

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

POSO CREEK PHASE III UNDERGROUND INJECTION CONTROL PROJECT 566-09-021

UNINCORPORATED KERN COUNTY, CALIFORNIA

MAY 2022

DRAFT

Prepared on Behalf of:

California Department of Conservation
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List of Acronyms and Abbreviations

APD	Application for Permits to Drill
API	American Petroleum Institute
ASTM	American Standard of Testing and Materials
BLM	U.S. Bureau of Land Management
BMP	best management practice
CAA	Clean Air Act
CalGEM	Geologic Energy Management Division
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
C.F.R.	Code of Federal Regulations
CO ₂ e	carbon dioxide equivalent
CRPR	California rare plant rank
CV-RWQCB	Central Valley Regional Water Quality Control Board
dBA	A-weighted decibel
E&B	E&B Natural Resources Management Corporation
EA	Environmental Assessment
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
FONSI	Finding of No Significant Impact
FTA	Federal Transit Authority
GHG	greenhouse gas
GWh	gigawatt-hours
H ₂ S	hydrogen sulfide
HAPs	hazardous air pollutants
IS/MND	Initial Study/Mitigated Negative Declaration
Ldn	day-night sound level

Leq	equivalent sound level
Lmax	maximum sound level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
PAL	Project Approval Letter
PFYC	Potential Fossil Yield Classification
PM ₁₀	respirable particulate matter
PM _{2.5}	fine particulate matter
ppm	parts per million
PRC	Public Resources Code
SCH	State Clearinghouse
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SREIR	Supplemental Recirculated Environmental Impact Report
SSC	species of special concern
SWRCB	State Water Resources Control Board
µg/m ³	micrograms per cubic meter
UIC	Underground Injection Control
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compound
WDR	waste discharge requirements

Mitigated Negative Declaration

Project Name:

Poso Creek Phase III Underground Injection Control Project 566-09-021

Lead Agency Name and Address:

Department of Conservation, California Geologic Energy Management Division
715 P Street MS 18-03, Sacramento, CA 95814

Contact Person, Phone Number, and Email Address:

Ray Mullins, (916) 917-3654, CEQA@conservation.ca.gov

Project Proponent Name and Address:

E&B Natural Resources Management Corporation
1608 Norris Road, Bakersfield, CA 93308

Project Description:

E&B Natural Resources Management Corporation (E&B) applied to the Department of Conservation, Geologic Energy Management Division (CalGEM) to amend an existing Class II Underground Injection Control (UIC) Project Approval Letter (PAL) to merge their steam flood production (UIC Project No. 566-09-021) and cyclic steam production (UIC Project No. 566-09-040) (Project) activities at the Poso Creek Oil Field. The Project objective is to enhance oil production at the Poso Creek Oil Field to continue to support the energy needs of California.

The proposed Project consists of 62 new wells, as part of the third phase of expansion of existing operations in the Poso Creek Oil Field (Phase III). The proposed project area under Phase III would be geographically contiguous to previously approved project areas (Phase I approved in 2013 and Phase II approved in 2018). E&B seeks an amendment to an existing Project Approval Letter (PAL) for the proposed expansion to existing steam flood UIC project (Project 566-09-021) and cyclic steam UIC project (Project 566-09-040). If approved, CalGEM will amend the PAL for UIC Permit No. 566-09-021, and render the PAL for UIC Project No. 566-09-040 obsolete. All previously approved injection activity under Phase I and Phase II expansion will be covered by this amended PAL. The impacts of this project area are addressed in this Initial Study/Mitigated Negative Declaration (IS/MND).

Project Location:

The Project is in unincorporated Kern County, California, approximately 12 miles north of Bakersfield, and wholly within the Poso Creek Oil Field (Section 32, Township 27 South, Range 27 East). Highway 65 runs north to south through the oil field (Figure 1). The Project wells would be drilled within three surface lease areas operated by E&B: Midway Premier, Grimes East, and Grimes West. The Midway Premier lease is located

entirely on private lands (owned by an affiliated company of E&B's). Both the Grimes East and Grimes West lease areas are located entirely on federal lands owned and managed by the U.S. Bureau of Land Management (BLM) and under lease by E&B.

Findings:

It is hereby determined that based on the information contained in the attached Initial Study, the Project, with implementation of the BLM Conditions of Approval and mitigation measures listed therein, would not have a significant effect on the environment. Mitigation measures necessary to avoid the potentially significant impacts on the environment are included in the Initial Study, which is hereby incorporated and fully made part of this Mitigated Negative Declaration. E&B has reviewed and agreed to implement all mitigation measures in the Initial Study. A Mitigation Monitoring and Reporting Plan containing each mitigation measure in this IS/MND has been prepared for adoption by the Department of Conservation, as the lead agency, and all mitigation measures, implemented as required and as outlined in the Mitigation Monitoring and Reporting Plan, will be incorporated as Conditions of Approval in all permits for the Project to ensure that mitigation measures are implemented, as required.

Pursuant to Section 21082.1 of the California Environmental Quality Act, the Department of Conservation has independently reviewed and analyzed the IS/MND for the proposed Project and finds that this document reflects the independent judgement of the Department of Conservation. The Department of Conservation also confirms that the Project mitigation measures detailed in this document are feasible and will be implemented as stated in the IS/MND.

Signature

Date

1 Introduction

E&B has applied to the Department of Conservation, California Geologic Energy Management Division (CalGEM), for an amendment to an existing Class II Underground Injection Control (UIC) Project Approval Letter (PAL) to merge their steam flood and cyclic steam production activities at the Poso Creek Oil Field.

Catalyst Environmental Solutions Corporation prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of and with critical review, input, and policy expertise of CalGEM pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code [PRC], §21000 et seq.) and the CEQA Guidelines.

1.1 Summary of the Proposed Project

The proposed Project consists of 62 new wells (Project), as part of the third phase of expansion of existing operations in the Poso Creek Oil Field (Phase III). The proposed expansion under Phase III would be geographically contiguous to the wells drilled under the previously approved projects (Phase I approved in 2013 and Phase II approved in 2018, discussed in detail in Section 3.1, *Environmental Setting and Baseline*). E&B seeks a PAL for the proposed merging of existing steam flood UIC Project 566-09-021 and cyclic steam UIC Project 566-09-040. If approved, CalGEM will amend the PAL for UIC Project 566-09-021 to incorporate the previously approved injection activity and injection wells under UIC Project 566-09-040 and will include activity for the Phase III expansion addressed in this IS/MND.

Table 1.1-1 summarizes the wells to be included in the amended PAL, their land type, and their environmental review status. The wells are located within three different lease areas of the Poso Creek Oil Field, encompassing both federal lands and private lands within Kern County (Figure 1 displays the location of the Poso Creek Oil Field, and Figure 2 shows the affected lease areas within the oil field and the boundary of the proposed Project area). Prior to drilling a new well on federal or private land, E&B would be required to submit a Notice of Intention for a New Drill to CalGEM for approval.

1.1.1 Midway Premier Lease

The Project includes the drilling of four wells on the Midway Premier lease. These four undrilled wells on the Midway Premier lease were not reviewed under the 2015 Kern County Oil and Gas Development Environmental Impact Report (2015 Kern County EIR) (State Clearinghouse [SCH] #2013081079), which was not available to support the environmental review of new wells after March 25, 2020. Kern County revised its ordinance governing oil and gas operations and certified a Supplemental Recirculated EIR (2021 Kern County SREIR) under the same SCH

number on March 9, 2021 (Kern County 2021). On October 22, 2021, Kern County Superior Court ordered the County to cease issuing permits until the Court determines the ordinance supported by the 2021 Kern County SREIR complies with CEQA. The four wells in the Midway Premier lease did not receive Kern County permits under the 2021 Kern County SREIR. E&B will obtain all necessary permits and pay all mitigation fees required by Kern County at the time the wells are drilled. Therefore, these wells are subject to separate CEQA review by CalGEM and are addressed in this IS/MND. Prior to March 26, 2020, E&B obtained job cards (the result of conformity with Kern County ordinance which constitutes approval or permit) for 78 wells through Kern County who reviewed the proposal for well drilling in accordance with the 2015 Kern County EIR, which was in effect at the time. These 78 wells have been drilled and all construction of surface infrastructure is completed. As discussed below, these existing wells constitute part of the environmental baseline for the Project.

1.1.2 Grimes East Lease

The Project includes 47 new wells on the Grimes East lease. The 47 wells on the federal Grimes East lease were subject to National Environmental Policy Act (NEPA) review in 2019 and received NEPA review concurrent with the Kern County Land Use and Planning Department's CEQA review of the Midway Premier lease wells (U.S. Bureau of Land Management [BLM] 2019). The BLM prepared an Environmental Assessment (EA) in accordance with NEPA requirements for all activities associated with the 47 wells on the Grimes East lease area (Project DOI-BLM-CA-C060-2019-0124-EA). The Finding of No Significant Impact (FONSI) was signed on July 23, 2019. The BLM subsequently approved the Applications for Permit to Drill (APDs) for all 47 proposed wells.

1.1.3 Grimes West Lease

The Project includes eight wells on the Grimes West lease. The eight wells on the federal Grimes West lease were subject to NEPA review. The BLM prepared an EA in accordance with NEPA requirements for all construction and drilling activities associated with the eight oil wells and ancillary facilities on the Grimes West lease area (Project DOI-BLM-CA-C060-2020-0045-EA; BLM 2020). The FONSI was signed on August 7, 2020. The BLM subsequently approved the APDs for all eight proposed wells.

1.1.4 Temperature Observation Wells

As part of the conditions of approval for the UIC Permit, as specified by the Central Valley Regional Water Quality Control Board (CV-RWQCB), upon approval of the amended PAL for UIC Project 566-09-021, E&B will drill two temperature observation wells within the Grimes East lease and one temperature observation well within the Grimes West lease to demonstrate fluid

containment to the approved zones of injection for the Project. The drilling and operation of these three temperature observation wells are included as part of the proposed Project evaluated in this IS/MND.

1.2 Objectives of the Project

The Project objective is to enhance oil production at the Poso Creek Oil Field to continue to support the energy needs of California. CalGEM's objective is to respond to E&B's application to amend their existing Class II UIC Project (Project No. 566-09-021) and incorporate UIC Project No. 566-09-040 in accordance with the 2019 updated UIC Regulations (California Code of Regulations [CCR], Title 14, Division 2, Chapter 4), address protections for public health and safety and the environment, and issue the PAL. If approved, CalGEM intends to amend the PAL for UIC Permit No. 566-09-021 to incorporate the previously approved injection activity and injection wells under UIC Permit No. 566-09-040, as well as the proposed expansion addressed in this IS/MND.

As the CEQA lead agency for the four undrilled Midway Premier wells, the Department of Conservation, acting through CalGEM, is analyzing the proposed Project as a whole, which also includes wells on the Grimes West and Grimes East leases that have already completed review under NEPA. Therefore, the proposed Project includes a total of 62 wells (four on private lands and 58 on federal lands) that have not yet been drilled and that are the subject of this CEQA document (Table 1.1-1).

1.3 Purpose of the Environmental Assessment

CalGEM has prepared this IS/MND to evaluate the potential environmental effects of the Project in advance of deciding whether to amend the PAL for UIC Project No. 566-09-021 to incorporate all aspects of UIC Project No. 566-09-040, including the proposed expansion for Phase III, and if so, any potential conditions of approval.

1.4 Agency Actions

CalGEM has permitting authority for this UIC project under the 2019 updated UIC regulations, which spans both federal land and private land in unincorporated Kern County. CalGEM filed a CEQA Notice of Exemption for its updated UIC regulations on February 11, 2019, pursuant to CEQA Guidelines, Section 15307, Protection of Natural Resources and Section 15308, Protection of the Environment (State Clearinghouse #2019028156).

BLM is the NEPA lead agency for the portions of the project within their jurisdiction. All wells located within the boundaries of federal land require permits from the BLM and compliance with all federal requirements. As described above in Section 1.1.2 and 1.1.3, the wells located on federal land have already

been evaluated under NEPA (Project DOI-BLM-CA-C060-2020-0045-EA and Project DOI-BLM-CA-C060-2019-0124-EA) and E&B has received approval from the BLM for all the federal APDs.

The four wells located on private land within the Poso Creek Oil Field did not receive Kern County permits under the 2021 Kern County SREIR that was suspended by order of the Kern County Superior Court on October 22, 2021. E&B will obtain all necessary permits and pay all mitigation fees required by Kern County at the time the wells are drilled.

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Table 1.1-1 Summary of the Wells in the Phase III UIC Expansion Proposal by Lease Area

Lease	Land Type	Number of Wells Already Drilled/Constructed (Baseline)	Number of CalGEM Notices of Intent to be Filed for New Wells to Be Drilled/Constructed (Analyzed in Initial Study)	Notes
Midway Premier	Private	46 Cyclic Steam 32 Steam Flood	4 Steam Flood Wells	For the 46 Cyclic Steam, and 32 Steam Flood wells, CEQA was completed by Kern County in 2019, E&B has approved job cards from the County. All well drilling, and construction completed for these 78 total wells.
Grimes, East	Federal	--	25 Cyclic Steam Wells 22 Steam Flood Wells 2 Temperature Observation Wells	For the 25 Cyclic Steam and 22 Steam Flood wells, NEPA completed in 2019, E&B has approved APDs from the BLM for all wells. Vegetation has already been removed; wells not yet drilled.
Grimes, West	Federal	--	6 Cyclic Steam Wells 2 Steam Flood Wells 1 Temperature Observation Well	For the 6 Cyclic Steam and 2 Steam Flood wells, NEPA completed August 2020, E&B has approved APDs from the BLM for all wells. Wells not yet drilled.
Total Number of Wells Included in the Phase III UIC Expansion Proposal that are Baseline Environmental Setting		78	--	--
Total Number of Wells Requiring a Notice of Intent from CalGEM Included in the Phase III UIC Expansion Proposal that are Analyzed in this Initial Study		--	62	--

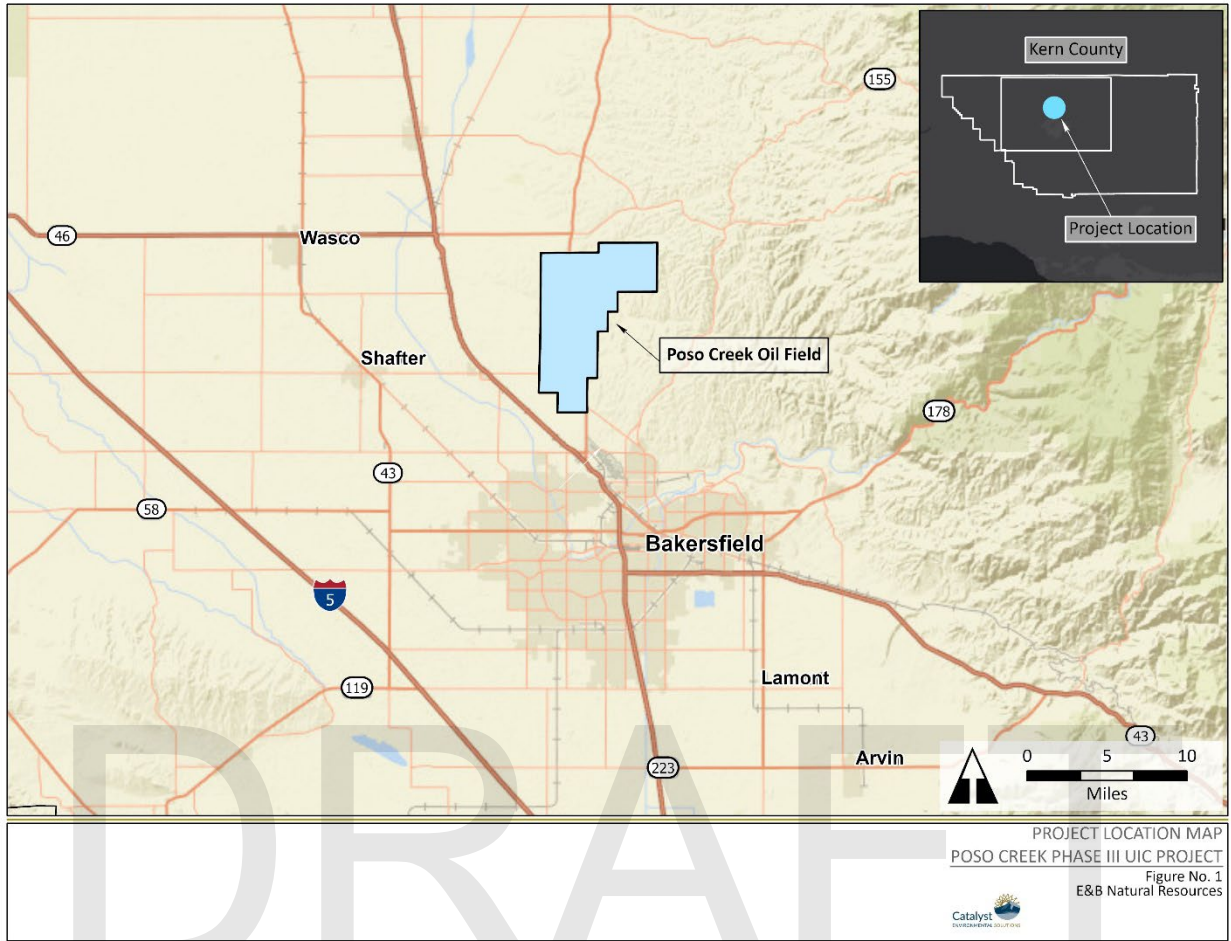


Figure 1. Project Location Map

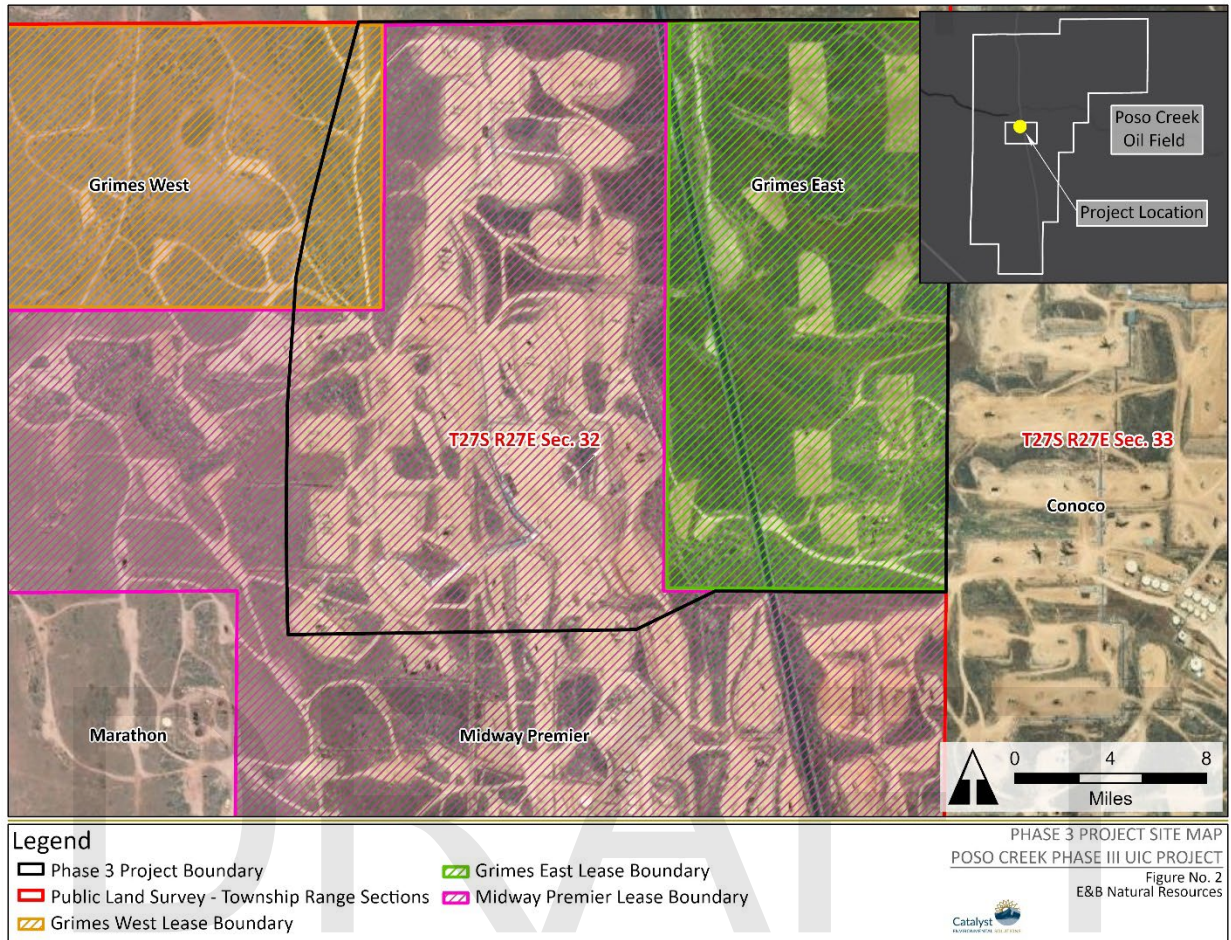


Figure 2. Lease Areas Included in the Phase III UIC Project Boundary

2 Project Description

E&B has applied for amendment to their Class II UIC permits to conduct enhanced oil recovery (steam flood and cyclic steam) in existing leasehold areas within the Poso Creek Oil Field (Projects 566-09-040 and 566-09-021) for 140 wells. The injection would occur within an exempt aquifer as defined by Title 14 PRC §3131 and the federal Safe Drinking Water Act (40 Code of Federal Regulations [C.F.R.] §146.4). The aquifer exemption was approved in 1982 in the Primacy Agreement with the then Division of Oil, Gas, and Geothermal Resources, now CalGEM, by the U.S. Environmental Protection Agency (EPA).

If an amended PAL is approved, E&B proposes to drill 62 wells in three lease areas (4 on private land and 58 on federal land). At this time, it is speculative if any additional observation wells will be needed. However, if during project operations E&B or CalGEM determines that additional observation wells are necessary, E&B proposes to convert existing idle oil and gas wells within the three lease areas into observation wells to monitor the progression of the Phase III steam flood over time as well as contain the injected fluids to the approved zones of injection. Well conversion would not require any surface disturbance or construction activity. The other 78 wells that would be included in the PAL have already been drilled in accordance with relevant CalGEM permits to drill new wells and job card approvals from Kern County Land Use and Planning Department. The construction and operation of these 78 wells were analyzed under the 2015 Kern County EIR and are included as part of the baseline environmental setting (described in Section 3). The 58 wells on federal land were subject to NEPA review in 2019 and 2020 (BLM Environmental Assessment numbers: DOI-BLM-CA-C060-2019-0124-EA and DOI-BLM-CA-C060-2020-0045-EA), and the BLM has approved E&B's APDs (BLM 2019; BLM 2020).

E&B submitted its applications for UIC project modification to CalGEM (formerly Division of Oil, Gas and Geothermal Resources) in September 2018. CalGEM, the CV-RWQCB, and the State Water Resources Control Board (SWRCB) have reviewed the applications in accordance with the 2019 Updated UIC Regulations. The CV-RWQCB issued a Letter of No Objection with Conditions on November 12, 2019 (CV-RWQCB 2019). In accordance with CalGEM's longstanding practice under its primacy agreement with EPA, the UIC Project Applications were also posted for a 30-day public review on August 28, 2019, and subsequently for a second 15-day public review on November 26, 2019. CalGEM incorporated the conditions included in the November 12, 2019, letter issued by CV-RWQCB, including a Monitoring Plan, as conditions of approval in the Draft PAL for UIC Project 566-09-021 (which also incorporates all aspects of Project 566-09-040 as previously mentioned). The Monitoring Plan includes the drilling of three temperature observation wells to monitor and verify containment

of the injected fluids to the proposed zones of injection. The applications were also subject to review by the Lawrence Livermore National Laboratory. Accordingly, the proposed Project has been evaluated by CalGEM, CV-RWQCB, and Lawrence Livermore National Laboratory and determined to meet the requirements of the UIC Regulations, such that all fluids would be confined to the approved zones of injection and would not affect the current or potential future designated beneficial uses of groundwater. The injection of fluids is not further evaluated in this IS/MND because CalGEM's UIC regulations address the public health, safety, and environmental aspects of below ground activities (14 CCR §§ 1724.5-1724.13). CalGEM's UIC regulations comprehensively address potential environmental impacts associated with injection operations, and compliance with those regulations effectively mitigates those potential impacts. This environmental analysis addresses the potential environmental impacts that are outside the scope of CalGEM's UIC regulations, specifically, the potential environmental impacts of the construction and operation of the 62 wells that have not yet been drilled.

Four wells did not receive Kern County permits under the 2021 oil and gas ordinance that was suspended by order of the Kern County Superior Court on October 22, 2021. E&B will obtain all necessary permits and pay all mitigation fees required by CalGEM and Kern County at the time the wells are drilled. As the 2021 Kern County SREIR is suspended, the potential environmental impacts of these four wells are evaluated in this IS/MND.

2.1 Project Location

The proposed Project is in unincorporated Kern County, California, approximately 12 miles north of Bakersfield, and wholly within the Poso Creek Oil Field (Section 32, Township 27 South, Range 27 East). Highway 65 runs north to south through the oil field (Figure 1). The Project wells would be drilled within three surface lease areas operated by E&B: Midway Premier, Grimes East, and Grimes West (Figure 2). The Midway Premier lease is located entirely on private lands (owned by an affiliated company of E&B's). The Grimes East and Grimes West lease areas are located entirely on federal lands owned and managed by the BLM and under lease by E&B. Figure 3 depicts the lease areas and proposed wells within each lease. The proposed Project is located approximately 4,000 feet from the nearest private residence and 1,000 feet south from the nearest waters of the state (Poso Creek).

2.2 Project Components by Lease Areas

2.2.1 Grimes West

The proposed Project would include the drilling of eight oil wells and one temperature observation well on E&B's federal mineral lease Grimes West,

including the construction of new ancillary facilities such as temporary drilling sumps, power poles, powerlines, and approximately 2,000 linear feet of flowlines. The proposed Project would disturb 3.11 acres of habitat within the Grimes West lease area. As noted in Section 1.1.3 above, BLM conducted NEPA review of the proposed Project in 2020 and approved APDs for all eight proposed wells. The APD approval is the BLM's approval of surface disturbance associated with drilling. All downhole activities associated with each well are under the jurisdiction of CalGEM. CalGEM reviewed the EA (Project DOI-BLM-CA-C060-2020-0045-EA) and determined that it concurs with the analyses and conclusions presented. The EA is incorporated by reference into this IS/MND.

The drilling/construction of the new temperature observation well at Grimes West, as included as a Condition of Approval in the Draft PAL prepared by CalGEM in accordance with the CV-RWQCB Letter of No Objection with Conditions, was not included in the previously approved EA and is therefore considered in the analyses of this IS/MND. The temperature observation well would be drilled to the same depth as the oil wells, using the same rig and equipment.

E&B would use approximately 2,600 barrels (109,200 gallons) of fresh water per well to complete the wells and associated facilities, as well as using the water for dust control, soil compaction, and drilling, for a total of 23,400 barrels (982,800 gallons) of water. All water used for drilling and dust control would be trucked to the site from a water well owned by E&B and located in the Section 5 lease area of the Poso Creek Oil Field. The water would be applied to the surface for dust abatement and used during drilling for intermediate/production casing and surface casing. During well drilling, E&B would use the water to create a non-hazardous water-based drilling mud for drilling operations. Discussion regarding the use of this water and the Sustainable Groundwater Management Act is provided in Section 4.10, *Hydrology and Water Quality*.

Per the BLM EA and APDs, E&B would be restricted to the use of existing roads and previously approved areas of disturbance. The two proposed well pads would be accessed using a series of existing paved and unpaved oil field lease roads off Highway 65 (Porterville Highway). E&B would maintain the existing lease roads in the same or better condition as existed prior to the start of operations and maintenance would continue until final abandonment and reclamation of the well locations. During drilling, E&B would place all drilling equipment and materials on the proposed well pad locations. The pads would be cleared of unnecessary items following well completion. Lights would be removed following construction, and no lights would be permanently attached to the wells.

2.2.2 Grimes East

The proposed Project would include drilling 47 oil wells and 2 temperature observation wells within 9 well pads on federal mineral lease Grimes East and constructing access roads, power lines, temporary drilling sumps, and approximately 10,500 linear feet of flowlines. As noted in Section 1.1.2, following NEPA review in 2019, the BLM approved the APDs for all 47 wells, which is the BLM's approval of surface disturbance associated with drilling. Surface disturbance for proposed Project activities on Grimes East totals 17.35 acres. Vegetation clearing occurred in 2019 and 2020, following BLM approval of the APD for each well and according to the 2017 Oil and Gas Programmatic Biological Opinion (08ESMF00-2016-F-0683) in Kings and Kern Counties which limits surface disturbance to 10 acres of habitat per BLM fiscal year. All downhole activities associated with each well are under the jurisdiction of CalGEM. CalGEM reviewed the EA (Project DOI-BLM-CA-C060-2019-0124-EA) and determined that it concurs with the analyses and conclusions presented. The EA is incorporated by reference into this IS/MND.

The drilling/construction of the two new temperature observation wells at Grimes East was not included in the previously approved EA and is therefore considered in the analyses of this IS/MND. The temperature observation wells would be drilled to the same depth as the oil wells, using the same rig and equipment.

Approximately 2,600 barrels (109,200 gallons) of fresh water per well, for a total of 127,400 barrels (approximately 5.35 million gallons) of water, would be used for drilling and dust abatement. Water would be trucked from a water supply well owned by E&B in the Section 5 lease area of the Poso Creek Oil Field. Water would be applied to the surface to reduce dust and used to facilitate drilling in the form of drilling mud. Discussion regarding the use of this water and the Sustainable Groundwater Management Act is provided in Section 4.10, *Hydrology and Water Quality*. No lights would be permanently attached to the wells.

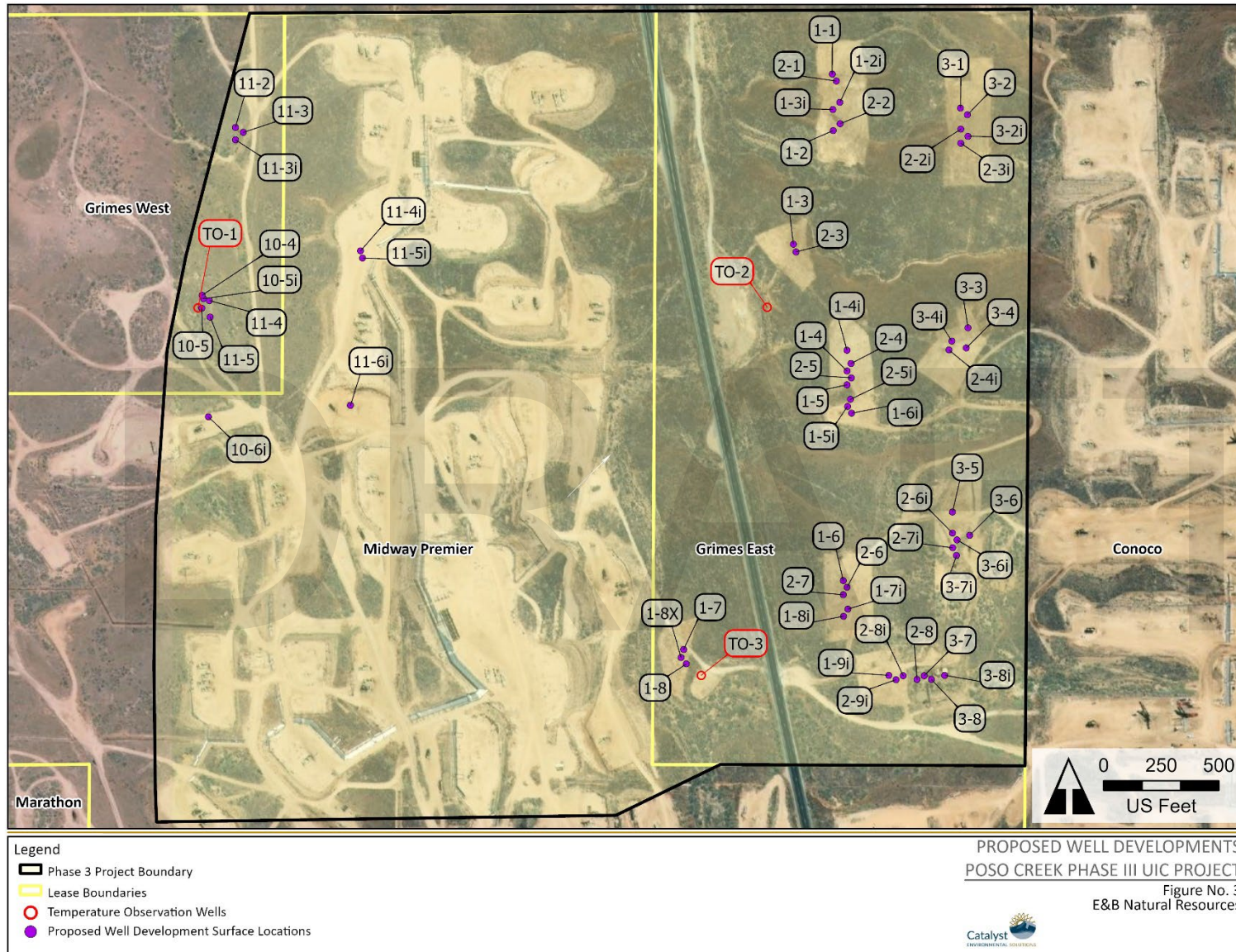


Figure 3. Proposed Wells Within Each Lease Area

2.2.3 Midway Premier Lease

The proposed Project would involve drilling four wells within existing drill pads in the Midway Premier lease. No grading or vegetation clearing would be required to drill these wells. Per project design, the wells would be accessed via existing roads and no lights would be permanently attached to the wells. A temporary drilling sump would be used for each of the four wells. E&B would install piping to connect the wells to existing pipes on the field (approximately 1,000 linear feet of piping total for all four wells) and four power poles to provide power to the existing drill pads where the wells will be drilled (total area of disturbance for the four wells is 1.76 acres). Approximately 2,600 barrels (109,200 gallons) of fresh water per well, for a total of 10,400 barrels (436,800 gallons) of water, would be used for drilling and dust abatement. Water would be trucked to the site from a water supply well owned by E&B in the Section 5 lease area of the Poso Creek Oil Field. Discussion regarding the use of this water and the Sustainable Groundwater Management Act is provided in Section 4.10, *Hydrology and Water Quality*. All other ancillary facilities are already present on the Midway Premier lease area and adjacent Conoco Lease (e.g., steam generators, free water knockout tanks, holding tanks).

2.3 Project Construction

Tables 2.3-1 through 2.3-4 below list the equipment that would be used to construct each well pad (on Grimes East and West lease areas), drill each well (on all three lease areas), and install the associated ancillary facilities (i.e., flowlines, pumping units, and electrical on all three lease areas, and new access roads in the Grimes East lease). A total of nine well pads would be constructed on Grimes East and two well pads would be constructed on Grimes West. Construction activity for each well pad would involve one day of site clearing and five days of grading operations. Well drilling involves five days of equipment use per well. Installation of the ancillary facilities includes installing flowlines, temporary sumps, power poles, and pumping units associated with each well. A construction crew of approximately 15 people would be required to complete the proposed Project on all three lease areas. Construction crews would be hired from the Kern County region.

A low solids non-dispersed mud system containing Wyoming bentonite, water, non-hazardous polymer and non-reactive lost circulation materials (sawdust, nutplug, and prima-seal) would be used in drilling operations. All cuttings and drilling fluid would be collected in unlined sumps located on the existing lease areas. The sumps would be constructed and operated in accordance with the Notice of Applicability of Water Quality Order 2003-0003-DWQ, "Statewide General Waste Discharge Requirements (WDRs) for Discharges to Land with a Low Threat to Water Quality (General WDRs)", approved by the CV-RWQCB (CV-RWQCB 2014). On Grimes West, the sump would measure approximately

270-feet wide by 8-feet long. On Grimes East, the sump would measure 250 feet long by 30 feet wide by 10 feet deep. Drilling water would be allowed to evaporate from the sumps while the well bore cuttings would remain in the sump. Prior to pit closure, E&B would conduct testing to confirm the mixture in each sump is non-hazardous. The sumps would be closed following drilling of the wells in accordance with the General WDR.

Drilling equipment and materials would be placed on a temporary staging area, and the pad would be cleared of unnecessary items following well completion. E&B would use existing roads to access the lease areas and limit construction activity to approved areas of disturbance during and following project implementation.

Table 2.3-1 Site Preparation and Grading Equipment Required for Each Drill Pad

Equipment	Model	BHP	Tier	No. Days Use Per Drill Pad	No. Hours Operated Per Day	Total Hours Operated to Complete Drill Pad
Scraper	Caterpillar 637E Scraper	783	T4	6	8	48
Scraper	Caterpillar 637E Scraper	783	T4	5	8	40
Motor Grader	Caterpillar 14H Grader	220	T3	4	5	20
Dozer	Caterpillar D8T Dozer	310	T4I	5	8	40
Dozer	Caterpillar D8R Dozer	305	T3	5	8	40
Water Wagon	Caterpillar 623	365	T3	5	4	20
Trucks Utility	Truck	365	T3	5	2	10
Trucks Utility	Truck	365	T3	2	5	10

Table 2.3-2 Drilling Equipment Required to Drill One Well

Equipment	No. of Units	Model	BHP	Tier	No. Days Use Per Well	No. Hours Operated Per Day	Total Hours Operated to Complete Well
Rig 21 Primary	1	Detroit 60	450	T4F	5	22	110
Rig EQ700 Generator	1	Detroit 60	415	T3	5	23	115
Rig EQ 713 Sub-Base	1	Perkins	174	T3	5	20	100

Equipment	No. of Units	Model	BHP	Tier	No. Days Use Per Well	No. Hours Operated Per Day	Total Hours Operated to Complete Well
Rig EQ 708 Mud Pump	1	Detroit 60	665	T3	5	22	110
Rig EQ 708 Mud Pump	1	Detroit 60	665	T3	5	22	110
Trucks Mobilization/ demobilization	3	Cummins	450	T3	2	3	18
Vacuum Trucks	2	Volvo	385	T3	1	3	6
Truck (Casing)	1	Inter	400	T3	1	0.5	0.5
Vacuum Trucks	2	Inter	400	T3	1	3	6
Bulk Trucks	2	Volvo	425	T3	1	3	6
Cement Truck	1	Western	400	T4I	1	3	3
Crane (casing)	1	FREIGHTLI	425	T3	1	1.5	1.5
Truck Straight (casing)	1	INTER	400	T3	1	1.5	1.5
Truck (wire line)	1	INTER	300	T3	1	6	6
Vacuum Trucks (cement)	2	INTER	385	T3	1	4	8
Bulk Trucks (cement)	2	VOLVO	400	T3	1	4	8
Cement Truck (cement)	1	INTER	425	T3	1	4	4
Cement pump trailer (cement)	2	Detroit 60	500	T3	1	4	8
Vacuum Trucks	2	INTER	385	T3	1	8	16

Table 2.3-3 Construction Equipment Required for Installation of Ancillary Facilities in Each Lease

Equipment	No. of Units	Tier	No. Hours Operated Per Day	No. Days Grimes East	No. Days Grimes West	No. Days Midway Premier
Piping Installation						
Welding Trucks (lightweight)	6	T4	6	10	10	17
Welding Trucks (lightweight)	2	T4	6	158	15	0
Roustabout Trucks (lightweight)	2	T3	2	168	25	17
Foreman Truck (lightweight)	1	T3	2	168	25	17
Water Truck	1	T3	2	168	25	17
Forklifts	2	T4	2	168	25	17
Crane	1	T4	2	168	25	17
Backhoe	1	T3	8	168	25	17
Install Pumping Units						
Truck	1	T3	1	27	4	3
Crane	1	T4	1	27	4	3
Electrical Installation						
Equipment Truck	1	T3	1	168	25	17
Bucket Truck	1	T3	3	168	25	17
Line Truck	1	T3	3	168	25	17
Tech Truck (lightweight)	1	T3	1	168	25	17

2.4 Project Operation

Following completion of construction activities, the wells would be operated under CalGEM permit requirements by the existing field crew at the Poso Creek Oil Field and would not require hiring additional crew members. Operational activity for each well involves at least three crew members visiting each well pad site per day in worker trucks with service by water truck twice per day throughout each lease. In addition, up to one well workover at each well per year is expected with a duration of two days for the workover work at each well. Workover operations involves use of one workover rig, one medium-duty truck, and six worker vehicles over two 12-hour workdays. Construction of the 62 wells and ancillary facilities would occur over a two-year period. The commencement of construction depends on the timing of PAL approval. The wells would become operational upon completion of drilling activities at each well pad. Operation of the wells would include 10 years of periodic well

maintenance and associated rig and crew emissions, including vehicle traffic in and out of each lease. Operation of each well is expected to direct well fluids to existing operational and permitted infrastructure at the Poso Creek Oil Field.

2.5 BLM Conditions of Approval

E&B will comply with all applicable federal, state, and local laws during Project implementation, including the Kern County revised oil and gas ordinance, if it goes into effect prior to drilling of the wells. The following sections describe BLM Conditions of Approval that are specified in: (a) the two EAs and (b) approvals of the APDs. E&B would implement the BLM Conditions of Approval as part of the proposed Project on federal land. The BLM Conditions of Approval are incorporated within the Mitigation Monitoring and Reporting Program (MMRP), included as Appendix B in this IS/MND.

2.5.1 Air Quality

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover, or vegetative ground cover.
- The speed limit on the unpaved access road shall be 15 miles per hour.
- All onsite unpaved roads and offsite-unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant during the construction phase.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, and cut & fill activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by -presoaking.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)

2.5.2 Biological Resources

The Project components on federal land are covered under the U.S. Fish and Wildlife Service (USFWS) 2017 Oil and Gas Programmatic Biological Opinion (08ESMF00-2016-F-0683) because they fall within the requirements for projects analyzed and authorized under that Biological Opinion. The 2017 Oil and Gas Programmatic Biological Opinion provides federal take coverage for federally listed species and USFWS 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 per year or that encompass

linear actions less than 10 miles long. The wells proposed in Grimes East and Grimes West lease areas would occur in Kern County. The area of disturbance for each of the leases would be as follows:

- Grimes West – eight wells disturbing 3.11 acres of habitat, compensated at a 3:1 ratio and replacing the 3.11 acres of disturbance at 1:1 ratio = 12.44 compensation acres.
- Grimes East – total disturbance is 17.35 acres, compensated at a 3:1 ratio and replacing the 17.35 acres of disturbance at 1:1 ratio is 69.4 compensation acres. The vegetation at the Project site was cleared over a two fiscal year period to ensure that less than 10 acres of habitat were disturbed each year.

In addition, E&B would comply with all the “Avoidance and Mitigation Action” included in both of the EAs prepared by the BLM and incorporated as conditions in the BLM approval of the proposed Project. These are listed below:

- Project employees and contractors will receive formal training prior to working on the Project, including attending a sensitive species education program developed by trained biologists focusing on the protected and sensitive species that may occur at the Project areas. At a minimum, the program will cover species distribution, identification characteristics, sensitivity to human activities, legal protection, penalties for violation of state and federal laws, reporting requirements, and project mitigation measures.
- Habitat disturbance will be minimized and conducted in a manner that avoids the potential for take of individuals of a listed species. Existing roads and routes of travel will be used to the greatest extent practicable. Natural drainage patterns will be maintained to the greatest extent practicable.
- Project activities will be conducted during daylight hours to minimize encounters with listed animals that typically are most active during night-time hours.
- Vehicles will use existing and/or designated roads and avoid any cross-country travel.
- Vehicles will observe a 15-mph speed limit in and around Project sites¹.
- To prevent attracting wildlife to the Project areas, trash and food items will be kept in closed containers and removed daily.
- Firearms and pets are prohibited within the boundaries of the Project areas.
- Dust control (use of water trucks) will be implemented during Project activities that create a substantial amount of dust.

¹ BLM APDs require 20-MPH as a condition of approval; however, E&B’s Best Management Practices limit vehicle speeds to 15-MPH on oil field leases.

- Spills of hazardous materials shall be immediately cleaned up to prevent exposure to wildlife.
- Topsoil that can potentially or is known to support sensitive plant species will be stockpiled and redistributed over portions of work areas that will be temporarily disturbed, where applicable.
- A pre-activity survey for listed species must be conducted by a qualified biologist within 30 days prior to any ground-disturbing activities. Any listed species, their sign, or sensitive habitat features observed must be noted and clearly marked.
- On-site biological monitoring will be performed during initial ground disturbing activities (e.g., vegetation removal, excavation, grading) to ensure that sensitive species are not impacted.
- To prevent entrapment of animals, any trenches or pits created during Project activities more than two feet deep (including sumps) must be either covered at night or earthen or wooden escape ramps must be provided. Before work continues in these areas, trenches and pits must be inspected to ensure that no animals are present.
- To minimize the inadvertent capture or entrapment of listed animals, the following additional measures will be implemented:
- San Joaquin kit fox – If kit fox dens are observed and can be avoided, then exclusion zones will be established for each kit fox den. Potential kit fox dens will be avoided by 50 feet, known kit fox dens will be avoided by 100 feet, and non-active pupping dens will be avoided by 200 feet. If an active natal den is observed, the BLM and USFWS will be contacted before any activities occur. If a kit fox den cannot be avoided during the Project activities, the den will be monitored for five consecutive nights to ensure it is not occupied. After establishing the den is unoccupied, and only if a take authorization/permit from the USFWS has been established, it must be excavated and backfilled according to guidelines. However, if a kit fox is observed using a den, it will be monitored for five consecutive nights to confirm the fox leaves the den, and then the den will be excavated. The BLM and the USFWS must be notified prior to any excavation activities.
- Nesting birds – Prior to construction, a qualified biologist will conduct avian nest surveys within the Project site and surrounding areas. Surveys will be conducted during the appropriate time of the breeding season (typically March 1 through August 1). If any protected species are found nesting in these areas, consultation with the BLM and the USFWS will be initiated to determine any effects on active nests and how to avoid them as well as establishing an appropriate buffer zone around active nests during the breeding season. Project activities shall avoid disturbance at active raptor

nests within or near the Project. For ground disturbing activities with mechanized equipment, no pre-construction surveys for nesting raptors will be required if work is to occur during the non-breeding season (September 1 through January 31). If, however, ground-disturbing activities are scheduled to occur during the breeding season (February 1 through August 31), pre-construction surveys of potentially active nest sites within 200 feet of the Project site shall be conducted in areas that may potentially have nesting raptors, including ground nesting raptor species. If the surveys indicate that nests are inactive or potential habitat is unoccupied during the life of the Project, no further mitigation shall be required.

- Burrowing owls – Pre-construction surveys for burrowing owls will be conducted according to the March 2012 California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation guidelines. If owls and/or burrows can be avoided using buffer zones, then the appropriate buffer areas will be implemented. If avoidance measures cannot be adhered to for burrowing owls located within the Project site, exclusion and burrow closures will be implemented. These activities will occur after consultation and CDFW and BLM approval has been obtained and in accordance with the 2012 CDFW report.

2.5.3 Cultural Resources

- In the event of an accidental discovery of cultural resources during Project implementation on federal lands, E&B shall immediately notify the BLM Field Office Cultural Staff and Field Manager. All work at the site of discovery, and in any other locations on federal lands where damage to the cultural resource could occur, shall also cease until written approval to proceed is provided by the BLM.
- If human remains are accidentally discovered on BLM 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. The BLM will adhere to current regulations regarding the treatment of human remains (Native American Graves Protection and Repatriation Act, 43 C.F.R. pt. 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.

2.5.4 Paleontological Resources

- A Paleontological Resources Mitigation Plan has been prepared for the Project in accordance with BLM requirements. All conditions of approval included in the Plan are incorporated into the project description.

- In the event of an accidental discovery of paleontological resources during unmonitored project implementation on BLM managed surface lands, the BLM Field Office Paleontological Staff and the BLM Field Manager 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 to proceed is provided by the BLM.

2.5.5 Construction and Interim Reclamation Best Management Practices

- Reclamation activities would be initiated in the fall, starting no earlier than October to maximize the use of the wet season. All reclamation would be monitored for a minimum of five years, or until the BLM determines the locations have been successfully reclaimed. Reclamation progress would 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 not subject to safety requirements shall be painted to blend with the natural color of the landscape. The paint used would be a color which simulates "Standard Environmental Colors." The colors selected for the Project 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. After well completion, topsoil would 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. Prior to applying topsoil to the sump, it would be cleaned, ripped to a minimum depth of 12 inches, and re-contoured to match the surrounding topography. Remaining topsoil would be stockpiled on an existing well pad or other previously disturbed surface and retained for future reclamation. Topsoil would be retained for no more than one year before reuse.
- All practicable measures would be taken to minimize erosion and stabilize disturbed soils. The following types of interim stabilization method may be used if necessary: jute netting, hydro-mulch, straw wattles, or crimped straw mulch.

2.5.6 Management of Noxious Weeds

- A site-specific weed control Environmental Assessment and Pesticide Use Proposal must be completed before any use of pesticides on BLM lands. Currently, E&B does not have these approvals; therefore, no herbicide treatment is authorized by the BLM.

2.5.7 Final Reclamation

- Disturbed lands shall be recontoured to conform with existing undisturbed topography unless the BLM determines that recontouring 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 all requirements set forth by the BLM.

2.6 Mitigation Measures Identified in this IS/MND

The following sections list the mitigation measures in the MMRP that CalGEM is considering as conditions of approving the amended UIC Project No. 566-09-021 to address potential environmental impacts associated with the proposed Project. The full draft MMRP is included in Appendix B of this IS/MND.

2.6.1 Air Quality

MM AIR-1 - All off-road diesel engines for construction, not registered under California Air Resources Board's (CARB's) Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 3 California Emission Standards for Off-road Compression-Ignition Engines as specified in 13 CCR §2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 3 engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide nitrogen oxides and particulate matter emissions that are equivalent to Tier 3 engine.

MM AIR-2 – E&B shall develop and implement a Fugitive Dust Control Plan in compliance with San Joaquin Valley Air Pollution Control District (SJVAPCD) fugitive dust suppression regulations. The Fugitive Dust Control Plan shall include:

- a. Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submission, and implementation of the plan.
- b. Description and location of operation(s).
- c. Listing of all fugitive dust emissions sources included in the operation.
- d. The following dust control measures shall be implemented:
 - i. All onsite unpaved roads shall be effectively stabilized using water or chemical soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than CARB-approved soil stabilizers,

and that shall not increase any other environmental impacts including loss of vegetation.

- ii. All material excavated or graded will be watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles will be watered as needed to limit dust emissions to less than 20 percent opacity or covered with temporary coverings.
- iii. Construction activities that occur on unpaved surfaces will be discontinued during windy conditions when winds exceed 25 miles per hour and those activities cause visible dust plumes that exceed the SJVAPCD 20 percent opacity standard.
- iv. Track-out debris onto public paved roads shall not extend 50 feet or more from an active operation and track-out shall be removed or isolated such as behind a locked gate at the conclusion of each workday, except on agricultural fields where speeds are limited to 15 mph.
- v. All hauling materials shall be moist while being loaded into dump trucks.
- vi. All haul trucks hauling soil, sand, and other loose materials on public roads shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
- vii. Soil loads shall be kept below 6 inches or the freeboard of the truck.
- viii. Drop heights when loaders dump soil into trucks shall not exceed 5 feet above the truck.
- ix. Gate seals shall be tight on dump trucks.
- x. All grading activities shall be suspended when visible dust emissions exceed 20 percent.
- xi. Other fugitive dust control measures as necessary to comply with SJVAPCD rules and regulations.
- xii. Disturbed areas shall not exceed those shown on the Site Plan.
- xiii. Disturbed areas shall be re-vegetated as soon as possible after disturbance if area is no longer needed for oil and gas activities (3.11 acres in Grimes West, 17.35 acres in Grimes East, and 1.76 acres in Midway Premier).

2.6.2 Biological Resources

MM BIO-1 - A Worker Environmental Awareness Program shall be developed and implemented for all personnel that could access the site prior to commencing any disturbance activities. The program shall consist of an on-site or center presentation that will describe the locations and types of sensitive

plant, wildlife, and sensitive natural communities (collectively, “Biological Resources”) on and near the site, an overview of the laws and regulations governing the protection of Biological Resources, the reasons for protecting the Biological Resources, the specific protection and avoidance measures that are applicable to the site, and the identity of designated points of contact should questions or issues arise, including the qualified biologist. The program shall provide training to recognize, avoid and report to applicable qualified biologists any Biological Resources on the site.

- The Worker Environmental Awareness Program shall emphasize the need to avoid contact with onsite wildlife and avoid entry into areas where Biological Resources have been identified based on pre-disturbance field surveys and to implement the buffer avoidance or other protection measures established by the USFWS or CDFW shall be identified or required by the Biological Resource mitigation measures in the MMRP. The training shall emphasize the importance of not feeding or domesticating wildlife and the need to avoid any trash or potential food disposal onsite except in animal-proof containers emptied daily to avoid attracting or causing adverse impacts to special status wildlife.
- All onsite personnel must sign a statement verifying that they have completed the Worker Environmental Awareness Program, and that they worksite. If signed employee statements are not available, documentation may be provided by Worker Environmental Awareness Program training records, which shall be kept by E&B for a minimum of five years. E&B shall maintain a list of all persons who have completed the training program and shall provide the list to CalGEM, and state and federal wildlife agency representatives upon request.

MM BIO-2 - E&B shall conduct special status wildlife surveys by a qualified biologist within a 30-day period prior to commencement of new ground-disturbance construction activities, and pre-disturbance surveys for active bird nests must be conducted no more than 10 days prior to the commencement of disturbance. Surveys shall follow USFWS and CDFW guidance and/or protocols, as applicable. The purpose of the pre-disturbance surveys is to confirm the presence or absence of any federal- or state-listed threatened species or those designated as fully protected in the California Fish and Game Code (collectively, “Protected Species”), and to confirm the presence or absence of any other species considered “sensitive” under CEQA (“Sensitive Species”), and to identify and implement feasible avoidance and minimization measures for such species. The surveys shall be conducted in accordance with all currently applicable presence and absence survey and/or species protocols established by the USFWS and the CDFW (“Species Protocols”). In the absence of any approved protocols, the survey shall extend for a minimum of 250 feet from all

areas where any ground disturbance activities would occur, provided that permission to access has been obtained.

MM BIO-3 - No incidental take of any species listed as threatened or endangered under the federal Endangered Species Act or California Endangered Species Act may occur unless the incidental take is authorized by applicable state and federal wildlife agencies in the form of a permit or other written authorization, an approved state or federal conservation plan, or in accordance with an approved regional plan such as a Habitat Conservation Plan and/or Natural Community Conservation Plan.

MM BIO-4 – Occupied burrowing owl burrows shall not be disturbed during the species nesting season (February 1 through August 31). Burrowing owls present in proposed disturbance areas or within 500 feet or as specified under an approved Habitat Conservation Plan (as identified during pre-disturbance surveys) outside of the breeding season (between September 1 and January 31) may be moved away from the disturbance area using passive relocation techniques approved by the CDFW. A minimum of one or more weeks will be required to relocate the owl(s) and allow for acclimatization to alternate off-site burrows. Prior to burrow exclusion or eviction, a burrowing owl management plan shall be prepared and approved by the CDFW. As an alternative to passive relocation, occupied burrows identified off-site within 500 feet of construction activities may be buffered with hay bales, fencing (e.g., sheltering in place), or as directed by the qualified biologist and the CDFW, to avoid disturbance of burrows.

MM BIO-5 - Any potential San Joaquin kit fox dens detected during pre-disturbance surveys shall be reevaluated for species activity no more than 14 days prior to the commencement of ground disturbance. Potential kit fox dens shall be marked, and a 50-foot avoidance buffer shall be delineated using stakes and flagging or similar materials to prevent inadvertent damage to the potential den. If a potential den cannot feasibly be avoided, the den may be hand excavated in accordance with the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance*. If species activity is detected, the location shall be identified as a “known” kit fox den in accordance with USFWS species guidelines. A minimum 100-foot buffer from any disturbance area shall be maintained for known dens and a minimum 500-foot buffer from any disturbance area shall be maintained for natal dens. No excavation of a known or natal den shall occur without prior authorization from the USFWS and the CDFW.

MM BIO-6 - If any occupied American badger dens are detected during pre-disturbance surveys, the dens shall be flagged, and ground-disturbing activities avoided within 50 feet of the den. Maternity dens shall be avoided and a minimum 200-foot buffer from disturbance shall be maintained during pup-

rearing season (February 15 through July 1). Maternity dens shall be avoided to the maximum extent feasible. If a maternity den cannot feasibly be avoided, the CDFW must be contacted to identify appropriate impact minimization measures prior to initiating any disturbance that would affect the den, including potential passive relocation by excavation before or after the rearing season.

MM BIO-7 - The following measures shall be implemented to avoid take of blunt-nosed leopard lizard and to ensure protection of these animals during Project activities:

- a. Project activities shall avoid all potential burrows that may be occupied by blunt-nosed leopard lizards. Suitable burrows within and adjacent to potential habitat for the species shall be avoided by a minimum distance of 50-feet in all areas where ground-disturbing Project activities will occur.
- b. No more than one year prior to ground disturbing activities, focused surveys following current CDFW and USFWS protocols for detection of this species or other methods approved by both agencies shall be conducted in all potential blunt-nosed leopard lizard habitat within the work site and a 250-foot buffer area. If no individual blunt-nosed leopard lizards are observed during focused surveys, and surveys are current (e.g., completed in the same calendar year), then Project activities may proceed.
- c. If blunt-nosed leopard lizards are detected during focused surveys, a blunt-nosed leopard lizard avoidance plan shall be prepared for the Project that will result in avoidance of incidental take of this species unless take is separately authorized under a Natural Communities Conservation Plan and appropriate federal authorization is obtained. At a minimum, the blunt-nosed leopard lizard avoidance plan shall contain the following elements:
 - i. During periods that are optimal for blunt-nosed leopard lizard activity (early spring through late fall), the onsite qualified biologist shall check the Project area and access route daily during the blunt-nosed leopard lizard active season to determine presence or absence of lizards in or near the work areas. Monitoring by a qualified biologist is not required during periods of inactivity (the winter season).
 - ii. If blunt-nosed leopard lizards are observed at the work site during construction, construction shall cease within a 250-foot radius, and the USFWS and the CDFW shall be consulted to determine what additional measures would be necessary to prevent take of this species.
 - iii. Offsite locations where blunt-nosed leopard lizards have been observed or are likely to occur shall be clearly marked to prevent workers from driving off the road and to prevent inadvertent destruction of burrows. Barriers, such as exclusionary fencing may be installed. All construction equipment

- and construction personnel vehicles shall be checked prior to moving to ensure no blunt-nosed leopard lizard are under equipment/vehicles.
- iv. A speed limit of 10 miles per hour shall be posted and observed within 0.25 miles of any reported blunt-nosed leopard lizard observation.
 - v. Construction activities shall avoid burrows that may be used by blunt-nosed leopard lizards. Any location of proposed construction activity with potential to collapse or block burrows (i.e., stockpile storage, parking areas, staging areas, trenches) will be identified prior to construction in the blunt-nosed leopard lizard avoidance plan and approved by the qualified biologist. The qualified biologist may allow certain activities in burrow areas if the combination of soil hardness and activity impact is not expected to collapse burrows and no blunt-nosed leopard lizards have been found during pre-Project surveys in the impact area.
- d. All individual blunt-nosed leopard lizards observed above-ground will be avoided. Any individual blunt-nosed leopard lizard that may enter the Project area would be allowed to leave unobstructed, and on its own accord. If a blunt-nosed leopard lizard is detected during biological monitoring or observed at any other point, the CDFW and the USFWS shall be notified to determine what additional measures would be necessary to prevent take of the species.

2.6.3 Cultural Resources

MM CUL-1 - Prior to initiating ground disturbance activities, E&B shall:

- a. Have an archival records search completed by a qualified archaeologist. This shall include an examination of the California Historical Resources Information Files at the Southern San Joaquin Valley Information Center, California State University, Bakersfield, and a search of the Native American Heritage Commission Sacred Lands Files, Sacramento. E&B may rely on a previously performed records search for subsequent ground disturbing activities.
- b. If a location has been previously surveyed and no cultural resources have been recorded on it, no further cultural resources studies shall be required.
- c. Implement either:
 - i. If a site plan is within a section that has experienced 100 percent previous ground-surface disturbance, as indicated by 300 or more existing oil wells or other agricultural, industrial or urban uses, and the records searches indicate that the parcel has been previously surveyed and no cultural or Native American resources are known on it, no further cultural resources studies shall be required. All other application locations shall be subject to intensive (100 percent) pedestrian ground-surface survey (Phase I survey/Class III inventory) by qualified archaeologists. E&B may rely on a

- previously performed ground surface survey for subsequent ground disturbing activities; or
- ii. If a location has not been previously surveyed based on the records search information, an intensive (100 percent) pedestrian ground surface survey (Phase I survey/Class III inventory) by qualified archaeologists shall be required.
 - d. All prehistoric/Native American archaeological sites, whether identified during the records searches or during the intensive survey, shall be demarcated by a qualified archaeologist, fenced by E&B, and preserved in place.
 - e. Historical (Euro-American) archaeological sites that are potentially eligible for listing in the National Register of Historic Places shall be evaluated by a qualified archaeologist and must meet the requirements of the National Historic Preservation Act of 1966 to qualify. Qualifying sites, structures and equipment that are identified during the records search or field survey shall be fenced and preserved in open-space, removed and curated, or treated using appropriate data recovery procedures.
 - f. Historical (Euro-American) archaeological site types relating to oil and gas activities that have been determined Not Significant/Unique shall require no archaeological study or treatment.
 - g. All oil and gas industry employees conducting work in the Project area shall complete Worker Environmental Awareness Program training including training dedicated to cultural resources protection.

MM CUL-2 - In the event archaeological materials are encountered during ground disturbance or construction, the Project operator/contractor shall cease any ground disturbing activities within 50 feet of the find. The qualified archaeologist shall evaluate the significance of the resources and recommend appropriate treatment measures. Per CEQA Guidelines Section 15126.4(b)(3), Project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. If it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with CalGEM, which may include data recovery or other appropriate measures. CalGEM shall consult with appropriate Native American representatives, in determining appropriate treatment for unearthened cultural resources if the resources are prehistoric or Native American in nature. If after consultation it is deemed appropriate, archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to CalGEM and to the Southern San Joaquin Valley Information Center.

MM CUL-3 - If human remains are uncovered during Project construction, E&B shall immediately halt all work, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e) of the CEQA Guidelines. CalGEM shall be notified concurrently. If the County Coroner determines that the remains are Native American, the Project proponent shall contact the Native American Heritage Commission, in accordance with Health and Safety Code § 7050.5, subdivision (c), and PRC §5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendant for the remains per PRC §5097.98. Per PRC §5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (§7100 *et. seq.*) directing identification of the next-of-kin will apply.

2.6.4 Energy

MM ENG-1 - E&B shall implement all the following applicable energy conservation control measures during construction of the project:

- a. Idling times on all diesel-fueled commercial vehicles over 10,000 pounds shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure 13 CCR §2485). Clear signage to this effect shall be provided for construction workers at all access points.
- b. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a written policy as required by 13 CCR §2449 ("CARB Off-Road Diesel Regulations").
- c. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- d. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available, and it is not feasible to use propane or natural gas.

2.6.5 Geology and Soils

MM GEO-1 - As part of any Worker Environmental Awareness Program training, all construction personnel shall be trained regarding the recognition of possible buried paleontological resources and protection of paleontological resources during construction, prior to the initiation of construction or ground-disturbing activities. Training shall inform construction personnel of the procedures to be followed upon the discovery of paleontological materials. These procedures include notification of a paleontological monitor upon an accidental discovery and cessation of all work at the site of discovery until written approval to proceed is provided by the monitor. All personnel shall be instructed that unauthorized collection or disturbance of fossils is unlawful.

2.6.6 Greenhouse Gases

MM GHG-1 - E&B shall comply with the Cap-and-Trade regulation (e.g., by reducing greenhouse gases (GHG) emissions within their facilities or by surrendering GHG allowances, offset credits, or other compliance instruments to offset the GHG increases), and other applicable GHG emission control and reduction regulations as these may be adopted or amended over time, to reduce, avoid, mitigate and/or sequester GHG emissions from Project-related air emissions. E&B shall implement Best Performance Standards applicable to GHG reduction for Components at all Thermally Enhanced Oil Recovery Wells (SJVAPCD 2010a), and Steam Generators (SJVAPCD 2010b).

MM GHG-2 - E&B shall implement methods to recover for reuse or destroy methane existing in associated gas and casinghead gas, as follows:

- Recover all associated gas produced from the reservoir via new wells, regardless of the well type, except for gas produced from delineation wells or as a result of start-up, shutdown and maintenance activities (whether planned or unplanned), system failures, and emergencies in accordance with SJVAPCD regulations as part of Rule 4401, as this may be amended over time.
- Comply with the CARB methane regulation adopted March 2017.

MM GHG-3 -For those wells not on federal lands, E&B shall offset all GHG emissions not covered by the Cap-and-Trade program or other mandatory GHG emission reduction measures through reductions of GHG emissions as verified by the SJVAPCD, through acquisition of offset credits from the California Air Pollution Control Officers Association Exchange Register, or other third party GHG reductions as verified by the SJVAPCD, or through inclusion in an Emission Reduction Agreement, to offset Project-related GHG emissions that are not included in the Cap-and-Trade program to assure that no net increase in GHG emissions.

2.6.7 Hazards and Hazardous Materials

MM HAZ-1 - E&B shall provide a comprehensive Worker Environmental Awareness Program to CalGEM, and shall include all training requirements identified as best management practices (BMPs) and mitigation measures and include annual training for all field personnel (including employees, agents, and contractors). The Worker Environmental Awareness Program shall include hazardous materials and hazardous waste management, and emergency preparedness, release reporting, and response requirements. E&B shall maintain records of employee training and shall make such records available to CalGEM for review.

MM HAZ-2 - E&B shall maintain and implement a Spill Prevention Control and Countermeasure Plan, which includes the following practices:

- a. Construction activities shall be conducted to allow for easy clean-up of spills. Construction crews shall have sufficient tools, supplies, and absorbent and barrier materials to contain and recover spilled materials.
- b. Fuels and lubricants shall be stored only at designated staging areas. Fuel and lubricant tanks shall have appropriate secondary spill containment (e.g., curbs).
- c. Storage of fuel and lubricants in the staging area shall be at least 100 feet away from the edge of water bodies. Refueling and lubrication of equipment shall be restricted to upland areas at least 100 feet away from stream channels and wetlands.
- d. Fuel trucks shall carry an oil spill response kit and spill response equipment at all times.
- e. E&B shall be required to perform all routine equipment maintenance at the well pad, and promptly collect and lawfully dispose of wastes at an authorized recycling, treatment or disposal facility.
- f. Berms and/or dikes (secondary containment) shall be constructed around the permanent above-ground bulk tanks and the foundations shall be installed with a passive leak detection system, so that potential spill materials shall be contained and collected in specified areas isolated from any water bodies. Tanks shall not be placed in areas subject to periodic flooding or washout.
- g. A sufficient supply of sorbent and barrier materials shall be maintained on construction sites, and sorbent and barrier materials shall also be utilized to contain runoff from contaminated areas.

2.6.8 Hydrology and Water Quality

MM HYDRO-1 - E&B shall ensure that discharges of stormwater runoff from well pad construction are not contaminated by contact with, or do not come into

contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products; are only contaminated by or only come into contact with sediment; and pursuant to 40.C.F.R. §122.26(c)(1) (iii), do not contribute to a violation of a water quality standard.

MM HYDRO-2 – E&B shall implement BMPs during construction and operation of the subject well pads and wells. All selected practices shall be shown on a drainage implementation plan and self-certified as complete and feasible by a licensed professional qualified in drainage and flood control issues. The following BMPs shall be implemented and shown on the drainage plan:

- Utilizing established facilities design, and construction or similar standards as applicable appropriate (e.g., American Society for the Testing and Materials (ASTM) American Petroleum Institute (API)).
- Implementing good housekeeping and maintenance practices:
- Preventing trash, waste materials, and equipment from construction storm water.
- Maintaining wellheads, compressors, tanks, and pipelines in good condition without leaks or spills.
- Designing and maintaining graded pads to not actively erode and discharge sediment.
- Maintaining vehicles in good working order.
- Implementing spill prevention and response measures:
- Utilizing preventative operating practices such as tank level monitoring, safe chemical handling and conducting regular inspections.
- Developing, maintaining, and implementing a spill response plan.
- Conducting spill response training for employees and have a process to ensure contractors have the necessary training and equipment.
- Maintaining spill response equipment on site.
- Implementing material storage and management practices:
- Preventing unauthorized access.
- Utilizing “run-on” and “run-off” control berms and swales.
- Stabilizing exposed slopes through vegetation and other standard slope stability methods.

3 Environmental Setting and Baseline

3.1 Current Oil and Gas Production Operations

The entire proposed Project is located within the Poso Creek Oil Field, which has been operated as an active oil field since 1920. Primary ancillary features on the field include water treatment facilities and a steam generator site in the Section 5 lease area; a tank farm in the Midway Premier lease area; and a second steam generator site in the Conoco lease area. In 2018, E&B constructed an additional 40-foot-wide corridor in the Grimes West lease area to accommodate a pipe rack for installation of steam, production, casing vapor recovery, and water disposal pipelines and power. In addition, E&B constructed a 10-foot corridor to install flow lines, steam injection lines, and power lines for the Midway Premier wells.

CalGEM approved the original UIC permits in 2013 and E&B modifications to the UIC permit in 2018. All wells approved in 2013 and 2018 have been drilled and completed. Table 3.1-1 lists the number of wells that have been drilled and are operating under the existing UIC permits. E&B submitted their application for the Phase III expansion project in September 2018. For the first part of Phase III, E&B received all necessary approvals, including from the Kern County Land Use and Planning Department and CalGEM, to drill 46 cyclic steam wells and 32 steam flood wells in the Midway Premier lease area. These 78 wells are drilled and part of the baseline environmental setting.

Table 3.1-1 Wells Drilled and Operating under Phase I and Phase II of E&B's Poso Creek UIC Program

UIC Project Phase	Township	Range	Section	Lease	Land Type	Well Type	Number of Wells
2	27 S	27 E	33	Conoco	Private	Cyclic Steam	128
2	27 S	27 E	33	Conoco	Private	Steam Flood	107
2	27 S	27 E	32	Foulds Fee	Private	Cyclic Steam	29
2	27 S	27 E	33	Foulds Fee	Private	Steam Flood	27
2	27 S	27 E	32	Midway Premier	Private	Cyclic Steam	12

UIC Project Phase	Township	Range	Section	Lease	Land Type	Well Type	Number of Wells
2	27 S	27 E	32	Midway Premier	Private	Steam Flood	20
1	27 S	27 E	33	Conoco	Private	Cyclic Steam	9
1	27 S	27 E	33	Foulds Fee	Private	Steam Flood	4
1	27 S	27 E	32	Midway Premier	Private	Cyclic Steam	22
1	27 S	27 E	32	Midway Premier	Private	Steam Flood	18
1	28 S	27 E	5	Sec. 5	Private	Cyclic Steam	49
1	28 S	27 E	5	Sec. 5	Private	Steam Flood	24
1	28 S	27 E	4	Wilcox	Private	Cyclic Steam	1
1	28 S	27 E	4	Wilcox	Private	Steam Flood	1

Notes: Phase 2 approved by Division of Oil, Gas, and Geothermal Resources on 6/7/2018. Phase 1 approved by Division of Oil, Gas, and Geothermal Resources on 1/28/2013.

3.2 Environmental Setting

3.2.1 Air Quality

The proposed Project area is in unincorporated Kern County, California, and within the San Joaquin Valley Air Basin. At the state level, air regulatory duties lie with the CARB and at the federal level with EPA, Region 9. Oversight and rulemaking authority for air quality matters in California are delegated to local air districts.

The federal Clean Air Act (CAA), as amended, and the California Clean Air Act (CCAA) contain the primary provisions relating to air quality. The EPA, CARB, and regional air districts have issued rules to implement federal and state Clean Air Acts. The EPA uses "criteria pollutants" as indicators of air quality and has established for each of them a maximum concentration above which adverse effects on human health and the environment may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS).

One set of limits (primary standard) protects health; another set of limits (secondary standard) is intended to prevent environmental and property damage. Under the CAA, the EPA has established NAAQS for seven criteria pollutants: ozone, respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. California has established State Ambient Air Quality Standards for the same criteria pollutants, plus an additional three pollutants (visibility reducing particulates, sulfates, and hydrogen sulfide). States may have standards that are more restrictive than the federal thresholds, but they cannot be less restrictive. Although more stringent, the State standards have no specific dates for attainment, unlike federal standards. Under State law, designations are made by pollutant, rather than by averaging time. A geographic area that meets or exceeds the primary standard is called an attainment area; areas that do not meet the primary standard are called nonattainment areas.

Federal air quality standards for PM_{2.5} and ozone have been exceeded in the San Joaquin Valley Air Basin due to local and transported pollutants. This has resulted in the current designation of the air basin as a federal non-attainment area for PM_{2.5} and ozone under the NAAQS. The air basin has been designated as a federal maintenance area for PM₁₀. Based on the EPA 2010 designations, the primary pollutants of concern in the Project area are 8-hour ozone, PM₁₀, and PM_{2.5}. The remaining criteria pollutants are either unclassified or in attainment with the NAAQS.

The Project area is within the EPA Pacific Southwest Region 9 Planning Area. A State Implementation Plan (SIP) has been prepared for the planning area, which identifies sources of emissions and control measures to reduce emissions. In 2016, CARB updated the State Strategy for achieving emissions reductions toward bringing these areas into attainment with federal standards for ozone and PM_{2.5}. A San Joaquin Valley Supplement to the 2016 State Strategy 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.

District air quality plans that have recently been adopted and 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 PM₁₀ Maintenance Plan*. 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 ozone precursor emissions, nitrogen oxides (NO_x), and Volatile Organic Compounds (VOCs). Particulate matter attainment strategies include control measures to reduce dust from unpaved roads and construction activities.

CAA 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 by the State of California. The EPA currently lists 189 compounds as HAPs, some of which, such as benzene, toluene, and formaldehyde, can be emitted from oil and gas development operations. NAAQS have not been set for HAPs; rather HAP emissions are controlled by source type- or industrial sector-specific regulations. Hydrogen sulfide (H₂S) 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.

3.2.1.1 Applicable SJVAPD Rules to Implement Air Quality Plans

Once air quality attainment demonstration plans are adopted, the reductions necessary to meet the respective reduction mandates contained in the plan(s) are achieved through prohibitory rules created and enforced by the local air quality board/APCD. Complying with applicable rules, regulations, and land use and zoning requirements ensures continued movement towards achieving the SJVAPCD attainment goals. Examples of SJVAPCD rules that may apply to the proposed Project are:

- Rule 2201 (*New and Modified Stationary Source Rule*): The purpose of this rule is to provide for the review of new and modified stationary sources of air pollution and to provide mechanisms including emissions trade-offs by which Authorities to Construct such sources may be granted without interfering with the attainment and maintenance of ambient air quality standards and to ensure no net increase in emissions above specified thresholds from new and modified stationary sources of all nonattainment pollutants and precursors.
- Rule 2010 (*Authority to Construct and Permit to Operate*): The purpose of this rule is to require any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate.
- Rule 2280 (*Portable Equipment Registration*): Certain portable emissions units would be required for well drilling, service or workover rigs, pumps, compressors, generators, and field flares.
- Rule 4101 (*Visible Emissions*): The purpose of this rule is to prohibit the emissions of visible air contaminants to the atmosphere.
- Rule 4401 (*Steam-Enhanced Crude Oil Production Wells*): The purpose of this rule is to limit the VOC emissions from steam-enhanced crude oil production wells.
- Rule 4402 (*Crude Oil Production Sumps*): The purpose of this rule is to limit VOC emissions from sumps.

- Rule 4623 (*Storage of Organic Liquids*): The purpose of this rule is to limit VOC emissions from the storage of organic liquids.
- Regulation VIII (*Fugitive PM₁₀ Prohibitions*): The purpose of Regulation VIII is to reduce ambient concentrations of particulate matter (PM₁₀) by requiring actions to prevent, reduce, or mitigate anthropogenic fugitive dust emissions. Regulation VIII rules pertinent to the proposed Project include, but are not limited to, the following:
 - Rule 8021 (*Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities*): This rule limits fugitive dust emissions (PM₁₀) from construction, demolition, excavation, extraction, and other earthmoving activities. This rule applies to any such activity and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on-site, and travel on access roads to and from the site.
 - Rule 8031 (*Bulk Materials*): The purpose of this rule is to limit fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials.

3.2.2 Biological Resources

A review of the California Natural Diversity Database indicates that the following special status species have been recorded in the quadrangle of the Project area, which includes the Grimes West, Grimes East, and Midway Premier lease areas (CDFW 2020):

- Burrowing owl (*Athene cunicularia*) – California Species of Special Concern (SSC)
- San Joaquin kit fox (*Vulpes macrotis mutica*) – federal endangered; state threatened
- San Joaquin pocket mouse (*Perognathus inornatus*) – BLM Sensitive Species
- American badger (*Taxidea taxus*) – California SSC
- San Joaquin coachwhip (*Masticophis flagellum ruddocki*) – California SSC
- Blunt-nosed leopard lizard (*Gambelia sila*) – federal endangered; state endangered; California fully protected species
- Bakersfield cactus (*Opuntia basilaris* var. *treleasei*) – federal and state endangered species
- Ferris' goldfields (*Lasthenia ferrisiae*) – California rare plant rank (CRPR) 4.2: Plant of limited distribution – a watch list; fairly threatened in California (moderate degree/immediacy of threats)
- San Joaquin bluecurls (*Trichostema ovatum*) – CRPR 4.2
- Cottony buckwheat (*Eriogonum gossypinum*) – CRPR 4.2

Federally listed plant species in the southern San Joaquin Valley include Kern mallow (*Eremalche kernensis*), San Joaquin woolly-threads (*Monolopia congdonii*), California jewelflower (*Caulanthus californicus*), and Bakersfield cactus (*Opuntia basilaris* var. *treleasei*). California jewelflower is not known to naturally exist in Kern County, and Bakersfield cactus is endemic to a limited area of central Kern County in the vicinity of the City of Bakersfield. Federally listed animal species also include giant kangaroo rat (*Dipodomys ingens*) and Tipton kangaroo rat (*Dipodomys nitratooides*). Additionally, this region contains the State-listed San Joaquin antelope squirrel (*Ammospermophilus nelsoni*). There is no designated critical habitat for any threatened or endangered species on the Project area or in the vicinity.

The areas under the proposed Project where ground disturbance would occur (Grimes West and East lease areas) are on public surfaces within an area identified as habitat corridor (green zone) under the Conserved Lands goal in the Bakersfield Resource Management Plan. The Conserved Lands goal is to maintain suitable amounts of habitat largely undisturbed by development activities. Limiting the amount of habitat (and ground) disturbance allows sufficient habitat to remain intact, keep ecosystem processes functioning properly, and connect viable species populations across the landscape. Conserved Lands are subdivided into two components: reserve areas (red zones) and habitat corridors (green zones). Reserve areas are managed with a 10 percent disturbance limit and habitat corridors are managed with a 25 percent disturbance limit. The habitat on-site consists of non-native grasslands and valley saltbush scrub typical of the southern San Joaquin Valley (BLM 2019, 2020).

Reconnaissance-level surveys to identify the potential for the occurrence of listed species in the Grimes West Project area were conducted by consulting Biologist, Andy Krause (Padre, Inc.), on September 11, 2019. A Project-specific onsite inspection was completed by BLM Natural Resource Specialist, Matt Thomas, on January 15, 2020. No federally listed plant or animal species or their signs were observed on the Project area during the surveys (BLM 2020).

In Grimes East, a project-specific on-site inspection was completed by BLM Natural Resource Specialist, Fernando Baños, on October 30, 2018. During the inspection he noted that the Project location is within non-native annual grassland and valley saltbush scrub habitat that is moderately developed with oilfield infrastructure and used for livestock grazing. Dominant species observed onsite include red brome, rip-gut brome, red-stemmed filaree, and common pepper grass. The site inspection found no evidence of giant kangaroo rat or Tipton kangaroo rat in the vicinity of the lease area nor were there any observations of San Joaquin antelope squirrel. The inspection did not observe any burrows suitable for use by blunt-nosed leopard lizard within the proposed

Project area or any potential San Joaquin kit fox dens in the Project area (BLM 2019).

The portion of the proposed Project on private lands (Midway Premier) provides limited habitat for biological resources as the area has been previously disturbed and is fully developed with well pads, access roads and other infrastructure. The limited habitat that is present is similar in nature to the public lands and consists of non-native grasslands and valley saltbush scrub.

3.2.3 Soil Resources

Based on a review of the Natural Resources Conservation Service Web Soil Survey database, the entire Project area is underlain by soils in the Chanac-Pleito-Premier association. This map unit is present on hillsides, tends to be loam in the top 60 inches, and has a moderate potential for water erosion. The Project area is composed of approximately 50 percent Chanac clay loam (9 and 15 percent slopes and 15 to 30 percent slopes), 20 percent Premier coarse sandy loam (9 to 15 percent slopes), and 30 percent Premier-Durorthids association soils (9 to 15 percent slopes). These soils are very deep, well drained soils (NRCS 2020.)

3.2.4 Water Quality and Quantity

There are no intermittent or perennial rivers, lakes, or streams in the Project area, although Poso Creek, a perennial stream, is just north of the Project area within the Poso Creek Oil Field. Water for the Project will be sourced from a fresh water well owned by E&B and located in the Section 5 lease as discussed in Sections 2.2.1, 2.2.2, and 2.2.3.

Several geologic formations are pertinent to the UIC Project applications and are examined from increasing depth as follows. The proposed Project area is underlain by the Pleistocene-aged Kern River Formation and the Pleistocene-Pliocene-aged Upper Etchegoin Formation. These freshwater aquifers serve as underlying sources of drinking water. The Macoma Claystone, a sub-member of the Etchegoin Formation, immediately underlies the Upper Etchegoin Formation and serves as an aquitard layer and caprock to underlying oil reservoirs. The Macoma Claystone ranges in thickness of approximately 60 feet to 100 feet in the Premier Area of the Poso Creek Oil Field.

The Miocene-aged Basal Etchegoin and Chanac Formations serve as oil reservoirs that are the target injection zones of the UIC application. CalGEM regulates oil and gas drilling activities to occur within a specified area that will have minimal impact underground due to the existing conditions of the natural resources found there and determination that it will not impact clean water that can be used as a source of agricultural or drinking water. CalGEM, EPA, and the SWRCB have jointly developed a process to ensure protection of aquifers that

supply clean water for drinking or agricultural use are not impacted, as documented in the 1982 EPA Primacy Agreement with the Division of Oil, Gas, and Geothermal Resources (now CalGEM) (Department of Conservation 2015) and the July 31, 2018 Memorandum of Agreement with the SWRCB (SWRCB and DOC 2018). The first step of the process involves with CalGEM and SWRCB concurring that an aquifer meets certain criteria set forth in PRC §3131 and § 146.4 of Title 40 of the Code of Federal Regulations, including documentation that the aquifer is not currently and would not in the future become a source of drinking water. Following concurrence and public review of the proposal, the agencies jointly submit the request for the exemption from the federal Safe Drinking Water Act to the EPA, which makes the final determination. The final determination from EPA is published in the form of a Record of Decision and Class II UIC permits may only be issued for projects that would inject fluids into those aquifers that are determined to not be underground sources of drinking water by the EPA. Both the Basal Etchegoin and Chanac Formations within the Project area are exempted aquifers under the 1982 EPA Primacy Agreement with the Division of Oil, Gas, and Geothermal Resources (now CalGEM). The 2019 updated UIC Regulations then ensure that oil and gas injection activities are authorized to inject fluids only in those formations that are exempt and that fluids are confined both vertically and horizontally to those defined areas.

3.2.5 Paleontological Resources

Every geologic unit can be assigned a Potential Fossil Yield Classification (PFYC) class based on the probability and abundance of known vertebrate fossils and scientifically significant invertebrate and plant fossils. The PFYC scheme ranges from very low (PFYC 1) to very high (PFYC 5) depending on the potential fossil yield (BLM 2019). Unknown fossil potential is assigned to geologic units that do not have a clear PFYC assignment (PFYC U). In accordance with the federal Paleontological Resources Preservation Act (16 U.S.C. §470aaa 1-11), paleontological resource compliance is required for earthwork occurring on federal land within PFYC classes 3, 4, 5, or U rock units. The Grimes West lease area is underlain by the Tulare Formation, which is known to have a high potential for fossil resources (PFYC 4) (BLM 2020). The Midway Premier lease area, particularly in the location of the proposed wells adjacent to Grimes West is also underlain by the Tulare Formation. The Grimes East lease area is underlain by the Kern River Formation, which is also known to have a high potential for fossil resources (BLM 2019).

4 Initial Study Checklist

Evaluation of Environmental Impacts

This checklist has been prepared to document CalGEM's evaluation of the proposed Project and the determination of the appropriate level of environmental review under CEQA. The checklist used for the environmental evaluation was adapted from the environmental checklist form presented in Appendix G of the CEQA Guidelines. For this checklist, the following designations are used:

- **No Impact.** The Project would not have any measurable environmental impact on the environment.
- **Less Than Significant Impact.** The Project may have the potential for affecting the environment, although these impacts will be below levels or thresholds that CalGEM, Kern County, or other responsible agencies consider to be significant.
- **Less Than Significant Impact with Mitigation.** The Project may have the potential to generate impacts that will have a significant impact on the environment. However, the level of impact may be reduced to levels that are less than significant with the implementation of mitigation measures.
- **Potentially Significant Impact.** The Project may result in environmental impacts that are significant and cannot be reduced to levels that are less than significant even with the implementation of mitigation measures.

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.

- | | | |
|---|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture / Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Geology/Soils | <input checked="" type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards and Hazardous Materials |
| <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

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 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

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

Signature _____ Draft _____ Date _____

4.1 Aesthetics

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

4.1.1 Environmental Assessment

a, b) **No Impact.** The Project area is within an active oil field; contains no scenic vistas, scenic resources, or historic sites; and is not visible from a scenic vista. State Highway 65 runs north to south through the Project area. It is not a State Scenic Highway, and there are no other scenic highways located within Kern County (Caltrans 2020). Therefore, there would be **no impact** to scenic vistas or State Scenic Highways.

c) **No Impact.** The portion of the Project area located on federal lands occurs within a Class IV Visual Resource Management area, which allows for major modification to the landscape. The portion of the Project area on private lands is not a designated scenic resource. The Project area is visible to the public from State Highway 65. However, the Project area is located within an active oil field, and the wells would have the same visual characteristics as those already present. Therefore, there would be **no impact** to the existing visual character or quality of public views of the site.

d) **Less than Significant.** Construction and operation activities would be typical of those already present at an active oil field. Lighting may be used during construction activity but would be removed following construction at any given

drill site. No permanent lights would be installed on any of the new wells. There would be no new source of nighttime light. Therefore, impacts with respect to light and glare would be ***less than significant***.

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4.2 Agriculture and Forestry Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the CARB. Would the project:</p>				
<p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>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))?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>d) Result in the loss of forest land or conversion of forest land to non-forest use?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.2.1 Environmental Assessment

a) **No Impact.** The Project area is in the northwestern section of the Poso Creek Oil Field on land mapped as “Vacant or Disturbed Land” on the Farmland Mapping and Monitoring Program of the California Resources Agency maps (CDOC 2018). The Project area does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. As such, **no impact** to these agricultural resources would occur.

b) **No Impact.** The Project area is zoned by Kern County as NR (20), meaning that it contains “productive or potentially productive petroleum, mineral, or timber resources; resource exploration, production, and transportation, and compatible activities” (Kern County 2020a). The Project area is not enrolled in a Williamson Act Contract (Kern County 2010). Therefore, **no impact** to existing agricultural zoning, uses, or Williamson Act contracts would occur.

c, d) **No Impact.** The Project area does not contain 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)). As such, **no impact** to such forest/timber resources would occur.

e) **No Impact.** All potential impacts would be limited to the Project area itself. No disturbance would occur outside of the Poso Creek Oil Field. There is no farmland or forest land in the Project vicinity that would be converted by the proposed Project. Therefore, **no impact** would occur.

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4.3 Air Quality

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.3.1 Environmental Assessment

a) **Less than Significant with Mitigation.** The Project area is located within the San Joaquin Valley Air Basin, which is the second largest air basin in the state. The SJVAPCD manages the San Joaquin Valley Air Basin. Table 4.3-1 shows the attainment status of the San Joaquin Valley Air Basin for the state and federal standards. As shown, the San Joaquin Valley Air Basin currently exceeds California Ambient Air Quality Standards for ozone, PM_{2.5}, and PM₁₀. The basin also currently exceeds NAAQS for ozone and PM_{2.5} (SJVAPCD 2020).

Table 4.3-1 California and National Ambient Air Quality Standards

Pollutant	Averaging Period	California Standard	Federal Standard	Attainment Status	
				California	Federal
Ozone (O ₃)	1 hour	0.09 ppm (180 µg/m ³)	Revoked	Nonattainment/ Severe	--
Ozone (O ₃)	8 hour	0.070 ppm (137 µg/m ³)	0.07 ppm (137 µg/m ³)	Nonattainment	Nonattainment/ Extreme
Respirable Particulate	24 hour	50 µg/m ³	150 µg/m ³	Nonattainment	Attainment

Pollutant	Averaging Period	California Standard	Federal Standard	Attainment Status	
				California	Federal
Matter (PM ₁₀)					
PM ₁₀	Annual	20 µg/m ³	Revoked	Nonattainment	--
Fine Particulate Matter (PM _{2.5})	24 hour	none	35 µg/m ³	Nonattainment	Nonattainment
PM _{2.5}	Annual	12 µg/m ³	12 µg/m ³	Nonattainment	Nonattainment
Carbon Monoxide (CO)	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	Attainment	Attainment
CO	8 hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	Attainment	Attainment
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm (338 µg/m ³)	0.100 ppm (188 µg/m ³)	Attainment	Attainment
NO ₂	Annual	0.030 ppm (56 µg/m ³)	0.053 ppm (100 µg/m ³)	Attainment	Attainment
Lead (Pb)	30 Day Average	1.5 µg/m ³	--	Attainment	--
Pb	Rolling three-month period, evaluated over a three-year period	--	0.15 µg/m ³	--	Attainment
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm (655 µg/m ³)	0.075 ppm (197 µg/m ³)	Attainment	Attainment
SO ₂	3 hour	--	0.5 ppm (1300 µg/m ³)	--	Attainment
SO ₂	24 hour	0.04 ppm (105 µg/m ³)	0.14 ppm (for certain areas)	Attainment	--
Hydrogen Sulfide (H ₂ S)	1 Hour	0.03 ppm (42 µg/m ³)	--	Unclassified	--

Pollutant	Averaging Period	California Standard	Federal Standard	Attainment Status	
				California	Federal
Sulfates	24 hour	25 µg/m ³	--	Attainment	--
Vinyl Chloride	24 hour	0.010 ppm (26 µg/m ³)	--	Attainment	Unclassified
Visibility-Reducing Particles	8 hour	Extinction coefficient of 0.23 per kilometer (visibility of ten miles or more due to particles when relative humidity is less than 70 percent)	--	Unclassified	Unclassified

Notes: µg/m³ – micrograms per cubic meter, ppm – parts per million

The SJVAPCD has established thresholds of significance for criteria pollutant emissions during construction and operations, which are based on the SJVAPCD's New Source Review offset requirements for stationary sources. Per SJVAPCD guidance, a project would have a significant impact on air quality if the emission sums exceed the thresholds presented in Table 4.3-2. Air emissions for Grimes East and Grimes West were calculated as part of the BLM NEPA reviews and review of E&B's APD for each well (BLM 2019; BLM 2020). These impact analyses were prepared using methodology described in the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts*, March 19, 2015 Revision and are incorporated by reference herein.

For the purposes of this analysis, short-term construction emissions and long-term operational emissions were determined utilizing the latest version of the CalEEMod model (version 2016.3.2) based on the assumptions described in Section 2, Project Description, but incorporating **Mitigation Measure (MM) AIR-1**. **MM AIR-1** requires that all off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines as specified in 13 CCR § 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 3 engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide nitrogen oxides and particulate matter emissions that are equivalent to Tier 3 engine (refer to Appendix A for emission model results). As described in Section 2, installation of the wells and associated ancillary facilities (i.e., installation of flowlines, pumping units, and electrical infrastructure) will occur over a 2-year period. For the purposes of modeling emissions, the model assumes that in Year One, up to nine wells pads would be constructed, 49 wells

would be drilled, up to 10,466 linear feet of flowlines would be installed, and associated power poles and pumping units would be installed for each well. The model further assumes the remaining two well pads would be constructed, and 13 wells would be drilled along with installation of all ancillary facilities and flowlines for these wells in Year Two. Table 4.3-3 shows the construction schedule. The calculated unmitigated and mitigated emissions for the proposed Project in each year of construction are provided in Table 4.3-4. The emissions are calculated assuming that one well would be drilled at a time with simultaneous construction of associated ancillary facilities (i.e., installation of flowlines, electrical, and pumping units) and provide total emissions in tons per year for the proposed activity for each year of construction. Further, to ensure that construction emissions remain below the emissions thresholds specified in Table 4.3-2, E&B would implement **MM AIR-1** which requires that all off-road construction diesel engines meet, at a minimum, the Tier 3 California Emission Standards or better. Accordingly, Table 4.3-4 provides the mitigated emissions for the proposed Project with the implementation of **MM AIR-1**. The annual emissions associated with operation of the wells in each lease area are presented in Table 4.3-5. These estimates assume that all wells are operational simultaneously.

Table 4.3-2 SJVAPCD Air Quality Significance Thresholds

Pollutant	Emissions (tons per year)	
	Construction	Operational per Lease Area
NO _x	10	10
SO _x	27	27
PM ₁₀	15	15
PM _{2.5}	15	15
CO	100	100
ROG (VOC)	10	10

Source: SJVAPCD 2015a

Table 4.3-3 Construction Schedule

Construction Year	Facilities to be Installed
1	9 Well Pads
	49 Wells
	Ancillary Facilities (up to 10,466 feet of pipelines, pumping units, electrical)
2	2 Well Pads
	13 Wells
	Ancillary Facilities (up to 3,064 feet of pipelines, pumping units, electrical)

Table 4.3-4 Criteria Pollutant Unmitigated and Mitigated Emissions by Construction Year (Tons per Year)

Pollutant	Construction Year 1		Construction Year 2	
	Unmitigated	Mitigated	Unmitigated	Mitigated
NO_x	16.54	9.79	4.44	2.62
SO_x	0.06	0.38	0.01	0.10
PM₁₀	0.66	0.46	0.17	0.12
PM_{2.5}	0.55	0.37	0.15	0.10
CO	12.69	25.80	3.41	6.92
ROG	1.99	0.91	0.54	0.24

Table 4.3-5 Operational Criteria Pollutant Emissions (Tons per Year)

Pollutant	Grimes West ¹	Grimes East ¹	Midway Premier ¹
NO_x	0.63	3.72	0.32
SO_x	0.02	0.14	0.01
PM₁₀	0.02	0.13	0.01
PM_{2.5}	0.02	0.12	0.01
CO	0.58	3.42	0.29
ROG	0.57	3.32	0.28

1. Per lease, assuming all wells are operational simultaneously (note that this is a conservative estimate as wells will be phased into operation over time as they are constructed).

Operation of wells within each lease area would also not exceed the SJVAPCD Operational Emissions thresholds and, therefore, would represent a less than significant impact. E&B would obtain all required SJVAPCD Permits to Operate for all equipment that would be operated under this proposed Project (in accordance with Rule 2010) and would comply with existing and future permit

conditions. Therefore, there would be no net increase in emissions from the existing facilities. In addition, as described in Section 2, there are additional SJVAPCD rules that would minimize air quality impacts, such as Rules 2201, 2010, 2280, 4101, 8021, and 8031. For example, E&B compliance with Regulation VIII (Rules 8021 and 8031) would minimize particulate emissions by watering unpaved access roads in the Project area and watering soils prior to excavation and trenching and during backfilling while compacting. E&B compliance with Rule 2280 would ensure that VOC and NO_x emissions would be evaluated per the SJVAPCD's calculation methodologies, and any increase in emissions would be fully offset during the air permitting process. Implementation of this existing regulatory mechanism would offset the increase in potential emissions related to the operation of the proposed Project. Accordingly, assuming full compliance with all regulatory requirements and implementation of **MM AIR-1** and **MM AIR-2** the proposed Project would not emit criteria pollutants above the SJVAPCD's established thresholds (Table 4.3-4) and would comply with SJVAPCD permit requirements. Therefore, incorporation of **MM AIR-1** and **MM AIR-2** would ensure that construction and operation of the wells would not conflict with or obstruct implementation of the applicable air quality plan and impacts would be **less than significant with mitigation**.

MM AIR-1 - All off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 3 California Emission Standards for Off-road Compression-Ignition Engines as specified in 13 CCR § 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 3 engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide nitrogen oxides and particulate matter emissions that are equivalent to Tier 3 engine.

MM AIR-2 - E&B shall develop and implement a Fugitive Dust Control Plan in compliance with SJVAPCD fugitive dust suppression regulations. The Fugitive Dust Control Plan shall include:

- a. Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submission, and implementation of the plan.
- b. Description and location of operation(s).
- c. Listing of all fugitive dust emissions sources included in the operation.
- d. The following dust control measures shall be implemented:
 - i. All onsite unpaved roads shall be effectively stabilized using water or chemical soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than CARB-approved soil stabilizers,

and that shall not increase any other environmental impacts including loss of vegetation.

- ii. All material excavated or graded will be watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles will be watered as needed to limit dust emissions to less than 20 percent opacity or covered with temporary coverings.
- iii. Construction activities that occur on unpaved surfaces will be discontinued during windy conditions when winds exceed 25 miles per hour and those activities cause visible dust plumes that exceed the SJVAPCD 20 percent opacity standard.
- iv. Track-out debris onto public paved roads shall not extend 50 feet or more from an active operation and track-out shall be removed or isolated such as behind a locked gate at the conclusion of each workday, except on agricultural fields where speeds are limited to 15 mph.
- v. All hauling materials shall be moist while being loaded into dump trucks.
- vi. All haul trucks hauling soil, sand, and other loose materials on public roads shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
- vii. Soil loads shall be kept below 6 inches or the freeboard of the truck.
- viii. Drop heights when loaders dump soil into trucks shall not exceed 5 feet above the truck.
- ix. Gate seals shall be tight on dump trucks.
- x. All grading activities shall be suspended when visible dust emissions exceed 20 percent.
- xi. Other fugitive dust control measures as necessary to comply with SJVAPCD Rules and Regulations.
- xii. Disturbed areas shall not exceed those shown on the Site Plan.
- xiii. Disturbed areas shall be re-vegetated as soon as possible after disturbance if area is no longer needed for oil and gas activities (3.11 acres in Grimes West, 17.35 acres in Grimes East, and 1.76 acres in Midway Premier).

b) **Less than Significant with Mitigation.** The proposed Project would emit criteria pollutants from the use of combustion sources such as diesel drill and completion/workover rig engines, drill pad construction equipment (i.e., dozers, backhoe, grader, etc.), equipment trucks, water trucks, drill rig crew trucks/vehicles, and portable lift equipment; through venting or fugitive losses from use of chemicals; use of open sumps and/or pits, or valves and fittings,

pumps, compressors; and the well head. In addition, impacts to air quality would occur during Project construction as a result of soil disturbance and fugitive dust emissions.

As noted above, the San Joaquin Valley Air Basin is in non-attainment for ozone, PM_{2.5}, and PM₁₀. However, Project construction would not generate emissions above the SJVAPCD thresholds with implementation of **MM AIR-1** and **MM AIR-2**, and operational emissions would not result in a net increase in emissions in accordance with Rule 2201. Therefore, the proposed Project would have a **less than significant impact with mitigation** on cumulatively considerable pollutant increases.

c) **Less than Significant.** The nearest sensitive receptors to the Project area are residences located greater than 4,000 feet to the northwest, north of Poso Creek. As shown in Table 4.3-4, construction emissions would be well below the SJVAPCD threshold. Operations would result in emissions associated with operation and maintenance of the wells. These activities would also occur at a distance greater than 4,000 feet from the nearest sensitive receptor. The SJVAPCD provides recommendations on buffer distances associated with various types of common sources. Although they do not specify a buffer distance for oil and gas production facilities, the maximum buffer distance for similar types of operations is 1,000 feet from the source. Since the proposed Project is not located within an established buffer distance, operations activities associated with the proposed Project would not be considered to pose an unacceptable health risk to sensitive receptors, and therefore would have a **less than significant impact** on sensitive receptors.

d) **Less than Significant.** The proposed Project may create odors. In the SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015b), oil and gas production facilities are included in the list of common facilities that are likely to have potentially significant odor emissions. Further, the nearest residential receptor is more than 4,000 feet from the proposed well construction, operation, and maintenance activities. As such, it is unlikely that odors associated with the proposed Project would be perceptible at this distance and would not affect a substantial number of people. Therefore, impacts would be **less than significant**.

4.4 Biological Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.4.1 Environmental Assessment

a) **Less than Significant with Mitigation.** The Project area is in an active oil field on previously disturbed land. In addition to the oil field, the Project area is also used for livestock grazing. The Project area does not contain designated critical habitat for any federal threatened or endangered species, although special

status species have been recorded in the quadrangle of the Project area as described in Section 3.

The portion of the proposed Project (Grimes East and Grimes West) that would occur on federal land is covered as projects #73, #01, and #103 by 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 and also requires compensation and replacement of disturbed habitat. In compliance with the Biological Opinion, E&B would provide 81.4 replacement and compensation acres for the proposed Project. E&B would adhere to all species-specific measures listed in the Biological Opinion and a qualified biologist would be present for all ground disturbing activities.

The estimated habitat disturbance would be 20.5 acres (3.11 acres in Grimes West and 17.35 acres in Grimes East). As identified in Table 1.1-1, vegetation on Grimes East has already been cleared. There would be no habitat disturbance on private lands (Midway Premier) because the four wells would be drilled on existing pads. Impacts to special-status species could occur from vegetation clearing; grading and surface disturbance; fugitive dust; vehicle strikes; increases in non-native and invasive plants; and noise emitted from the use of heavy equipment.

In accordance with the Biological Opinion, E&B would conduct pre-construction surveys for special status species on Grimes East and Grimes West. Further, E&B would implement the biological resource design features and additional regulatory requirements described in Section 2.5.1. Because the four Midway Premier wells would be drilled on existing well pads, special status species are not likely to be present within the Project area. However, E&B would implement **MM BIO-1** through **MM BIO-7** described below to ensure impacts are minimized. Therefore, potential impacts to candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW and Wildlife or USFWS would be **less than significant with mitigation**.

MM BIO-1 — A Worker Environmental Awareness Program shall be developed and implemented for all personnel that could access the site prior to commencing any disturbance activities. The program shall consist of an on-site or facility center presentation that will describe the locations and types of sensitive plant, wildlife, and sensitive natural communities (collectively, “Biological Resources”) on and near the site, an overview of the laws and regulations governing the protection of Biological Resources, the reasons for protecting the Biological Resources, the specific protection and avoidance measures that are applicable to the site, and the identity of designated points of contact should questions or issues arise, including the qualified biologist. The

program shall provide training to recognize, avoid and report to applicable qualified biologists any Biological Resources on the site.

- The Worker Environmental Awareness Program shall emphasize the need to avoid contact with onsite wildlife and avoid entry into areas where Biological Resources have been identified based on pre-disturbance field surveys and to implement the buffer avoidance or other protection measures established by the USFWS shall be identified or required by the Biological Resource mitigation measures. The training shall emphasize the importance of not feeding or domesticating wildlife and the need to avoid any trash or potential food disposal onsite except in animal-proof containers emptied daily to avoid attracting or causing adverse impacts to special status wildlife.
- All onsite personnel must sign a statement verifying that they have completed the Worker Environmental Awareness Program, and that they worksite. If signed employee statements are not available, documentation may be provided by Worker Environmental Awareness Program training records, which shall be kept by E&B for a minimum of five years. E&B shall maintain a list of all persons who have completed the training program and shall provide the list to CalGEM and federal wildlife agency representatives upon request.

MM BIO-2 – E&B shall conduct special status wildlife surveys by a qualified biologist within a 30-day period prior to commencement of new ground-disturbance construction activities, and pre-disturbance surveys for active bird nests must be conducted no more than 10 days prior to the commencement of disturbance. Surveys shall follow USFWS and CDFW guidance and/or protocols, as applicable. The purpose of the pre-disturbance surveys is to confirm the presence or absence of any federal- or state-listed threatened species or those designated as fully-protected in the California Fish and Game Code (collectively, "Protected Species"), and to confirm the presence or absence of any other species considered "sensitive" under CEQA ("Sensitive Species"), and to identify and implement feasible avoidance and minimization measures for such species. The surveys shall be conducted in accordance with all currently-applicable presence and absence survey and/or species protocols established by the USFWS and the CDFW ("Species Protocols"). In the absence of any approved protocols, the survey shall extend for a minimum of 250 feet from all areas where any ground disturbance activities would occur, provided that permission to access has been obtained.

MM BIO-3 – No incidental take of any species listed as threatened or endangered under the federal Endangered Species Act or California Endangered Species Act may occur unless the incidental take is authorized by applicable state and federal wildlife agencies in the form of a permit or other written authorization, an approved state or federal conservation plan, or in

accordance with an approved regional plan such as a Habitat Conservation Plan and/or Natural Community Conservation Plan.

MM BIO-4 – Occupied burrowing owl burrows shall not be disturbed during the nesting season (February 1 through August 31). Burrowing owls present in proposed disturbance areas or within 500 feet or as specified under an approved Habitat Conservation Plan (as identified during pre-disturbance surveys) outside of the breeding season (between September 1 and January 31) may be moved away from the disturbance area using passive relocation techniques approved by the CDFW. A minimum of one or more weeks will be required to relocate the owl(s) and allow for acclimatization to alternate off-site burrows. Prior to burrow exclusion or eviction, a burrowing owl management plan shall be prepared and approved by the CDFW. As an alternative to passive relocation, occupied burrows identified off-site within 500 feet of construction activities may be buffered with hay bales, fencing (e.g., sheltering in place), or as directed by the qualified biologist and the CDFW, to avoid disturbance of burrows.

MM BIO-5 — Any potential San Joaquin kit fox dens detected during pre-disturbance surveys shall be reevaluated for species activity no more than 14 days prior to the commencement of ground disturbance. Potential kit fox dens shall be marked, and a 50-foot avoidance buffer shall be delineated using stakes and flagging or similar materials to prevent inadvertent damage to the potential den. If a potential den cannot feasibly be avoided, the den may be hand excavated in accordance with the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance*. If species activity is detected, the location shall be identified as a “known” kit fox den in accordance with USFWS species guidelines. A minimum 100-foot buffer from any disturbance area shall be maintained for known dens and a minimum 500-foot buffer from any disturbance area shall be maintained for natal dens. No excavation of a known or natal den shall occur without prior authorization from the USFWS and CDFW.

MM BIO-6 – If any occupied American badger dens are detected during pre-disturbance surveys, the dens shall be flagged and ground-disturbing activities avoided within 50 feet of the den. Maternity dens shall be avoided to the maximum extent feasible and a minimum 200-foot buffer from disturbance shall be maintained during pup-rearing season (February 15 through July 1). If a maternity den cannot feasibly be avoided, the CDFW must be contacted to identify appropriate impact minimization measures prior to initiating any disturbance that would affect the den, including potential passive relocation by excavation before or after the rearing season.

MM BIO-7 – The following measures shall be implemented to avoid take of blunt-nosed leopard lizard and to ensure protection of these animals during Project activities:

- a. Project activities shall avoid all potential burrows that may be occupied by blunt-nosed leopard lizards. Suitable burrows within and adjacent to potential habitat for the species shall be avoided by a minimum distance of 50-feet in all areas where ground-disturbing Project activities will occur.
- b. No more than one year prior to ground disturbing activities, focused surveys following current CDFW and USFWS protocols for detection of this species or other methods approved by both agencies shall be conducted in all potential blunt-nosed leopard lizard habitat within the work site and a 250-foot buffer area. If no individual blunt-nosed leopard lizards are observed during focused surveys, and surveys are current (e.g., completed in the same calendar year), then Project activities may proceed.
- c. If blunt-nosed leopard lizards are detected during focused surveys, a blunt-nosed leopard lizard avoidance plan shall be prepared for the Project that will result in avoidance of incidental take of this species unless take is separately authorized under a Natural Communities Conservation Plan and appropriate federal authorization is obtained. At a minimum, the blunt-nosed leopard lizard avoidance plan shall contain the following elements:
 - i. During periods that are optimal for blunt-nosed leopard lizard activity (early spring through late fall), the onsite qualified biologist shall check the Project area and access route daily during the blunt-nosed leopard lizard active season to determine presence or absence of lizards in or near the work areas. Monitoring by a qualified biologist is not required during periods of inactivity (the winter season).
 - ii. If blunt-nosed leopard lizards are observed at the work site during construction, construction shall cease within a 250-foot radius, and the USFWS and the CDFW shall be consulted to determine what additional measures would be necessary to prevent take of this species.
 - iii. Offsite locations where blunt-nosed leopard lizards have been observed or are likely to occur shall be clearly marked to prevent workers from driving off the road and to prevent inadvertent destruction of burrows. Barriers, such as exclusionary fencing may be installed. All construction equipment and construction personnel vehicles shall be checked prior to moving to ensure no blunt-nosed leopard lizard are under equipment/vehicles.
 - iv. A speed limit of 10 miles per hour shall be posted and observed within 0.25 miles of any reported blunt-nosed leopard lizard observation.
 - v. Construction activities shall avoid burrows that may be used by blunt-nosed leopard lizards. Any location of proposed construction activity with potential to collapse or block burrows (i.e., stockpile storage, parking areas, staging areas, trenches) will be identified prior to construction in the blunt-nosed leopard lizard avoidance plan and approved by the qualified

biologist. The qualified biologist may allow certain activities in burrow areas if the combination of soil hardness and activity impact is not expected to collapse burrows and no blunt-nosed leopard lizards have been found during pre-Project surveys in the impact area.

- d. All individual blunt-nosed leopard lizards observed above-ground will be avoided. Any individual blunt-nosed leopard lizard that may enter the Project area would be allowed to leave unobstructed, and on its own accord. If a blunt-nosed leopard lizard is detected during biological monitoring or observed at any other point, the CDFW and the USFWS shall be notified to determine what additional measures would be necessary to prevent take of the species.
- b) **No Impact.** There are no riparian habitats in the Project area. As noted above, the Project area contains non-native grassland and valley saltbush scrub habitat, and the Midway Premier lease area is already completely developed with well pads and access roads and contains little to no natural habitat. There are no sensitive natural communities within the Project area. Therefore, there would be **no impact** to these resources.
- c) **No Impact.** A review of the National Wetlands Inventory indicates that there are no jurisdictional wetlands or waters of the U.S. within the proposed Project area (USFWS 2020). Therefore, there would be **no impact** to wetlands.
- d) **No Impact.** The proposed Project would not involve the construction of any features that would interfere with animal movement. Further, there are no migratory wildlife corridors located through the Project area and no trees suitable for nesting/migratory birds. Therefore, the proposed Project would have **no impact** on wildlife movement.
- e, f) **No Impact.** Based on a review of aerial photographs of the Project area and the site-specific surveys conducted as part of the BLM NEPA reviews, there are no trees present in the Project area, and the proposed Project would not conflict with any local ordinances. There are no adopted Habitat Conservation Plans for the Project area. The Project area is included within the boundaries of the draft Kern County Valley Floor Habitat Conservation Plan, but this Habitat Conservation Plan has not been approved by the CDFW, USFWS, Kern County, or other applicable local, state, and federal agencies (Kern County 2006). The Grimes East and Grimes West portions of the Project area are covered by the USFWS 2017 Biological Opinion (Kern County 2006). The proposed Project would adhere to all BMPs and take-minimization measures outlined in the Biological Opinion. Therefore, the proposed Project would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan, and there would be **no impact**.

4.5 Cultural Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.5.1 Environmental Assessment

a) **No Impact.** Cultural resource surveys conducted within the portion of the Project area that occurs on federal land identified three archaeological sites consisting of historic period oil field remains within the area of potential effect for the proposed Project. These were evaluated for significance according to National Register of Historic Places criteria and determined ineligible for inclusion (BLM 2020). No surface disturbance would occur within the Midway Premier lease area because the four wells would be drilled on an existing drill pad. Therefore, the proposed Project would have **no impact** on historical resources.

b) **Less than Significant with Mitigation.** No archaeological resources have been identified within the Project area on federal land. Prior to Project construction of the Midway Premier wells, E&B would implement **MM CUL-1**. In the unlikely event of an accidental discovery, E&B would implement the cultural resources procedures described in Section 2.5.2 and **MM CUL-2**. Therefore, impacts to archaeological resources would be **less than significant with mitigation**.

MM CUL-1 – Prior to initiating ground disturbance activities, E&B shall:

- a. Have an archival records search completed by a qualified archaeologist. This shall include an examination of the California Historical Resources Information Files at the Southern San Joaquin Valley Information Center, California State University, Bakersfield, and a search of the Native American Heritage Commission Sacred Lands Files, Sacramento. E&B may rely on a previously performed records search for subsequent ground disturbing activities.
- b. If a location has been previously surveyed and no cultural resources have been recorded on it, no further cultural resources studies shall be required.
- c. Implement either:

- i. If a site plan is within a section that has experienced 100 percent previous ground-surface disturbance, as indicated by 300 or more existing oil wells or other agricultural, industrial or urban uses, and the records searches indicate that the parcel has been previously surveyed and no cultural or Native American resources are known on it, no further cultural resources studies shall be required. All other locations shall be subject to intensive (100 percent) pedestrian ground-surface survey (Phase I survey/Class III inventory) by qualified archaeologists. E&B may rely on a previously performed ground surface survey for subsequent ground disturbing activities; or
 - ii. If a location has not been previously surveyed based on the records search information, an intensive (100 percent) pedestrian ground surface survey (Phase I survey/Class III inventory) by qualified archaeologists shall be required.
- d. All prehistoric/Native American archaeological sites, whether identified during the records searches or during the intensive survey, shall be demarcated by a qualified archaeologist, fenced by E&B, and preserved in place.
 - e. Historical (Euro-American) archaeological sites that are potentially eligible for listing in the National Register of Historic Places shall be evaluated by a qualified archaeologist and must meet the requirements of the National Historic Preservation Act of 1966 to qualify. Qualifying sites, structures and equipment that are identified during the records search or field survey shall be fenced and preserved in open-space, removed and curated, or treated using appropriate data recovery procedures.
 - f. Historical (Euro-American) archaeological site types relating to oil and gas activities that have been determined Not Significant/Unique shall require no archaeological study or treatment.
 - g. All oil and gas industry employees conducting work in the Project area shall complete Worker Environmental Awareness Program training including training dedicated to cultural resources protection.

MM CUL-2 – In the event archaeological materials are encountered during ground disturbance or construction, the Project operator/contractor shall cease any ground disturbing activities within 50 feet of the find. The qualified archaeologist shall evaluate the significance of the resources and recommend appropriate treatment measures. Per CEQA Guidelines 14 CCR § 15126.4(b)(3), Project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. If it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with CalGEM, which may include data recovery or other appropriate measures. CalGEM shall consult with appropriate Native American representatives and may consult with the Kern

County Planning and Community Development Department, in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. If after consultation it is deemed appropriate, archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to CalGEM, who will share the data with the Southern San Joaquin Valley Information Center.

c) **Less than Significant with Mitigation.** No human remains have been identified within the Project area. In the unlikely event of an accidental discovery, E&B would implement the cultural resources procedures described in Section 2.5.2 and **MM CUL-3**. Therefore, impacts would be **less than significant with mitigation**.

MM CUL-3 - If human remains are uncovered during Project construction, E&B shall immediately halt all work, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in § 15064.5 (e) of the CEQA Guidelines. CalGEM shall be notified concurrently. If the County Coroner determines that the remains are Native American, the Project proponent shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC § 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendant for the remains per PRC § 5097.98. Per PRC § 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (§ 7100 *et. seq.*) directing identification of the next-of-kin will apply.

4.6 Energy

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.6.1 Environmental Assessment

a) **No Impact.** Construction of the proposed Project would require the 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 on-site and commuter trips). Tables 2.3-1 through 2.3-3 detail the total hours of operation for each piece of equipment during the construction phase. In addition to direct construction-related energy consumption, indirect energy use would be required to make the materials and components used in construction. This includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing.

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 will not be used in an inefficient or wasteful manner. The proposed Project would help minimize inefficient or wasteful use of energy and increase conservation during construction because the proposed grading plan is designed to balance all earthwork on site, which would avoid truck trips that would have been required to haul-in fill materials to the site and haul-off of materials to be exported off-site. This would reduce fuel use, while also reducing temporary increases in noise and exhaust emissions. The grading plan would also minimize impacts to the surrounding transportation network that would result from truck traffic associated with soil import or export.

Implementation of **MM ENG-1** would further reduce fuel consumption and energy use.

Then operations energy use would consist of electricity at each well and maintenance activities, as follows:

- Electric energy consumption is estimated at 223 kilowatt-hours (kWh)/day per well; and
- The temperature observation wells do not consume any electricity;
- Maintenance at each pad includes:
- Three crew members/trucks visiting each well pad site per day;
- Service by water truck twice per day; and
- One well workover per year at each well, including one workover rig, one medium-duty truck, and six worker vehicles over two 12-hour days.

The electric use at each well of 223 kWh/day would result in total annual electric consumption of 4,802,305 kWh. In 2019, the total annual electricity consumption in Kern County is reported to be 17,105 million kWh (i.e., 17,105 gigawatt-hours [GWh]). Accordingly, operation of the wells would represent approximately 0.02 percent of the total electricity consumption in Kern County. No new sources of electricity would be needed to meet the proposed Project's energy needs. As discussed in the 2015 Kern County EIR, the state supply of electricity and natural gas, including electrical power and gas that is produced and used by oil and gas operators in cogeneration and similar facilities, has been sufficient to meet Kern County demand. Supplies would likely remain sufficient to meet demand assuming oil and gas production electricity and natural gas demand in the Project area remains consistent with historical levels (Kern County 2015). Overall, the proposed Project's operation would not involve wasteful, inefficient, or unnecessary uses of energy and the impact for operations would not result in a significant impact.

With implementation of **MM ENG-1**, the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, the proposed Project would have **no impact** on wasteful energy consumption.

b) **No Impact.** The proposed Project would occur within an active oil field and would not conflict with or obstruct any state or local renewable energy or energy efficiency plans. Therefore, there would be **no impact**.

MM ENG-1 – E&B shall implement all the following applicable energy conservation control measures during construction of the project:

- a. Idling times on all diesel-fueled commercial vehicles over 10,000 pounds shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure 13 CCR §2485). Clear signage to this effect shall be provided for construction workers at all access points.
- b. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a

written policy as required by 13 CCR §2449 (“CARB Off-Road Diesel Regulations”).

- c. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- d. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available, and it is not feasible to use propane or natural gas.

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4.7 Geology and Soils

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Directly or indirectly destroy a unique site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.7.1 Environmental Assessment

a) **Less than Significant.** The Project area is located within an Alquist-Priolo Earthquake fault zone (CDOC 2020). It is dissected by a major fault, the Midway Premier fault, and therefore is located on two separate fault blocks: the Grimes East lease is located immediately to the east of the Midway Premier fault and the Midway Premier lease and Grimes West are located immediately to the west of it. The Project area is not located within a landslide or liquefaction zone.

In the event of an earthquake, seismic ground-shaking could be experienced in the Project area, as is typical throughout Southern California. Seismic ground-shaking and seismically induced liquefaction, landslides, or other slope failure could result in structural damage to Project infrastructure and facilities. However, the proposed Project does not involve any infrastructure or facilities that would include human occupancy. Therefore, the risk of injury during the proposed Project associated with ground-shaking, landslides, or liquefaction are low. It is possible that ground-shaking, landslides, or liquefaction could substantially damage Project related infrastructure. The proposed Project would be designed and constructed to conform with the most recently adopted building codes. Therefore, impacts would be **less than significant**.

b) **Less than Significant with Mitigation.** Soil erosion and loss of topsoil could occur because of surface disturbance activities including well pad, road, and sump construction, staging site construction, and drilling operations. Soils would be compacted, which could lead to surface runoff and erosion. E&B would implement measures to minimize erosion and stabilize disturbed soils, including the use of jute netting, hydro-mulch, straw wattles, or crimped straw mulch or similar methods as necessary, in accordance with the BLM approvals of the APDs. E&B would also conduct interim reclamation utilizing site-specific topsoil on the temporary staging areas, cut and fill slopes, and the sump after drilling operations. E&B would complete final reclamation when the wells are abandoned. E&B would also implement the erosion control measures described in **MM HYDRO-2**. Therefore, potential erosion and topsoil loss impacts would be **less than significant with mitigation**.

c) **No Impact.** The Project area is composed of approximately 50 percent Chanac clay loam (9 and 15 percent slopes and 15 to 30 percent slopes), 20 percent Premier coarse sandy loam (9 to 15 percent slopes), and 30 percent Premier-Durorthids association (9 to 15 percent slopes) soils (NRCS 2020). These soils are very deep, well drained soils. These soils are not unstable nor would the proposed Project cause them to become unstable. The Project area is not located within a liquefaction or landslide zone. Therefore, the proposed Project would result in **no impacts** on soil stability, landslide, lateral spreading, subsidence, liquefaction, or collapse.

d) **No Impact.** The Project area soils are not defined as expansive soils under California Building Code; therefore, **no impacts** would occur.

e) **No Impact.** The proposed Project would not involve the construction of any septic tank or other alternative wastewater disposal systems. Therefore, there would be **no impact**.

f) **Less than Significant with Mitigation.** The Project area is underlain by the Kern River and Tulare geologic formations, which have been designated as a PFYC Class 4 by the BLM. Class 4 formations are likely to contain vertebrate fossils or scientifically significant invertebrate fossils (BLM 2019). Therefore, any ground disturbing activities could adversely impact paleontological resources. E&B would implement a Paleontological Resource Mitigation Plan as required by the BLM, which includes paleontological monitoring and specimen collection, for all construction-related activities. To minimize potential effects during drilling of the four wells in the Midway Premier lease are, **MM GEO-1** shall be implemented. Therefore, impacts to paleontological resources would be **less than significant with mitigation**.

MM GEO-1 – As part of any Worker Environmental Awareness Program training, all construction personnel shall be trained regarding the recognition and protection of possible buried paleontological resources during construction, prior to the initiation of construction or ground-disturbing activities. Training shall inform construction personnel of the procedures to be followed upon the discovery of paleontological materials. These procedures include notification of a paleontological monitor upon an accidental discovery and cessation of all work at the site of discovery until written approval to proceed is provided by the monitor. All personnel shall be instructed that unauthorized collection or disturbance of fossils is unlawful.

g) **No Impact.** There are no unique geologic features present in the Project area; therefore, there would be **no impacts** to these resources.

4.8 Greenhouse Gas Emissions

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.8.1 Environmental Assessment

a) **Less than Significant with Mitigation.** The proposed Project would result in GHG emissions from diesel- and gasoline-powered construction equipment including drill and completion/workover rig engines, drill pad construction equipment, 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 well head.

The SJVAPCD does not have numeric thresholds for GHG emissions; therefore, no threshold exceedances would occur. Temporary GHG emissions associated with construction of one well is estimated to be 120.4 metric tons carbon dioxide equivalent (CO₂e). For operations (emissions that would occur continuously over the life of the Project), annual GHG emissions are estimated to be 49.66 metric tons CO₂e per well for the duration of the proposed Project. Operational emissions capture all emissions from vehicles and off-road equipment (e.g., workover rigs), which includes anticipated annual maintenance of the wells and well pads. Total Project GHG emissions for construction are shown in Table 4.8-1. Total Project GHG emissions for operation activities in each lease are shown in Table 4.8-2. The total operational emissions for the proposed Project are estimated at 2,930 metric tons of CO₂e per year (as shown in Table 4.8-2). Detailed information regarding the approach to quantifying and calculating emissions is provided in Section 4.2, *Air Quality* and full modeling results are presented in Appendix A.

Table 4.8-1 Estimated Project Construction Greenhouse Gas Emissions

Construction Year	Metric tons CO ₂ e/year
Year 1	5,522
Year 2	1,464

Table 4.8-2 Estimated Project Operational Greenhouse Gas Emissions by Lease Area

Lease Area	Metric tons CO ₂ e/year
Midway Premier	199
Grimes, East ¹	2,334
Grimes, West ¹	397
Total GHG Emissions	2,929

1. Operation emission estimates include operation of 47 wells at East Grimes and 8 wells at West Grimes. Temperature observation wells are used for the purpose of observation and do not require operation or maintenance activities and are not included in these calculations.

Per CEQA Guidelines Section 15064(h)(3) and section 15064.4, subdivision(b)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project will comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "air quality attainment or maintenance plan and/or plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significance for GHG emissions if a project complies with regulatory programs to reduce GHG emissions.

In the absence of any adopted numeric threshold, the significance of the proposed Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b) by considering whether the Project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. At the time of this writing, Kern County has not developed a Climate Action Plan. Therefore, the Project will be evaluated against the CARB 2017 Scoping Plan update. Measures included in the Scoping Plan update would indirectly address GHG emission levels associated with construction activities, including the phasing-in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low-carbon fuel standard.

Policies formulated under the mandate of AB 32 (discussed in detail in section 6.10.1) that apply to construction-related activity either directly or indirectly, are assumed to be implemented Statewide and would affect the Project should those policies be implemented before construction begins. Specifically, implementation of AB 32 control measures for reduced vehicle emissions would decrease GHG emissions from the Project.

In addition, CARB has approved additional regulation to reduce fugitive and vented emissions from new and existing oil and gas facilities which, implementing Measure I-2 of the AB 32 Scoping Plan. The E&B Oil Field Operator is required to comply with this regulation, thus reducing GHG emissions and being consistent with the AB 32 Scoping Plan, the Scoping Plan update, and the *Regulation Order Subarticle 13: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities § 95665*. Specifically, this regulation covers greenhouse gas emissions, predominately methane, from production, gathering and boosting stations, and processing as well as natural gas storage and transmission compressor stations. It addresses both vented (intentional) and fugitive (unintentional) releases of greenhouse gases by processes at facilities in the following sectors: (1) onshore and offshore crude oil or natural gas production; (2) crude oil, condensate and produced water separation and storage; (3) natural gas underground storage; (4) natural gas gathering and boosting stations; (5) natural gas processing plants; and (6) natural gas transmission compressor stations. This regulation establishes emission standards for active and idle equipment and components at these facilities (1-6 in the prior sentence). Compliance with the Scoping Plan Measure I-2 requirements would ensure that the proposed Project would not conflict with AB 32 or SB 32.

Consistent with the requirements of the SJVAPCD Permits, E&B is required to obtain an Authority to Construct Permit and Permits to Operate for any facility or equipment with the potential to emit air contaminants, as required pursuant to District Rule 2010. All emissions increases from permitted equipment shall comply with District Rule 2201 which requires no net increase in emissions above specified thresholds from new and modified Stationary Sources of all nonattainment pollutants and their precursors. E&Bs implementation of actions to comply with SJVAPCD Rule 2260 (Registration Requirements for Equipment Subject to California's Oil and Gas Regulation) would ensure compliance with California's Oil and Gas Regulation (Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities, 17 CCR § 95665 et seq.) and provides a registration mechanism that satisfies the requirements. Accordingly, the proposed Project would not conflict with the Scoping Plan update or any other plans, policies, or regulations for the purpose of reducing GHG emissions. Further, crude oil production and refining are included in the AB 32 Cap-and-Trade Program, which requires purchase of California Carbon Allowances to mitigate GHG emissions. E&B is currently obligated to comply with the AB 32 Cap-and-

Trade Program, which requires E&B to offset GHG emissions by providing California Climate Allowances.

The SJVAPCD has determined that GHG emissions covered under the Cap-and-Trade Program cannot constitute significant increases under CEQA, for two reasons: 1) the Cap-and-Trade Program is an approved GHG mitigation plan that meets the requirements set forth in the District's policy on stationary source GHG emission impacts (SJVAPCD 2014); 2) any increase in GHG emissions from the oil and gas production sector must be accounted for under the statewide GHG emissions cap in the Cap-and-Trade Program, and that cap decreases over time. As a result, ongoing participation in the Cap-and-Trade Program will fully mitigate any project increases for emissions included under the cap (SJVAPCD 2014). As such, GHG emissions associated with Project operations would be reduced to less than significant with coverage under the Cap-and-Trade Program and compliance with the SJVAPCD Rules applicable to the Project.

As part of the proposed Project, E&B will implement **MM GHG-1**, **MM GHG-2**, and **MM GHG-3** described below. With implementation of proposed mitigation measures MM GHG-1, MM GHG-2, and MM GHG-3, the proposed Project cumulative impact on GHG emissions would be **less than significant with mitigation**.

MM GHG-1 – E&B shall comply with the Cap-and-Trade regulation (17 CCR Sections 95801-96022) (e.g., by reducing GHG emissions within their facilities or by surrendering GHG allowances, offset credits, or other compliance instruments to offset the GHG increases), and other applicable GHG emission control and reduction regulations as these may be adopted or amended over time, to reduce, avoid, mitigate and/or sequester GHG emissions from Project-related air emissions. E&B shall implement Best Performance Standards applicable to GHG reduction for Components at all Thermally Enhanced Oil Recovery Wells (SJVAPCD 2010a), and Steam Generators (SJVAPCD 2010b).

MM GHG-2 – E&B shall implement methods to recover for reuse or destroy methane existing in associated gas and casinghead gas, as follows:

- Recover all associated gas produced from the reservoir via new wells, regardless of the well type, except for gas produced from delineation wells or as a result of start-up, shutdown and maintenance activities (whether planned or unplanned), system failures, and emergencies in accordance with SJVAPCD regulations as part of Rule 4401, as this may be amended over time.
- Comply with the CARB methane regulation (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Sections 95665-95677) adopted March 2017.

MM GHG-3 – For wells not on federal land, E&B shall offset all GHG emissions not covered by the Cap-and-Trade program or other mandatory GHG emission reduction measures through reductions of GHG emissions as verified by the SJVAPCD, through acquisition of offset credits from the California Air Pollution Control Officers Association Exchange Register, or other third party GHG reductions as verified by the SJVAPCD, or through inclusion in an Emission Reduction Agreement, to offset Project-related GHG emissions that are not included in the Cap-and-Trade program to assure that no net increase in GHG emissions.

b) **Less than Significant with Mitigation.** The proposed Project will implement **MM GHG-1, GHG-2, and GHG-3** as described above. Therefore, the proposed Project will be consistent with California's adopted California Climate Change Scoping Plan, CARB's GHG Cap-and-Trade Program, SJVACPD's Best Performance Standards for GHG reduction, and other applicable adopted standards and regulations. Therefore, the proposed Project's impacts on GHG plans, policies, and regulations in California would be ***less than significant with mitigation.***

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4.9 Hazards and Hazardous Materials

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.9.1 Environmental Assessment

a, b) **Less than Significant with Mitigation.** The Project does not involve the use or transport of significant amounts of hazardous materials. However, vehicles and equipment used for Project construction would contain or require the short-term use of small amounts of potentially hazardous materials including, but not limited

to, fuels, lubricating oils, solvents, antifreeze, hydraulic fluid, and compressed gasses. Portable generators (less than 50 horsepower) often are used so diesel tanks could be used. Other specialized chemicals that are potentially hazardous substances could also be used include acids, bases, demulsifiers, and bactericides. These and other products may be stored at the well pad to support the drilling process.

The potential exists for an accidental release of hazardous materials during well pad preparation and development, drilling, and well completion. Improper management or maintenance of hazardous materials containers, handling of hazardous materials (transfer between containers and equipment), storage, or disposal could result in leaks or larger releases which result in the contamination of soil. Construction activities also have the potential to result in exposure to these hazardous materials by workers, or by the public, if access to the construction site is not adequately controlled or if the materials are not properly handled and contained.

All Project wastes would be disposed of in on-site sumps that would be constructed and operated in accordance with SWRCB Order 2003-0003-DWQ on sump use and disposal of well bore cuttings. E&B would also have to comply with the Assembly Bill 1960 implementing regulations, which address Spill Contingency Plan requirements; oilfield sumps; production facilities containment, maintenance, and testing; pipeline construction and maintenance; and maintenance and monitoring of production facilities, safety equipment, and other equipment.

Adherence to regulations would limit the potential for exposure from routine use of hazardous materials during construction such that unhealthful levels of exposure by workers at a construction site, or to the public located outside of Project construction areas, would not be expected. Furthermore, adherence to these regulations would limit the potential for hazardous materials to be released to the environment due to routine use. While the routine use of hazardous materials related to Project construction would have a low likelihood of resulting in health or environmental consequences from exposure to a hazard by the public offsite or to construction workers onsite, E&B will implement **MM HAZ-1** and **MM HAZ-2** to further ensure safety of workers and the public. Therefore, any hazards to the public from routine use, transport or disposal of hazardous materials or their accidental release would be **less than significant with mitigation**.

MM HAZ-1 – E&B shall prepare a comprehensive Worker Environmental Awareness Program. The program shall include all training requirements identified as BMPs and mitigation measures and include annual training for all field personnel (including employees, agents, and contractors). The Worker Environmental Awareness Program shall include hazardous materials and hazardous waste management, and emergency preparedness, release

reporting, and response requirements. E&B shall maintain records of all training material and proof of employee training and shall make such records available to CalGEM upon request.

MM HAZ-2 – E&B shall maintain and implement a Spill Prevention Control and Countermeasure Plan, which includes the following practices:

- a. Construction activities shall be conducted to allow for easy clean-up of spills. Construction crews shall have sufficient tools, supplies, and absorbent and barrier materials to contain and recover spilled materials.
 - b. Fuels and lubricants shall be stored only at designated staging areas. Fuel and lubricant tanks shall have appropriate secondary spill containment (e.g., curbs).
 - c. Storage of fuel and lubricants in the staging area shall be at least 100 feet away from the edge of water bodies. Refueling and lubrication of equipment shall be restricted to upland areas at least 100 feet away from stream channels and wetlands.
 - d. Fuel truck shall carry an oil spill response kit and spill response equipment at all times.
 - e. E&B shall be required to perform all routine equipment maintenance at the well pad, and promptly collect and lawfully dispose of wastes at an authorized recycling, treatment or disposal facility.
 - f. Berms and/or dikes (secondary containment) shall be constructed around the permanent above-ground bulk tanks and the foundations shall be installed with a passive leak detection system, so that potential spill materials shall be contained and collected in specified areas isolated from any water bodies. Tanks shall not be placed in areas subject to periodic flooding or washout.
 - g. A sufficient supply of sorbent and barrier materials shall be maintained on construction sites, and sorbent and barrier materials shall also be utilized to contain runoff from contaminated areas.
- c) **No Impact.** There are no existing or proposed schools within one-quarter mile of the Project area. Therefore, there would be **no impact** related to hazardous materials in the vicinity of a school.
- d) **No Impact.** The Project area is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and therefore would have **no impact** on the public or environment (DTSC 2020, SWRCB 2020).
- e) **No Impact.** The Project area is not located within an airport land use plan. The nearest active airport is the Minter Airfield District, located over five miles west of the Project area. Therefore, the proposed Project would have **no impact**

regarding safety hazards or excessive noise for people residing or working near an airport.

f) **No Impact.** The Project area is not located in an area with an adopted emergency response plan or emergency evacuation plan. Therefore, there would be **no impact** to emergency response or evacuation procedures in an adopted plan.

g) **Less than Significant.** The fire hazard severity of the federal lands of the Project area are not mapped by the California Department of Forestry and Fire Protection, but the surrounding areas are mapped as moderate (CAL FIRE 2019). In the event of a wildfire, the proposed drill pad and wells could be damaged. However, installation of the proposed wells would not increase the risk for wildfire or involve the construction of any structures that would expose people to a wildfire. Therefore, impacts would be **less than significant**.

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4.10 Hydrology and Water Quality

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) result in a substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.10.1 Environmental Assessment

a) **Less than Significant with Mitigation.** As described in Section 2, E&B has applied for and received coverage under the SWRCB Order 2003-0003-DWQ for sump use and burying well bore cuttings. Construction activities could result in potential effects to the water quality of stormwater runoff through erosion and uncontained leaks or spills of hazardous materials. The Clean Water Act also

established the National Pollutant Discharge Elimination System (NPDES) permit program, regulating point source discharges of pollutants into waters of the United States. Section 402 of the Clean Water Act provides that storm water discharges associated with industrial activity and construction must be authorized under a NPDES permit. Clearing, grading, and excavation projects that disturb more than one acre are required to obtain a NPDES storm water discharge permit under EPA regulations, though certain regulations such as 40 C.F.R. §122.26 (a)(2), (e)(8), and (c)(1)(iii) codify exemptions for oil and gas operations. However, in California, oil and gas operations may be required to obtain a storm water discharge permit (Construction General Permit Order 2009-0009-DWQ, as amended by 2010-00014-DWQ and 2012-0006-DWQ) under the authority of the Clean Water Act and the Code of Federal Regulations, and E&B would obtain coverage under the Construction General Permit in advance of construction activity, if required. Construction activities could result in potential effects to the water quality of stormwater runoff through erosion and uncontained leaks or spills of hazardous materials. E&B would implement **MM HYDRO-1**, **MM HYDRO-2**, and **MM HAZ-2** resulting in ***less than significant impacts with mitigation*** to surface and groundwater quality.

MM HYDRO-1 – E&B shall ensure that discharges of stormwater runoff from well pad construction are not contaminated by, or encounter, any overburden, raw material, intermediate products, finished product, byproduct or waste products; are only contaminated by or only encounter sediment; and pursuant to 40 C.F.R. §122.26(c)(1)(iii) that do not contribute to a violation of a water quality standard.

MM HYDRO-2 – E&B shall implement BMPs during construction and operation of the subject well pads and wells. All selected practices shall be shown on a drainage implementation plan and self-certified as complete and feasible by a licensed professional qualified in drainage and flood control issues. The following BMPs shall be implemented and shown on the drainage plan:

- Utilizing established facilities design, and construction or similar standards as applicable appropriate (e.g., ASTM, API).
- Implementing good housekeeping and maintenance practices:
- Preventing trash, waste materials and equipment from construction storm water;
- Maintaining wellheads, compressors, tanks and pipelines in good condition without leaks or spills;
- Designing and maintaining graded pads to not actively erode and discharge sediment; and
- Maintaining vehicles in good working order.
- Implementing spill prevention and response measures:

- Utilizing preventative operating practices such as tank level monitoring, safe chemical handling and conducting regular inspections;
- Developing and maintaining a spill response plan;
- Conducting spill response training for employees and have a process to ensure contractors have the necessary training;
- Maintaining spill response equipment on site;
- Implementing material storage and management practices;
- Preventing unauthorized access;
- Utilizing “run-on” and “run-off” control berms and swales; and
- Stabilizing exposed slopes through vegetation and other standard slope stability methods.

b) **Less than Significant.** The Project area is in the DWR-designated groundwater Kern County Subbasin. Groundwater sustainability in the subbasin is overseen by the Kern Groundwater Authority, which has adopted the Kern Groundwater Authority Groundwater Sustainability Plan and Cawelo Groundwater Sustainability Agency Management Area Plan. The Cawelo Groundwater Sustainability Agency Management Area Plan is incorporated into the Kern County Authority Groundwater “umbrella” sustainability plan. The Poso Creek Oil Field is entirely within the boundary of the Cawelo Groundwater Sustainability Agency Management Area Plan. Neither, the Cawelo Groundwater Sustainability Agency Management Area Plan, nor the “umbrella” Kern Groundwater Authority Groundwater Sustainability Plan identify oil and gas operations as a significant factor affecting the achievement of any of the Sustainable Groundwater Management Act objectives in the subbasin. The water for the well drilling would be supplied by a fresh water source well owned by E&B. This groundwater is subject to water rights owned by E&B, and total water use over the drilling period would be 161,200 barrels. As wells would be drilled one at a time and the water volumes would be in accordance with the Cawelo Groundwater Sustainability Agency Management Area Plan, the proposed Project would have **less than significant impacts** regarding groundwater management of the basin and groundwater supplies.

c) **Less than Significant with Mitigation.** The proposed drill pads would be earthen in nature but graded prior to drilling. Therefore, the proposed Project would not impede infiltration of stormwater through the addition of impervious surfaces. The proposed Project does not involve the alteration of any natural drainages or streams. However, construction activity could result in potential effects to the water quality of stormwater runoff. E&B would implement **MM HYDRO-1** and **MM HYDRO-2**. Therefore, the proposed Project would result in **less than significant impacts with mitigation** regarding increases in erosion, siltation,

or the rate or amount of surface run-off or the capacity of existing or planned stormwater drainage systems.

d) **No Impact.** The Project area is not located in a flood hazard, tsunami, or seiche zone. Therefore, there would be **no impact** from the risk of pollutant release due to Project inundation.

e) **No Impact.** As described in response to b) above, water for the proposed Project would be obtained from a water source well owned by E&B and would not conflict with the Kern Groundwater Authority Groundwater Sustainability Plan and Cawelo Groundwater Sustainability Agency Management Area Plan. Therefore, the proposed Project would not conflict with any sustainable groundwater management plans or water quality control plans, and there would be **no impact**.

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4.11 Land Use and Planning

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.11.1 Environmental Assessment

a) **No Impact.** The proposed Project would be constructed and operated in an existing oil field and would not divide an established community. Therefore, **no impacts** to an established community would occur.

b) **No Impact.** The proposed Project would not conflict with any local, regional, or federal land use plan. As determined by BLM, the portion of the proposed Project on federal lands would be constructed and operated in conformance with the Bakersfield Resource Management Plan approved on December 22, 2014. The four wells on private lands would be drilled in an unincorporated area of Kern County zoned as a Natural Resources district under the March 2020 Kern County Zoning Ordinance. The purpose of the Natural Resource District is to designate lands that contain productive or potentially productive petroleum, mineral, or timber resources and to prevent the encroachment of incompatible uses onto such lands. Uses in the Natural Resource District are limited to resource exploration, production, and transportation, and to compatible activities (Kern County 2020b). The proposed Project would also conform with the Kern County General Plan, *Section 5.3.6, Environmental Impacts of Petroleum*, by identifying and mitigating impacts of petroleum development, as described in this IS/MND. Therefore, there would be **no impacts** related to any land use plans, policies, or regulations.

4.12 Mineral Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.12.1 Environmental Assessment

a), b) **Less than Significant.** The proposed Project would result in the production of a known mineral resource (e.g., petroleum) that is of value to the region and the residents of the State. Therefore, the proposed Project would result have a **less than significant impact** related to mineral resources.

4.13 Noise

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.13.1 Environmental Assessment

a) **Less than Significant.** Short-term construction noise impacts could result from land clearing and grading for well pads and work areas; construction and maintenance of access roads; construction of accessory facilities (including pipelines, electrical transmission lines, drilling sumps); transporting the drilling rig, associated equipment, workers, and materials to the well pad site; well drilling; and construction equipment operations. Due to the complexity of drilling and the hazards associated with leaving a well unattended during the drilling process, drilling operations are typically conducted 24 hours a day. Depending on the depth of the formation, some wells may take less than 24 hours to drill, while some wells in deeper formations may take up to 60 days to drill. E&B anticipates that well drilling will take five days per well. Construction noise is usually made up of intermittent peaks and continuous lower levels of noise from equipment cycling through use. As shown in Figure 4, there are no sensitive receptors within 4,000 feet of the Midway Premier lease wells. There are residences/ranches to the east and south of the Project area in areas zoned agricultural, but these residences are also greater than 4,000 feet away from the Project area. Potential noise impacts were conservatively modeled using a 4,000-foot distance; assuming ambient daytime noise levels of 50 A-weighted

decibels (dBA) (7:00 a.m. to 10:00 p.m.) and nighttime noise of 40 dBA (10:00 p.m. to 7:00 a.m.) corresponding to a Day-Night Average Sound Level (Ldn) of 50 dBA (i.e., equivalent sound level for a 24-hour period with an additional 10 dBA imposed on the equivalent sound levels for night time hours of 10:00 p.m. to 7 :00 a.m.); the Federal Transit Authority's construction noise methodology (FTA 2006); and assuming one well is drilled at a time. The potential noise at the nearest sensitive receptors resulting from the proposed Project is summarized in Table 4.13-1.

A study of noise associated with oil and gas operations found that the noise levels generated from production well sites averaged at around 47 dBA at 350 feet from the source (Radtke 2016). The Kern County General Plan applies an exterior noise level standard of 65 dBA Ldn for noise levels in outdoor activity areas of residential and other noise sensitive uses (Kern County 2004). In addition, when a Project activity is proposed in an area with an ambient noise level under 65 dB, Kern County considers the noise impact of that activity to be significant if it will increase the ambient noise by more than 5 dBA. The adopted standard allows the property owner the use and enjoyment of their outdoor areas, such as the backyard of a single-family house or conducting church services. The adopted standard also works in tandem with the County's adopted limit for interior noise of 45 dBA Ldn. When sound is limited to 65 dBA Ldn at the exterior of a structure, the interior noise levels are typically limited to 45 dBA Ldn. Although construction methods and materials vary based upon location and period of construction, typical construction complying with building code standards can be expected to provide an outdoor-to-indoor noise level reduction of at least 20 dBA. This is the lower end of the national average of outdoor-to-indoor noise reduction. Demonstration of Project compliance with the exterior noise level criterion would therefore ensure Project compliance with the interior noise level criterion of 45 dBA Ldn. These thresholds apply only to activities on unincorporated areas of the County outside of federal lands. The Project's noise impacts as they relate to the four wells proposed on Midway Premier lease areas must therefore be evaluated against an absolute 65 dBA Ldn standard.

As discussed above, baseline ambient noise levels were assumed to be 50 dBA Ldn. As shown in Table 4.13-1, the noisiest phase of Project construction would occur during well drilling operations which would result in noise levels at the nearest sensitive receptor of approximately 52.1 dBA Ldn, representing an increase of approximately 2.1 dBA over assumed ambient noise levels of 50 dBA. Thus, the proposed Project would not increase noise levels by more than 5 dBA and the proposed Project would comply with the Kern County General Plan noise level standard at the location of the nearest sensitive receptor. Further, although the proposed activities on federal lands in Grimes West and East lease areas are not subject to the Kern County Noise Ordinance, as shown in the

table, construction activities at these well sites would also be below the 65 dBA threshold. Therefore, impacts would be ***less than significant***.

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Table 4.13-1 Calculated Noise Levels at Surrounding Sensitive Receptors

Project Activity	Equipment	Number	Daytime Operating Hours	Night time Operating Hours	Typical Equip. L _{max} (dBA) at 50 feet from Source ¹	Leq (dBA)	Ldn (dBA)
Site Preparation and Grading	Scraper – Cat 637E	2	8	0	87	36.7	
	Dozer – D8	2	8	0	85	34.7	
	Motor Grader – Cat 140K	1	5	0	83	30.7	
	Water Truck, 2500 Gal	1	5	0	76	23.7	
	Pickup Trucks, Ford F-150	2	5	0	75	22.7	
Noise At 4,000 Feet						42.3	46.8
Well Drilling Operations	Rig 21 Primary	1	12	10	84	35.5	
	Rig EQ700 Generator	1	12	11	82	33.5	
	Rig EQ 713 Sub-Base	1	12	8	84	35.5	
	Rig EQ 708 Mud Pump	1	12	10	69	20.5	
	Rig EQ 708 Mud Pump	1	12	10	69	20.5	
	Trucks Mob/demob	3	3	0	84	29.5	
	Vacuum Trucks	2	3	0	85	30.5	

Project Activity	Equipment	Number	Daytime Operating Hours	Night time Operating Hours	Typical Equip. L _{max} (dBA) at 50 feet from Source ¹	Leq (dBA)	Ldn (dBA)
	Truck (Casing)	1	0.5	0	84	21.7	
	Vacuum Trucks	2	3	0	85	30.5	
	Bulk Trucks	2	3	0	84	29.5	
	Cement Truck	1	3	0	85	30.5	
	Crane (casing)	1	1.5	0	81	23.4	
	Truck Straight (casing)	1	1.5	0	84	26.4	
	Truck (wire line)	1	6	0	84	32.5	
	Vacuum Trucks (cement)	2	4	0	85	31.7	
	Bulk Trucks (cement)	2	4	0	84	30.7	
	Cement Truck (cement)	1	4	0	81	27.7	
	Cement pump trailer (cement)	2	4	0	85	31.7	
	Vacuum Trucks	2	8	0	85	34.7	
Noise at 4,000 Feet						45.7	52.1

Notes: Leq – The level of continuous sound with equal energy, L_{max} – the maximum value of sound over the time period, L_{dn} – the average noise level over a 24-hour period

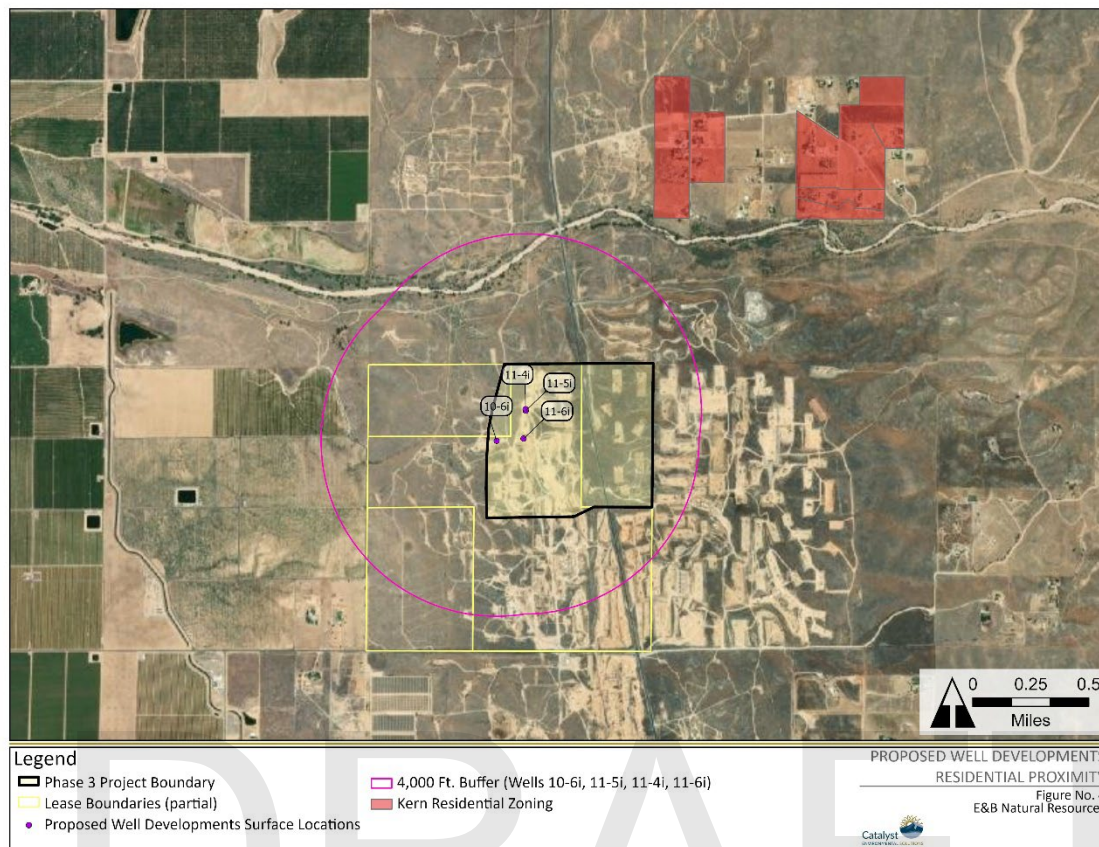


Figure 4. Sensitive Receptors in Proximity to Project Area

b) **Less than Significant.** Construction would result in temporary ground vibration. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Construction activities most likely to cause vibration include heavy construction equipment and drilling. The nearest sensitive receptors are located over a mile away from the Midway Premier wells; thus, receptors would not perceive vibration or groundborne noise during construction. Operation of the proposed Project would not result in vibrations perceptible to nearby receptors. As such, impacts would be **less than significant**.

c) **No Impact.** The Project area is not located within an airport land use plan nor is it within two miles of a public airport or public use airport. As such, **no impact** would occur to people residing or working in the Project area related to excessive noise levels.

4.14 Population and Housing

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.14.1 Environmental Assessment

a) **No Impact.** Site preparation and construction activities would involve the employment of approximately 15 workers over a period of about 24 months. All workers are expected to come from the Kern County area. Once the construction is complete no new workers would be required. Therefore, the proposed Project would have **no impact** on population growth.

b) **No Impact.** The proposed Project would occur entirely within the existing Poso Creek Oil Field and, therefore, would not result in the displacement of any residences or people. As such, the proposed Project would have **no impact** on housing or resident displacement.

4.15 Public Services

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES. 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 other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.15.1 Environmental Assessment

a) **No Impact.** The proposed Project would occur at the existing Poso Creek Oil Field, only incrementally increasing the amount of equipment and infrastructure at the site. The incremental increase in equipment would not require new or expanded fire protection or other safety efforts. The number of vehicles at the site would increase by approximately 15 during construction of the proposed Project, and during Project operation the number of vehicles would return to baseline levels. No new permanent employees would be necessary for Project implementation, so the proposed Project would not induce population growth in the area. The proposed Project would not put an increased burden on off-site public services, including existing fire, police, school, and other governmental services. Therefore, **no impact** to public services would occur.

4.16 Recreation

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. RECREATION. Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.16.1 Environmental Assessment

a), b) **No Impact.** The proposed Project would not result in any new permanent employees, and hence use of existing neighborhood and regional parks or recreational facilities would not increase because of Project implementation. Further, the proposed Project would be located within the existing oil field and would be similar in nature to the existing conditions at the oil field; thus, the proposed Project would have no effect on existing nearby parks or other recreational facilities. Therefore, there would be **no impact** to recreational facilities.

4.17 Transportation

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION. Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.17.1 Environmental Assessment

a) **No Impact.** The proposed Project would not involve any transportation improvements or programs that would conflict with adopted policies, plans, or programs supporting alternative transportation. As such **no impact** would occur.

b) **Less than Significant.** During Project construction 15 workers would travel to the Project area, all from nearby areas in Kern County. Project equipment would remain onsite during construction. During operations, the proposed Project would be staffed by current oilfield personnel. Therefore, the proposed Project would not cause a significant increase in vehicle miles traveled and impacts would be **less than significant**.

c) **No Impact.** The proposed Project would not result in any changes to any roads, intersections, streets, highways, nor would it provide any incompatible uses to the street and highway system. All vehicles that would be used for travel to and from the Project area would be licensed and comply with all appropriate transportation laws and regulations including obtaining and adhering to provisions of any required permits for oversized loads. As such, **no impact** related to transportation design hazards would occur.

d) **No Impact.** The proposed Project would occur within an existing developed oil field and would not result in any changes in ingress or egress to the site. Therefore, the proposed Project would have **no impact** on emergency access.

4.18 Tribal Cultural Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES.				
<p>a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <p>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</p> <p>ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.18.1 Environmental Assessment

a) **Less than Significant with Mitigation.** There are no known tribal cultural resources listed or eligible for California Register of Historical Resources or local register listing in the Project area. As part of the NEPA review for the proposed Project, the BLM conducted tribal notification and coordination, and no places of cultural importance to Native American tribes were identified within the Project area. In accordance with Assembly Bill 52, CalGEM obtained a list of tribes that could be affected from the Native American Heritage Commission and sent letters notifying the tribes of the proposed Project on October 30, 2020. The letters indicated that a response was required within 30 days of receipt of the letter to request formal consultation. CalGEM did not receive any requests for consultation from any of the contacted tribes during the 30-day period or after the 30 days ended. Therefore, it is not expected that tribal cultural resources would be encountered during Project construction or operations. In the unlikely event of an accidental tribal cultural resource discovery, E&B would

implement the procedures described in Section 2.5.2 and **MM CUL-2** and **MM CUL-3**. Therefore, impacts to tribal cultural resources would be ***less than significant with mitigation***.

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4.19 Utilities and Service Systems

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS. 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 could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.19.1 Environmental Assessment

a) **No Impact.** The proposed Project would not require construction of or relocate new water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunication facilities. Therefore, there would be **no impact**.

b) **Less than Significant.** Approximately 2,600 barrels of water would be required to drill each well, for a total of 171,200 barrels for the entire proposed Project. Operation of the wells would not require any water, although water would be used for dust control as part of normal oil field operations. The water necessary for the proposed Project would be sourced from a water well owned by E&B and located in the Section 5 lease area of the Poso Creek Oil Field. Therefore,

the proposed Project would have sufficient water supplies during normal, dry, and multiple dry years, and **less than significant impacts** to water supply.

c) **No Impact.** Because no new employees would be required for Project operation and the proposed Project does not involve any additional discharge of water to sewer or stormwater systems, the proposed Project would not require the construction of new or expanded water or wastewater treatment facilities nor need any wastewater treatment determination by the provider that serves the Project area. Employees that would be onsite during construction would use existing facilities and portable toilets that are regularly serviced in accordance with all applicable regulatory requirements. Moreover, produced water associated with the UIC Project is reinjected back into the producing formations on the oil field and therefore would not cause an exceedance of any applicable water board requirements pertaining to produced water discharges. As such, **no impact** related to wastewater treatment would occur.

d), e) **Less than Significant.** Some volumes of waste would be generated during the construction activity associated with drilling of wells. The waste material would be trucked offsite for disposal in an approved landfill. Sufficient landfill capacity exists to handle the one-time disposal of the minimal amount of this material. No soil would be removed from the site and disposed of as a result of the construction proposed Project, and operation of the wells would not generate any solid wastes. Therefore, any increase in solid municipal waste would be considered **less than significant** because: 1) it is a one-time increase, 2) it would not exceed the capacity of the servicing landfill, and 3) it would comply with all local, state, and federal regulations related to solid waste.

4.20 Wildfire

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.20.1 Environmental Assessment

a) **No Impact.** The Project area is not located in an area with an adopted emergency response plan or emergency evacuation plan. Therefore, there would be **no impact** to emergency response or evacuation procedures in adopted plans.

b) **No Impact.** The fire hazard severity of the federal lands of the Project area are not mapped by the California Department of Forestry and Fire Protection, but the surrounding areas are mapped as moderate (CAL FIRE 2019). The proposed Project does not involve the building of any occupied structures. Therefore, the proposed Project would have **no impact** with regard to exposing Project occupants to any pollutant concentrations due to a wildfire.

c) **Less than Significant.** The wells, piping, and power poles would be installed on an active oil field and all new proposed well pads, piping, and power poles placed on federal lands would be installed in accordance with BLM resource management plan requirements. The wells proposed, power poles, and piping in the Midway Premier lease would be drilled on an existing well pad, and

construction activities would not require vegetation removal. Therefore, the proposed Project would not exacerbate the risk for wildfire and impacts would be **less than significant**.

d) The Project area does not lie within a flood or landslide zone and would not significantly alter the existing slopes, runoff patterns, or drainage of the area. Therefore, there would be **no impact**.

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4.21 Mandatory Findings of Significance

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE.				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.21.1 Environmental Assessment

a) **Less than Significant with Mitigation.** As described in Section 4.4, Biological Resources, the Project area does not contain designated critical habitat for any federal threatened or endangered species, although special status species have been recorded in the quadrangle of the Project area. There are no riparian areas, wetlands, trees, or migratory wildlife corridors within the Project area, and there are no adopted Habitat Conservation Plans or Natural Community Conservation Plans for the Project area. CalGEM has determined that potential impacts of the Project to special status species would be less than significant with the incorporation of mitigation measures (MM BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, and BIO-7) and that there would be no impact to riparian areas, wetlands, trees, wildlife corridors or compliance with adopted Habitat Conservation Plans or Natural Community Conservation Plans. Therefore, the proposed Project would not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels,

threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. Further, as described in Section 4.5, cultural resource surveys conducted within the portion of the Project area that occurs on federal land identified three archaeological sites consisting of historic period oil field remains within the area of potential effect for the proposed Project. These were evaluated for significance according to National Register of Historic Places criteria and determined ineligible for inclusion (BLM 2020). No new surface disturbance would occur within the Midway Premier lease area because the four wells would be drilled on an existing drill pad. Therefore, the proposed Project would have **no impact** on historical resources, and any potential impacts to unknown resources would be reduced to less than significant with the implementation of mitigation measures (MM CUL-1, CUL-2, and CUL-3). Therefore, the proposed Project would not eliminate important examples of major periods of California's history or pre-history. Impacts are considered **less than significant with mitigation**.

b) **Less than Significant with Mitigation.** The proposed Project would result in air emissions and GHG emissions that could be considerable when considered with all other cumulative emission sources in the San Joaquin Valley. However, as described in Section 4.3, Air Quality, CalGEM has determined that impacts of the proposed Project on the applicable air quality plan and on cumulatively considerable pollutant increases would be less than significant with implementation of the mitigation measures (MM AIR-1, AIR-2). Regarding GHG emissions, the proposed Project's contribution to total emissions from the oil and gas sector would be 0.0001 percent, and the Project would be in compliance with applicable state and local GHG regulations (as described in Section 4.8). Further, the implementation of mitigation measures (MM GHG-1, GHG-2, and GHG-3) would mitigate any potential contributions to cumulative impacts. Therefore, impacts would be **less than significant with mitigation**.

c) **Less than Significant.** The proposed Project is located on an active oil field and is not within 4,000 feet of any sensitive receptors. Project activities are consistent with the operation of an active oil field and would not directly or indirectly cause substantial adverse impacts to human beings. Impacts would be **less than significant**.

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Appendix A Air Emissions Model

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E&B East Grimes Ancillary Equipment Installation - San Joaquin Valley Unified APCD Air District, Annual

E&B East Grimes Ancillary Equipment Installation
San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	2.40	104,660.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2023
Utility Company	Modesto Irrigation District				
CO2 Intensity (lb/MW hr)	833.46	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

E&B East Grimes Ancillary Equipment Installation - San Joaquin Valley Unified APCD Air District, Annual

Project Characteristics - East Grimes Ancillary Facilities: Installation of piping and power lines/electrical

Land Use - Pipeline corridor is 10-feet wide with total length of 10,466 feet = total area of 104,660 ft² = 2.4 acres

Construction Phase - Pipe installation, installation of pumping units and electrical will overlap. No paving or architectural coating

Off-road Equipment - No architectural coating

Off-road Equipment - No additional construction

Off-road Equipment - Installation of electrical equipment provided by E&B 1/22/2021

Off-road Equipment - Installation of pumping units equipment provided by E&B 1/22/2021

Off-road Equipment - No paving

Off-road Equipment - Phase 1 of Pipe Installation is primarily setting pipe with minimal welding

Off-road Equipment - Installation of pumping units - total of 31 operational hours for truck and crane

Off-road Equipment - Phase 2 of Pipe Installation will involve max welding operations

Trips and VMT - Assume 1 truck trip per day for delivery of pipe, 1 truck trip per day for delivery of cement, and 1 truck trip per day for delivery of pumping units.

Architectural Coating - No architectural coating

Energy Use -

Construction Off-road Equipment Mitigation - Mitigation requires Tier 3 and Tier 4 equipment

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tblConstEquipMitigation	Tier	No Change	Tier 3
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tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripNumber	17.00	2.00
tblTripsAndVMT	VendorTripNumber	17.00	1.00
tblTripsAndVMT	VendorTripNumber	17.00	1.00
tblTripsAndVMT	VendorTripNumber	17.00	0.00
tblTripsAndVMT	WorkerTripNumber	44.00	14.00
tblTripsAndVMT	WorkerTripNumber	44.00	2.00
tblTripsAndVMT	WorkerTripNumber	44.00	4.00
tblTripsAndVMT	WorkerTripNumber	44.00	0.00
tblTripsAndVMT	WorkerTripNumber	9.00	0.00

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2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1286	0.9230	0.8984	2.6000e-003	0.0239	0.0357	0.0596	6.4200e-003	0.0339	0.0403	0.0000	224.4459	224.4459	0.0548	0.0000	225.8148
2023	0.1280	0.8812	1.0004	2.3600e-003	0.0334	0.0338	0.0672	9.0000e-003	0.0326	0.0416	0.0000	200.0267	200.0267	0.0348	0.0000	200.8975
Maximum	0.1286	0.9230	1.0004	2.6000e-003	0.0334	0.0357	0.0672	9.0000e-003	0.0339	0.0416	0.0000	224.4459	224.4459	0.0548	0.0000	225.8148

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0848	1.0282	1.1825	2.6000e-003	0.0239	0.0361	0.0599	6.4200e-003	0.0354	0.0418	0.0000	224.4456	224.4456	0.0548	0.0000	225.8145
2023	0.0796	0.8681	1.1106	2.3600e-003	0.0334	0.0277	0.0611	9.0000e-003	0.0272	0.0362	0.0000	200.0265	200.0265	0.0348	0.0000	200.8973
Maximum	0.0848	1.0282	1.1825	2.6000e-003	0.0334	0.0361	0.0611	9.0000e-003	0.0354	0.0418	0.0000	224.4456	224.4456	0.0548	0.0000	225.8145

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	35.95	-5.11	-20.76	0.00	0.00	8.25	4.53	0.00	5.78	4.68	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	0.1347	0.1491
2	4-1-2022	6-30-2022	0.1521	0.1976
3	7-1-2022	9-30-2022	0.1537	0.1998
4	10-1-2022	12-31-2022	0.6182	0.5722
5	1-1-2023	3-31-2023	0.6308	0.5924
6	4-1-2023	6-30-2023	0.3779	0.3549
		Highest	0.6308	0.5924

2.2 Overall Operational
Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4815	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0118	0.1071	0.0899	6.4000e-004		8.1400e-003	8.1400e-003		8.1400e-003	8.1400e-003	0.0000	465.5395	465.5395	0.0144	4.6500e-003	467.2844
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.4933	0.1071	0.0899	6.4000e-004	0.0000	8.1400e-003	8.1400e-003	0.0000	8.1400e-003	8.1400e-003	0.0000	465.5395	465.5395	0.0144	4.6500e-003	467.2844

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4815	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0118	0.1071	0.0899	6.4000e-004		8.1400e-003	8.1400e-003		8.1400e-003	8.1400e-003	0.0000	465.5395	465.5395	0.0144	4.6500e-003	467.2844
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.4933	0.1071	0.0899	6.4000e-004	0.0000	8.1400e-003	8.1400e-003	0.0000	8.1400e-003	8.1400e-003	0.0000	465.5395	465.5395	0.0144	4.6500e-003	467.2844

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Piping Installation - Phase 1	Building Construction	1/1/2022	1/14/2022	5	10	
2	Installation of Pumping Units	Building Construction	1/15/2022	2/22/2022	5	27	
3	Electrical	Building Construction	2/23/2022	10/14/2022	5	168	
4	Piping Installation - Phase 2	Building Construction	10/15/2022	5/24/2023	5	158	
5	Building Construction - null	Building Construction	5/25/2023	5/24/2023	5	0	
6	Paving - null	Paving	5/25/2023	5/24/2023	5	0	
7	Architectural Coating - null	Architectural Coating	5/25/2023	5/24/2023	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Piping Installation - Phase 1	Concrete/Industrial Saws	0	0.00	81	0.73
Piping Installation - Phase 1	Cranes	1	2.00	231	0.29
Piping Installation - Phase 1	Forklifts	2	2.00	89	0.20
Piping Installation - Phase 1	Generator Sets	0	0.00	84	0.74
Piping Installation - Phase 1	Off-Highway Trucks	2	2.00	402	0.38
Piping Installation - Phase 1	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation - Phase 1	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation - Phase 1	Rubber Tired Dozers	0	0.00	247	0.40
Piping Installation - Phase 1	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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Piping Installation - Phase 1	Welders	2	6.00	46	0.45
Installation of Pumping Units	Cranes	1	1.00	231	0.29
Installation of Pumping Units	Forklifts	0	0.00	89	0.20
Installation of Pumping Units	Generator Sets	0	0.00	84	0.74
Installation of Pumping Units	Graders	0	0.00	187	0.41
Installation of Pumping Units	Off-Highway Trucks	1	1.00	402	0.38
Installation of Pumping Units	Scrapers	0	0.00	367	0.48
Installation of Pumping Units	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Installation of Pumping Units	Welders	0	0.00	46	0.45
Electrical	Cranes	0	0.00	231	0.29
Electrical	Forklifts	0	0.00	89	0.20
Electrical	Generator Sets	0	0.00	84	0.74
Electrical	Graders	0	0.00	187	0.41
Electrical	Off-Highway Trucks	2	1.00	402	0.38
Electrical	Off-Highway Trucks	2	3.00	402	0.38
Electrical	Rubber Tired Dozers	0	0.00	247	0.40
Electrical	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Electrical	Welders	0	0.00	46	0.45
Building Construction - null	Cranes	0	0.00	231	0.29
Building Construction - null	Forklifts	0	0.00	89	0.20
Building Construction - null	Generator Sets	0	0.00	84	0.74
Building Construction - null	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction - null	Welders	0	0.00	46	0.45
Paving - null	Cement and Mortar Mixers	0	0.00	9	0.56
Paving - null	Pavers	0	0.00	130	0.42
Paving - null	Paving Equipment	0	0.00	132	0.36
Paving - null	Rollers	0	0.00	80	0.38

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Paving - null	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating - null	Air Compressors	0	0.00	78	0.48
Piping Installation - Phase 2	Cranes	1	2.00	231	0.29
Piping Installation - Phase 2	Forklifts	2	2.00	89	0.20
Piping Installation - Phase 2	Off-Highway Trucks	2	2.00	402	0.38
Piping Installation - Phase 2	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation - Phase 2	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation - Phase 2	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Piping Installation - Phase 2	Welders	6	6.00	46	0.45
Piping Installation - Phase 2	Generator Sets	1	8.00	84	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Piping Installation - Phase 1	10	14.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Installation of Pumping Units	2	2.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Electrical	4	4.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - null	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving - null	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - null	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Piping Installation - Phase 2	15	44.00	17.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

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3.2 Piping Installation - Phase 1 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2900e-003	0.0473	0.0460	1.1000e-004		2.0500e-003	2.0500e-003		1.9300e-003	1.9300e-003	0.0000	9.5489	9.5489	2.8000e-003	0.0000	9.6189
Total	6.2900e-003	0.0473	0.0460	1.1000e-004		2.0500e-003	2.0500e-003		1.9300e-003	1.9300e-003	0.0000	9.5489	9.5489	2.8000e-003	0.0000	9.6189

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0100e-003	1.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2457	0.2457	2.0000e-005	0.0000	0.2462
Worker	3.5000e-004	2.4000e-004	2.4500e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7201	0.7201	2.0000e-005	0.0000	0.7205
Total	3.8000e-004	1.2500e-003	2.6300e-003	1.0000e-005	9.3000e-004	1.0000e-005	9.4000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.9658	0.9658	4.0000e-005	0.0000	0.9667

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3.2 Piping Installation - Phase 1 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6800e-003	0.0482	0.0583	1.1000e-004		1.8800e-003	1.8800e-003		1.8300e-003	1.8300e-003	0.0000	9.5489	9.5489	2.8000e-003	0.0000	9.6189
Total	3.6800e-003	0.0482	0.0583	1.1000e-004		1.8800e-003	1.8800e-003		1.8300e-003	1.8300e-003	0.0000	9.5489	9.5489	2.8000e-003	0.0000	9.6189

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0100e-003	1.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2457	0.2457	2.0000e-005	0.0000	0.2462
Worker	3.5000e-004	2.4000e-004	2.4500e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7201	0.7201	2.0000e-005	0.0000	0.7205
Total	3.8000e-004	1.2500e-003	2.6300e-003	1.0000e-005	9.3000e-004	1.0000e-005	9.4000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.9658	0.9658	4.0000e-005	0.0000	0.9667

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3.3 Installation of Pumping Units - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5200e-003	0.0138	8.8600e-003	3.0000e-005		5.4000e-004	5.4000e-004		5.0000e-004	5.0000e-004	0.0000	2.8135	2.8135	9.1000e-004	0.0000	2.8362
Total	1.5200e-003	0.0138	8.8600e-003	3.0000e-005		5.4000e-004	5.4000e-004		5.0000e-004	5.0000e-004	0.0000	2.8135	2.8135	9.1000e-004	0.0000	2.8362

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.3600e-003	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.3317	0.3317	3.0000e-005	0.0000	0.3324
Worker	1.4000e-004	9.0000e-005	9.5000e-004	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2778	0.2778	1.0000e-005	0.0000	0.2779
Total	1.8000e-004	1.4500e-003	1.1900e-003	0.0000	4.2000e-004	0.0000	4.2000e-004	1.1000e-004	0.0000	1.2000e-004	0.0000	0.6095	0.6095	4.0000e-005	0.0000	0.6103

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3.3 Installation of Pumping Units - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5000e-004	0.0121	0.0139	3.0000e-005		4.6000e-004	4.6000e-004		4.5000e-004	4.5000e-004	0.0000	2.8135	2.8135	9.1000e-004	0.0000	2.8362
Total	9.5000e-004	0.0121	0.0139	3.0000e-005		4.6000e-004	4.6000e-004		4.5000e-004	4.5000e-004	0.0000	2.8135	2.8135	9.1000e-004	0.0000	2.8362

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.3600e-003	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.3317	0.3317	3.0000e-005	0.0000	0.3324
Worker	1.4000e-004	9.0000e-005	9.5000e-004	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2778	0.2778	1.0000e-005	0.0000	0.2779
Total	1.8000e-004	1.4500e-003	1.1900e-003	0.0000	4.2000e-004	0.0000	4.2000e-004	1.1000e-004	0.0000	1.2000e-004	0.0000	0.6095	0.6095	4.0000e-005	0.0000	0.6103

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3.4 Electrical - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.3372	0.2821	1.1100e-003		0.0123	0.0123		0.0113	0.0113	0.0000	97.4632	97.4632	0.0315	0.0000	98.2512
Total	0.0444	0.3372	0.2821	1.1100e-003		0.0123	0.0123		0.0113	0.0113	0.0000	97.4632	97.4632	0.0315	0.0000	98.2512

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	8.4600e-003	1.4900e-003	2.0000e-005	5.0000e-004	2.0000e-005	5.2000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	2.0640	2.0640	1.6000e-004	0.0000	2.0682
Worker	1.6900e-003	1.1400e-003	0.0118	4.0000e-005	4.1800e-003	3.0000e-005	4.2000e-003	1.1100e-003	2.0000e-005	1.1300e-003	0.0000	3.4564	3.4564	8.0000e-005	0.0000	3.4584
Total	1.9300e-003	9.6000e-003	0.0133	6.0000e-005	4.6800e-003	5.0000e-005	4.7200e-003	1.2600e-003	4.0000e-005	1.3000e-003	0.0000	5.5204	5.5204	2.4000e-004	0.0000	5.5266

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3.4 Electrical - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0325	0.4668	0.4935	1.1100e-003		0.0175	0.0175		0.0172	0.0172	0.0000	97.4631	97.4631	0.0315	0.0000	98.2511
Total	0.0325	0.4668	0.4935	1.1100e-003		0.0175	0.0175		0.0172	0.0172	0.0000	97.4631	97.4631	0.0315	0.0000	98.2511

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	8.4600e-003	1.4900e-003	2.0000e-005	5.0000e-004	2.0000e-005	5.2000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	2.0640	2.0640	1.6000e-004	0.0000	2.0682
Worker	1.6900e-003	1.1400e-003	0.0118	4.0000e-005	4.1800e-003	3.0000e-005	4.2000e-003	1.1100e-003	2.0000e-005	1.1300e-003	0.0000	3.4564	3.4564	8.0000e-005	0.0000	3.4584
Total	1.9300e-003	9.6000e-003	0.0133	6.0000e-005	4.6800e-003	5.0000e-005	4.7200e-003	1.2600e-003	4.0000e-005	1.3000e-003	0.0000	5.5204	5.5204	2.4000e-004	0.0000	5.5266

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3.5 Piping Installation - Phase 2 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0665	0.4613	0.4937	1.0100e-003		0.0206	0.0206		0.0199	0.0199	0.0000	83.5902	83.5902	0.0180	0.0000	84.0402
Total	0.0665	0.4613	0.4937	1.0100e-003		0.0206	0.0206		0.0199	0.0199	0.0000	83.5902	83.5902	0.0180	0.0000	84.0402

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3300e-003	0.0471	8.2900e-003	1.2000e-004	2.8000e-003	1.2000e-004	2.9200e-003	8.1000e-004	1.1000e-004	9.2000e-004	0.0000	11.4874	11.4874	9.2000e-004	0.0000	11.5102
Worker	6.1000e-003	4.0900e-003	0.0424	1.4000e-004	0.0150	1.0000e-004	0.0151	4.0000e-003	9.0000e-005	4.0900e-003	0.0000	12.4471	12.4471	2.9000e-004	0.0000	12.4545
Total	7.4300e-003	0.0512	0.0507	2.6000e-004	0.0178	2.2000e-004	0.0181	4.8100e-003	2.0000e-004	5.0100e-003	0.0000	23.9345	23.9345	1.2100e-003	0.0000	23.9647

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3.5 Piping Installation - Phase 2 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0378	0.4377	0.5491	1.0100e-003		0.0159	0.0159		0.0156	0.0156	0.0000	83.5901	83.5901	0.0180	0.0000	84.0401
Total	0.0378	0.4377	0.5491	1.0100e-003		0.0159	0.0159		0.0156	0.0156	0.0000	83.5901	83.5901	0.0180	0.0000	84.0401

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3300e-003	0.0471	8.2900e-003	1.2000e-004	2.8000e-003	1.2000e-004	2.9200e-003	8.1000e-004	1.1000e-004	9.2000e-004	0.0000	11.4874	11.4874	9.2000e-004	0.0000	11.5102
Worker	6.1000e-003	4.0900e-003	0.0424	1.4000e-004	0.0150	1.0000e-004	0.0151	4.0000e-003	9.0000e-005	4.0900e-003	0.0000	12.4471	12.4471	2.9000e-004	0.0000	12.4545
Total	7.4300e-003	0.0512	0.0507	2.6000e-004	0.0178	2.2000e-004	0.0181	4.8100e-003	2.0000e-004	5.0100e-003	0.0000	23.9345	23.9345	1.2100e-003	0.0000	23.9647

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3.5 Piping Installation - Phase 2 - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1156	0.8057	0.9152	1.8900e-003		0.0335	0.0335		0.0324	0.0324	0.0000	156.5994	156.5994	0.0332	0.0000	157.4285
Total	0.1156	0.8057	0.9152	1.8900e-003		0.0335	0.0335		0.0324	0.0324	0.0000	156.5994	156.5994	0.0332	0.0000	157.4285

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7200e-003	0.0686	0.0128	2.2000e-004	5.2500e-003	6.0000e-005	5.3100e-003	1.5200e-003	6.0000e-005	1.5800e-003	0.0000	20.9872	20.9872	1.1800e-003	0.0000	21.0166
Worker	0.0106	6.8600e-003	0.0724	2.5000e-004	0.0282	1.7000e-004	0.0283	7.4900e-003	1.6000e-004	7.6500e-003	0.0000	22.4401	22.4401	4.9000e-004	0.0000	22.4524
Total	0.0123	0.0755	0.0852	4.7000e-004	0.0334	2.3000e-004	0.0337	9.0100e-003	2.2000e-004	9.2300e-003	0.0000	43.4273	43.4273	1.6700e-003	0.0000	43.4689

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3.5 Piping Installation - Phase 2 - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0672	0.7927	1.0254	1.8900e-003		0.0275	0.0275		0.0270	0.0270	0.0000	156.5992	156.5992	0.0332	0.0000	157.4283
Total	0.0672	0.7927	1.0254	1.8900e-003		0.0275	0.0275		0.0270	0.0270	0.0000	156.5992	156.5992	0.0332	0.0000	157.4283

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7200e-003	0.0686	0.0128	2.2000e-004	5.2500e-003	6.0000e-005	5.3100e-003	1.5200e-003	6.0000e-005	1.5800e-003	0.0000	20.9872	20.9872	1.1800e-003	0.0000	21.0166
Worker	0.0106	6.8600e-003	0.0724	2.5000e-004	0.0282	1.7000e-004	0.0283	7.4900e-003	1.6000e-004	7.6500e-003	0.0000	22.4401	22.4401	4.9000e-004	0.0000	22.4524
Total	0.0123	0.0755	0.0852	4.7000e-004	0.0334	2.3000e-004	0.0337	9.0100e-003	2.2000e-004	9.2300e-003	0.0000	43.4273	43.4273	1.6700e-003	0.0000	43.4689

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3.8 Architectural Coating - null - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	348.9794	348.9794	0.0121	2.5100e-003	350.0316
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	348.9794	348.9794	0.0121	2.5100e-003	350.0316
NaturalGas Mitigated	0.0118	0.1071	0.0899	6.4000e-004		8.1400e-003	8.1400e-003		8.1400e-003	8.1400e-003	0.0000	116.5601	116.5601	2.2300e-003	2.1400e-003	117.2528
NaturalGas Unmitigated	0.0118	0.1071	0.0899	6.4000e-004		8.1400e-003	8.1400e-003		8.1400e-003	8.1400e-003	0.0000	116.5601	116.5601	2.2300e-003	2.1400e-003	117.2528

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	2.18425e+006	0.0118	0.1071	0.0899	6.4000e-004		8.1400e-003	8.1400e-003		8.1400e-003	8.1400e-003	0.0000	116.5601	116.5601	2.2300e-003	2.1400e-003	117.2528
Total		0.0118	0.1071	0.0899	6.4000e-004		8.1400e-003	8.1400e-003		8.1400e-003	8.1400e-003	0.0000	116.5601	116.5601	2.2300e-003	2.1400e-003	117.2528

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	2.18425e+006	0.0118	0.1071	0.0899	6.4000e-004		8.1400e-003	8.1400e-003		8.1400e-003	8.1400e-003	0.0000	116.5601	116.5601	2.2300e-003	2.1400e-003	117.2528
Total		0.0118	0.1071	0.0899	6.4000e-004		8.1400e-003	8.1400e-003		8.1400e-003	8.1400e-003	0.0000	116.5601	116.5601	2.2300e-003	2.1400e-003	117.2528

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	923101	348.9794	0.0121	2.5100e-003	350.0316
Total		348.9794	0.0121	2.5100e-003	350.0316

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	923101	348.9794	0.0121	2.5100e-003	350.0316
Total		348.9794	0.0121	2.5100e-003	350.0316

6.0 Area Detail

6.1 Mitigation Measures Area

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0728					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4088					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.4815	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

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

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7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

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

Mitigated

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

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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E&B Midway Premier Ancillary Equipment Installation
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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Midway-Premier Ancillary Facilities: Installation of piping and power lines/electrical

Land Use - Pipeline corridor is 10-feet wide with total length of 1,000 feet = total area of 10,000 ft^2 = 0.23 acres

Construction Phase - Pipe installation, installation of pumping units and electrical will overlap. No paving or architectural coating

Off-road Equipment - No architectural coating

Off-road Equipment - No additional construction

Off-road Equipment - Installation of electrical equipment provided by E&B 1/22/2021

Off-road Equipment - Installation of pumping units equipment provided by E&B 1/22/2021

Off-road Equipment - No paving

Off-road Equipment - Piping installation equipment based on information provided by E&B 1/22/2021

Trips and VMT - Assume number of workers equivalent to number of pieces of equipment per phase.

Assume 1 truck per day for pipe delivery, 1 truck per day for cement delivery, 1 truck per day for electrical delivery, 1 truck per day for pumping unit delivery. No hauling

Architectural Coating - No architectural coating

Energy Use -

Construction Off-road Equipment Mitigation - Mitigation requires Tier 3 and Tier 4 equipment

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	10,320.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	30,960.00	0.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	100.00	0.00
tblConstructionPhase	NumDays	100.00	17.00
tblConstructionPhase	NumDays	100.00	3.00
tblConstructionPhase	NumDays	100.00	17.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblLandUse	LandUseSquareFeet	0.00	10,000.00
tblLandUse	LotAcreage	0.00	0.23
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	6.00
tblOffRoadEquipment	PhaseName		Piping Installation
tblOffRoadEquipment	PhaseName		Piping Installation
tblOffRoadEquipment	PhaseName		Piping Installation
tblOffRoadEquipment	PhaseName		Electrical
tblOffRoadEquipment	PhaseName		Electrical
tblOffRoadEquipment	PhaseName		Install Pumping Units
tblOffRoadEquipment	PhaseName		Piping Installation
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	4.00	0.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	4.00	0.00
tblOffRoadEquipment	UsageHours	4.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

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tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	VendorTripNumber	3.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	1.00
tblTripsAndVMT	VendorTripNumber	3.00	1.00
tblTripsAndVMT	WorkerTripNumber	9.00	0.00
tblTripsAndVMT	WorkerTripNumber	9.00	14.00
tblTripsAndVMT	WorkerTripNumber	9.00	4.00
tblTripsAndVMT	WorkerTripNumber	9.00	2.00
tblTripsAndVMT	WorkerTripNumber	2.00	0.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	0.1649	0.1421
		Highest	0.1649	0.1421

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0534	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	1.1300e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	36.7954	36.7954	1.3700e-003	4.4000e-004	36.9621
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0545	0.0102	8.5900e-003	6.0000e-005	0.0000	7.8000e-004	7.8000e-004	0.0000	7.8000e-004	7.8000e-004	0.0000	36.7954	36.7954	1.3700e-003	4.4000e-004	36.9621

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0534	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	1.1300e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	36.7954	36.7954	1.3700e-003	4.4000e-004	36.9621
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0545	0.0102	8.5900e-003	6.0000e-005	0.0000	7.8000e-004	7.8000e-004	0.0000	7.8000e-004	7.8000e-004	0.0000	36.7954	36.7954	1.3700e-003	4.4000e-004	36.9621

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction - null	Building Construction	1/1/2022	12/31/2021	5	0	
2	Piping Installation	Building Construction	1/1/2022	1/25/2022	5	17	
3	Electrical	Building Construction	1/1/2022	1/5/2022	5	3	
4	Install Pumping Units	Building Construction	1/1/2022	1/25/2022	5	17	
5	Paving - null	Paving	7/15/2023	7/14/2023	5	0	
6	Architectural Coating - null	Architectural Coating	7/22/2023	7/21/2023	5	0	

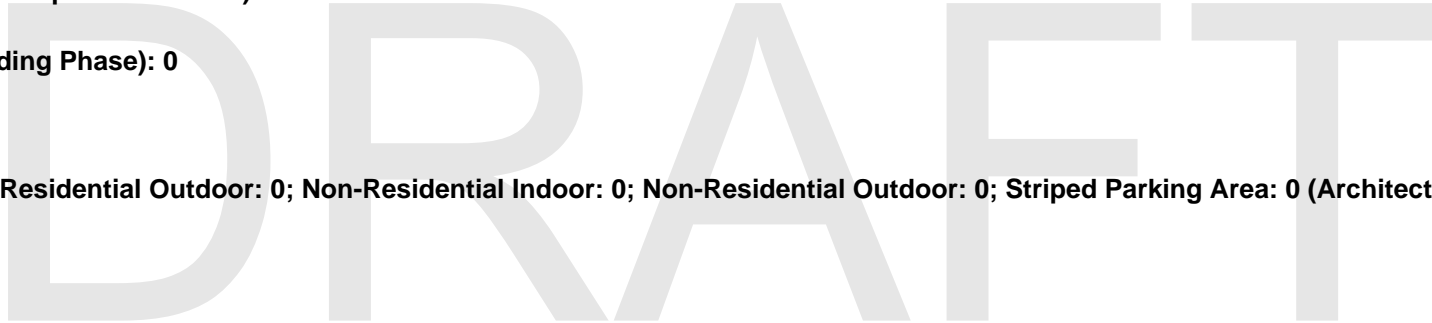
Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment



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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction - null	Cranes	0	0.00	231	0.29
Building Construction - null	Forklifts	0	0.00	89	0.20
Building Construction - null	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Piping Installation	Cranes	1	2.00	231	0.29
Piping Installation	Forklifts	2	2.00	89	0.20
Piping Installation	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation	Off-Highway Trucks	2	2.00	402	0.38
Piping Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Piping Installation	Welders	6	6.00	46	0.45
Electrical	Cranes	0	0.00	231	0.29
Electrical	Forklifts	0	0.00	89	0.20
Electrical	Off-Highway Trucks	2	1.00	402	0.38
Electrical	Off-Highway Trucks	2	3.00	402	0.38
Electrical	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Install Pumping Units	Cranes	1	1.00	231	0.29
Install Pumping Units	Forklifts	0	0.00	89	0.20
Install Pumping Units	Off-Highway Trucks	1	1.00	402	0.38
Install Pumping Units	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving - null	Cement and Mortar Mixers	0	0.00	9	0.56
Paving - null	Pavers	0	0.00	130	0.42
Paving - null	Rollers	0	0.00	80	0.38
Paving - null	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating - null	Air Compressors	0	0.00	78	0.48

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction - null	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Piping Installation	14	14.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Electrical	4	4.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Install Pumping Units	2	2.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving - null	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - null	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.3 Piping Installation - 2022

Unmitigated Construction On-Site



	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0178	0.1177	0.1214	2.6000e-004		5.1200e-003	5.1200e-003		4.9000e-003	4.9000e-003	0.0000	21.0327	21.0327	5.3400e-003	0.0000	21.1661
Total	0.0178	0.1177	0.1214	2.6000e-004		5.1200e-003	5.1200e-003		4.9000e-003	4.9000e-003	0.0000	21.0327	21.0327	5.3400e-003	0.0000	21.1661

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3.3 Piping Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.7100e-003	3.0000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4177	0.4177	3.0000e-005	0.0000	0.4186
Worker	6.0000e-004	4.0000e-004	4.1700e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2241	1.2241	3.0000e-005	0.0000	1.2249
Total	6.5000e-004	2.1100e-003	4.4700e-003	1.0000e-005	1.5800e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.6419	1.6419	6.0000e-005	0.0000	1.6434

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3000e-003	0.1073	0.1472	2.6000e-004		3.1900e-003	3.1900e-003		3.1900e-003	3.1900e-003	0.0000	21.0327	21.0327	5.3400e-003	0.0000	21.1661
Total	5.3000e-003	0.1073	0.1472	2.6000e-004		3.1900e-003	3.1900e-003		3.1900e-003	3.1900e-003	0.0000	21.0327	21.0327	5.3400e-003	0.0000	21.1661

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3.3 Piping Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.7100e-003	3.0000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4177	0.4177	3.0000e-005	0.0000	0.4186
Worker	6.0000e-004	4.0000e-004	4.1700e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2241	1.2241	3.0000e-005	0.0000	1.2249
Total	6.5000e-004	2.1100e-003	4.4700e-003	1.0000e-005	1.5800e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.6419	1.6419	6.0000e-005	0.0000	1.6434

3.4 Electrical - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.9000e-004	6.0200e-003	5.0400e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.0000e-004	2.0000e-004	0.0000	1.7404	1.7404	5.6000e-004	0.0000	1.7545
Total	7.9000e-004	6.0200e-003	5.0400e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.0000e-004	2.0000e-004	0.0000	1.7404	1.7404	5.6000e-004	0.0000	1.7545

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3.4 Electrical - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.5000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0369	0.0369	0.0000	0.0000	0.0369
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0617	0.0617	0.0000	0.0000	0.0618
Total	3.0000e-005	1.7000e-004	2.4000e-004	0.0000	8.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0986	0.0986	0.0000	0.0000	0.0987

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.8000e-004	9.3800e-003	0.0105	2.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	1.7404	1.7404	5.6000e-004	0.0000	1.7545
Total	4.8000e-004	9.3800e-003	0.0105	2.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	1.7404	1.7404	5.6000e-004	0.0000	1.7545

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3.4 Electrical - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.5000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0369	0.0369	0.0000	0.0000	0.0369
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0617	0.0617	0.0000	0.0000	0.0618
Total	3.0000e-005	1.7000e-004	2.4000e-004	0.0000	8.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0986	0.0986	0.0000	0.0000	0.0987

3.5 Install Pumping Units - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6000e-004	8.7100e-003	5.5800e-003	2.0000e-005		3.4000e-004	3.4000e-004		3.1000e-004	3.1000e-004	0.0000	1.7714	1.7714	5.7000e-004	0.0000	1.7858
Total	9.6000e-004	8.7100e-003	5.5800e-003	2.0000e-005		3.4000e-004	3.4000e-004		3.1000e-004	3.1000e-004	0.0000	1.7714	1.7714	5.7000e-004	0.0000	1.7858

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3.5 Install Pumping Units - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	8.6000e-004	1.5000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.2089	0.2089	2.0000e-005	0.0000	0.2093
Worker	9.0000e-005	6.0000e-005	6.0000e-004	0.0000	2.1000e-004	0.0000	2.1000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1749	0.1749	0.0000	0.0000	0.1750
Total	1.1000e-004	9.2000e-004	7.5000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.3837	0.3837	2.0000e-005	0.0000	0.3843

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.2000e-004	6.9700e-003	0.0102	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.7714	1.7714	5.7000e-004	0.0000	1.7858
Total	4.2000e-004	6.9700e-003	0.0102	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.7714	1.7714	5.7000e-004	0.0000	1.7858

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3.7 Architectural Coating - null - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694

5.0 Energy Detail

Historical Energy Use: N

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5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	25.6584	25.6584	1.1600e-003	2.4000e-004	25.7589
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	25.6584	25.6584	1.1600e-003	2.4000e-004	25.7589
NaturalGas Mitigated	1.1300e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1370	11.1370	2.1000e-004	2.0000e-004	11.2032
NaturalGas Unmitigated	1.1300e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1370	11.1370	2.1000e-004	2.0000e-004	11.2032

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	208700	1.1300e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1370	11.1370	2.1000e-004	2.0000e-004	11.2032
Total		1.1300e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1370	11.1370	2.1000e-004	2.0000e-004	11.2032

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	208700	1.1300e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1370	11.1370	2.1000e-004	2.0000e-004	11.2032
Total		1.1300e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1370	11.1370	2.1000e-004	2.0000e-004	11.2032

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	88200	25.6584	1.1600e-003	2.4000e-004	25.7589
Total		25.6584	1.1600e-003	2.4000e-004	25.7589

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0144					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0391					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0534	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0144					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0391					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0534	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

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7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

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

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7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

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

Mitigated

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

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

DRAFT

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San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry		1000sqft	0.35	15,246.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Well installation and operations emission estimates per well.

Land Use - Average well pad size = 1.93 acres, or roughly 0.35 acres per well (multiple wells on each well pad).

Construction Phase - No demolition, paving, or architectural coating phases. Site preparation and grading is included in well pad construction estimates.

Off-road Equipment - Total hours for equipment is averaged over full 5-day grading period (e.g. 10 total hours for utility truck is spread over five days results in average operation of 2 hours per day)

Off-road Equipment - No architectural coating

Off-road Equipment - No demolition

Off-road Equipment - No Paving

Off-road Equipment - Equipment operational hours averaged over 5-day well installation phase.

Trips and VMT - Offsite trips for deliver and removal increased from default of 0 to 12/day

Grading - No site prep or grading.

Vehicle Trips - Operational on-road trips include only those associated with workers coming to/from the oil field (100% C-W), 4 workers for operation of each well (water truck and three worker trucks), equivalent to 0.4 trips/1,000sqft.

Water And Wastewater - No additional water and wastewater usage associated with project operations.

Solid Waste - No additional solid waste generation associated with project.

Off-road Equipment - No site preparation for well installation (included in well pad construction estimates, modeled separately).

Off-road Equipment - No grading for well installation (well pad construction emissions estimates included in separate model).

Architectural Coating - No architectural coating for well installation

Area Coating - No architectural coating for wells.

Energy Use - Energy usage = 223 kWh/day per well (81,395 kWh/year), for energy usage per 1,000sqft divide 81,395 kWh/yr by 15,246sqft.

Operational Off-Road Equipment - Operations activities include 2-day workover and daily visits by three workers and two passovers with water truck for dust suppression.

Construction Off-road Equipment Mitigation - Tier 3 and Tier 4 required for mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	42,035.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	126,105.00	0.00
tblAreaCoating	Area_Nonresidential_Exterior	42035	0
tblAreaCoating	Area_Nonresidential_Interior	126105	0

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	22.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	2.00	0.00
tblConstructionPhase	NumDays	4.00	0.00
tblConstructionPhase	NumDays	200.00	5.00
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	5.30
tblEnergyUse	NT24NG	3.84	0.00

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tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24NG	17.03	0.00
tblGrading	AcresOfGrading	16.25	0.00
tblGrading	AcresOfGrading	1.00	0.00
tblGrading	PhaseName	Grading	Null - Grading
tblGrading	PhaseName	Site Preparation	Null - Site Preparation
tblOffRoadEquipment	HorsePower	231.00	425.00
tblOffRoadEquipment	HorsePower	84.00	415.00
tblOffRoadEquipment	HorsePower	221.00	450.00
tblOffRoadEquipment	HorsePower	402.00	450.00
tblOffRoadEquipment	HorsePower	402.00	385.00
tblOffRoadEquipment	HorsePower	402.00	400.00
tblOffRoadEquipment	HorsePower	402.00	400.00
tblOffRoadEquipment	HorsePower	402.00	425.00
tblOffRoadEquipment	HorsePower	402.00	400.00
tblOffRoadEquipment	HorsePower	402.00	400.00
tblOffRoadEquipment	HorsePower	402.00	300.00
tblOffRoadEquipment	HorsePower	402.00	385.00
tblOffRoadEquipment	HorsePower	402.00	400.00
tblOffRoadEquipment	HorsePower	402.00	425.00
tblOffRoadEquipment	HorsePower	402.00	385.00
tblOffRoadEquipment	HorsePower	168.00	97.00
tblOffRoadEquipment	HorsePower	168.00	500.00
tblOffRoadEquipment	HorsePower	84.00	665.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

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tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
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tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

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tblOffRoadEquipment	PhaseName		Well Installation
tblOffRoadEquipment	PhaseName		Well Installation
tblOffRoadEquipment	PhaseName		Well Installation
tblOffRoadEquipment	PhaseName		Null - Site Preparation
tblOffRoadEquipment	PhaseName		Null - Grading
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	23.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
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tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOnRoadDust	PhaseName	Site Preparation	Null - Site Preparation
tblOnRoadDust	PhaseName	Grading	Null - Grading

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tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	2.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	2.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	2.00
tblOperationalOffRoadEquipment	OperHorsePower	402.00	500.00
tblOperationalOffRoadEquipment	OperHorsePower	402.00	365.00
tblOperationalOffRoadEquipment	OperHorsePower	88.00	450.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	12.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.30
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	1.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.30
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	12.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	3.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	6.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblSolidWaste	SolidWasteGenerationRate	104.25	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	12.00
tblTripsAndVMT	PhaseName	Site Preparation	Null - Site Preparation
tblTripsAndVMT	PhaseName	Grading	Null - Grading
tblTripsAndVMT	VendorTripNumber	14.00	21.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	35.00	55.00
tblTripsAndVMT	WorkerTripNumber	7.00	0.00
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CW_TTP	59.00	100.00

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tblVehicleTrips	ST_TR	1.32	0.40
tblVehicleTrips	SU_TR	0.68	0.40
tblVehicleTrips	WD_TR	6.97	0.40
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	19,441,187.50	0.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	0.3358	0.1891
		Highest	0.3358	0.1891

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0595	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	23.5068	23.5068	1.0600e-003	2.2000e-004	23.5989
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Offroad	0.0111	0.0792	0.0728	2.9000e-004		2.8500e-003	2.8500e-003		2.6300e-003	2.6300e-003	0.0000	25.8521	25.8521	8.3600e-003	0.0000	26.0611
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0707	0.0792	0.0728	2.9000e-004	0.0000	2.8500e-003	2.8500e-003	0.0000	2.6300e-003	2.6300e-003	0.0000	49.3588	49.3588	9.4200e-003	2.2000e-004	49.6600

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0595	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	23.5068	23.5068	1.0600e-003	2.2000e-004	23.5989
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Offroad	0.0111	0.0792	0.0728	2.9000e-004		2.8500e-003	2.8500e-003		2.6300e-003	2.6300e-003	0.0000	25.8521	25.8521	8.3600e-003	0.0000	26.0611
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0707	0.0792	0.0728	2.9000e-004	0.0000	2.8500e-003	2.8500e-003	0.0000	2.6300e-003	2.6300e-003	0.0000	49.3588	49.3588	9.4200e-003	2.2000e-004	49.6600

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Null - No Demolition	Demolition	1/1/2022	12/31/2021	5	0	
2	Null - Site Preparation	Site Preparation	1/29/2022	1/28/2022	5	0	
3	Null - Grading	Grading	2/3/2022	2/2/2022	5	0	
4	Well Installation	Building Construction	2/11/2022	2/17/2022	5	5	
5	Null - No Paving	Paving	12/16/2022	12/15/2022	5	0	
6	Null - No Architectural Coating	Architectural Coating	12/30/2022	12/29/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Null - No Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Null - No Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Null - No Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Null - Site Preparation	Graders	0	0.00	187	0.41
Null - Site Preparation	Scrapers	0	0.00	367	0.48
Null - Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Null - Grading	Crawler Tractors	0		212	0.43
Null - Grading	Crawler Tractors	0		212	0.43
Null - Grading	Graders	0	0.00	187	0.41
Null - Grading	Graders	0	0.00	187	0.41

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Null - Grading	Off-Highway Trucks	0		402	0.38
Null - Grading	Off-Highway Trucks	0		402	0.38
Null - Grading	Rubber Tired Dozers	0	0.00	247	0.40
Null - Grading	Scrapers	0		367	0.48
Null - Grading	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Well Installation	Bore/Drill Rigs	1	22.00	450	0.50
Well Installation	Cranes	1	2.00	425	0.29
Well Installation	Forklifts	0	0.00	89	0.20
Well Installation	Generator Sets	1	23.00	415	0.74
Well Installation	Off-Highway Trucks	3	1.20	450	0.38
Well Installation	Off-Highway Trucks	2	0.60	385	0.38
Well Installation	Off-Highway Trucks	1	0.10	400	0.38
Well Installation	Off-Highway Trucks	2	0.60	400	0.38
Well Installation	Off-Highway Trucks	2	0.60	425	0.38
Well Installation	Off-Highway Trucks	1	0.60	400	0.38
Well Installation	Off-Highway Trucks	1	0.30	400	0.38
Well Installation	Off-Highway Trucks	1	1.20	300	0.38
Well Installation	Off-Highway Trucks	2	0.80	385	0.38
Well Installation	Off-Highway Trucks	2	0.80	400	0.38
Well Installation	Off-Highway Trucks	1	0.80	425	0.38
Well Installation	Off-Highway Trucks	2	1.60	385	0.38
Well Installation	Other Material Handling Equipment	1	20.00	97	0.40
Well Installation	Other Material Handling Equipment	2	0.80	500	0.40
Well Installation	Pumps	2	22.00	665	0.74
Well Installation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Well Installation	Welders	0	0.00	46	0.45
Null - No Paving	Cement and Mortar Mixers	0	0.00	9	0.56

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Null - No Paving	Pavers	0	0.00	130	0.42
Null - No Paving	Paving Equipment	0	0.00	132	0.36
Null - No Paving	Rollers	0	0.00	80	0.38
Null - No Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Null - No Architectural Coating	Air Compressors	0	0.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Null - No Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Null - Site Preparation	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Null - Grading	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Well Installation	28	55.00	21.00	12.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Null - No Paving	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Null - No Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

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3.5 Well Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0355	0.2923	0.2233	1.0300e-003		9.4200e-003	9.4200e-003		9.2200e-003	9.2200e-003	0.0000	102.3376	102.3376	8.9700e-003	0.0000	102.5619
Total	0.0355	0.2923	0.2233	1.0300e-003		9.4200e-003	9.4200e-003		9.2200e-003	9.2200e-003	0.0000	102.3376	102.3376	8.9700e-003	0.0000	102.5619

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.4000e-003	2.2000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4447	0.4447	2.0000e-005	0.0000	0.4453
Vendor	1.6000e-004	5.4800e-003	9.7000e-004	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.3914	1.3914	1.0000e-004	0.0000	1.3940
Worker	5.0000e-004	3.1000e-004	3.3100e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9188	0.9188	2.0000e-005	0.0000	0.9194
Total	7.0000e-004	7.1900e-003	4.5000e-003	2.0000e-005	1.5500e-003	2.0000e-005	1.5800e-003	4.2000e-004	2.0000e-005	4.4000e-004	0.0000	2.7548	2.7548	1.4000e-004	0.0000	2.7586

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3.5 Well Installation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0157	0.1655	0.4833	1.0300e-003		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	102.3375	102.3375	8.9700e-003	0.0000	102.5618
Total	0.0157	0.1655	0.4833	1.0300e-003		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	102.3375	102.3375	8.9700e-003	0.0000	102.5618

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.4000e-003	2.2000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4447	0.4447	2.0000e-005	0.0000	0.4453
Vendor	1.6000e-004	5.4800e-003	9.7000e-004	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.3914	1.3914	1.0000e-004	0.0000	1.3940
Worker	5.0000e-004	3.1000e-004	3.3100e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9188	0.9188	2.0000e-005	0.0000	0.9194
Total	7.0000e-004	7.1900e-003	4.5000e-003	2.0000e-005	1.5500e-003	2.0000e-005	1.5800e-003	4.2000e-004	2.0000e-005	4.4000e-004	0.0000	2.7548	2.7548	1.4000e-004	0.0000	2.7586

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3.7 Null - No Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	100.00	0.00	0.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	80803.8	23.5068	1.0600e-003	2.2000e-004	23.5989
Total		23.5068	1.0600e-003	2.2000e-004	23.5989

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	80803.8	23.5068	1.0600e-003	2.2000e-004	23.5989
Total		23.5068	1.0600e-003	2.2000e-004	23.5989

6.0 Area Detail

6.1 Mitigation Measures Area

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0595					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0595	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

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

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7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

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

Mitigated

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

9.0 Operational Offroad

E&B Well Installation and Ops - San Joaquin Valley Unified APCD - San Joaquin Valley Unified APCD Air District, Annual

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	12.00	2	500	0.38	Diesel
Off-Highway Trucks	3	0.30	260	365	0.38	Diesel
Off-Highway Trucks	6	1.00	2	402	0.38	Diesel
Off-Highway Trucks	1	0.30	260	402	0.38	Diesel
Other General Industrial Equipment	1	12.00	2	450	0.34	Diesel

UnMitigated/Mitigated

Equipment Type	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Highway Trucks	0.0105	0.0741	0.0683	2.7000e-004		2.6800e-003	2.6800e-003		2.4700e-003	2.4700e-003	0.0000	24.1155	24.1155	7.8000e-003	0.0000	24.3105
Other General Industrial Equipment	6.6000e-004	5.0800e-003	4.5400e-003	2.0000e-005		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	1.7366	1.7366	5.6000e-004	0.0000	1.7506
Total	0.0111	0.0792	0.0728	2.9000e-004		2.8500e-003	2.8500e-003		2.6300e-003	2.6300e-003	0.0000	25.8521	25.8521	8.3600e-003	0.0000	26.0611

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

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Equipment Type	Number
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11.0 Vegetation

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San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	84.07	1000sqft	1.93	84,070.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Modeled emissions for construction of well pads only (assume average well pad size of 1.93 acres).

Land Use - Average well pad size = 1.93 acres.

Construction Phase - No demolition, paving, or architectural coating phases. Site is disturbed grassland.

Off-road Equipment - Total hours for equipment is averaged over full 5-day grading period (e.g. 10 total hours for utility truck is spread over five days results in average operation of 2 hours per day)

Off-road Equipment - No architectural coating

Off-road Equipment - No building construction associated with well pad construction.

Off-road Equipment - No demolition

Off-road Equipment - No Paving

Off-road Equipment - Site preparation is one day of top soil and vegetation removal, top

Off-road Equipment - Equipment operational hours averaged over 5-day well installation phase.

Trips and VMT - Offsite trips per E&B

Grading - Area is extent of well pad - 1.93 acres

Vehicle Trips - No operations associated with construction of well pads.

Area Coating - No architectural coating with well pad grading

Energy Use - No operational energy use for construction of well pads.

Water And Wastewater - No additional water and wastewater usage associated with project operations.

Solid Waste - No additional solid waste generation associated with project.

Operational Off-Road Equipment - No operations associated with well pad construction.

Construction Off-road Equipment Mitigation - Mitigation requires Tier 3 and Tier 4 equipment for construction of well pads.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	42,035.00	65,120.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	126,105.00	195,360.00
tblAreaCoating	Area_Nonresidential_Exterior	42035	0
tblAreaCoating	Area_Nonresidential_Interior	126105	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	200.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	4.00	5.00
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	2.00	1.00
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24NG	17.03	0.00
tblGrading	AcresOfGrading	16.25	1.93
tblGrading	AcresOfGrading	1.00	1.93
tblOffRoadEquipment	HorsePower	231.00	425.00
tblOffRoadEquipment	HorsePower	84.00	415.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

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tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tbloffRoadEquipment	PhaseName		Grading
tbloffRoadEquipment	PhaseName		Grading
tbloffRoadEquipment	PhaseName		Grading
tbloffRoadEquipment	PhaseName		Grading
tbloffRoadEquipment	PhaseName		Site Preparation
tbloffRoadEquipment	PhaseName		Grading
tbloffRoadEquipment	UsageHours	6.00	0.00

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tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblSolidWaste	SolidWasteGenerationRate	104.25	0.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	14.00	0.00
tblTripsAndVMT	WorkerTripNumber	35.00	0.00
tblTripsAndVMT	WorkerTripNumber	7.00	0.00
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CW_TTP	59.00	100.00

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tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	19,441,187.50	0.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	0.1201	0.0369
		Highest	0.1201	0.0369

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3284	1.0000e-005	7.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.3284	1.0000e-005	7.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3284	1.0000e-005	7.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.3284	1.0000e-005	7.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Null - No Demolition	Demolition	1/1/2022	12/31/2021	5	0	
2	Site Preparation	Site Preparation	1/29/2022	1/31/2022	5	1	
3	Grading	Grading	2/3/2022	2/9/2022	5	5	
4	Null - No Building Construction	Building Construction	2/11/2022	2/10/2022	5	0	
5	Null - No Paving	Paving	12/16/2022	12/15/2022	5	0	
6	Null - No Architectural Coating	Architectural Coating	12/30/2022	12/29/2022	5	0	

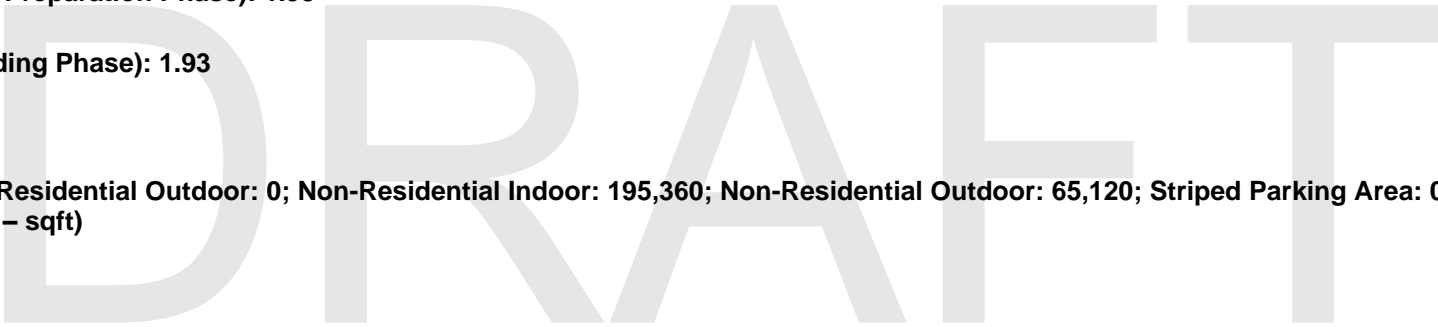
Acres of Grading (Site Preparation Phase): 1.93

Acres of Grading (Grading Phase): 1.93

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 195,360; Non-Residential Outdoor: 65,120; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment



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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Null - No Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Null - No Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Null - No Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Crawler Tractors	1	8.00	212	0.43
Grading	Crawler Tractors	1	8.00	212	0.43
Grading	Graders	1	8.00	187	0.41
Grading	Graders	1	4.00	187	0.41
Grading	Off-Highway Trucks	1	2.00	402	0.38
Grading	Off-Highway Trucks	1	2.00	402	0.38
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Null - No Building Construction	Cranes	0	0.00	425	0.29
Null - No Building Construction	Forklifts	0	0.00	89	0.20
Null - No Building Construction	Generator Sets	0	0.00	415	0.74
Null - No Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Null - No Building Construction	Welders	0	0.00	46	0.45
Null - No Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Null - No Paving	Pavers	0	0.00	130	0.42
Null - No Paving	Paving Equipment	0	0.00	132	0.36
Null - No Paving	Rollers	0	0.00	80	0.38
Null - No Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Null - No Architectural Coating	Air Compressors	0	0.00	78	0.48

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Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Null - No Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Null - No Building Construction	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Null - No Paving	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Null - No Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0200e-003	0.0000	1.0200e-003	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-004	4.4700e-003	3.1900e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	0.6669	0.6669	2.2000e-004	0.0000	0.6723
Total	4.1000e-004	4.4700e-003	3.1900e-003	1.0000e-005	1.0200e-003	1.7000e-004	1.1900e-003	1.1000e-004	1.6000e-004	2.7000e-004	0.0000	0.6669	0.6669	2.2000e-004	0.0000	0.6723

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3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	0.0000	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0100	0.0100	0.0000	0.0000	0.0100
Total	1.0000e-005	0.0000	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0100	0.0100	0.0000	0.0000	0.0100

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.6000e-004	0.0000	4.6000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-005	4.0000e-004	3.4200e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.6669	0.6669	2.2000e-004	0.0000	0.6723
Total	9.0000e-005	4.0000e-004	3.4200e-003	1.0000e-005	4.6000e-004	1.0000e-005	4.7000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6669	0.6669	2.2000e-004	0.0000	0.6723

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3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	0.0000	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0100	0.0100	0.0000	0.0000	0.0100
Total	1.0000e-005	0.0000	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0100	0.0100	0.0000	0.0000	0.0100

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0200e-003	0.0000	1.0200e-003	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7700e-003	0.0995	0.0541	1.6000e-004		3.6900e-003	3.6900e-003		3.3900e-003	3.3900e-003	0.0000	13.7440	13.7440	4.4500e-003	0.0000	13.8551
Total	8.7700e-003	0.0995	0.0541	1.6000e-004	1.0200e-003	3.6900e-003	4.7100e-003	1.1000e-004	3.3900e-003	3.5000e-003	0.0000	13.7440	13.7440	4.4500e-003	0.0000	13.8551

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3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0400e-003	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2650	0.2650	2.0000e-005	0.0000	0.2655
Worker	1.8000e-004	1.1000e-004	1.2100e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3341	0.3341	1.0000e-005	0.0000	0.3343
Total	2.1000e-004	1.1500e-003	1.4000e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.5991	0.5991	3.0000e-005	0.0000	0.5998

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.6000e-004	0.0000	4.6000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6100e-003	0.0318	0.0750	1.6000e-004		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	13.7440	13.7440	4.4500e-003	0.0000	13.8551
Total	2.6100e-003	0.0318	0.0750	1.6000e-004	4.6000e-004	1.1700e-003	1.6300e-003	5.0000e-005	1.1700e-003	1.2200e-003	0.0000	13.7440	13.7440	4.4500e-003	0.0000	13.8551

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3.7 Null - No Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	100.00	0.00	0.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694

5.0 Energy Detail

Historical Energy Use: N

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3284	1.0000e-005	7.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003
Unmitigated	0.3284	1.0000e-005	7.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3283					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003
Total	0.3284	1.0000e-005	7.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3283					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003
Total	0.3284	1.0000e-005	7.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-003	1.5000e-003	0.0000	0.0000	1.6000e-003

7.0 Water Detail

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7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use**Unmitigated**

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

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7.2 Water by Land Use**Mitigated**

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

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

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

Mitigated

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

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

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E&B West Grimes Ancillary Equipment Installation - San Joaquin Valley Unified APCD Air District, Annual

E&B West Grimes Ancillary Equipment Installation
San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.47	20,640.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - West Grimes Ancillary Facilities: Installation of piping and power lines/electrical

Land Use - Pipeline corridor is 10-feet wide with total length of 2,064 feet = total area of 20,640 ft^2 = 0.470 acres

Construction Phase - Pipe installation, installation of pumping units and electrical will overlap. No paving or architectural coating

Off-road Equipment - No architectural coating

Off-road Equipment - No additional construction

Off-road Equipment - Installation of electrical equipment provided by E&B 1/22/2021

Off-road Equipment - Installation of pumping units equipment provided by E&B 1/22/2021

Off-road Equipment - No paving

Off-road Equipment - Piping installation equipment based on information provided by E&B 1/22/2021

Trips and VMT - Assume 1 truck per day for delivery of pipe, 1 truck per day for delivery of cement, 1 truck per day for delivery of electrical equipment, and 1 truck per day for delivery of pumping units

Architectural Coating - No architectural coating

Energy Use -

Construction Off-road Equipment Mitigation - Mitigation requires tier 3 and tier 4 equipment

Off-road Equipment - Equipment usage based on info provided by E&B 1/26/21

Off-road Equipment - Equipment usage based on info provided by E&B 1/26/21

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	10,320.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	30,960.00	0.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 3

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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	100.00	0.00
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	100.00	4.00
tblConstructionPhase	NumDays	100.00	25.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	100.00	15.00
tblLandUse	LandUseSquareFeet	0.00	20,640.00
tblLandUse	LotAcreage	0.00	0.47
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	6.00
tblOffRoadEquipment	PhaseName	Piping Installation	Piping Installation - Phase 1
tblOffRoadEquipment	PhaseName	Piping Installation	Piping Installation - Phase 1
tblOffRoadEquipment	PhaseName	Piping Installation	Piping Installation - Phase 1
tblOffRoadEquipment	PhaseName		Piping Installation - Phase 1
tblOffRoadEquipment	PhaseName		Piping Installation - Phase 1
tblOffRoadEquipment	PhaseName		Electrical
tblOffRoadEquipment	PhaseName		Electrical
tblOffRoadEquipment	PhaseName		Install Pumping Units
tblOffRoadEquipment	PhaseName		Piping Installation - Phase 1
tblOffRoadEquipment	PhaseName		Piping Installation - Phase 2
tblOffRoadEquipment	PhaseName		Piping Installation - Phase 2
tblOffRoadEquipment	PhaseName		Piping Installation - Phase 2
tblOffRoadEquipment	PhaseName		Piping Installation - Phase 2
tblOffRoadEquipment	PhaseName		Piping Installation - Phase 2

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tblOffRoadEquipment	PhaseName		Piping Installation - Phase 2
tblOffRoadEquipment	PhaseName		Piping Installation - Phase 2
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	4.00	0.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	4.00	0.00
tblOffRoadEquipment	UsageHours	4.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
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tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOnRoadDust	PhaseName	Piping Installation	Piping Installation - Phase 1
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	PhaseName	Piping Installation	Piping Installation - Phase 1
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	VendorTripNumber	3.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	1.00
tblTripsAndVMT	VendorTripNumber	3.00	1.00
tblTripsAndVMT	WorkerTripNumber	9.00	0.00
tblTripsAndVMT	WorkerTripNumber	9.00	14.00

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tblTripsAndVMT	WorkerTripNumber	9.00	4.00
tblTripsAndVMT	WorkerTripNumber	9.00	2.00
tblTripsAndVMT	WorkerTripNumber	2.00	0.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	0.2267	0.1942
		Highest	0.2267	0.1942

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0950	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	2.3200e-003	0.0211	0.0177	1.3000e-004	1.6000e-003	1.6000e-003	1.6000e-003	1.6000e-003	1.6000e-003	1.6000e-003	0.0000	75.9457	75.9457	2.8400e-003	9.2000e-004	76.2899
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0973	0.0211	0.0177	1.3000e-004	0.0000	1.6000e-003	1.6000e-003	0.0000	1.6000e-003	1.6000e-003	0.0000	75.9457	75.9457	2.8400e-003	9.2000e-004	76.2899

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0950	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	2.3200e-003	0.0211	0.0177	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	75.9457	75.9457	2.8400e-003	9.2000e-004	76.2899
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0973	0.0211	0.0177	1.3000e-004	0.0000	1.6000e-003	1.6000e-003	0.0000	1.6000e-003	1.6000e-003	0.0000	75.9457	75.9457	2.8400e-003	9.2000e-004	76.2899

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction - null	Building Construction	1/1/2022	12/31/2021	5	0	
2	Piping Installation - Phase 1	Building Construction	1/1/2022	1/14/2022	5	10	
3	Electrical	Building Construction	1/1/2022	1/6/2022	5	4	
4	Install Pumping Units	Building Construction	1/1/2022	2/4/2022	5	25	
5	Piping Installation - Phase 2	Building Construction	1/15/2022	2/4/2022	5	15	
6	Paving - null	Paving	7/15/2023	7/14/2023	5	0	
7	Architectural Coating - null	Architectural Coating	7/22/2023	7/21/2023	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction - null	Cranes	0	0.00	231	0.29
Building Construction - null	Forklifts	0	0.00	89	0.20
Building Construction - null	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Piping Installation - Phase 1	Cranes	1	2.00	231	0.29
Piping Installation - Phase 1	Forklifts	2	2.00	89	0.20
Piping Installation - Phase 1	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation - Phase 1	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation - Phase 1	Off-Highway Trucks	2	2.00	402	0.38
Piping Installation - Phase 1	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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Piping Installation - Phase 1	Welders	6	6.00	46	0.45
Electrical	Cranes	0	0.00	231	0.29
Electrical	Forklifts	0	0.00	89	0.20
Electrical	Off-Highway Trucks	2	1.00	402	0.38
Electrical	Off-Highway Trucks	2	3.00	402	0.38
Electrical	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Install Pumping Units	Cranes	1	1.00	231	0.29
Install Pumping Units	Forklifts	0	0.00	89	0.20
Install Pumping Units	Off-Highway Trucks	1	1.00	402	0.38
Install Pumping Units	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving - null	Cement and Mortar Mixers	0	0.00	9	0.56
Paving - null	Pavers	0	0.00	130	0.42
Paving - null	Rollers	0	0.00	80	0.38
Paving - null	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating - null	Air Compressors	0	0.00	78	0.48
Piping Installation - Phase 2	Cranes	1	2.00	231	0.29
Piping Installation - Phase 2	Forklifts	2	2.00	89	0.20
Piping Installation - Phase 2	Off-Highway Trucks	2	2.00	402	0.38
Piping Installation - Phase 2	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation - Phase 2	Off-Highway Trucks	1	2.00	402	0.38
Piping Installation - Phase 2	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Piping Installation - Phase 2	Welders	6	6.00	46	0.45

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction - null	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Piping Installation - Phase 1	14	14.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Electrical	4	4.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Install Pumping Units	2	2.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving - null	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - null	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.3 Piping Installation - Phase 1 - 2022

Unmitigated Construction On-Site



	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0104	0.0692	0.0714	1.5000e-004		3.0100e-003	3.0100e-003		2.8800e-003	2.8800e-003	0.0000	12.3722	12.3722	3.1400e-003	0.0000	12.4506
Total	0.0104	0.0692	0.0714	1.5000e-004		3.0100e-003	3.0100e-003		2.8800e-003	2.8800e-003	0.0000	12.3722	12.3722	3.1400e-003	0.0000	12.4506

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3.3 Piping Installation - Phase 1 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0100e-003	1.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2457	0.2457	2.0000e-005	0.0000	0.2462
Worker	3.5000e-004	2.4000e-004	2.4500e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7201	0.7201	2.0000e-005	0.0000	0.7205
Total	3.8000e-004	1.2500e-003	2.6300e-003	1.0000e-005	9.3000e-004	1.0000e-005	9.4000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.9658	0.9658	4.0000e-005	0.0000	0.9667

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.1200e-003	0.0631	0.0866	1.5000e-004		1.8800e-003	1.8800e-003		1.8800e-003	1.8800e-003	0.0000	12.3722	12.3722	3.1400e-003	0.0000	12.4506
Total	3.1200e-003	0.0631	0.0866	1.5000e-004		1.8800e-003	1.8800e-003		1.8800e-003	1.8800e-003	0.0000	12.3722	12.3722	3.1400e-003	0.0000	12.4506

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3.3 Piping Installation - Phase 1 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0100e-003	1.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2457	0.2457	2.0000e-005	0.0000	0.2462
Worker	3.5000e-004	2.4000e-004	2.4500e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7201	0.7201	2.0000e-005	0.0000	0.7205
Total	3.8000e-004	1.2500e-003	2.6300e-003	1.0000e-005	9.3000e-004	1.0000e-005	9.4000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.9658	0.9658	4.0000e-005	0.0000	0.9667

3.4 Electrical - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0600e-003	8.0300e-003	6.7200e-003	3.0000e-005		2.9000e-004	2.9000e-004		2.7000e-004	2.7000e-004	0.0000	2.3206	2.3206	7.5000e-004	0.0000	2.3393
Total	1.0600e-003	8.0300e-003	6.7200e-003	3.0000e-005		2.9000e-004	2.9000e-004		2.7000e-004	2.7000e-004	0.0000	2.3206	2.3206	7.5000e-004	0.0000	2.3393

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3.4 Electrical - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.0000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0491	0.0491	0.0000	0.0000	0.0492
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0823	0.0823	0.0000	0.0000	0.0823
Total	5.0000e-005	2.3000e-004	3.2000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1314	0.1314	0.0000	0.0000	0.1316

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.5000e-004	0.0125	0.0140	3.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	2.3206	2.3206	7.5000e-004	0.0000	2.3393
Total	6.5000e-004	0.0125	0.0140	3.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	2.3206	2.3206	7.5000e-004	0.0000	2.3393

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3.4 Electrical - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.0000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0491	0.0491	0.0000	0.0000	0.0492
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0823	0.0823	0.0000	0.0000	0.0823
Total	5.0000e-005	2.3000e-004	3.2000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1314	0.1314	0.0000	0.0000	0.1316

3.5 Install Pumping Units - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4100e-003	0.0128	8.2000e-003	3.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	2.6051	2.6051	8.4000e-004	0.0000	2.6261
Total	1.4100e-003	0.0128	8.2000e-003	3.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	2.6051	2.6051	8.4000e-004	0.0000	2.6261

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3.5 Install Pumping Units - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.2600e-003	2.2000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.3072	0.3072	2.0000e-005	0.0000	0.3078
Worker	1.3000e-004	8.0000e-005	8.8000e-004	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2572	0.2572	1.0000e-005	0.0000	0.2573
Total	1.7000e-004	1.3400e-003	1.1000e-003	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.5643	0.5643	3.0000e-005	0.0000	0.5651

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2000e-004	0.0103	0.0150	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	2.6051	2.6051	8.4000e-004	0.0000	2.6261
Total	6.2000e-004	0.0103	0.0150	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	2.6051	2.6051	8.4000e-004	0.0000	2.6261

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3.5 Install Pumping Units - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.2600e-003	2.2000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.3072	0.3072	2.0000e-005	0.0000	0.3078
Worker	1.3000e-004	8.0000e-005	8.8000e-004	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2572	0.2572	1.0000e-005	0.0000	0.2573
Total	1.7000e-004	1.3400e-003	1.1000e-003	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.5643	0.5643	3.0000e-005	0.0000	0.5651

3.6 Piping Installation - Phase 2 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0157	0.1039	0.1071	2.3000e-004		4.5200e-003	4.5200e-003		4.3300e-003	4.3300e-003	0.0000	18.5898	18.5898	4.7200e-003	0.0000	18.7077
Total	0.0157	0.1039	0.1071	2.3000e-004		4.5200e-003	4.5200e-003		4.3300e-003	4.3300e-003	0.0000	18.5898	18.5898	4.7200e-003	0.0000	18.7077

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3.8 Architectural Coating - null - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694

5.0 Energy Detail

Historical Energy Use: N

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5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	52.9589	52.9589	2.3900e-003	5.0000e-004	53.1664
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	52.9589	52.9589	2.3900e-003	5.0000e-004	53.1664
NaturalGas Mitigated	2.3200e-003	0.0211	0.0177	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.9868	22.9868	4.4000e-004	4.2000e-004	23.1234
NaturalGas Unmitigated	2.3200e-003	0.0211	0.0177	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.9868	22.9868	4.4000e-004	4.2000e-004	23.1234

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	430757	2.3200e-003	0.0211	0.0177	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.9868	22.9868	4.4000e-004	4.2000e-004	23.1234
Total		2.3200e-003	0.0211	0.0177	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.9868	22.9868	4.4000e-004	4.2000e-004	23.1234

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	430757	2.3200e-003	0.0211	0.0177	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.9868	22.9868	4.4000e-004	4.2000e-004	23.1234
Total		2.3200e-003	0.0211	0.0177	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.9868	22.9868	4.4000e-004	4.2000e-004	23.1234

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	182045	52.9589	2.3900e-003	5.0000e-004	53.1664
Total		52.9589	2.3900e-003	5.0000e-004	53.1664

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0144					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0806					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0950	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0144					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0806					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0950	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

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7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

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

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7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

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

Mitigated

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

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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Appendix B Mitigation Monitoring and Reporting Plan

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Table B-1. Mitigation Monitoring and Reporting Plan

Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
Air Quality			
<p>MM AIR-1 - All off-road diesel engines for construction not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 3 California Emission Standards for Off-road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 3 engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide nitrogen oxides and particulate matter emissions that are equivalent to Tier 3 engine.</p>	<p>1) Submit the Material Submittal Document and Compliance Monitoring Report (CMR) within 30 days of project implementation; and 2) E&B will provide updated CMRs to CalGEM annually in March.</p>	<p>A. CalGEM's CMR includes details of any off-road construction diesel engines not registered under California Air Resources Board's Statewide Portable Equipment Registration Program, which has a rating of 50 horsepower or more and compliance details for such equipment. [Diesel Engines]</p>	<p>CalGEM</p>
<p>MM AIR-2 – E&B shall develop and implement a Fugitive Dust Control Plan in compliance with San Joaquin Valley Air Pollution Control District regulations for fugitive dust suppression. The Fugitive Dust Control Plan shall include: a. Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submission, and implementation of the plan. b. Description and location of operation(s). c. Listing of all fugitive dust emissions sources included in the operation. d. The following dust control measures shall be implemented: i. All onsite unpaved roads shall be effectively stabilized using water or chemical soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than CARB approved soil stabilizers, and that shall not increase any other</p>	<p>1) Submit the Material Submittal Document and CMR within 30 days of project implementation; and 2) E&B will provide updated CMRs to CalGEM annually in March.</p>	<p>A. Fugitive Dust Control Plan submitted. B. All required details included. C. The CMR includes note that Fugitive Dust Control Plan is on file with CalGEM and available on the job site. [Fugitive Dust Control Plan]</p>	<p>CalGEM</p>

Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>environmental impacts including loss of vegetation.ii. All material excavated or graded will be watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles will be watered as needed to limit dust emissions to less than 20% opacity or covered with temporary coverings.iii. Construction activities that occur on unpaved surfaces will be discontinued during windy conditions when winds exceed 25 miles per hour and those activities cause visible dust plumes that exceed the SJVAPCD 20% opacity standard.iv. Track-out debris onto public paved roads shall not extend 50 feet or more from an active operation and track-out shall be removed or isolated such as behind a locked gate at the conclusion of each workday, except on agricultural fields where speeds are limited to 15 mph.v. All hauling materials shall be moist while being loaded into dump trucks.vi. All haul trucks hauling soil, sand, and other loose materials on public roads shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).vii. Soil loads shall be kept below 6 inches or the freeboard of the truck.viii. Drop heights when loaders dump soil into trucks shall not exceed 5 feet above the truck.ix. Gate seals shall be tight on dump trucks.x. Traffic speeds on unpaved roads shall be limited to 25 miles per hour.xi. All grading activities shall be suspended when visible dust emissions exceed 20%. xii. Other fugitive dust control measures as necessary to comply with SJVAPCD Rules and Regulations.xiii. Disturbed areas shall not exceed those shown on the Site Plan. xiv. Disturbed areas shall be re-vegetated as soon as possible after disturbance if area is no</p>			



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
longer needed for oil and gas activities (3.11 acres in Grimes West, 17.35 acres in Grimes East, and 1.76 acres in Midway Premier).			
Biological Resources			
<p>MM BIO-1 - A Worker Environmental Awareness Program (WEAP) shall be developed and implemented for all personnel that could access the site prior to commencing any disturbance activities. The program shall consist of an on-site or facility presentation that will describe the locations and types of sensitive plant, wildlife, and sensitive natural communities (collectively, "Biological Resources") on and near the site, an overview of the laws and regulations governing the protection of Biological Resources, the reasons for protecting the Biological Resources, the specific protection and avoidance measures that are applicable to the site, and the identity of designated points of contact should questions or issues arise, including the qualified biologist. The program shall provide training to recognize, avoid and report to applicable qualified biologists any Biological Resources on the site. • The WEAP shall emphasize the need to avoid contact with onsite wildlife and avoid entry into areas where Biological Resources have been identified based on pre-disturbance field surveys and to implement the buffer avoidance or other protection measures established by the USFWS shall be identified CDFW or required by the Biological Resource mitigation measures. The training shall emphasize the importance of not feeding or domesticating wildlife and the need to avoid any trash or potential food disposal onsite except in animal-proof</p>	<p>1) Submit the WEAP within 30 days of project implementation; and 2) E&B will provide updated WEAP to CalGEM annually in March.</p>	<p>A. WEAP submitted.B. All required details included on conduct on biological resources.C. The WEAP is on file with CalGEM.</p>	<p>CalGEM</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>containers emptied daily to avoid attracting or causing adverse impacts to special status wildlife. • All onsite personnel must sign a statement verifying that they have completed the WEPA Program, and that they work onsite. If signed employee statements are not available, documentation may be provided by Worker Environmental Awareness Program training records, which shall be kept by E&B for a minimum of five years. E&B shall maintain a list of all persons who have completed the training program and shall provide the list to CalGEM and to state and federal wildlife agency representatives upon request.</p>			
<p>MM BIO-2 - E&B shall conduct special status wildlife resource surveys by a qualified biologist within a 30-day period prior to commencement of new ground-disturbance construction activities, and pre-disturbance surveys for active bird nests must be conducted no more than 10 days prior to the commencement of disturbance. Surveys shall follow USFWS and CDFW guidance and/or protocols, as applicable. The purpose of the pre-disturbance surveys is to confirm the presence or absence of any federal- or state-listed threatened species or those designated as fully protected in the California Fish and Game Code (collectively, "Protected Species"), and to confirm the presence or absence of any other species considered "sensitive" under CEQA ("Sensitive Species"), and to identify and implement feasible avoidance and minimization measures for such species. The surveys shall be conducted in accordance with all currently applicable presence and absence survey and/or species protocols established by the USFWS and the CDFW ("Species Protocols"). In the absence of any approved protocols, the</p>	<p>Prior to construction, provide surveys conducted in accordance with mitigation requirements as noted within the CMR to CalGEM.</p>	<p>For special status species surveys [SSS]: A. Resume of qualified biologist who prepared the report is filed with the report.B. The resume meets the requirements.B. A survey plan must be submitted to USFWS and the CDFW for approval prior to surveys.C. Results from the surveys must be submitted to the USFWS, CDFW and with the CMR submittal.D. The survey report must contain avoidance and minimization measures if sensitive species were documented within the</p>	<p>CDFW;USFWS Service;CalGEM</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>survey shall extend for a minimum of 250 feet from all areas where any ground disturbance activities would occur, provided that permission to access has been obtained.</p>		<p>survey area.E. If required, all approved avoidance and minimization measures detailed on CMR. For nesting bird surveys [Nesting Bird]: A. E&B shall conduct pre-disturbance surveys as specified in the mitigation measure.B. Implement avoidance measures as specified in the mitigation measureC. A qualified biologist shall monitor all construction activities for impacts to active bird nests if nest buffers cannot be implemented.D. E&B shall provide written documentation and approval of variance from the no-disturbance areas to CalGEM.E. If required, all approved avoidance and minimization measures detailed on CMR.</p>	



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>MM BIO-3 - No incidental take of any listed as threatened or endangered species under the federal Endangered Species Act or California Endangered Species Act may occur unless the incidental take is authorized by applicable state and federal wildlife agencies in the form of a permit or other written authorization, an approved state or federal conservation plan, or in accordance with an approved regional plan such as a Habitat Conservation Plan and/or Natural Community Conservation Plan.</p>	<p>Prior to construction, and within 7 days of drilling activities, provide surveys conducted in accordance with mitigation requirements as noted within the CMR to CalGEM.</p>	<p>Obtain permits and/or written authorization from USFWS and CDFW and submit with CMR [Incidental Take Authorization]</p>	<p>USFWS; CDFW; CalGEM</p>
<p>MM BIO-4 – Occupied burrowing owl burrows shall not be disturbed during the nesting season (February 1 through August 31). Burrowing owls present in proposed disturbance areas or within 500 feet or as specified under an approved Habitat Conservation Plan (as identified during pre-disturbance surveys) outside of the breeding season (between September 1 and January 31) may be moved away from the disturbance area using passive relocation techniques approved by CDFW. A minimum of one or more weeks will be required to relocate the owl(s) and allow for acclimatization to alternate off-site burrows. Prior to burrow exclusion or eviction, a burrowing owl management plan shall be prepared and approved by the CDFW. As an alternative to passive relocation, occupied burrows identified off-site within 500 feet of construction activities may be buffered with hay bales, fencing (e.g. sheltering in place), or as directed by the qualified biologist and the CDFW, to avoid disturbance of burrows.</p>	<p>Prior to construction, and within 7 days of drilling activities, provide surveys conducted in accordance with mitigation requirements as noted within the WEAP to CalGEM.</p>	<p>A. If required, all approved avoidance and minimization measures detailed on CMR [Pre-disturbance surveys]B. WEAP contains required training and is on file with CalGEM. Implement the WEAP</p>	<p>USFWS; CDFW; CalGEM</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>methods approved by both agencies shall be conducted in all potential blunt-nosed leopard lizard habitat within the work site and a 250-foot buffer area. If no individual blunt-nosed leopard lizards are observed during focused surveys, and surveys are current (e.g., completed in the same calendar year), then Project activities may proceed.c. If blunt-nosed leopard lizards are detected during focused surveys, a blunt-nosed leopard lizard avoidance plan shall be prepared for the Project that will result in avoidance of incidental take of this species unless take is separately authorized under a Natural Communities Conservation Plan and appropriate federal authorization is obtained. At a minimum, the blunt-nosed leopard lizard avoidance plan shall contain the following elements:i. During periods that are optimal for blunt-nosed leopard lizard activity (early spring through late fall), the onsite qualified biologist shall check the Project site and access route daily during the blunt-nosed leopard lizard active season to determine presence or absence of lizards in or near the work areas. Monitoring by a qualified biologist is not required during periods of inactivity (the winter season).ii. If blunt-nosed leopard lizards are observed at the work site during construction, construction shall cease within a 250-foot radius, and USFWS and CDFW shall be consulted to determine what additional measures would be necessary to prevent take of this species.iii. Offsite locations where blunt-nosed leopard lizards have been observed or are likely to occur shall be clearly marked to prevent workers from driving off the road and to prevent inadvertent destruction of burrows. Barriers, such as exclusionary fencing may be</p>		<p>season).D. E&B shall provide avoidance plan if blunt-nosed leopard lizards were detected during focused surveys.E. WEAP contains required training and is on file with CalGEM. Implement the WEAP.F. If required, all approved avoidance and minimization measures detailed on CMR [Pre-disturbance surveys, WEAP]</p>	

Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>installed. All construction equipment and construction personnel vehicles shall be checked prior to moving to ensure no blunt-nosed leopard lizard are under equipment/vehicles.iv. A speed limit of 10 miles per hour shall be posted and observed within 0.25 miles of any reported blunt-nosed leopard lizard observation.v. Construction activities shall avoid burrows that may be used by blunt-nosed leopard lizards. Any location of proposed construction activity with potential to collapse or block burrows (i.e., stockpile storage, parking areas, staging areas, trenches) will be identified prior to construction in the blunt-nosed leopard lizard avoidance plan and approved by the qualified biologist. The qualified biologist may allow certain activities in burrow areas if the combination of soil hardness and activity impact is not expected to collapse burrows and no blunt-nosed leopard lizards have been found during pre-Project surveys in the impact area.d. All individual blunt-nosed leopard lizards observed above-ground will be avoided. Any individual blunt-nosed leopard lizard that may enter the Project site would be allowed to leave unobstructed, and on its own accord. If a blunt-nosed leopard lizard is detected during biological monitoring or observed at any other point, the CDFW and the USFWS shall be notified to determine what additional measures would be necessary to prevent take of the species.</p>			
Cultural Resources			



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>MM CUL-1 - Prior to initiating ground disturbance activities, E&B shall:</p> <p>a. Have an archival records search completed by a qualified archaeologist. This shall include an examination of the California Historical Resources Information Files at the Southern San Joaquin Valley Information Center, California State University, Bakersfield, and a search of the Native American Heritage Commission Sacred Lands Files, Sacramento. E&B may rely on a previously performed records search for subsequent ground disturbing activities.</p> <p>b. If an application location has been previously surveyed and no cultural resources have been recorded on it, no further cultural resources studies shall be required.</p> <p>c. Implement either:</p> <p>i. If an application site plan is within a section that has experienced 100% previous ground-surface disturbance, as indicated by 300 or more existing oil wells or other agricultural, industrial or urban uses, and the records searches indicate that the parcel has been previously surveyed and no cultural or Native American tribal resources are known on it, no further cultural resources studies shall be required. All other application locations shall be subject to intensive (100%) pedestrian ground-surface survey (Phase I survey/Class III inventory) by qualified archaeologists. E&B may rely on a previously performed ground surface survey for subsequent ground disturbing activities;</p> <p>ii. If an application location has not been previously surveyed based on the records search information, an intensive (100%) pedestrian ground surface survey (Phase I survey/Class III inventory) by qualified archaeologists shall be required.</p> <p>d. All prehistoric/Native American archaeological sites, whether identified during the records searches or</p>	<p>1) Submit the WEAP within 30 days of project implementation; and</p> <p>2) E&B will provide updated WEAP to CalGEM annually in March.</p>	<p>A. Review submitted cultural records search for accurate parcel location.</p> <p>B. If cultural resources identified, confirm implementation of mitigation and details shown on CMR.</p> <p>C. Confirm WEAP on file with CalGEM includes training dedicated to cultural resources protection.</p> <p>[Cultural Resources]</p>	<p>Southern San Joaquin Valley Information Center; State Historic Preservation Office; CalGEM</p>

Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>during the intensive survey, shall be demarcated by a qualified archaeologist, fenced by E&B, and preserved in place.e. Historical (Euro-American) archaeological sites that are potentially eligible for listing in the National Register of Historic Places shall be evaluated by a qualified archaeologist and must meet the requirements of the National Historic Preservation Act of 1966 to qualify. Qualifying sites, structures and equipment that are identified during the records search or field survey shall be fenced and preserved in open space, removed and curated, or treated using appropriate data recovery procedures.f. Historical (Euro-American) archaeological site types relating to oil and gas activities that have been determined Not Significant/Unique shall require no archaeological study or treatment.g. All oil and gas industry employees conducting work in the area identified on the Site Plan shall complete Worker Environmental Awareness Program training including training dedicated to cultural resources protection.</p>			
<p>MM CUL-2 - In the event archaeological materials are encountered during ground disturbance activities, the Project operator/contractor shall cease any ground disturbing activities within 50 feet of the find. The qualified archaeologist shall evaluate the significance of the resources and recommend appropriate treatment measures. Per CEQA Guidelines Section 15126.4(b)(3), Project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. If it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with CalGEM,</p>	<p>Variable; during construction</p>	<p>A. All work shall cease within 50 feet of the find. B. An unanticipated discovery plan shall be prepared and submitted. C. A qualified archaeologist shall evaluate any unanticipated site for significance and recommend appropriate treatment measures.</p>	<p>CalGEM; Native American Heritage Commission</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>which may include data recovery or other appropriate measures. CalGEM shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. If after consultation it is deemed appropriate, archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to CalGEM and to the Southern San Joaquin Valley Information Center.</p>		<p>D. The qualified archaeologist shall outline the recommendations for data recovery and curation in a report for submittal and review for the file. E. CalGEM shall determine if or when ground disturbing activities within 50 feet of the find can or cannot resume.</p>	
<p>MM CUL-3 - If human remains are uncovered during Project construction, E&B shall immediately halt all work, contact the County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.4 (e)(1) of the CEQA Guidelines. CalGEM shall be notified concurrently. If the County Coroner determines that the remains are of Native American descent, the Project proponent shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendant for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further</p>	<p>Variable; during construction</p>	<p>A. All specific provisions of the mitigation and State law shall be implemented.</p>	<p>CalGEM; County Coroner; Native American Heritage Commission; Most Likely Descendent</p>

Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>development activity until the landowner has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply.</p>			
<p>Energy</p>			
<p>MM ENG-1 - E&B shall implement the following applicable energy conservation control measures during construction of the project:</p> <ul style="list-style-type: none"> a. Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure CCR Title 13, Section 2485). Clear signage to this effect shall be provided for construction workers at all access points. b. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a written policy as required by CCR Title 23, Section 2449 ("CARB Off-Road Diesel Regulations"). c. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's 	<p>Variable; during construction</p>	<p>A. CMR includes details of any off-road construction diesel engines and compliance details for such equipment [Diesel Engines]</p>	<p>CalGEM</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.</p> <p>d. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available and it is not feasible to use propane or natural gas.</p>			
<p>Geology and Soils</p>			
<p>MM GEO-1 - As part of any WEAP training, all construction personnel shall be trained regarding the recognition and protection of possible buried paleontological resources during construction, prior to the initiation of construction or ground-disturbing activities. Training shall inform construction personnel of the procedures to be followed upon the discovery of paleontological materials. These procedures include notification of a paleontological monitor upon an accidental discovery and cessation of all work at the site of discovery until written approval to proceed is provided by the monitor. All personnel shall be instructed that unauthorized collection or disturbance of fossils is unlawful.</p>	<p>1) Submit WEAP within 30 days of project implementation; and 2) E&B will provide updated WEAP to CalGEM annually in March.</p>	<p>A. Confirm WEAP on file includes training dedicated to recognition of possible buried paleontological resources and protection of paleontological resources during construction. [WEAP]</p>	<p>CalGEM</p>
<p>Greenhouse Gas Emissions</p>			
<p>MM GHG-1 - E&B shall comply with the Cap-and-Trade regulation (e.g., by reducing GHG emissions within their facilities or by surrendering GHG allowances, offset credits,</p>	<p>1) Submit CMR within 30 days of project implementation; and</p>	<p>A. Report any stationary sources that would be subject to Cap-and-Trade</p>	<p>CalGEM; SJVAPCD</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>or other compliance instruments to offset the GHG increases), and other applicable GHG emission control and reduction regulations as these may be adopted or amended over time, to reduce, avoid, mitigate and/or sequester GHG emissions from Project-related air emissions. E&B shall implement Best Performance Standards applicable to GHG reduction for Components at all Thermally Enhanced Oil Recovery Wells (SJVAPCD 2010a), and Steam Generators (SJVAPCD 2010b).</p>	<p>2) E&B will provide updated CMR to CalGEM annually in March.</p>	<p>Program. B. Confirm with SJVAPCD that any stationary source shown will be permitted in conformance with the Cap-and-Trade Program.</p>	
<p>MM GHG-2 - E&B shall implement methods for recovery, reuse or destruction of methane existing in associated gas and casinghead gas, as follows: • Recover all associated gas produced from the reservoir via new wells, regardless of the well type, except for gas produced from delineation wells or as a result of start-up, shutdown and maintenance activities (whether planned or unplanned), system failures, and emergencies in accordance with SJVAPCD regulations as part of Rule 4401, as this may be amended over time. • Comply with the CARB methane regulation adopted March 2017.</p>	<p>1) Submit CMR within 30 days of project implementation; and 2) E&B will provide updated CMR to CalGEM annually in March.</p>	<p>A. Confirm notes on CMR plan confirming compliance with regulation.</p>	<p>CalGEM; SJVAPCD</p>
<p>MM GHG-3 - For wells not on federal land, E&B shall offset all GHG emissions not covered by the Cap-and-Trade program or other mandatory GHG emission reduction measures through E&B reductions of GHG emissions as verified by the SJVAPCD, through acquisition of offset credits from the California Air Pollution Control Officers Association Exchange Register, or other third party GHG reductions as verified by the SJVAPCD, or through inclusion in an Emission Reduction Agreement, to offset Project-related GHG emissions that are</p>	<p>1) Submit CMR within 30 days of project implementation; and 2) E&B will provide updated CMR to CalGEM annually in March.</p>	<p>A. Confirm on CMR coverage under Cap-and-Trade Program. B. If not covered confirm Air District Emission Reduction fee paid through Accela permit system. C. Confirm calculation of</p>	<p>CalGEM; SJVAPCD</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
not included in the Cap-and-Trade program to assure that no net increase in GHG emissions.		co-benefits of GHG reduction.	
Hazards and Hazardous Materials			
MM HAZ-1 – E&B shall provide a comprehensive WEAP to CalGEM and shall include all training requirements identified in E&B's BMPs and mitigation measures and include annual training for all field personnel (including E&B's employees, agents, and contractors). The WEAP shall include hazardous materials and hazardous waste management, and emergency preparedness, release reporting, and response requirements. E&B shall maintain records of employee training and shall make such records available for review upon request.	1) Submit WEAP within 30 days of project implementation; and 2) E&B will provide updated WEAP to CalGEM annually in March.	A. Confirm the WEAP has been submitted, reviewed for completeness with all requirements and on file.	CalGEM
MM HAZ-2 – E&B shall develop, implement and maintain a Spill Prevention Control and Countermeasure Plan, which includes the following practices: a. Construction activities shall be conducted to allow for easy clean-up of spills. Construction crews shall have sufficient tools, supplies, and absorbent and barrier materials to contain and recover spilled materials. b. Fuels and lubricants shall be stored only at designated staging areas. Fuel and lubricant tanks shall have appropriate secondary spill containment (e.g., curbs). c. Storage of fuel and lubricants in the staging area shall be at least 100 feet away from the edge of water bodies.	1) Submit CMR within 30 days of project implementation; and 2) E&B will provide updated CMR to CalGEM annually in March.	A. Confirm statement on CMR that implementation of the permit will comply with all requirements of the mitigation measure.	CalGEM

Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>Refueling and lubrication of equipment shall be restricted to upland areas at least 100 feet away from stream channels and wetlands.</p> <p>d. Any fuel truck shall carry an oil spill response kit and spill response equipment at all times.</p> <p>e. E&B shall be required to perform all routine equipment maintenance at the well pad, and promptly collect and lawfully dispose of wastes at an authorized recycling, treatment or disposal facility.</p> <p>f. Berms and/or dikes (secondary containment) shall be constructed around the permanent above-ground bulk tanks and the foundations shall be installed with a passive leak detection system, so that potential spill materials shall be contained and collected in specified areas isolated from any water bodies. Tanks shall not be placed in areas subject to periodic flooding or washout.</p> <p>g. A sufficient supply of sorbent and barrier materials shall be maintained on construction sites, and sorbent and barrier materials shall also be utilized to contain runoff from contaminated areas.</p>			
<p>Hydrology and Water Quality</p>			
<p>MM HYDRO-1 - E&B shall ensure that discharges of stormwater runoff from well pad construction are not contaminated by, or do not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct or waste products; are only contaminated by or only come into contact with sediment; and pursuant to 40.C.F.R. § 122.26(c)(1) (iii) that do not contribute to a violation of a water quality standard.</p>	<p>1) Submit CMR within 30 days of project implementation; and 2) E&B will provide updated CNR to CalGEM annually in March.</p>	<p>A. Drainage Plan submitted and transmitted to CalGEM for review [Stormwater Drainage Plan] B. Confirmation of approval of drainage plan on file.</p>	<p>CalGEM</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
		C. Confirmation of any other approvals needed for stormwater management.	
<p>MM HYDRO-2 – E&B shall implement BMPs during construction and operation of the subject well pads and wells. All selected practices shall be shown on a drainage implementation plan and self-certified as complete and feasible by a licensed professional qualified in drainage and flood control issues. The following Best Management Practices shall be implemented and shown on the drainage plan:</p> <ul style="list-style-type: none"> • Utilizing established facilities design, and construction or similar standards as applicable appropriate (e.g., American Society for the Testing and Materials (ASTM) American Petroleum Institute (API). • Implementing good housekeeping and maintenance practices: • Preventing trash, waste materials and equipment from construction storm water. • Maintaining wellheads, compressors, tanks and pipelines in good condition without leaks or spills. • Designing and maintaining graded pads to not actively erode and discharge sediment • Maintaining vehicles in good working order • Implementing spill prevention and response measures: • Utilizing preventative operating practices such as tank level monitoring, safe chemical handling and conducting 	<p>1) Submit CMR within 30 days of project implementation; and 2) E&B will provide updated CNR to CalGEM annually in March.</p>	<p>A. Drainage Plan submitted and transmitted to CalGEM for review [Drainage Plan] B. Confirmation of approval of drainage plan on file. C. Confirmation of any other approvals needed for stormwater management.</p>	<p>CalGEM</p>

Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
regular inspections. <ul style="list-style-type: none"> • Developing and maintaining a spill response plan • Conducting spill response training for employees and have a process to ensure contractors have the necessary training • Maintaining spill response equipment on site. • Implementing material storage and management practices: <ul style="list-style-type: none"> • Preventing unauthorized access • Utilizing “run-on” and “run-off” control berms and swales • Stabilizing exposed slopes through vegetation and other standard slope stability methods. 			
Tribal Cultural Resources			
MM CUL-2 - In the event archaeological materials are encountered during ground disturbance or construction, E&B (and their contractor, if applicable) shall cease any ground disturbing activities within 50 feet of the find. The qualified archaeologist shall evaluate the significance of the resources and recommend appropriate treatment measures. Per CEQA Guidelines Section 15126.4(b)(3), Project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical	Variable; during construction	A. All work shall cease within 50 feet of the find. B. An unanticipated discovery plan shall be prepared and submitted. C. A qualified archaeologist shall evaluate any unanticipated site for	CalGEM; Native American Heritage Commission



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>resources. If it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with CalGEM, which may include data recovery or other appropriate measures. CalGEM shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. If after consultation it is deemed appropriate, archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to CalGEM and to the Southern San Joaquin Valley Information Center.</p>		<p>significance and recommend appropriate treatment measures. D. The qualified archaeologist shall outline the recommendations for data recovery and curation in a report for submittal and review for the file. E. CalGEM shall determine if or when ground disturbing activities within 50 feet of the find can or cannot resume.</p>	
<p>MM CUL-3 - If human remains are uncovered during Project construction, E&B shall immediately halt all work, contact the County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.4 (e)(1) of the CEQA Guidelines. CalGEM shall be notified concurrently. If the County Coroner determines that the remains are of Native American descent, the Project proponent shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendant for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to</p>	<p>Variable; during construction</p>	<p>A. All specific provisions of the mitigation and State law shall be implemented.</p>	<p>CalGEM; County Coroner; Native American Heritage Commission; Most Likely Descendant;</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply.</p>			
<p>BLM Conditions of Approval</p>			
<p>Air Quality</p>			
<p>All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover, or vegetative ground cover.</p>	<p>During Construction</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>The speed limit on the unpaved access road shall be 15 miles per hour.</p>	<p>Throughout Construction and Operation</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>All onsite unpaved roads and offsite-unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant during the construction phase.</p>	<p>During Construction</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
All land clearing, grubbing, scraping, excavation, land leveling, grading, and cut & fill activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by -presoaking.	During Construction	All specific provisions of the Condition of Approval shall be implemented on federal lands.	BLM
All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)	Throughout Construction and Operation	All specific provisions of the Condition of Approval shall be implemented on federal lands.	BLM
Biological Resources			
Project employees and contractors will receive formal training prior to working on the Project, including attending a sensitive species education program developed by trained biologists focusing on the protected and sensitive species that may occur at the Project areas. At a minimum, the program will cover species distribution, identification characteristics, sensitivity to human activities, legal protection, penalties for violation of state and federal laws, reporting requirements, and project mitigation measures.	Prior to construction	A. Develop Worker Environmental Awareness Program for federal lands. B. Training to be conducted by qualified biologist prior to any employees or contractors working on the jobsite. C. Maintain records of all employees and contractors who receive training. D. Provide records to BLM upon request.	BLM



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>Habitat disturbance will be minimized and conducted in a manner that avoids the potential for take of individuals of a listed species. Existing roads and routes of travel will be used to the greatest extent practicable. Natural drainage patterns will be maintained to the greatest extent practicable.</p>	<p>Throughout Construction and Operation</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>Project activities will be conducted during daylight hours to minimize encounters with listed animals that typically are most active during night-time hours.</p>	<p>Throughout Construction and Operation</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>Vehicles will use existing and/or designated roads and avoid any cross-country travel.</p>	<p>Throughout Construction and Operation</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>To prevent attracting wildlife to the Project areas, trash and food items will be kept in closed containers and removed daily.</p>	<p>Throughout Construction and Operation</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>Firearms and pets are prohibited within the boundaries of the Project areas.</p>	<p>Throughout Construction and Operation</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>Dust control (use of water trucks) will be implemented during Project activities that create a substantial amount of dust.</p>	<p>Throughout Construction</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
Spills of hazardous materials shall be immediately cleaned up to prevent exposure to wildlife.	Throughout Construction and Operation	Implement Spill Prevention, Containment and Countermeasures Plan.	BLM
Topsoil that can potentially or is known to support sensitive plant species will be stockpiled and redistributed over portions of work areas that will be temporarily disturbed, where applicable.	Throughout Construction	All specific provisions of the Condition of Approval shall be implemented on federal lands.	BLM
A pre-activity survey for listed species must be conducted by a qualified biologist within 30 days prior to any ground-disturbing activities. Any listed species, their sign, or sensitive habitat features observed must be noted and clearly marked.	Prior to Construction	A. Construction pre-activity survey by qualified biologist within 30 days of ground-disturbing activity on federal lands. B. Submit summary report documenting survey results to BLM.	BLM
On-site biological monitoring will be performed during initial ground disturbing activities (e.g., vegetation removal, excavation, grading) to ensure that sensitive species are not impacted.	During Construction	A. Retain qualified biologist to conduct biological monitoring during vegetation removal, excavation, grading on federal lands. B. Daily monitoring reports to be prepared and submitted to BLM.	BLM



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>To prevent entrapment of animals, any trenches or pits created during Project activities more than two feet deep (including sumps) must be either covered at night or earthen or wooden escape ramps must be provided. Before work continues in these areas, trenches and pits must be inspected to ensure that no animals are present.</p>	<p>During Construction</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>San Joaquin kit fox – If kit fox dens are observed and can be avoided, then exclusion zones will be established for each kit fox den. Potential kit fox dens will be avoided by 50 feet, known kit fox dens will be avoided by 100 feet, and non-active pupping dens will be avoided by 200 feet. If an active natal den is observed, the BLM and USFWS will be contacted before any activities occur. If a kit fox den cannot be avoided during the Project activities, the den will be monitored for five consecutive nights to ensure it is not occupied. After establishing the den is unoccupied, and only if a take authorization/permit from the USFWS has been established, it must be excavated and backfilled according to guidelines. However, if a kit fox is observed using a den, it will be monitored for five consecutive nights to confirm the fox leaves the den, and then the den will be excavated. The BLM and the USFWS must be notified prior to any excavation activities.</p>	<p>During Construction</p>	<p>A. Conduct pre-construction survey for kit fox dens. B. Establish exclusion zones from observed dens. C. If a den cannot be avoided, additional monitoring is required, and E&B must obtain a take authorization from USFWS. D. E&B shall notify BLM and USFWS prior to any excavation activities.</p>	<p>BLM and USFWS</p>
<p>Nesting birds – Prior to construction, a qualified biologist will conduct avian nest surveys within the Project site and surrounding areas. Surveys will be conducted during the appropriate time of the breeding season (typically March 1 through August 1). If any protected species are found nesting in these areas, consultation with the BLM and the</p>	<p>Prior to Construction</p>	<p>A. Nesting bird surveys to be conducted by qualified biologist within 200 feet of project site. B. If protected species observed nesting, consult</p>	<p>BLM and USFWS</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>USFWS will be initiated to determine any effects on active nests and how to avoid them as well as establishing an appropriate buffer zone around active nests during the breeding season. Project activities shall avoid disturbance at active raptor nests within or near the Project. For ground disturbing activities with mechanized equipment, no pre-construction surveys for nesting raptors will be required if work is to occur during the non-breeding season (September 1 through January 31). If, however, ground-disturbing activities are scheduled to occur during the breeding season (February 1 through August 31), pre-construction surveys of potentially active nest sites within 200 feet of the Project site shall be conducted in areas that may potentially have nesting raptors, including ground nesting raptor species. If the surveys indicate that nests are inactive or potential habitat is unoccupied during the life of the Project, no further mitigation shall be required.</p>		<p>with BLM and USFWS to determine appropriate avoidance measures.</p>	
<p>Burrowing owls – Pre-construction surveys for burrowing owls will be conducted according to the March 2012 California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation guidelines. If owls and/or burrows can be avoided using buffer zones, then the appropriate buffer areas will be implemented. If avoidance measures cannot be adhered to for burrowing owls located within the Project site, exclusion and burrow closures will be implemented. These activities will occur after consultation and CDFW and BLM approval has been obtained and in accordance with the 2012 CDFW report.</p>	<p>Prior to Construction</p>	<p>A. Pre-construction surveys conducted by qualified biologist in accordance with CDFW guidelines. B. Consultation regarding findings with CDFW and BLM. C. Establish buffer zones, avoidance measures, and/or exclusion and burrow closures under</p>	<p>BLM and CDFW</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
		supervision of BLM and CDFW.	
Cultural Resources			
<p>In the event of an accidental discovery of cultural resources during Project implementation on federal lands, E&B shall immediately notify the BLM Field Office Cultural Staff and Field Manager. All work at the site of discovery, and in any other locations on federal lands where damage to the cultural resource could occur, shall also cease until written approval to proceed is provided by the BLM.</p>	During Construction	<p>A. All work shall cease at the discovery site and any other location on federal land where damage to cultural resources could occur. B. E&B notify BLM Field Office Cultural Staff and Field Manager. C. BLM shall determine if or when ground disturbing activities can or cannot resume.</p>	BLM
<p>If human remains are accidentally discovered on BLM 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. The BLM will adhere to current regulations regarding the treatment of human remains (Native American Graves Protection and Repatriation Act,</p>	During Construction	<p>A. All work shall cease at the discovery site and any other location on federal land where damage to cultural resources could occur. B. E&B notify BLM Field</p>	BLM



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>43 C.F.R. pt. 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.</p>		<p>Manager. C. BLM shall determine if or when ground disturbing activities can or cannot resume.</p>	
<p>Paleontological Resources</p>			
<p>A Paleontological Resources Mitigation Plan has been prepared for the Project in accordance with BLM requirements. All conditions of approval included in the Plan are incorporated into the project description.</p>	<p>During Construction</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>In the event of an accidental discovery of paleontological resources during unmonitored project implementation on BLM managed surface lands, the BLM Field Office Paleontological Staff and the BLM Field Manager 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 to proceed is provided by the BLM.</p>	<p>During Construction</p>	<p>A. All work shall cease at the discovery site and any other location on federal land where damage to cultural resources could occur. B. E&B notify BLM Field Office Paleontological Staff and Field Manager. C. BLM shall determine if or when ground disturbing activities can or cannot resume.</p>	<p>BLM</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
Construction and Interim Reclamation Best Management Practices			
<p>Reclamation activities would be initiated in the fall, starting no earlier than October to maximize the use of the wet season. All reclamation would be monitored for a minimum of five years, or until the BLM determines the locations have been successfully reclaimed. Reclamation progress would 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.</p>	Following Construction	<p>A. Prepare Interim Reclamation Plan for approval by BLM. B. Implement Interim Reclamation Plan. C. Monitor all sites annually for five years. Submit annual monitoring reports. D. As needed, conduct additional reclamation activities to achieve BLM success criteria.</p>	BLM
<p>All permanent above-ground structures not subject to safety requirements shall be painted to blend with the natural color of the landscape. The paint used would be a color which simulates "Standard Environmental Colors." The colors selected for the Project are Covert Green or Carlsbad Canyon.</p>	Following Construction	All specific provisions of the Condition of Approval shall be implemented on federal lands.	BLM
<p>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. After well completion, topsoil would 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. Prior to applying topsoil to the sump, it would be cleaned, ripped to</p>	Prior to and Following Construction	All specific provisions of the Condition of Approval shall be implemented on federal lands.	BLM

Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
<p>a minimum depth of 12 inches, and re-contoured to match the surrounding topography. Remaining topsoil would be stockpiled on an existing well pad or other previously disturbed surface and retained for future reclamation. Topsoil would be retained for no more than one year before reuse.</p>			
<p>All practicable measures would be taken to minimize erosion and stabilize disturbed soils. The following types of interim stabilization method may be used if necessary: jute netting, hydro-mulch, straw wattles, or crimped straw mulch.</p>	<p>During Construction</p>	<p>Implement Erosion Control and Sediment Management Plan.</p>	<p>BLM</p>
<p>Management of Noxious Weeds</p>			
<p>A site-specific weed control Environmental Assessment and Pesticide Use Proposal must be completed before any use of pesticides on BLM lands. Currently, E&B does not have these approvals; therefore, no herbicide treatment is authorized by the BLM.</p>	<p>Throughout Construction and Operation</p>	<p>All specific provisions of the Condition of Approval shall be implemented on federal lands.</p>	<p>BLM</p>
<p>Final Reclamation</p>			
<p>Disturbed lands shall be recontoured to conform with existing undisturbed topography unless the BLM determines that recontouring 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</p>	<p>Project End of Life</p>	<p>A. Prepare Final Reclamation Plan for submittal to BLM B. Consult with BLM to determine reclamation requirements and conditions.</p>	<p>BLM</p>



Mitigation Measure	Time Frame for Implementation	Steps to Compliance and Verification	Responsible Monitoring Agency
features and meet the needs of the planned post-disturbance land use. Final reclamation shall specifically achieve all requirements set forth by the BLM.			

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