the event that paleontological resources are encountered during ground disturbance activities, all work within 100 feet shall halt. If required, the paleontologist shall conduct additional investigation and complete additional studies or plans.	The project proponent shall submit evidence of compliance to CalGEM to verify compliance.	CalGEM

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	data recovery plan consistent with the applicable standards. The plan shall be submitted to the Lead Agency for review and approval. Upon approval, the plan shall be incorporated into the Project.			
RR-GEO-1 SJVAPCD Regulation VIII Reduction Measures	During project construction activities, CREH shall implement the following fugitive dust measures in accordance with SJVAPCD's Regulation VIII: The project proponent will water exposed areas three times per day. Limit the speed of vehicles traveling on unpaved access or haul roads within the Project area to a maximum of 15 miles per hour.	During construction Project Monitor Photos	Send to SJVAPCD for review	SJVAPCD
RR-GEO-2 BLM COA Geology and Soils Discovery of Paleontological Resources (DOI-BLM-CA-C060-2022-0024-EA, COA's p.3;)	Wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, 675H-6-8D This project is located on BLM surface lands, and the area has been designated as Potential Fossil Yield Classification (PFYC) of 4, the Tulare formation, as well as PFYC U (Unknown) from older alluvial fan deposits. Class 4 formations are highly likely to contain vertebrate fossils or scientifically significant invertebrate fossils, while Class U has an unknown potential. A paleontological survey (6000-2016-34P) has provided a monitoring and mitigation strategy for the BVH MDP area for the 4 federal surface land wells (provided at the end of these COAs). CRC was contacted regarding the 2 split estate wells (613H-26-25B & 613UH-26-25B) as the private landowner, and they have waived paleontological monitoring and mitigation for these two wells.	During construction activities; upon inadvertent discovery of paleontological resources	CREH must report any inadvertent discovery to the BLM Field Office Paleontological Staff and BLM Field Manager	BLM Field Office

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	In the event of inadvertent discovery of paleontological resources during project implementation, the BLM Field Office Paleontological Staff and the BLM Field Manager (661-391-6000) shall be immediately notified by personnel responsible for the project. All work at the site of discovery, and in any other locations where damage to the discovery could occur, shall cease until written approval by the BLM.			
RR-GEO-3 BLM COA Geology and Soils Paleontological Resource Monitoring and Mitigation Plan (DOI-BLM-CA-C060-2022-0024-EA; COA's, p. 6; DOI-BLM-CA-C060-2022-0089-EA COA's pgs. 6-13; DOI-BLM-CA-C060-2019-0108-EA, 2019, COA's p. 9)	Wells 603H-1-6D, 658UH-36-6D, 674UH-6-8D, 675H-6-8D, 4-5H-6D, 616-12D The following sections provide a detailed paleontological mitigation plan (PMP) recommended for future development on BLM managed lands within the Buena Vista Hills Master Development Plan (MDP) (for private surface split estate or fee lands, paleontological resource compliance is up to the discretion of the surface owner). This mitigation program has been divided into sections outlining steps to be taken prior to the commencement of construction (e.g., contracting a qualified Project Paleontologist, attendance of Project Paleontologist at pre-construction meetings, paleontological resource training provided for earth excavation personnel), during construction (paleontological monitoring of excavations into Pleistocene older alluvial deposits or the Tulare Formation, salvage of discovered fossils), and post-construction (preparation and curation of any salvaged fossils, completion of final paleontological mitigation report). All steps taken in the mitigation program are in accordance with industry standards (e.g., SVP,	Prior to construction, during construction, post construction Contact a professional repository Paleontological Monitor	Paleontological Monitoring Exhibit submittal by Project Paleontologist List of Qualified Paleontological Monitors Submittal If fossil discovered, Project Paleontologist contact BLM and Kern County Submittal of Final Paleontological Mitigation report	BLM Bakerfield Field Office Kern County

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	2010; Murphey et al., 2014). Adopting the recommendations outlined in this PMP will reduce impacts to paleontological resources from ground disturbance during construction to less than significant levels. A1.0 PRECONSTRUCTION A2.0 DURING CONSTRUCTION A3.0 POST CONSTRUCTION Additional information for each sub-header can be found in Appendix A.			
RR-2 BLM COA Geology and Soils Paleontological Resources Training (pg. 3; DOI-BLM-CA-C060-2022-0089-EA; COA	For Well 4-5H-6D CRC, the private surface estate landowner for the split estate well (626-26B), has requested to follow the following Paleontological Compliance procedures: All construction personnel will be trained on the importance of paleontological resources and to notify CRC's Health, Safety and Environment Department of the discovery of any archeological, historical, or vertebrate fossil found. All work will stop within 50' of the discovery until a paleontologist reviews the discovery. Construction personnel shall be instructed that unauthorized collection or disturbance of fossils is unlawful.'	Prior to construction Employee Training Records	Notify CRC's Health, Safety and Environmental Department Submit record of employee training records	BLM
Section 3.4.9 Hazards				
RR-HAZ-1 Oil Spill Contingency Plan (OSCP, SPCC)	CREH will follow the procedures in the California Resources Production Corporation San Joaquin Valley Operations, Oil Spill Contingency Plan (OSCP). Throughout the Project, CREH will implement standard equipment monitoring and	During all project activities CRPC San Joaquin Valley Operations, Oil Spill Contingency Plan	Submittal of plan	Kern County Fire Department (CUPA)

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	notification procedures. To address discharge incidents, the following actions will be taken: 1) containment of spill 2) flow shutdown to failing equipment 3) recovery and cleanup Containment actions include the construction of earthen berms to contain spills or divert spills to an identified containment area and/or inception trench/barrier to contain the oil. If a trench is excavated, the bottom and downgradient would be covered with plastic. Additional efforts for containment include storm drain and culvert blocking. The use of sorbents to recover oil is also addressed.			
RR-HAZ-2 CREH Emergency Response Plan	CREH shall ensure compatibility between the project CREH Emergency Response Plan and the Kern County Mult-Hazard Mitigation Plan and Kern County Multi-Jurisdictional Natural Hazard Plan.	During all project activities	Submit a copy of the CREH Emergency Response Plan	Kern County Emergency Management Department
RR-HAZ-3 Hazardous Materials Business Plan (HMBP)	If necessary, CREH shall update the current Hazardous Materials Business Plan to include Project activities. As part of the HMBP, CREH shall require annual worker training requirements to increase awareness of the most common types of failures and methods to avoid mistakes, shall maintain records of employee training, and shall make such records available to the County for review upon request.	During all project activities Hazardous Materials Business Plan and training records	Submit record of employee training records and a copy of the business plan	Kern County Public Fire Department (CUPA)
Section 3.4.10 Hydrology and Water Quality				

Mitigation # Mitigation Title	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
RR-HYDRO-1 Notice of Applicability Water Quality Order 2003-0003-DWQ-0090	CREH will comply with the terms of California Water Boards Statewide General Water Quality Order 2003-0003-DWQ-0090 to Discharge Drilling Muds and Boring Waste.	Prior to project construction activities		CVRWQCB
RR-HYRDO-2 Statewide General WDRs for Discharges to Land with a Low Threat to Water Quality (General Order 2003-0003-DWQ)	CREH will comply with the terms of California Water Boards Statewide General Water Quality Order 2003-0003-DWQ for well completion activities.	After well drilling, part of well completion activities		CalGEM; CVRWQCB

Mitigation Agreement

Acting as an authorized representative of Operator Name, I, Representative Name, acknowledge that I reviewed the MMRP approved as part of Environmental Document Title. I accept all the mitigation methods in the MMRP and hereby, on behalf of Operator Name, agree that Operator Name will implement the MMRP as CEQA and the project approval(s) require.

_____ _____

Representative Name
Position Title
Operator Name

Date

***** Operator information and signatures will be completed in the final Mitigation Monitoring and Reporting Program upon project approval.***

SECTION 5 - REFERENCES

ASM Affiliates. (2022a). *Cultural Resources Review, Four Buena Vista Hills Oil Field Federal Wells, Kern County, California.*

ASM Affiliates. (2022b). *Cultural Resources Review, Two Buena Vista Hills Oil Field Federal Wells, Kern County, California.*

Bureau of Land Management. (2019). *Environmental Assessment, California Resources Elk Hills, LLC (CREH) Application for Permit to Drill Well 645H-12D DOI-BLM-CA-C060-2019-0108-EA, Programmatic Project #68* .

Bureau of Land Management. (2022a). *Environmental Assessment: California Resources Elk Hills, LLC (CREH) 6 APDs in Buena Vista Hills DOI-BLM-CA-C060-2022-0024-EA Programmatic Project #124.*

Bureau of Land Management. (2022b). *Environmental Assessment, California Resources Elk Hills, LLC (CREH), 2 APDs in Buena Vista Hills, DOI-BLM-CA-C060-2022-0089-EA, Programmatic Project #133.*

Cal Recycle. (2023a). *Taft Recycling & Sanitary Landfill (15-AA-0061)*. Retrieved August 2023, from SWIS Facility/Site Summary: https://www2.calrecycle.ca.gov/SolidWaste/Site/Summary/709

Cal Recycle. (2023b). *McKittrick Waste Treatment Site (15-AA-0105)*. Retrieved August 2023, from SWIS Facility/Site Summary: https://www2.calrecycle.ca.gov/SolidWaste/Site/Summary/721

Calflora. (2022, April). *Illustrated Plant List*. Retrieved August 2023, from Inventory of Rare Plants: https://www.calflora.org//app/ipl?list_id=px1018

California Department of Conservation - Division of Oil, Gas, and Geothermal Resources. (1998). *California Oil and Gas Fields, Volume 1 – Central California Report* .

California Department of Conservation. (2022, January). *Farmland Mapping and Monitoring Program*. Retrieved August 2023, from Important Farmland Finder- 2018: https://maps.conservation.ca.gov/DLRP/CIFF/

California Department of Fish and Wildlife. (2022). *California Natural Diversity Database*. Retrieved August 2023, from https://wildlife.ca.gov/Data/CNDDB

California Department of Transportation. (2022, January). *California State Scenic HIghway System Map*. Retrieved August 2023, from State Scenic Highway

System ARC GIS On LIne.: https://www.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa

California Governor's Office of Emergency Services. (2018). *Release Reporting Requirements Matrix.* Retrieved September 2023, from https://www.caloes.ca.gov/wp-content/uploads/Fire-Rescue/Documents/Release-Reporting-Matrix.pdf

California Office of Emergency Services. (2023). *Cal OES Spill Release Reporting*. Retrieved August 2023, from California Office of Emergency Services: https://www.caloes.ca.gov/office-of-the-director/operations/response-operations/fire-rescue/hazardous-materials/spill-release-reporting/

California Resources Production Corporation. (2021). *California Resources Production Corporation San Joaquin Valley Operations, Oil Spill Contingency Plan.*

CDFW. (2012). *Staff Report on Burrowing Oil Mitigation.* Retrieved December 3, 2025, from California Department of Fish and Wildlife: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline

Department of Toxic Substances Control. (2022). EnviroStor. California, United States of America.

Kern County. (2004). *Kern County General Plan 2004 Chapter 3 Noise Element.*

Kern County. (2009a). *General Plan 2040.*

Kern County. (2009b). *Lake Isabella Dam Failure Evacuation Plan.*

Kern County. (2012). *Airport Land Use Compatability Plan.*

Kern County. (2015). *Environmental Impact Report- Revisions to the Kern County Zoning Ordinance – 2015 C.*

Kern County Subbasin GSAs. (2025). *Draft 2025 Kern County Subbasin Groundwater Sustainability Agencies Groundwater Sustainability Plan.* Retrieved December 2, 2025, from State Water Boards FTP Site: https://ftp.waterboards.ca.gov/#/2025/June/06202025_SGMA_KernGSPs/Kern%202025%20GSPs/01_2025%20Plans/

Natural Soils Conservation Service. (2022, May). *Soils Series*. Retrieved August 2023, from Chancac, Pleito and Preemier: https://soilseries.sc.egov.usda.gov/OSD_Docs/P/PREMIER.html

PaleoServices - SDNHM. (2016). *Paleontological Resource Assessment - Buena Vista Hills Master Development Plans; Kern County CA.*

Quad Knopf, Inc. (2025a). *CREH Buena Vista 4 and 6 CalEEMod Emissions Update.*

Quad Knopf, Inc. (2025b). *CREH Buena Vista 4 and 6 Project Health Screening Assessment.*

San Joaquin Valley Air Pollution Control District. (2015). *Guidance for Assessing and Mitigating Air Quality Impacts.*

Society of Vertebrate Paleontology. (2010). *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.*

USFWS. (2011). *Standarized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance.* Retrieved December 3, 2025, from California Department of Fish and Wildlife: https://www.fws.gov/sites/default/files/documents/survey-protocols-for-the-san-joaquin-kit-fox.pdf

West Kern Environmental Consulting, LLC. (2022). *Protocol Level Blunt-Nosed Leopard Lizard Survey Results - Proposed Well Location 616-12D in the Buena Vista Oilfield, Kern County, California.*