

# Feasibility Study of Potential Alternatives Ventura Compressor Station Modernization Project

**MARCH 2022**



*Prepared by SoCalGas  
with technical input from  
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# Acronyms and Abbreviations

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Acronym/Abbreviation	Definition
AACE	American Association of Cost Engineers
ALUC	Airport Land Use Commission
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CPUC	California Public Energy Commission
CUP	conditional use permit
CWA	Clean Water Act
DOT	U.S. Department of Transportation
ESD	emergency shutdown
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
GO	General Order
GRC	General Rate Case
HP	horsepower
kV	kilovolt
MM	million
MW	megawatt
NAS	Naval Air Station
NPDES	National Pollutant Discharge Elimination System
NWP	Nationwide Permit
OEM	original equipment manufacturer's
psi	pounds per square inch
PSPS	Public Safety Power Shutoffs
PTC	permit to construct
RP	Recommended Practice
SAA	streambed alteration agreement
SCE	Southern California Edison Company
SOAR	Save Open-Space and Agricultural Resources
SR	State Route
VCAPCD	Ventura County Air Pollution Control District
VCFD	Ventura City Fire Department

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# Executive Summary

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SoCalGas®<sup>1</sup> operates an integrated energy delivery system composed of pipelines, compressor stations, storage fields, and regulator stations, designed to provide safe and reliable service to its customers. SoCalGas relies on this as part of a network to deliver energy to residential, business, industrial, and agricultural customers throughout Southern California. Notably, the integrated energy system's reliance on the reliability and resiliency attributes of the gas system, including to meet the peak ramping demands of dispatchable electric generation when renewables are otherwise unavailable, is expected to increase even though overall gas throughput may decline. The gas system similarly provides an existing mechanism capable of transporting increasingly cleaner gaseous fuels in alignment with decarbonization goals. SoCalGas also emphasizes that activities necessary to maintain and enhance safety cannot be compromised. SoCalGas' core mission is to provide safe and reliable gas service. Safety is at the foundation of its operational activities, which are grounded in federal and state law as well as CPUC decisions. The planned project, as further described below, is necessary to support the safe operation of the gas system and provision of reliable gas service that is essential to customers.

The Ventura Compressor Station, located at 1555 North Olive Street in the City of Ventura, is one of these critical components, which has safely and reliably operated to meet local demand within Ventura and the Central Coast, as well as to supply the La Goleta Storage Field. The California Public Utilities Commission (CPUC), which has primary regulatory authority over SoCalGas' integrated natural gas system, has recognized the critical importance of storage to maintaining a reliable energy system, including providing fuel for electric generation and meeting the needs of residential customers, especially during winter months (Abdelaziz et al. 2021).

The existing compression equipment was installed in the 1980s, and a compressor station has been in use since at least 1923. Due to the decreased functionality and reliability of the existing 40-year-old equipment, coupled with changes in system operations related to decreasing local supply and the need to support storage of natural gas, SoCalGas has proposed to modernize the Ventura Compressor Station. The planned Ventura Compressor Station Modernization Project (planned project), which was first contemplated in 2013, would replace three existing natural gas compressors with four new natural gas compressors to maintain the same annual supply flowing through the compressor station, and construct a new compressor building and other associated improvements at the current compressor station site.

In August of 2021, the CPUC requested that SoCalGas prepare a feasibility study of the planned project that: (1) fully analyzes all options considered for the compressor station upgrade; (2) provides the basis for rejecting any alternatives that were considered, including but not limited to electric compressors for all or part of the planned project (3) discusses all alternative sites that were considered but rejected and provides SoCalGas' reasons for rejecting them; and (4) provides an explanation of how the planned project factors into both local and statewide safe and reliable service and the state's decarbonization goals. SoCalGas continues to collaborate with the CPUC and stakeholders on California's energy transition in a comprehensive and transparent manner.

Through extensive stakeholder engagement with the local community, including public meetings, community canvassing, stakeholder briefings, station tours for local officials,

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<sup>1</sup> SoCalGas is a wholly owned subsidiary of Sempra Energy.

informational newsletters, and social media posts and dedicated project website updates, SoCalGas requested input and identified seventeen (17) potential alternatives as part of this feasibility study. Of these alternatives, seven (7) were dismissed from further consideration for failing to meet the purpose, need and objectives of the planned project or for failing to meet essential site criteria, which are criteria that must be met to construct and operate a compressor station. The potential alternatives are shown in Table ES-1 below.

The ten (10) remaining alternatives were evaluated based on operational considerations; environmental considerations; project cost; operational cost; and schedule duration. In order to assess each potential alternative option according to the same criteria, a scoring rubric was developed. These alternatives were assessed based on a desktop level analysis with cost estimates developed to a Class 5<sup>2</sup> and schedule estimates to a Level 1.<sup>3</sup> Given the relatively high-level assessment that was performed on the 10 alternatives, please note the potential for wide accuracy ranges with respect to cost and schedule. The schedule for each alternative was determined using industry standards and consulting with industry experts to determine durations for engineering, procurement, and construction. Without engaging in preliminary negotiations with the landowners, a common 24-month period was used for the land and/or right-of-way acquisition duration for each alternate location other than for the current site, which SoCalGas already owns. The duration for the alternative site locations could easily be extended due to lengthy negotiations if a voluntary transfer cannot be agreed upon or the property is currently under use by the owner(s). A duration extending beyond 24 months would impact the schedule and delay the progress of the engineering, procurement of long-lead-time equipment, and construction. These delays could add years to the estimated schedules.

The environmental analysis was performed by Dudek, a third-party environmental consulting firm, and their analysis is included in Appendix A. The criteria within the environmental rubric address topic areas that the CPUC examined in data requests as well as some other categories that are typically evaluated in a California Environmental Quality Act (CEQA) environmental impact report (EIR).<sup>4</sup> The scoring rubric for all five considerations – operational, environmental, project cost, operational cost, and schedule – is included in Appendix B.

**Table ES-1. Ventura Compressor Modernization Project Potential Alternatives**

Alternative	Identified By	Location
No Project	Community	Current site – Maintain existing site configuration and operational profile
Compressor Station Removal	Community	Current site – Remove compressor station and do not replace compression

<sup>2</sup> In accordance with AACE RP 87R-14 (AACE 2020), a Class 5 cost estimates is "generally prepared based on very limited information, and subsequently have wide accuracy ranges. Class 5 estimates are generally based on unclarified contingent resources..."

<sup>3</sup> In accordance with AACE RP 91R-16 (AACE 2020), a Level 1 schedule is "a high-level schedule that reflects key milestones and summary activities by major phase, stage or project being executed. .... Level 1 schedules provide high-level information that assist in the decision making process (go/no go prioritization and criticality of projects)."

<sup>4</sup> There is no discretionary permit required for the planned modernization project and consequently, environmental review under CEQA is not required. Environmental considerations evaluated by Dudek include topic areas such as, but not limited to, land use, air quality, traffic, and wildfire, which are topic areas in CEQA Guidelines Appendix G, Environmental Checklist Form.



**Table ES-1. Ventura Compressor Modernization Project  
Potential Alternatives**

<b>Alternative</b>	<b>Identified By</b>	<b>Location</b>
3/1 Hybrid	SoCalGas	Install a hybrid equipment configuration consisting of three electric compressors and one natural gas compressor at current site or other alternative sites
All Electric Compression	CPUC	Install an all-electric equipment configuration consisting of four new electric compressors at current site or other alternative sites
Goleta Storage Field	SoCalGas	Remove the existing horsepower from the compressor station and replace with new compression equipment at the La Goleta Storage Field approximately 40 miles north within the County of Santa Barbara
Petrochem	SoCalGas	Approximately 15-acre industrial site designated and zoned for industrial uses located approximately 13,500 feet northwest of the compressor station on the west side of State Route (SR) 33 within the County of Ventura
Petrochem – Hybrid	SoCalGas	
Planned Project	SoCalGas	Current site – Approximately 8-acre parcel located on land designated and zoned for industrial uses on the west side of City of Ventura
Current Site – Hybrid	SoCalGas	
Avocado Site – Natural Gas	Community	Approximately 15-acre agricultural site designated for open space uses and zoned for agriculture located approximately 3,000 feet west of the compressor station within the County of Ventura
Avocado Site – Hybrid	Community	
Ventura Steel – Natural Gas	SoCalGas	Approximately 10-acre industrial site with oil extraction infrastructure designated and zoned for industrial uses located approximately 8,000 feet north of the compressor station within the County of Ventura
Ventura Steel – Hybrid	SoCalGas	
Devil’s Canyon Road – Natural Gas	Community	Approximately 12.88-acre oil extraction site located approximately 6,000 feet to the north of the compressor station on west side of SR-33 within the County of Ventura
Devil’s Canyon Road – Hybrid	Community	
County Line – Natural Gas	SoCalGas	Approximately 12.33-acre vacant parcel of land designated and zoned for agriculture located within County of Ventura at the county line between Santa Barbara/Ventura counties approximately 12 miles northwest of the existing compressor station
County Line – Hybrid	SoCalGas	

**Table ES-2. Results of Evaluation**

<b>Ranking Order</b>	<b>Operational Considerations</b>	<b>Environmental Considerations</b>	<b>Project Cost</b>	<b>Operational Cost</b>	<b>Schedule</b>
<b>1</b>	<b>1A Planned Project</b>	<b>4B Devil's Canyon Road – Hybrid</b>	<b>1A Planned Project</b>	<b>1A Planned Project</b>	<b>1A Planned Project</b>
<b>2</b>	<b>3A Ventura Steel – Natural Gas</b>	<b>1B Current Site – Hybrid</b>	<b>1B Current Site – Hybrid</b>	<b>3A Ventura Steel – Natural Gas</b>	<b>1B Current Site – Hybrid</b>
<b>3</b>	<b>1B Current Site – Hybrid</b>	<b>3B Ventura Steel – Hybrid</b>	<b>4A Devil's Canyon Road – Natural Gas</b>	<b>4A Devil's Canyon Road – Natural Gas</b>	<b>4A Devil's Canyon Road – Natural Gas</b>

The top three alternatives for each of the five categories are shown in Table ES-2: Results of Evaluation, above. Based on the analysis, Alternative 1.A Planned Project received the highest rankings in the most categories. However, SoCalGas has selected Alternative 1.B Current Site – Hybrid, which received the second highest rankings in the most categories, as the preferred alternative. The Devil's Canyon Road - Hybrid alternative received the highest score in the environmental considerations. However, it did so with less than one percent difference between it and the current site when equipped with hybrid compression technology. Further, it does not achieve high rankings in the other four categories.

SoCalGas determined Current Site - Hybrid alternative (1) provides greater reliability benefits due to project duration as compared to the alternative site locations; (2) provides greater oxides of nitrogen (NO<sub>x</sub>) emissions reductions as compared to an all-gas option; and (3) reduces the project cost burden to our customers as compared to the alternative site locations.

# 1 Introduction

SoCalGas®<sup>5</sup> operates an integrated energy delivery system composed of pipelines, compressor stations, storage fields, and regulator stations, designed to provide safe and reliable service to its customers. SoCalGas relies on this network to deliver energy to residential, business, industrial, and agricultural customers throughout Southern California. As the nation's largest natural gas distribution utility, SoCalGas serves 21.8 million consumers through 5.9 million meters in more than 500 communities within its 24,000-square-mile service territory.

The Ventura Compressor Station, located at 1555 North Olive Street in the City of Ventura, has safely and reliably operated to meet local distribution needs within Ventura and the Central Coast, as well as to supply the La Goleta Storage Field. Figure 1 shows an overview of the site's location in SoCalGas' service area. However, the existing compression equipment was installed in the 1980s, and the compressor station has been in use since at least 1923. As discussed further herein, due to changes to the operating environment of SoCalGas' integrated natural gas transmission system, the functionality of the existing 40-year-old equipment, the ability to maintain system reliability, and the critical importance of maintaining adequate inventory in the La Goleta storage field, SoCalGas has proposed to modernize the compressor station, by replacing three existing natural gas compressors with four new natural gas compressors within a new compressor building and other associated improvements (planned project). The California Public Utilities Commission (CPUC) has recognized the role of compressor stations in maintaining the operational reliability and safety of the gas transmission system (CPUC 2019).



Figure 1. Regional Overview

The CPUC, which has primary regulatory authority over SoCalGas' integrated natural gas transmission system, requested<sup>6</sup> that SoCalGas prepare a feasibility study that: (1) fully

<sup>5</sup> SoCalGas is a wholly owned subsidiary of Sempra Energy.

<sup>6</sup> California Public Utility Commission letters dated August 5, 2021, and August 20, 2021 (CPUC 2021a, 2021b).

analyzes all options considered for the compressor station upgrade; (2) provides the basis for rejecting any alternatives that were considered, including but not limited to electric compressors for all or part of the planned project (3) discusses all alternative sites that were considered but rejected and provides SoCalGas' reasons for rejecting them; and (4) provides an explanation of how the planned project factors into both local and statewide safe and reliable service and the state's decarbonization goals.

This feasibility study for the Ventura Compressor Station analyzes potential project alternatives to determine if they meet the purpose and need of the planned project and most of the project objectives; determine if they meet essential site criteria; assess operational and environmental criteria; and finally, assess cost and schedule. In order to assess each potential alternative option according to the same criteria, a scoring rubric was developed for operational, environmental and schedule considerations. The rubric assigns point values from 0 to 9. Cost was evaluated based on the lowest to highest cost.

The criteria within the rubric address several topic areas that the CPUC examined in multiple data requests<sup>7</sup> regarding the Ventura Compressor Modernization Project as well as categories typically evaluated in a CEQA EIR or topic areas relevant to operational needs.<sup>8</sup> Operational considerations include topic areas such as safety and resiliency, electrification and power requirements, control systems, system maintenance and gas releases, and siting considerations. Environmental considerations include topic areas such as, but not limited to, air quality, greenhouse gas emissions, traffic, noise, aesthetics/visual resources, land use designation, and wildfire. Additional topic areas were added to expand the environmental evaluation to address cultural resources, natural resources, and CalEnviroScreen pollution burden.

Dudek was retained by SoCalGas to prepare an environmental evaluation as part of this feasibility study (see Appendix A). Dudek is a 700-person national, multidisciplinary environmental and engineering firm founded in 1980 and is ranked as one of the top 120 U.S. Environmental Firms (Engineering News-Record 2021). Additional technical support for SoCalGas' feasibility study analysis was provided by Burns and McDonnell (BMCD) and SPEC Services. BMCD is a 7,500-person family of companies consisting of engineers, construction professionals, architects, planners, technologists, and scientists to design and build infrastructure. SPEC Services is an engineering firm that includes over 200 people covering a broad range of disciplines, including process, mechanical, electrical, controls, civil/ structural, and pipeline engineering and design,

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<sup>7</sup> CPUC Data Requests/SoCalGas Responses include:

- CPUC–Energy Division Data Request 1, RE: Ventura Compressor Station, Date Requested: May 12, 2021; Date Responded: May 14, 2021 (SoCalGas 2021a)
- CPUC–Energy Division Data Request 2, RE: Ventura Compressor Station, Date Requested: May 17, 2021; Date Responded: May 24, 2021 (SoCalGas 2021b)
- CPUC–Energy Division Data Request 3, RE: Ventura Compressor Station, Date Requested: June 1, 2021; Date Responded: June 4, 2021 (SoCalGas 2021c)
- CPUC–Energy Division Data Request 4, RE: Ventura Compressor Station, Date Requested: June 23, 2021; Date Responded: July 7, 2021 (SoCalGas 2021d)
- CPUC–Energy Division Data Request 5, RE: Ventura Compressor Station, Date Requested: July 23, 2021; Date Responded: August 6, 2021 (SoCalGas 2021e)
- CPUC–Safety and Enforcement Division Data Request 1, RE: Ventura Compressor Station, Date Requested: August 19, 2021; Date Responded: August 19, 2021 (SoCalGas 2021f)

<sup>8</sup> There is no discretionary permit required for the planned modernization project and consequently, environmental review under CEQA is not required. Environmental considerations evaluated by Dudek include topic areas such as but not limited to land use, air quality, traffic, and wildfire, which are topic areas in CEQA Guidelines Appendix G, Environmental Checklist Form.

procurement, construction management, project controls, survey, and land services, and permits.

As discussed more fully herein, the natural gas system and the planned project are integrally related to local and statewide safe and reliable energy service and the state’s decarbonization goals.

## 1.1 System Overview, Safety, Reliability, and Decarbonization Goals

This section provides an overview of SoCalGas’ natural gas system, system safety, Ventura Compressor Station safety and reliability and provides an explanation of how the planned project factors into both local and statewide safe and reliable service and the state’s decarbonization goals, as requested by the CPUC in letters dated August 5, 2021, and August 20, 2021.

### 1.1.1 Gas System Overview

SoCalGas’ service territory encompasses approximately 24,000 square miles throughout Central and Southern California, from Visalia to the Mexican border. Most of the natural gas used in California—more than 90 percent—is produced out of state including from basins in Texas and New Mexico. Transmission pipelines transport natural gas supplies from the California/Arizona border and other receipt points in Central and Southern California to areas throughout SoCalGas’ service territories. Nine compressor stations located along the transmission pipelines, including the Ventura Compressor Station, provide the pressurization needed to move the gas through the pipelines.<sup>9</sup> Natural gas may be moved into four underground storage fields within the SoCalGas system.<sup>10</sup> Since out-of-state supplies of natural gas may not be enough to meet customers’ needs, gas from the storage facilities is used to make up the difference. Storage fields play a critical role in providing gas supplies during colder months for heating and warmer months to support electricity generation. Natural gas may be withdrawn from storage fields and moved into transmission pipelines and then into smaller, lower-pressure distribution mains that transport the natural gas around the region and directly to commercial and industrial customers. The natural gas is then moved into even smaller and lower-pressure pipelines for delivery to homes and businesses throughout SoCalGas’ service territory.

### 1.1.2 System Safety

At SoCalGas, the safety of our customers, employees, contractors, and the communities we serve has been, and will remain, our core value. Our tradition of safety spans more than 150 years and is the foundation of our business. As the nation’s largest natural gas utility, we take our safety commitment very seriously. Our longstanding commitment to safety focuses on three primary areas – employee and contractor safety, customer and public safety, and the safety of

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<sup>9</sup> As noted by the U.S. Energy Information Administration, “The U.S. interstate natural gas pipeline network relies on more than 1,200 natural gas compressor stations to maintain the continuous flow of natural gas between supply area and consumers. Compressor stations are ‘pumping’ facilities that advance the flow of natural gas. They are usually situated between 50 and 100 miles apart along the length of a natural gas pipeline system and are designed to operate on a nonstop basis” (USEIA 2007).

<sup>10</sup> The four natural gas storage fields are Aliso Canyon (northern San Fernando Valley near Porter Ranch), Honor Rancho (Santa Clarita near the State Route 126 and Interstate 5 interchange), La Goleta (Goleta south of University of California, Santa Barbara), and Playa del Rey (north of Los Angeles International Airport).



our gas system. This safety focus is embedded in all we do and is the foundation for who we are – from initial employee training, to the installation, operation and maintenance of our utility infrastructure, and to our commitment to provide safe and reliable service to our customers. We strive to continuously improve and strengthen our safety performance by setting clear measurable goals, assessing our safety performance, reviewing and questioning approaches and assumptions, integrating people and activities to promote a common approach to safety, and learning from and sharing best practices and lessons learned with our stakeholders, including our peers. This safety commitment has guided SoCalGas' past and current practice and will continue to guide our future direction. SoCalGas' overarching safety program is called the Safety Management System (SMS).

## Safety Features

Natural gas energy providers, such as SoCalGas, are regulated, monitored, and inspected by a number of government agencies. Pipeline operators must comply with the Code of Federal Regulations requirements, Department of Transportation Pipeline and Hazardous Materials Safety Administration requirements (PHMSA 2018), National Code Standard requirements, and CPUC General Orders and regulations when engineering, designing, and constructing compressor stations. SoCalGas also incorporates best available technology and safety systems when retrofitting or redesigning its facilities and equipment to provide multiple layers of redundancy when it comes to system safety and reliability. Figure 2 presents a overview of the components of the SoCalGas pipeline system.

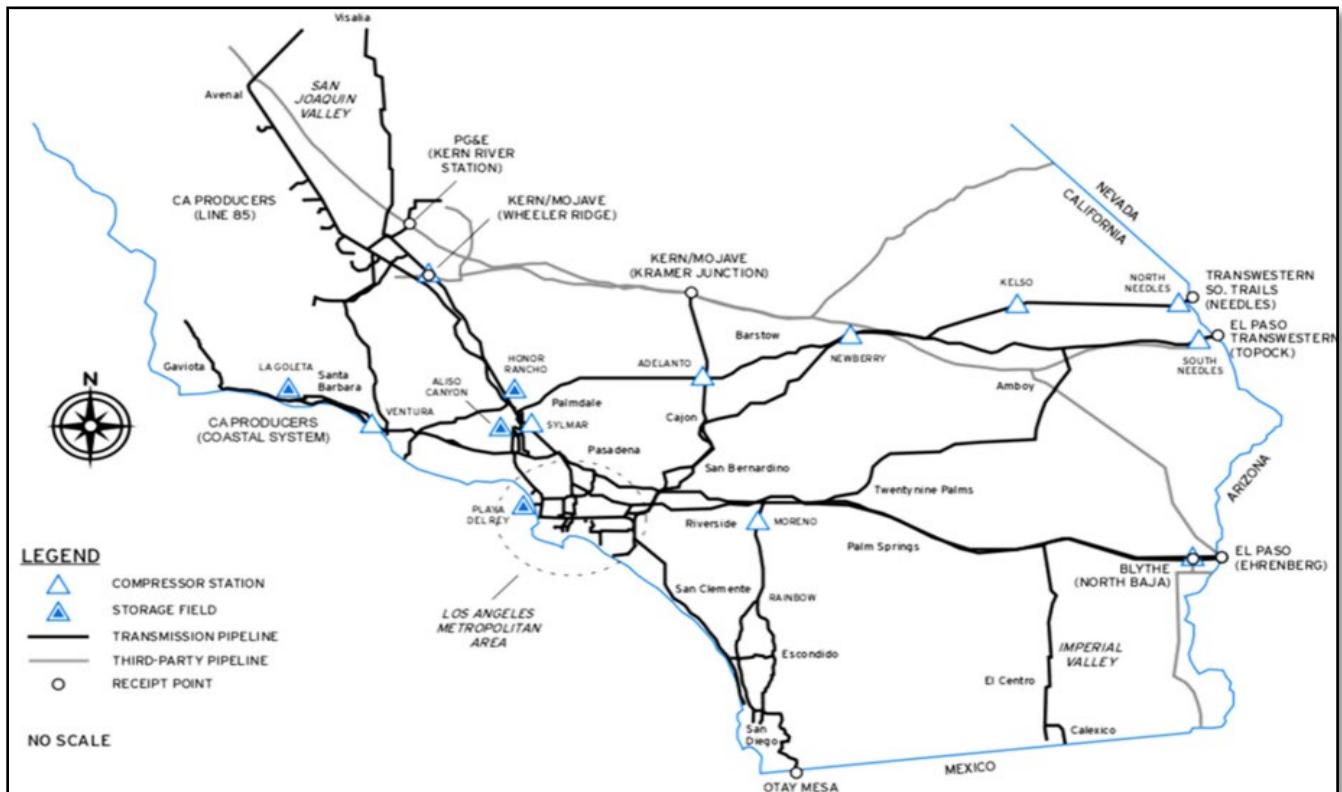


Figure 2. Gas Transmission System

The integrity of the pipeline systems that bring natural gas to homes and businesses is also under careful and routine surveillance. SoCalGas has approximately 5,000 trained employees

to respond quickly to incidents throughout the service territory. Additional safety measures include the following:

- **Leak Surveys:** SoCalGas conducts regular leak surveys by trained and qualified individuals of its pipelines and compressor stations, typically using sensitive natural gas detection equipment, and addresses leak indications found as a result of a leak survey.
- **Pipeline Patrols:** Pipeline patrols are performed by trained and qualified individuals within structured scheduled times that meet or exceed federal and state requirements to look for indications of any abnormal conditions, such as missing pipeline markers, construction activity, potential gas leaks, and other factors that can affect the safety and operation of the pipeline.
- **Corrosion Control:** In order to protect pipelines from external corrosion, SoCalGas uses pipeline coating and cathodic protection. SoCalGas also manages the quality of the natural gas in its system and manages the system's operation to prevent internal corrosion.
- **Valve Inspection:** Valves utilized for isolating pipeline segments are inspected once each year and serviced for valve casing leak detection, proper valve identification, adequate lubrication, and valve operation. There are approximately 8,500 of these valves in the transmission pipeline system.
- **Underground Vaults:** Once a year, SoCalGas performs routine maintenance and inspection on all underground vaults within its service area, which typically contain pressure-regulating or pressure-limiting equipment. Maintenance and inspection include proper operation of ventilation equipment, inspection of structural conditions, correction of water presence, and removal of trash or other foreign substances.

### 1.1.3 Ventura Compressor Station Safety and Reliability

SoCalGas' SMS encompasses all aspects of safety relevant to SoCalGas' business, including employee safety, contractor safety, customer safety, public safety, and system safety. It applies to all SoCalGas assets and operations as well as to all employees, from senior management to those on the frontline. Our staff at the Ventura Compressor Station work and live in the Ventura community and impart the value of safety in every task.

#### **Safety**

The Ventura Compressor Station meets all applicable federal and state requirements for safety. SoCalGas performs specific testing and inspections at the Ventura Compressor Station as required by the Code of Federal Regulations, California Air Resources Board (CARB) and CPUC General Order 112-E and other relevant local regulations (e.g., Ventura County Air Pollution Control District [VCAPCD]). The station, including its piping, safety, and fire equipment, is equipped with continuous remote/onsite monitoring equipment, and is also subject to in-person testing and inspection, as further described below. SoCalGas also is in regular communication with first responders, including the Ventura City Fire Department (VCFD), which is the primary emergency response agency for an emergency natural-gas-related incident at the Ventura Compressor Station. The VCFD also reviews and approves the facility's hazardous materials business plan and spill prevention, control, and countermeasure plan. In advance of routine maintenance activities, SoCalGas contacts the VCFD to maintain open communication. Additionally, SoCalGas' Emergency Services Department conducts annual briefings with first

responders in Ventura and across its service territory so that they are educated about how to respond to a natural gas incident.

The Ventura Compressor Station is among the many SoCalGas facilities subject to the statewide California Air Resources Board (CARB) Oil and Gas Methane Regulation, per California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10: Climate Change, Article 4, Subarticle 13: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities, which has been in effect since January 1, 2018. This regulation includes quarterly third-party leak detection and repair (LDAR) inspections. The purpose of this regulation is to establish greenhouse gas emission standards for natural gas facilities and serve the purposes of the California Global Warming Solutions Act, Assembly Bill 32, as codified in Sections 38500–38599 of the California Health and Safety Code. The rule is intended to minimize methane leakage associated with gas storage, processing, and transmission. The rule also includes time frames for conducting timely repairs and re-inspections should a component be found to be leaking methane.

There are a multitude of regular tests and inspections that occur at the Ventura Compressor Station, which include the following:

- **Daily:** Facility rounds/remote monitoring
- **Weekly:** Hazardous materials storage area audio-visual inspections
- **Monthly:** Fire and safety equipment inspection; preventive maintenance and inspections per original equipment manufacturer's (OEM) specifications; spill prevention, control, and countermeasure inspections
- **Quarterly:** Fire and gas detector testing and inspections; emission testing; third-party leak inspections per CARB's statewide Oil and Gas Methane Regulation; preventive maintenance and inspections per OEM specifications
- **Semi-annual:** Structural support integrity inspections; preventive maintenance and inspections per OEM specifications; internal environmental compliance audits and inspections
- **Annual:** Third-party fire equipment inspections, servicing, and testing; emergency shutdown (ESD) system testing and inspections; third-party emission testing; preventive maintenance and inspections per OEM specifications; valve maintenance and inspections; relief valve and transmitter inspections and testing; internal leak inspections
- **Other as needed:** Stormwater compliance evaluations every rain event

When performing system testing, natural gas is released into onsite piping that feeds into SoCalGas' local distribution system. When a compressor or onsite pipeline is taken out of service for scheduled maintenance SoCalGas uses state of the art technology to reduce/eliminate the venting of natural gas to atmosphere. Releases are accounted for in SoCalGas' greenhouse gas annual emission report.

## Reliability

The Ventura Compressor Station is situated to support the Central Coast and meet reliability needs. It is the last compressor station on SoCalGas' Coastal System and the main feed to customers in Ventura and on the Central Coast. A compressor station has been in use at the planned project site since 1923 and the current equipment has been onsite since the 1980s. Customer demand on the Coastal System has been relatively stable over the last 10 years;



however, locally produced gas supplies have decreased significantly over the same period.<sup>11</sup> With the loss of local supply and performance constraints due to aging equipment, the compressor station has had to run more frequently in order to meet customer demand and maintain gas storage supply in the La Goleta Storage Field. SoCalGas has made use of natural gas supply from Pacific Gas and Electric Company (PG&E) that is delivered to the distribution system at Morro Bay to supplement the local demand, thereby facilitating injection at the La Goleta Storage Field. However, these operational modifications are not sufficient to address the long-term changes, such as the loss of local production, to the system. Gas supplies transported through the Ventura Compressor Station are now the primary source of supply for the La Goleta Storage Field because local supplies no longer meet injection needs. For these reasons, SoCalGas sought CPUC authorization for compressor station modernization in the 2016 and 2019 General Rate Case (GRC).<sup>12</sup>

### 1.1.4 Decarbonization Goals

Reducing carbon intensity across all economic sectors is foundational to achieving California's net zero GHG emission goals. It requires energy efficiency, renewable electricity, renewable gases, long duration storage, carbon management, and other technologies to be viable at scale. A successful energy transition requires leadership, innovation, effective policy, and broad collaboration. SoCalGas set a goal to achieve net zero greenhouse emissions in its operations and the energy it delivers by 2045. These steps are in alignment with the State of California.

The State is working on many decarbonization efforts with the goal of achieving carbon neutrality by 2045. The Ventura Compressor Station Modernization Project, along with the others recognized by Commission Decision D.19-09-051 on SoCalGas' integrated gas transmission system, will support both local and statewide decarbonization efforts. Furthermore, SoCalGas continues to integrate electric equipment across its infrastructure to create hybrid operating systems that further reduce potential emissions.

The reliability services and capabilities provided by the gas grid are increasingly being called upon to support decarbonization goals and complement renewable resource deployment. For example, "renewable natural gas (RNG) is produced from food waste, farms, landfills, and even sewer systems. It can rapidly cut greenhouse gas emissions because it takes more climate

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<sup>11</sup> Over time, locally produced gas supplies on SoCalGas' transmission system downstream of the Ventura Compressor Station have dropped from approximately 15,029,633 million cubic feet in 2011 to 1,534,807 million cubic feet in 2020 (SoCalGas 2021a).

<sup>12</sup> As noted in Commission Decision D.19-09-051 on SoCalGas' 2019 GRC application, the CPUC authorized the planned compressor modernization project and the necessary funding, recognizing the importance of maintaining operational reliability and safety of the gas transmission system, and finding that: "With respect to the requested amounts for this GRC, we note that other largescale projects are being planned specifically for the Ventura Compressor Station and the Honor Rancho Compressor Station (and the Moreno Compressor station for SDG&E [San Diego Gas & Electric®]). Because we recognize the importance of the proposed projects and the role of compressor stations in maintaining operational reliability and safety of the gas transmission system, we find that it is prudent and reasonable to authorize the proposed projects and for SoCalGas to have the necessary funding to conduct these projects (and Moreno Compressor station for SDG&E). At this point, we do not find it necessary to deviate from current GRC practice and authorize funding only for specific projects because of the large scope covered in the GRC and because of the many challenges associated with planning and executing multiple and large projects within a specified timeframe. We do however encourage SoCalGas to place a high priority on critical projects under this category as most of its compressors are over 50 years old and because of key risks that need to be mitigated in this area. Therefore, we find that the requested amounts for Compressor Stations should be authorized" (D.19-09-051 at pp. 116–117).

pollution out of the air” (Kovaleski 2019). The CPUC recently issued Decision 22-02-025 on biomethane standards to implement Senate Bill 1440 Biomethane Procurement Program which sets “biomethane (i.e., renewable natural gas and/or bio-synthetic natural gas) procurement targets to reduce short-lived climate pollutant emissions ... establish a cost-effective means of procurement and adopt provisions to achieve additional co-benefits, as well as timetables for each investor-owned utility providing gas service in California to achieve specified procurement targets” (CPUC 2022). California’s Low-Carbon Fuel Standard, which requires companies that sell transportation fuels in the state to lower their products’ carbon intensity, is causing increased interest in dairy renewable natural gas to address the emissions linked to climate change (Dvorak 2022). Biogas from cow manure, which is around 60% methane, is piped to a processing facility that collects gas and purifies it for injection into the pipeline (Dvorak 2022). Calgren Dairy Fuels completed a dairy renewable natural gas facility in Pixley, California, the first of its kind in the state. The biogas captured by the facility is processed and piped into the SoCalGas system. As noted by Walt Dwelle, principal owner of Calgren Renewable Fuels: “This facility alone will eventually capture methane produced from the manure of more than 75,000 cows, preventing about 130,000 tons of greenhouse gas from entering the atmosphere each year, the equivalent of taking more than 25,000 passenger cars off the road for a year” (Kovaleski 2019).

SoCalGas is integrating green hydrogen into the pipeline network to support hard to electrify industries – like dispatchable electric generation, high heat industries and heavy-duty trucks. There’s a growing consensus among academics, industry leaders, community stakeholders and regulators that solar, wind and batteries alone cannot achieve California’s target of carbon neutrality by 2045 – a goal SoCalGas shares for its own operations.

The California Energy Commission (CEC) observed that the gas system is integral to the electric grid because the gas system is “being used to integrate renewables” by “meet[ing] peak and net peak demand.”<sup>13</sup> Advancement of renewable resources has changed the way electricity is generated and driven increased “inter-dependencies between gas and electric systems.”<sup>14</sup> As noted by Katherine Blunt in the Wall Street Journal, “grid operators around the country have recently raised concerns that the intermittence of some electricity sources is making it harder for them to balance supply and demand, and could result in more shortages” (Blunt 2022). As the electric grid incorporates an increasing amount of renewable resources, it is likely less natural gas will be used for electric generation on an annualized basis. Despite this, the gas system will be called upon to fill gaps when renewable resources cannot meet demand due to intermittent supply, increased levels of end-use electrification, increases in extreme weather events, and wildfires such as the 2018 Thomas Fire that affected both Ventura and Santa Barbara Counties.

As such, deliveries of just-in-time natural gas are increasing for thermal generation, albeit overall generation is decreasing. In recent years due to changes in regulations related to cooling systems for natural gas electric generation, in-state gas fired generation has decreased by almost 13,000 megawatts (MW).<sup>15</sup> Despite this decline in gas generation capacity, gas throughput on SoCalGas’ integrated transmission system has risen largely to support

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<sup>13</sup> See CEC, “Overview of California Gas Reliability Issues,” presented at the Integrated Energy Policy Report Joint Agency Workshop on Summer 2021 Reliability, Session 3: Gas Reliability Issues and Polar Vortex, held on July 9, 2021. Available at: <https://www.energy.ca.gov/event/workshop/2021-07/iepr-joint-agency-workshop-summer-2021-electric-and-natural-gas-0>.

<sup>14</sup> Ibid.

<sup>15</sup> See 2021 Draft IEPR, Volume II, p. 33.

dispatchable generation.<sup>16</sup> For example, in 2020, in significant measure most peak hour gas deliveries from SoCalGas' system were to serve dispatchable electric generators and electric system ramping needs more so than to serve peak hour core customer thermal load. For example, of the 77 hours in 2020 when deliveries to either core customers or dispatchable electric generators exceeded 100,000 Dekatherms/hour (Dths/hr) (equivalent to ~ 2.4 billion cubic feet/day (Bcf/d) of capacity), 62 hours were to serve dispatchable electric generators while 15 hours served core customers. This requires consistent and reliable compression of gas in the pipelines to be able to move high quantities of gas quickly.

## 1.2 Feasibility Study Methodology

SoCalGas appreciates the collaboration with the community and CPUC on the Ventura Compressor Station Project. We understand the public's concern for safety at this facility and all SoCalGas facilities. SoCalGas is committed to clear, open, transparent, and frequent communication to work collaboratively with the communities and local municipalities in which our facilities are located and with regulatory agencies with oversight of our facilities. This feasibility study represents SoCalGas' diligent and earnest assessment of the Ventura Compressor Station and the feasibility of potential alternative site locations and equipment configurations.

There is no prescriptive format or template for a feasibility study. As such, SoCalGas developed this study based on the foundational purpose, need and objectives of the project, essential site criteria and five core considerations – operational, environmental, project cost, operational cost, and schedule – described herein.

### 1.2.1 Purpose, Need, and Objectives of the Project

SoCalGas considered project alternatives based on safety, reliability, resiliency, environmental, and community considerations; ratepayer impacts; and cost and schedule in relationship to the planned project's objectives. The purpose of the planned Ventura Compressor Modernization Project is to:

1. Continue providing reliable compression to supply residential, business, industrial, and agricultural customers with gas in Ventura and along the Central Coast of California;
2. Enhance reliability by modernizing aging infrastructure; and
3. Support gas deliveries to the La Goleta Storage Field, a critical part of the region's energy infrastructure.

The need for the planned project is driven by changes to the operating environment of SoCalGas' integrated gas transmission system, the functionality of the existing 40-year-old equipment, the ability to maintain sufficient pressure in the existing pipelines, and the critical importance of maintaining adequate inventory in the La Goleta Storage Field.

The objectives of the planned project are to:

- Replace compression infrastructure installed in the 1980s with new equipment that complies with applicable Ventura County Air Pollution Control District (VCAPCD)

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<sup>16</sup> SoCalGas' internal modeling analysis.

requirements and supports California’s climate goals and SoCalGas’ climate goals to reach net zero carbon emissions by 2045.

- Meet system operational requirements, including adequate horsepower to compress gas, and address changes in the natural gas transmission system that necessitate flexibility such that the equipment can provide sufficient compression to supply the La Goleta Storage Field and customers north of the Ventura Compressor Station as well as meeting local distribution needs in Ventura.
- Safely construct and operate the compressor station by complying with safety regulations including, but not limited to, U.S. Department of Transportation (DOT) regulations.
- Maintain compatibility with local agency land use designations and zoning by utilizing existing industrial land with adequate acreage to minimize land use conflicts and minimize disturbance to undeveloped land as practicable.
- Minimize environmental impacts, such as loss of environmentally sensitive habitat, impacts to sensitive wildlife species, and impacts to historical and Native American resources.
- Minimize significant hillside grading, dust generation, and installation of retaining walls.
- Minimize the need to relocate pipelines and other infrastructure and maintain adequate separation to reduce potential landslide risk and maintain resiliency.
- Consider availability of electric infrastructure if a hybrid natural gas and electric compressor configuration is contemplated.
- Consider proximity to and the design pressure of the existing pipeline system.
- Safeguard ratepayer funds by evaluating project costs in a prudent manner and in accordance with CPUC direction.

### 1.2.2 Essential Site Criteria

Essential site criteria are those criteria that must be met to construct and operate a compressor station. They include the following:

1. Property acreage is at least 8 acres but ideally 10 acres or larger, especially for sites with slopes greater than an average of 15% to account for graded cut/fill slopes. The site must also be held by private property owners or SoCalGas (not a local, state, or federal agency).

SoCalGas operates nine (9) compressor stations on its integrated gas transmission system. The property acreage of these compressor stations vary in size from less than an acre to more than 100 acres, with a median size of 39 acres and an average size of roughly 40 acres. To safely operate a compressor station, adequate space within and around buildings and pipelines is necessary, which is dependent on the operational needs of the particular facility. The existing station is operating on 8 acres but given that the median compressor station size for SoCalGas’ 9 compressor stations is 39 acres and the average compressor station size is 40 acres, at least 10 acres is needed for a new compressor station to provide for operational needs and to address slopes/grading.

2. The site is compatible with Federal Aviation Administration (FAA) requirements for land use.

The FAA sets forth guidance for development near airports and land use compatibility. This guidance is typically implemented at the regional level by Airport Land Use Commissions (ALUC).<sup>17</sup> Certain types of land uses are limited or prohibited near airports for safety reasons, such as industrial-scale land uses and utility-scale solar arrays, due to glare. The compressor station location must comply with FAA requirements.

3. The site is not within a Federal Emergency Management Agency (FEMA) mapped floodway.

FEMA regulatory floodways are defined as “the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height” (FEMA 2020). Further, “[t]he community is responsible for maintaining the floodway to mitigate flood hazards; the community must not allow any activities causing a rise in the Base Flood Elevation (BFE) in the regulatory floodway” (FEMA 2019). Development within a floodway is typically restricted and as such, placing a compressor station in a regulatory floodway would be inconsistent with FEMA flood requirements.

### 1.2.3 Five Core Considerations

The evaluation of alternative options accounts for operational and environmental considerations that go beyond the foundational elements of the purpose, need, and objectives of the planned project and the essential site criteria. In addition, the feasibility study evaluates project cost, operational cost, and schedule. Cost is evaluated because as stated in the California Public Utilities Code Section 701.1(a)1, “a principal goal of electric and natural gas utilities’ resource planning and investment shall be to minimize the cost to society of the reliable energy services that are provided by natural gas and electricity.” Schedule is also evaluated because as stated in the CPUC’s Decision D.19-09-051 on SoCalGas’ 2019 GRC application, “We do however encourage SoCalGas to place a high priority on critical projects under this category as most of its compressors are over 50 years old and because of key risks that need to be mitigated in this area” (D.19-09-051 at pp. 116-117). The consideration of schedule aligns with the CPUC’s input.

Operational, environmental, and schedule subcategories were rated on a scale of 0-9, with 9 being the highest score an alternative could receive and 0 being the lowest score. The point values for each subcategory were added together to come up with a separate total score for the operational, environmental, and schedule considerations. The project cost and operational cost were ranked from lowest cost to highest cost based on total dollar value.

- **Operational Considerations:** there are five subcategories: (1) auxiliary and control systems, (2) backup power requirements, (3) emergency access, (4) geotechnical engineering constraints, and (5) proximity to distribution system.

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<sup>17</sup> The California Public Utilities Code, Sections 21670 et seq., requires the County Board of Supervisors to establish an ALUC in each county with an airport operated for the benefit of the public. The Code also sets forth the range of responsibilities, duties, and powers of the ALUC. In Ventura County, the Board of Supervisors has designated the Ventura County Transportation Commission to act as the ALUC for the County (VCALUC 2000).

The operational considerations evaluation process included a team of six SoCalGas staff members with subject matter expertise in pipeline operations, mechanical engineering, and civil engineering. Each staff member evaluated each alternative and assigned a point score in accordance with the rubric (Appendix B).

- **Environmental Considerations:** there are three categories within which environmental topic areas are addressed:
  - *Operational Subcategories:* (1) air quality, (2) greenhouse gas emissions, (3) land use designation, (4) CalEnviroScreen pollution burden, (5) wildfire, (6) aesthetics/visual, and (7) noise.
  - *Onsite Construction Subcategories:* (1) slope/topography/grading, (2) traffic – construction, (3) air quality, (4) greenhouse gas emissions, (5) cultural resources, (6) natural resources, and (7) noise.
  - *Offsite Construction Subcategories:* (1) traffic – roadway construction, (2) utilities/service systems, (3) noise, (4) air quality, (5) greenhouse gas emissions, (6) natural resources, and (7) cultural resources.

Environmental considerations were evaluated by Dudek – see Appendix A – and are based on topic areas that the CPUC examined in multiple data requests as well as categories typically evaluated in a CEQA EIR.<sup>18</sup> Dudek assigned a point score for each subcategory that was subtotaled by category (Operational, Onsite Construction, Offsite Construction) and then the total score was calculated.

- **Project Cost:** project cost estimates using American Association of Cost Engineers (AACE) accepted industry practices for two subcategories: (1) property / right-of-way acquisition and (2) engineering and procurement.

Project costs were developed by SoCalGas, with support from BMCD and SPEC Services, and in accordance with AACE Recommended Practices (RP) 10S-90 for the various alternatives. Project costs were normalized and assigned a score.

- **Operational Cost:** operational cost estimates using AACE accepted industry practices for three subcategories: (1) fuel costs; (2) annual maintenance costs, and (3) fuel modification.

Operational costs were developed by SoCalGas, with support from BMCD and SPEC Services, and in accordance with AACE RP 10S-90 for the various alternatives. Operational costs were normalized and assigned a score.

- **Schedule:** project duration to assess most timely process for three subcategories: (1) project permitting complexity; (2) property/ROW acquisition; and (3) construction duration.

Schedules were developed by SoCalGas, with technical support from BMCD and SPEC Services, for each alternative. Schedule estimates were also based on accepted industry

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<sup>18</sup> There is no discretionary permit required for the planned modernization project and as a result, environmental review under CEQA is not required.



standards using AACE RP 91R-16, “Schedule Development” (AACE 2020). Schedules were normalized and assigned a score.

## 1.2.4 Evaluation Process

The feasibility study identifies potential alternatives to the planned project for further evaluation, shown in Table 1: Ventura Compressor Station Modernization Project Potential Alternative Options, and on Figure 1: Potential Alternative Site Locations. These potential alternatives take into consideration direction from the CPUC and conversations with the community as a part of SoCalGas’ Town Halls hosted in October 2021.<sup>19</sup> All alternatives suggested by the community and the CPUC were considered as part of this analysis.

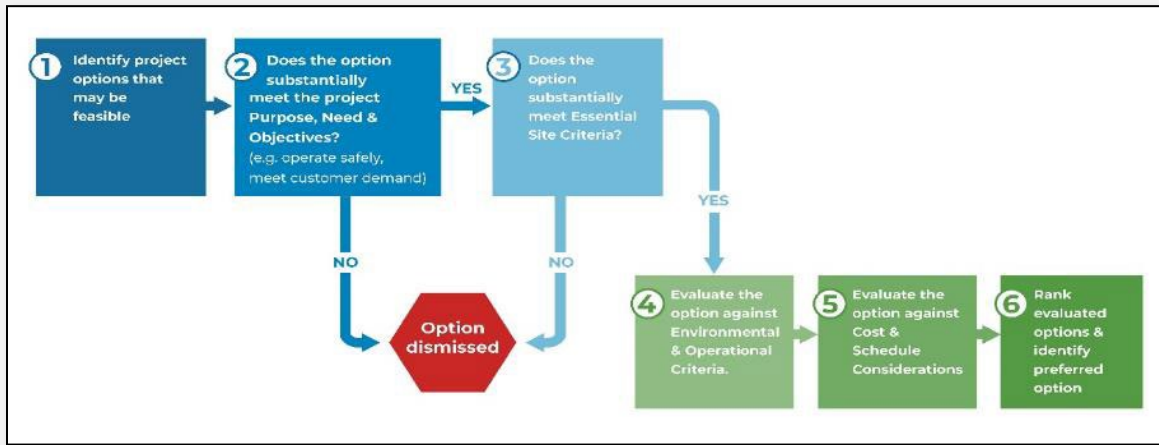
In addition to the alternative options suggested by the community, SoCalGas identified potential new sites by considering the essential site criteria and purpose, need, and objectives. Because urbanized areas generally do not have 10-acre parcels (or larger acreage with the potential to subdivide into a smaller 10-acre parcel), the screening process focused on more rural areas with larger parcel sizes outside city limits. These areas tended to be west-northwest of the compressor station or southeast within the agricultural areas near the cities of Oxnard and Camarillo. Steep slopes are also a consideration for the hillsides adjacent to the City of Ventura due to grading and visibility. Several mapped FEMA flood hazard areas are associated with the Arundell Barranca, the Santa Clara River and its tributaries, and coastal marine wetlands that are southeast of the compressor station and with the Ventura River to the northwest of the compressor station (FEMA 2022). Proximity to the Oxnard, Camarillo, and Naval Air Station (NAS) Point Mugu airports also constrains land use due to compliance with FAA requirements. Finally, although not identified as essential site criteria, proximity to and the design pressure of the existing pipeline system were considered at a macro level related to constructability and cost.<sup>20</sup> Alternatives have been evaluated according to the feasibility study process shown in Exhibit 1: Feasibility Study Evaluation Flowchart.

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<sup>19</sup> As part of SoCalGas’ effort to hear from and respond to the community’s concerns, allow for feedback, and answer questions, SoCalGas convened a series of town hall meetings in October 2021 to engage with the greater Ventura area community. Four of the sessions were held in person at the Museum of Ventura County and three were held virtually on the Microsoft Teams platform. All sessions provided the presentations and questions and answers in both English and Spanish. A total of 44 individuals participated in the town hall meetings.

<sup>20</sup> Pipelines are designed to a certain maximum allowable operating pressure in accordance with federal and state requirements.

Exhibit 1. Feasibility Study Evaluation Flowchart



**Source:** SoCalGas.

### Feasibility Study Evaluation Process

- Step 1: Potential alternative site locations and equipment configurations are identified.
- Step 2: The alternatives are analyzed to determine if they meet the purpose and need of the planned project and most (though not necessarily all) of the project objectives. If an alternative does not, it is dismissed from further consideration.
- Step 3: The remaining alternatives are analyzed to determine if they meet essential site criteria, such as minimum site acreage. If an alternative does not, it is dismissed from further consideration.
- Step 4: Those alternatives that meet the purpose, need, and most objectives and meet essential site criteria are assessed based on operational and environmental criteria and assigned a total technical score. The scoring rubric is provided in Appendix B: Feasibility Study Scoring Rubric.
- Step 5: The alternatives are then considered based on cost and schedule to implement and are assigned a total cost/schedule score according to the rubric.
- Step 6: At the conclusion of the analysis, the alternatives are ranked based on a total score and then the preferred option is identified.

The alternatives that have been developed are shown in Table 1.

**Table 1. Ventura Compressor Modernization Project Potential Alternatives**

Alternative	Identified By	Location/Configuration
<b>Alternatives Considered and Dismissed</b>		
No Project	Community	Current site – Maintain existing site configuration and operational profile



**Table 1. Ventura Compressor Modernization Project  
Potential Alternatives**

Alternative	Identified By	Location/Configuration
Compressor Station Removal	Community	Current site – Remove compressor station and do not replace compression
3/1 Hybrid	SoCalGas	Install a hybrid equipment configuration consisting of three electric compressors and one natural gas compressor at current site or other alternative sites
All Electric Compression	CPUC	Install an all-electric equipment configuration consisting of four new electric compressors at current site or other alternative sites
Goleta Storage Field	SoCalGas	Remove the existing horsepower from the compressor station and replace with new compression equipment at the La Goleta Storage Field approximately 40 miles north within the County of Santa Barbara
Petrochem	SoCalGas	Approximately 15-acre industrial site designated and zoned for industrial uses located approximately 13,500 feet northwest of the compressor station on the west side of State Route 33 within the County of Ventura
Petrochem – Hybrid	SoCalGas	
Alternatives Carried Forward for Analysis		
1.A: Planned Project	SoCalGas	Current site – Approximately 8-acre parcel located on land designated and zoned for industrial uses on the west side of City of Ventura
1.B: Current Site – Hybrid	SoCalGas	
2.A: Avocado Site – Natural Gas	Community	Approximately 15-acre agricultural site designated for open space uses and zoned for agriculture located approximately 3,000 feet west of the compressor station within the County of Ventura
2.B: Avocado Site – Hybrid	Community	
3.A: Ventura Steel – Natural Gas	SoCalGas	Approximately 10-acre industrial site with oil extraction infrastructure designated and zoned for industrial uses located approximately 8,000 feet north of the compressor station within the County of Ventura
3.B: Ventura Steel – Hybrid	SoCalGas	
4.A: Devil’s Canyon Road – Natural Gas	Community	Approximately 12.88-acre oil extraction site designated for open space uses and zoned for agriculture located approximately 6,000 feet to the north of the compressor station on west side of SR-33 within the County of Ventura
4.B: Devil’s Canyon Road – Hybrid	Community	
5.A: County Line – Natural Gas	SoCalGas	Approximately 12.33-acre vacant parcel of land designated and zoned for agriculture located within County of Ventura at the county line between Santa Barbara/Ventura counties approximately 12 miles northwest of the existing compressor station
5.B: County Line – Hybrid	SoCalGas	

\*Reasons for dismissing alternatives are discussed in Section 2.

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## 2 Alternatives Considered and Dismissed or Outside Scope of Analysis

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This section provides an overview of alternatives to the planned project that were considered by SoCalGas but dismissed from further consideration for reasons described in greater detail in the following sections.

### 2.1 Alternatives Dismissed for Failing to Achieve Purpose/Need/Objectives

Certain alternatives were considered and dismissed from further evaluation because they do not meet the purpose, need, and most objectives of the planned project as identified in Step 2 of the evaluation process.

#### 2.1.1 No Project

The No Project Alternative would result in maintaining the existing compressor station as it is currently configured (existing baseline setting). The existing compression equipment, consisting of three 1,100-horsepower (HP) compressors installed in the 1980s, would continue to be housed in the existing compressor building and would operate based on similar or reduced natural gas operational system demand.<sup>21</sup> The office trailer would provide office and administrative facilities for station staff; warehousing/storage would remain in the temporary storage containers. Piping and other supporting onsite infrastructure for both the transmission system and the distribution system would remain the same.

#### Rationale for Dismissing Alternative

The No Project Alternative would not meet the stated purpose and need of the planned project. The existing three 1,100 HP compressors were installed in the 1980s. Over time, locally produced gas supplies on SoCalGas' transmission system downstream of the Ventura Compressor Station have dropped from approximately 15,029,633 million cubic feet in 2011 to 1,534,807 million cubic feet in 2020 (SoCalGas 2021a). The loss in local production causes the Ventura Compressor Station to operate more frequently and with greater variability to move gas north, placing greater strain on already aging equipment. Maintenance events and days per year where one or more compressors were out of service for maintenance as of May 19, 2021,

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<sup>21</sup> The basis for natural gas requirements and supplies in California are mandated by the California Public Utilities Commission (CPUC) in Decision 95-01-039, which defined the requirement for SoCalGas, Pacific Gas and Electric Company, San Diego Gas & Electric®, Southwest Gas Corporation, City of Long Beach Energy Resources Department, and Southern California Edison to publish the California Gas Report. The most recent edition is the 2020 California Gas Report, which forecasts natural gas usage through 2035, accounting for energy efficiency and building electrification (reach codes). The report states that "utility-driven, statewide natural gas demand is projected to decline at an average rate of 1.0 percent each year through 2035" but "Nevertheless, gas-fired generation and energy storage will continue to be primary technologies to support long-term increases in electricity usage and integrate increasing quantities of intermittent renewable electric generation into the electric grid" (CGEU 2020). See also SoCalGas' Data Request 4 (SoCalGas 2021b).

were 73 and 461, respectively (SoCalGas 2021a).<sup>22</sup> In addition, replacement parts are becoming more difficult to obtain because of the age of the equipment. SoCalGas has already made changes to how it operates the main units in an effort to maximize the station's availability. Based on the natural gas forecast of the 2020 California Gas Report (CGEU 2020), natural gas use is anticipated to slowly decline with greater emphasis on renewable sources such as solar and wind, placing a greater emphasis on operational flexibility and the ability of equipment to ramp up and down quickly.

In 2012, SoCalGas retained a consultant to evaluate three compressor stations on SoCalGas' integrated transmission system, specifically Blythe, Moreno, and Ventura. Compression equipment at Ventura in 2012 consisted of three natural gas compressors at 1,100 HP each, the same equipment that is currently onsite. The results of the engineering analysis concluded that future operations will likely require a wide range of operating points, making flexibility for the station paramount. Additional horsepower is needed for daily fluctuations in loads, not to expand the system beyond existing levels of service. Without replacing the aging compressors and adding more horsepower, future operational needs would not be met and supplies at the La Goleta Storage Field would be affected. Storage fields play a critical role in providing gas supplies when supplies are not available from the out of state sources. The significant decrease in the local gas production and relatively stable demand has placed additional reliance on the La Goleta Storage Field to reliably provide service. Gas supplies transported through the Ventura Compressor Station (including supply from PG&E that is delivered at Morro Bay to supplement the local demand) are the primary source of supply for the La Goleta Storage Field, because local supplies no longer meet injection needs. The No Project Alternative would meet some of the stated objectives. The facility would continue to comply with safety and air quality regulations. The use of the property would remain consistent with the City of Ventura land use designation of "Industry" and zoning of "M-2 General Industrial," and the property size is sufficient for a compressor station (City of Ventura 2019, 2020). Potential environmental impacts would be minimized because there would be no construction or operational changes, and no grading would occur, because pipeline or other infrastructure relocation would be unnecessary. However, the No Project Alternative would not replace older compression infrastructure, causing potential impacts to reliability because the equipment would not meet changing system operational requirements.

As described above, the No Project Alternative would not provide sufficient compression to meet future operational needs, would not modernize aging infrastructure, would not maintain supplies to the La Goleta Storage Field, and would meet only some of the stated objectives. For these reasons, the No Project Alternative was dismissed.

### 2.1.2 Compressor Station Removal

The Compressor Station Removal Alternative would result in the decommissioning of the existing compressor station and removal of the onsite infrastructure, without relocating compression to

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<sup>22</sup> SoCalGas interprets a "maintenance event" as an event where operations needed to perform planned or unplanned maintenance activities on a specific compressor unit or any equipment related to a specific compressor unit or an event that may result in a reduction in the station gas throughput.

a new location. Compression from the Ventura Compressor Station to move natural gas north to Santa Barbara and San Luis Obispo counties would no longer be provided.<sup>23</sup>

### **Rationale for Dismissing Alternative**

The Compressor Station Removal Alternative would not meet the stated purpose and need of the planned project. SoCalGas is required to provide firm natural gas service, including to core customers (primarily residences and small businesses). As a result, SoCalGas must maintain reliable service to customers across its service territory. The Ventura Compressor Station is sited specifically to support the Central Coast, supplying natural gas to more than a quarter-million people for activities such as cooking and heating. It is the last compressor station on SoCalGas' system and is the main feed to customers in Ventura and on the Central Coast to meet reliability needs. The removal of compression would eliminate the ability to supply natural gas to customers in Ventura and along the Central Coast, would fail to modernize existing infrastructure (although the existing infrastructure would be removed), and would not enable deliveries to the La Goleta Storage Field.

The Compressor Station Removal Alternative would meet some of the stated objectives. The removal of the compressor station would be performed in accordance with all applicable safety requirements and the use of the property would remain consistent with the City of Ventura land use designation and zoning (City of Ventura 2019, 2020). However, this option would not meet the gas system's operational requirements. In addition, potential environmental impacts, especially related to dust generation, noise, and visual/aesthetics, could occur due to grading, trenching, and removal/disposal of pipeline materials and soil spoils. Additionally, future use of the property could be developed in accordance with the Ventura Municipal Code, which allows by right many industrial uses that could also cause environmental impacts (e.g., noise, lighting, glare, emissions).

As described above, the Compressor Station Removal Alternative would not provide sufficient compression to meet operational needs, would not modernize aging infrastructure, would not maintain supplies to the La Goleta Storage Field, and would meet only some of the stated objectives. For these reasons, the Compressor Station Removal Alternative was dismissed.

### **2.1.3 3/1 Hybrid Compression**

The 3/1 Hybrid Compression option would result in the installation of three new 1,900 HP electric compressors and one 1,900 HP natural gas compressor. Electricity would be provided by the Southern California Edison (SCE) electric grid and require a new onsite substation and potentially one new circuit, with an additional circuit for redundancy. Some onsite electric generation could be provided from rooftop-mounted solar panels and electric storage could be provided by an onsite battery energy storage system (BESS). One new natural gas compressor would be installed. A new compressor building would be constructed to house the equipment. As with the

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<sup>23</sup> M-2 General Industrial land uses allowed by Ventura Municipal Code Section 24.262.020 – Uses – Permitted include but are not limited to administrative, business, and professional services; automotive and accessories; drinking establishments; equipment rentals and sales; government services; food and fish processing; oil equipment services; recreation services; wholesaling and distribution; and major wireless telecommunication facilities. Additional land uses may be permitted under a director permit (e.g., farmer's market) or a use permit (e.g., farm employee housing, recycling services) (City of Ventura 2021).

planned project, a new office building and a new warehouse would be constructed and any structures currently onsite would be removed.

### **Rationale for Dismissing Alternative**

The 3/1 Hybrid Compression Alternative would not meet the stated purpose and need of the planned project. As discussed in Section 2.1.2: Compressor Station Removal Alternative, SoCalGas has a mandate to provide natural gas service to customers on the Central Coast and within its entire service area. Locally, wildfire risk is an ever-present threat. The 2017/2018 Thomas Fire was started during a high wind event that caused energized SCE power lines to arc and emit molten aluminum particles on dry vegetation igniting the fire (CALFIRE/VCFPD 2019). “Unlike electric systems in Europe, distribution and transmission lines in the U.S. were typically built overhead instead of buried underground, which makes them more vulnerable to high winds and other weather” (Blunt 2022). SCE has initiated Public Safety Power Shutoffs (PSPS) events during subsequent high wind conditions. An equipment configuration with three electric compressors affected by a PSPS event or disrupted due to fire damage or destroyed power lines would leave only one compressor functional. Under most operational conditions, the customers cannot be served with only one compressor in service and this situation could jeopardize the ability for long-term storage injection. Moreover, although unlikely, if the one natural gas compressor was also out of service during a PSPS event, reliability would be further compromised and supplies to the Coastal System and customers would be affected.

Offsite and onsite design features to offset the potential risk of PSPS events were considered. Based on preliminary analysis, approximately 5 MW of electric power would be needed and may be available on SCE distribution-level service. To minimize the risk of loss of power during a PSPS event, two unique power lines of at least 12 kilovolts (kV) that interconnect to two different circuits at two different substations could be installed. The exact size and location would need to be developed in consultation with SCE. This option presents several challenges due to SCE circuit availability and need to construct additional offsite electrical infrastructure.

Onsite generation would require approximately 5 MW. Solar, battery energy storage and fuel cells were evaluated. A utility-scale solar power plant may require between 5 and 10 acres per megawatt (MW) of generating capacity (USEIA 2021). Given the baseline power needed, a minimum of 30 acres to 60 acres would be necessary, which would not be feasible on the existing or potential alternative locations. A battery energy storage system (BESS) could offer onsite generation capabilities. BESS consist of individual batteries grouped into modules that are housed in climate-controlled containers typically 20 to 40 feet in length, about 10 feet in height and 10 feet in width. Data varies for the available capacity of a container and the longevity with which a BESS system can continue to function within design parameters, but the operational lifetime of the BESS could exceed 15 years (Dubarry et al. 2021). Based on these parameters, a BESS could be incorporated for supplemental power for administrative needs (e.g., office building) and potentially to provide supplemental power to electric compressors in the event of a power failure. However, “most large-scale batteries currently use lithium-ion technology, and can discharge for about four hours at most” (Blunt 2022). The length of time that a BESS could supply power would be contingent on the size and capacity of the BESS, likely between 3 to 5 days at most. Fuel cells, which directly convert chemical energy to electricity with pure water and heat as the only byproducts (USDOEEERE 2015), also could offer redundant power supply in the event of a power failure.

Even with design features incorporated to minimize risk from loss of power of the three electric compressors, the higher potential to lose all service with one natural gas compressor would

conflict with the mandate to provide natural gas service to customers on the Central Coast and within its entire service area. As a mainline compressor station, the station's ability to continue to serve customers at a rate sufficient to avoid a widespread disruption is paramount. In the event of a PSPS or prolonged power outage, service would be dependent on the capacity of the supplemental electric sources and amount of natural gas contained in the La Goleta Storage Field at the time of the outage.

The 3/1 Hybrid Compression option would meet some of the stated objectives. Three new electric and one natural gas compressors would meet VCAPCD and safety regulations and would be capable of meeting operating requirements when not impacted by a loss of electric power. Some potential environmental impacts, especially related to dust generation, noise, and visual/aesthetics, could occur due to grading, trenching, and installation of new electric infrastructure. Consistency with the land use designation and zoning and site size would be dependent on the site selected. New or reconductored offsite electric lines would be required.

As described above, the 3/1 Hybrid Compression Alternative would not provide reliable compression in the event of a power failure, would not enhance reliability, could jeopardize supplies to the La Goleta Storage Field, and would meet only some of the stated objectives. For these reasons, the 3/1 Hybrid Compression Alternative was dismissed.

## 2.1.4 All-Electric Compression

The All-Electric Compression option would result in the installation of four new 1,900 HP electric compressors. Electricity would be provided by the SCE electric grid and require a new onsite substation and potentially one new circuit, with an additional circuit for redundancy. Some onsite electric generation could be provided from rooftop-mounted solar panels and electric storage could be provided by an onsite BESS that would be sufficient to support the office/administrative electric load. No natural gas compressors would remain or be installed. A new compressor building would be constructed to house the equipment. As with the planned project, a new office building and a new warehouse would be constructed and any structures currently onsite would be removed.

### **Rationale for Dismissing Alternative**

The All-Electric Compression option would not meet the stated purpose and need of the planned project. As discussed in Section 2.1.2: Compressor Station Removal Alternative, SoCalGas has a mandate to provide natural gas service to customers on the Central Coast and within its entire service area. The reliability of the Ventura Compressor Station is critical. If SoCalGas lost electric power with an all-electric compressor option, this could impact customers due to the inability to move gas up the Central Coast to serve customer demand and to replenish the La Goleta Storage Field. With increasing frequency, PSPS on the SCE electric grid destabilize the energy delivery system and compromise reliability. Locally, wildfire risk is an ever-present threat. The Ventura community was affected by the Thomas Fire that began in December 2017, resulting in damage to more than 280,000 acres and destroying more than 1,000 buildings. Power was lost during the fire for several hours and subsequently SCE has initiated PSPS events during high wind conditions.

Additionally, the electrical load for four new electric compressors would require onsite infrastructure, such as a substation. Based on preliminary analysis, approximately 8 MW of electric power would be needed, which would require distribution-level service on two unique power lines of at least 12 kV or 16 kV each, or 8 MW of backup generation onsite. According to



the Solar Energy Industries Association, “depending on the specific technology, a utility-scale solar power plant may require between 5 and 10 acres per megawatt (MW) of generating capacity” (SEIA 2021). The existing site is only 8 acres in size and proposed new locations are roughly 15 acres in size, rendering utility-scale solar onsite infeasible. Also, as discussed above, BESS and fuel cells could provide supplemental power but the duration the power would be available is likely no longer than 5 days.

As a mainline compressor station, the station’s ability to continue to serve customers at a rate sufficient to avoid a widespread disruption is paramount. In the event of a PSPS or prolonged power outage, service would be dependent on the capacity of supplemental electric sources and the amount of natural gas contained in the La Goleta Storage Field at the time of the outage.

The All-Electric Compression Alternative would meet some of the stated objectives. New electric compressors would meet safety regulations and would be capable of meeting operating requirements when not impacted by a loss of electric power. Some environmental impacts, especially related to dust generation, noise, and visual/aesthetics, could occur due to grading, trenching, and installation of new electric infrastructure. Consistency with the land use designation and zoning and site size would be dependent on the site selected. New or reconducted offsite electric lines would be required.

As described above, the All-Electric Compression Alternative would not provide reliable compression in the event of a power failure, would not enhance reliability, could jeopardize supplies to the La Goleta Storage Field, and would meet only some of the stated objectives. For these reasons, the All-Electric Compression Alternative was dismissed.

### 2.1.5 La Goleta Storage Field

The La Goleta Storage Field Alternative (“Goleta Alternative”) would result in the installation of new compression equipment at the La Goleta Storage Field. The Ventura Compressor Station provides the necessary pressure to supply the Coastal System north of the Ventura Compressor Station and to support injection at the La Goleta Storage Field. Natural gas currently enters the La Goleta Storage Field at a pressure that enables the existing onsite equipment to boost pressure to overcome the differential between the storage field and pipeline. With the loss of compression at the Ventura Compression Station, new compression equipment would be installed to offset the loss of pipeline pressure currently provided by the Ventura Compressor Station and support injection.

#### **Rationale for Dismissing Alternative**

The Goleta Alternative would not meet the stated purpose and need of the planned project. The installation of new compression equipment at the La Goleta Storage Field would serve some of the essential functions of the Ventura Compressor Station but would not achieve the same operational benefits as the planned project. In general, it is less efficient and requires greater horsepower to compress at the end of a pipeline system rather than at the beginning. Additionally, the loss of pressure on the transmission lines serving the Coastal System north of the Ventura Compressor Station could impact the distribution pipeline systems north of the Ventura Compressor Station under winter demand conditions. Additional improvements to the Coastal System, such as rebuilding or replacing regulator stations and large customer meter sets or installing new pipelines, may be required. SoCalGas’ current design for the planned project would allow the station to support customer demand north of Ventura during a high-sendout condition should gas supply from the La Goleta Storage Field be unavailable, or during



milder demand conditions to preserve the inventory at the storage field for the winter heating season. Simply replacing the Ventura Compressor Station with incremental compression at the La Goleta Storage Field for injection purposes would not achieve this function; the extent of the additional improvements that would be required are unknown, but it may include new transmission pipeline between the compressors and the transmission mainline, an assessment of the capability of the existing compressors at the La Goleta Storage Field to perform this new transmission function, and a complex control system to operate the compressors in injection or transmission mode.

The Goleta Alternative would meet some of the stated objectives. The alternative would comply with applicable safety regulations, Santa Barbara County Air Pollution Control District requirements and maintain compatibility with the County of Santa Barbara land use designation and zoning as well as the County of Santa Barbara land use designation and zoning of the La Goleta Storage Field (“UT – Public Utility” and “PU – Public Utilities,” respectively) (County of Santa Barbara 2022). However, potential environmental impacts, especially related to dust generation, noise, and visual/aesthetics, could occur due to grading, trenching, and installation of new infrastructure. Environmental resource constraints, such as cultural and natural resources, that are known to be present at the La Goleta Storage Field, could be impacted by the installation of new compression equipment.

As described above, the Goleta Alternative would not provide sufficient compression to meet operational needs, would not enhance reliability, and would meet only some of the stated objectives. For these reasons, the Goleta Alternative was dismissed.

## 2.2 Alternatives Dismissed for Failing to Meet Essential Site Criteria

One alternative was considered and dismissed from further evaluation because it does not meet the essential site criteria as identified in Step 3 of the evaluation process. The alternative that was considered and the rationale for why it was dismissed are identified in Section 2.2.1.

### 2.2.1 Petrochem Site

The Petrochem Site option was developed by SoCalGas. This site is located approximately 12,000 feet north of the compressor station property to the west of State Route (SR) 33 within the jurisdiction of the County of Ventura. This site is not located on the existing transmission pipeline corridor and is privately owned; therefore, any future project would require the involvement of the landowner, either through easement acquisition, property purchase, or exercise of eminent domain. The property is approximately 15 acres on land currently developed with industrial uses, including oil extraction infrastructure, and is designated “Industrial” and zoned by the County of Ventura as “M3-10,000 sf – General Industrial, 10,000 sf minimum parcel size” (Ventura County 2020, 2021b). The slope of the property is less than 5 percent and would require onsite grading related to over-excavation and recompaction for structural foundations and grading to relocate and install pipelines. Access to the site is provided by multiple driveways off Crooked Palm Road that meet SoCalGas and emergency responder access requirements.

Transmission and distribution pipelines would need to be rerouted from the existing compressor station property to the new site location, requiring grading, trenching, and pipeline installation, and would potentially require acquisition of additional pipeline right-of-way. Given the fact that the site is developed with existing industrial uses, other utility connections for electrical, potable

water, sewer, and telecommunications are assumed to be available onsite and would require minimal upgrades. Water, sewer service, electricity, and telecommunications demand would be anticipated to be consistent with the existing compressor station.

A new office and a warehouse similar in size to the planned project structures would be constructed onsite. A perimeter block wall 8 feet in height would be required for security purposes. Cameras and lighting would also be required for operational needs and security. Landscaping, such as trees or hedges, would be installed to help screen the perimeter wall and minimize visibility of the compressor station.

## **Purpose and Need**

The Petrochem Site option would meet the stated purpose and need for the planned project. Four new compressors (either four gas or two gas and two electric) would replace the existing aging equipment and would meet the VCAPCD air emission and DOT safety requirements. Both transmission and distribution pipelines would need to be routed to the new location, which would be feasible predicated on detailed engineering design. The proposed 7,600 HP would also maintain sufficient pressure in the existing pipelines and adequate inventory in the La Goleta Storage Field.

The Petrochem Site Alternative would meet some of the stated objectives. This alternative would replace existing infrastructure with new equipment that would meet VCAPCD and safety regulations and be capable of meeting operating requirements, including during power outages. The 15-acre site is sufficient to build a new compressor station. The use of the property would be consistent with the Ventura County land use designation of “Industrial” and the zoning “M3-10,000 sf.” However, potential environmental impacts, especially related to dust generation, noise, and visual/aesthetics, would occur due to grading, trenching, and installation of new infrastructure.

As described above, the Petrochem Site Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet some of the stated objectives. For these reasons, the Petrochem Site Alternative was carried forward for consideration related to essential site criteria.

## **Essential Site Criteria**

The Petrochem Site option does not meet all the essential site criteria, as noted below and shown on Figure 3.

- The existing property is at least 10 acres in size for a new compressor station.
- The nearest airport to the property is the Oxnard Airport, which is approximately 9.85 miles to the southeast (VCALUC 2000). The use as a compressor station is compatible with the FAA land use regulations as stated in the *Airport Comprehensive Land Use Plan for Ventura County Final Report* (VCALUC 2000).<sup>24</sup>
- The site has several areas of mapped FEMA floodway (Zone AE) and areas without a base flood elevation identified (FEMA 2021b). The floodway occupies a significant portion of the site and as such, this site does not meet the essential site criteria.

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<sup>24</sup> The Airport Comprehensive Land Use Plan for Ventura County Final Report addresses the Camarillo, Oxnard, Santa Paula, and NAS Point Mugu airports (VCALUC 2000).

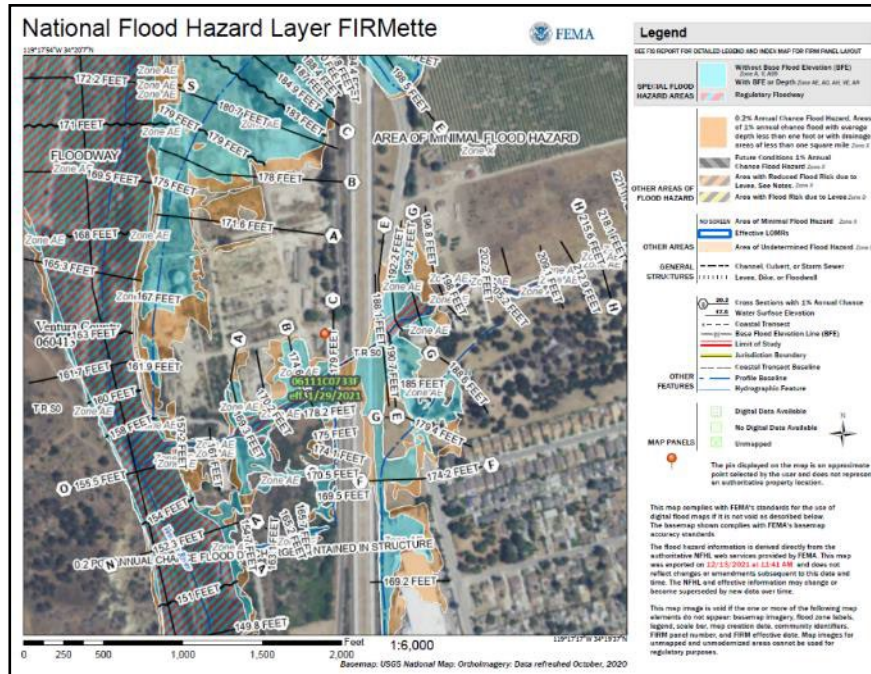


Figure 3. National Flood Hazard Layer FIRMette

Source: FEMA 2021b.

As such, the Petrochem Site option was dismissed from further consideration because of mapped FEMA floodway.

## 2.3 Other Alternatives Outside the Scope of the Feasibility Study

As previously noted, this feasibility study has been prepared in response to CPUC letters dated August 5, 2021, and August 20, 2021, which specifically request that SoCalGas “hold a public forum to present (1) full analysis of all options considered for the compressor station upgrade, (2) the basis for rejecting all alternatives, including but not limited to electric compressors for all or part of the project, (3) all alternative sites that were considered and SoCalGas’ reasons for rejecting them, and (4) an explanation of how this project factors into both local and statewide safe and reliable service and the state’s decarbonization efforts” (CPUC 2021). There are potential alternatives outside the scope of this feasibility study, such as relocating to non-industrial land uses farther away from the compressor station, that have not been evaluated given the focus of this analysis.

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### 3 Alternatives Carried Forward for Further Analysis

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This section provides a description of each alternative option, including the planned project, that was carried forward for detailed environmental and operational analysis. For the purpose of developing the alternative options, certain general construction assumptions are provided based on regulatory requirements, industry best management practices, and SoCalGas gas standards.<sup>25</sup> Specific construction assumptions for individual alternatives are described in the section for that respective alternative. For simplicity, measurements for linear distance, square footage, and grading (volume) have been rounded to the nearest hundred. Additionally, on January 6, 2022, representatives from SoCalGas' Construction Department, Gas Transmission Department, and Gas Engineering Department visited each alternative site location and viewed them from publicly accessible areas or from land with SoCalGas access rights to assess site conditions.

#### General Construction Assumptions

- Pipeline alignments and staging areas are conceptual and do not account for geotechnical, civil, environmental, utility, or other constraints. These factors would be addressed during preliminary engineering design.
- All quantities for linear distance, square footage, and grading are rounded to the nearest hundred.
- A hybrid compressor station would include two natural gas compressors and two electric compressors, with each unit having approximately 1,900 HP.
- A hybrid compressor station would require a 5 MW increase in the electric service capacity.
- New structures would be approximately 20,300 square feet total and the same approximate size (rounded to the nearest hundred square feet) and height for each alternative, as follows:
  - Compressor building: 10,000 square feet and 52.5 feet in height.
  - Warehouse: 5,200 square feet and 27.5 feet in height.
  - Office: 4,700 square feet and 16.5 feet in height.
  - Generator enclosure (850-kilowatt generator): 400 square feet and 16.5 feet in height.
- A perimeter block wall 8 feet in height would be required for security purposes.
- The new compressor station would require approximately 10 acres of land.
- Any new compressor station would require two suction pipelines and two discharge pipelines, consistent with the existing compressor station.
- Minimum easement width for ongoing operations (e.g., repair, maintenance, vehicular access, inspection, vegetation management) is 25 feet for one pipeline and 50 feet for two adjacent pipelines.
- A 25-foot temporary workspace easement would be required in addition to the 50-foot permanent non-exclusive easement.

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<sup>25</sup> SoCalGas' gas standards, including operations and maintenance procedures, are developed to comply with federal and state pipeline safety regulations.

- A permanent exclusive easement of 50 feet by 75 feet would be required for mainline valves.
- A 50-foot by 75-foot workspace would be required for new mainline valves.
- Transmission pipeline requires a minimum trench width of 28 inches and a minimum trench depth of 64 inches.
- Pipeline spacing must be a minimum of 60 inches of horizontal separation and 24 inches of vertical separation between natural gas pipelines and electrical, water, sewer, and telecommunications pipelines/conduit.
- One staging area is required for each alternative option that would be used for pipe storage, parking, and, temporary offices, welding activities, and other such temporary activities.
- Consistent with Ventura County Fire Protection District (VCFPD) Standard 501, “Fire Apparatus Access Standard,” emergency access roads must be a minimum of 24 feet wide and not exceed a slope greater than 20 percent, with turnouts every 150 feet.
- Grading cross slopes are dependent upon soil type and generally cannot exceed a 2:1 (horizontal:vertical) ratio.
- A disturbance footprint of 3.95 acres was assumed for the primary compressor station (exclusive of other site grading and utility connections), which includes over-excavation and recompaction.
- Subsurface utility potholing would be required for any new or relocated pipeline to identify potential conflicts and to address them in the engineering design.
- All grading quantities are estimates.<sup>26</sup> Ultimately, over-excavation, recompaction, rough grading, and other earthwork would be designed and implemented based on licensed geotechnical and civil engineers’ recommendations.
- For cross-county pipeline installations, geotechnical borings will be required to validate slope stability for pipeline design and routing.
- To the extent feasible, new pipelines and infrastructure would be placed within existing SoCalGas easements/right-of-way or public right-of-way rather than private property or public land (e.g., parks, schools).
- If an alternative location is selected that is not currently owned by SoCalGas, the company would acquire in fee property on which the compressor station would be located.
- As part of any necessary site acquisition process, any prior industrial contamination and well abandonment would be addressed by the seller, not SoCalGas.<sup>27</sup> Easement and/or fee acquisition would require coordination with and concurrence of the affected landowners. Eminent domain would be used as a last resort.
- Construction equipment is addressed in Appendix A and specifically the air quality analysis and reflects the different equipment for hillside sites and for level sites.
- SCE Interconnection:

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<sup>26</sup> Grading is defined by the City of Ventura as “removal of soil or deposition of fill or combination thereof, including but not limited to, overexcavation and recompaction” (City of Ventura 2017). Grading is defined by the County of Ventura as “excavation (cut), fill, or any combination of excavation and fill” (Ventura County 2016).

<sup>27</sup> It is assumed that remediation activities would be handled under the oversight of the California Department of Toxic Substances Control (DTSC 2022). Oil well abandonment may also require oversight and approval by the California Geologic Energy Management Division (CalGEM 2022).



- SCE assumptions were developed using SCE’s Southern California Edison Power Site Search Tool (SCE 2022).
- Any electrical alignment, pole placement, or electrical infrastructure requires SCE review and approval, which typically occurs after a Method of Service agreement has been established.
- Interconnection to the SCE system is assumed to occur by installing new poles to connect to the nearest existing circuit that runs from the site location to the Casitas Substation or to the Carpinteria Substation (County Line site only).
- For new poles, lightweight steel poles approximately 50 feet in height and spaced approximately every 100 to 150 feet would be required.
- Foundations would be approximately 2 feet in diameter and 7 feet in depth and require approximately 2 cubic yards of grading.
- Pole placement would be based on engineering design and field conditions but are assumed to be sited to avoid environmental resources to the extent feasible.
- Any new power pole inset is expected to require a temporary construction workspace of 50 feet by 50 feet (2,500 square feet) around each pole, which may result in temporary disturbance to ground cover.
- Vehicular access would be required to each pole location.

### 3.1 Alternative 1.A: Planned Project

The planned project was developed by SoCalGas at the existing Ventura Compressor Station site, located within the City of Ventura. The site is owned by SoCalGas and land use onsite consists of a compressor station, which has been present in some form since at least 1923 and has existed in its current configuration since the 1980s. The site is designated by the Ventura City General Plan as “Industry” and is zoned by the Ventura City municipal code as “M-2 General Industrial.” Industrial uses surround the site on the north, west, and south. The EP Foster Elementary School is located across Olive Street to the east of the site.

This alternative would result in the construction of a new compressor building and installation of four new natural gas engine-driven compressors (referred to throughout as “natural gas compressors”) at 1,900 HP each at the site. The existing three 1,100 HP natural gas reciprocating compressors would remain in operation until the new equipment is commissioned and in service. The existing compressors would then be decommissioned and removed and the old compressor building demolished. The existing office trailer and storage containers would be demolished/removed after a new office and a warehouse are constructed onsite. A perimeter block wall 8 feet in height would be required for security purposes. Cameras and lighting would also be required for operational needs and security. Landscaping, such as trees or hedges, would be installed to help screen the perimeter wall and minimize visibility of the compressor station. Access to the site via a driveway at least 24 feet wide is currently available and would be maintained to meet SoCalGas and emergency responder access requirements.

### 3.1.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 1.A: Planned Project are presented below and in Table 2.

- Other than ingress and egress to the site, construction activities would occur onsite or on an immediately adjacent eastern staging area.
- Construction of the compressor station, including pad grading, buildings, and compressors, would take approximately 24 to 36 months.

**Table 2. Alternative 1.A Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Project Site Acreage	8.42 acres
Project Site – Demolition	22,000 square feet Office Trailer: 1,500 square feet Storage Containers: 1,500 square feet Compressor Building, Piping, and Equipment: 19,000 square feet
Project Site - Grading	6,375 cubic yards
Offsite – New Pipeline	0
Offsite – Roads	0
Offsite – Staging Area	2.5 acres
SCE Circuit, Substation, and System Name	Grandad Circuit 16 kilovolts Casitas Substation Santa Clara 220/66 System
Offsite – New Electrical Poles	0 Existing electrical service sufficient for natural gas option
Estimated Number of Properties Affected*	3

**Note:**

\* Properties affected include the site, access, infrastructure, and staging areas.

### 3.1.2 Purpose, Need, and Objectives

The Alternative 1.A, the planned project, would meet the stated purpose and need for the planned project. The planned project would replace the existing aging equipment with four new natural gas compressors. The new equipment would meet the VCAPCD air emission requirements and safety requirements. The natural gas compressors would continue to operate even if there was a loss of power and would be available to move gas up the Central Coast and into the La Goleta Storage Field. As the overall energy delivery system in California continues to change due to the dispatching of renewable resources and electrification of buildings and vehicles, the ability of equipment to operate under variable conditions is critical. Solar and wind energy are intermittent and storage technology is not yet sufficient to store utility-scale power, which makes the resilience of the natural gas system for direct customer use and to support electric power generation imperative. The proposed combined 7,600 HP would maintain sufficient pressure in the existing pipelines and adequate inventory in the La Goleta Storage Field.



The planned project would meet all stated objectives. New natural gas compressors would replace existing infrastructure with new equipment that would meet VCAPCD and safety regulations and would be capable of meeting operating requirements, including during power outages. The use of the property would remain consistent with the City of Ventura land use designation and zoning. The property is sufficient in size for the equipment configuration. Potential environmental impacts from construction would be minimized because all work would occur on the existing property.

As described above, the planned project would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet all stated objectives. For these reasons, the planned project was carried forward for consideration related to essential site criteria.

### 3.1.3 Essential Site Criteria

The planned Ventura Compressor Station Project site would meet all the essential site criteria.

- The existing property is 8 acres in size.
- The nearest airport to the property is the Oxnard Airport, which is approximately 9 miles to the southeast. This airport is served by Runway 7-25, which is 5,950 feet long by 100 feet wide, is aligned east–west, and has a threshold of 1,372 feet for obstacle clearance safety (VCALUC 2000). The site’s use as a compressor station is compatible with the FAA land use regulations as stated in the *Airport Comprehensive Land Use Plan for Ventura County Final Report* (VCALUC 2000).<sup>28</sup>
- The site is designated by FEMA as “Area with Reduced Flood Risk Due to Levee Zone X” and is not within a floodway (FEMA 2021a).

Therefore, the planned project was carried forward for consideration related to environmental and operational criteria, as discussed in Section 4, Environmental and Operational Considerations.

## 3.2 Alternative 1.B: Current Site – Hybrid

The Ventura Compressor Station – Hybrid Alternative was proposed by the CPUC and would result in two new natural gas compressors at 1,900 HP each and two new electric compressors at 1,900 HP each at the existing Ventura Compressor Station property. The existing three 1,100 HP natural gas compressors would remain in operation until the new equipment is commissioned and in service. The existing compressors would then be decommissioned and removed and the old compressor building demolished. The new compressors would be installed in a new compressor building. The existing temporary office trailer and storage containers would be demolished/removed. A new office and a warehouse would be constructed onsite, similar to the planned project. New electric lines would be required to meet onsite electric demand from the new electric compressors. Based on preliminary analysis, approximately 5 MW of electric power are needed, which would require distribution-level service on one unique power line of at least 16 kV and potentially an onsite substation. It is assumed that this conduit could be placed on existing SCE poles that interconnect with the existing station.

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<sup>28</sup> The Airport Comprehensive Land Use Plan for Ventura County Final Report addresses the Camarillo, Oxnard, Santa Paula, and NAS Point Mugu airports (VCALUC 2000).

### 3.2.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 1.B: Current Site – Hybrid are presented below and in Table 3.

- Construction of the compressor station, including pad grading, buildings, and compressors, and electrical interconnection would take approximately 30 to 36 months.

**Table 3. Alternative 1.B Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Project Site Acreage	8.42 acres
Project Site – Demolition	22,000 square feet Office Trailer 1,500 square feet Storage Containers 1,500 square feet Compressor Building, Piping and Equipment: 19,000 square feet
Project Site - Grading	6,375 cubic yards
Offsite – New Pipeline	0
Offsite – Roads	0
Offsite – Staging Area	2.5 acres
Offsite – Pipeline Ground Disturbance	0
SCE Circuit, Substation, and System Name	San Nicholas Circuit 16 kilovolts Casitas Substation Santa Clara 220/66 System (SCE 2021a)
Offsite – New Electrical Poles	None required - existing electrical connection onsite assumed to be adequate to connect with San Nicholas Circuit
Estimated Number of Properties Affected*	3

**Note:**

\* Properties affected include the site, access, infrastructure. and staging areas.

### 3.2.2 Purpose, Need, and Objectives

The Ventura Compressor Station – Hybrid Alternative would meet the stated purpose and need for the planned project. A hybrid compressor configuration would replace the existing aging equipment with two new natural gas compressors and two new electric compressors. The new gas compressors would meet the VCAPCD's air emission requirements and the electric driven compressors would be non-emitting equipment and therefore would not be subject to VCAPCD's requirements. By providing two natural gas and two electric compressors, the compressor station would have the redundancy needed in the event of a loss of electric power. The natural gas compressors would continue to operate even if the electric compressors were offline and would be available to move gas up the Central Coast and into the La Goleta Storage Field. As the overall energy delivery system in California continues to change due to the dispatching of renewable resources and electrification of buildings and vehicles, the ability of equipment to operate under variable conditions is critical. Solar and wind energy are intermittent and storage technology is not yet sufficient to store utility-scale power, which makes the resilience of the natural gas system for direct customer use and to support electric power generation imperative.

A hybrid compressor station with the proposed combined 7,600 HP would also maintain sufficient pressure in the existing pipelines and adequate inventory in the La Goleta Storage Field.

The Ventura Compressor Station – Hybrid Alternative would meet most of the stated objectives. New natural gas and electric compressors would replace existing infrastructure with new equipment that would meet VCAPCD and safety requirements and be capable of meeting operating requirements, including during power outages due to the redundancy with natural gas compressors. The use of the property would remain consistent with the City of Ventura land use designation and zoning. The property is sufficient in size for a hybrid equipment configuration. Potential environmental impacts, especially related to dust generation, noise, and visual/aesthetics, could occur due to installation of new electric infrastructure.

As described above, the Ventura Compressor Station – Hybrid Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet most of the stated objectives. For these reasons, the Ventura Compressor Station – Hybrid Alternative was carried forward for consideration related to essential site criteria.

### 3.2.3 Essential Site Criteria

As discussed in Section 3.1.3, the Ventura Compressor Station site would meet all the essential site criteria. As such, the Ventura Compressor Station – Hybrid Alternative was carried forward for consideration related to environmental and operational criteria, as discussed in Section 4.

## 3.3 Alternative 2.A. Avocado Site – Natural Gas

The Avocado Site – Natural Gas Alternative was suggested by members of the public at SoCalGas' town hall in October 2021. This site is located approximately 3,000 feet west of the compressor station property on the existing transmission pipeline corridor within the jurisdiction of the County of Ventura. The site is privately owned; therefore, any future project would require the involvement of the landowner, either through a voluntary transfer of needed land rights or through the exercise of eminent domain.<sup>29</sup>

The property is approximately 15 acres and is designated "Open Space" and zoned by the County of Ventura as "AE-40 ac – Agricultural Exclusive, 40 acres minimum parcel size" (Ventura County 2020, 2021b). The Ventura County general plan "Open Space" land use designation encompasses land or water that is essentially unimproved and devoted to an open-space use, including land for preservation of natural resources, managed production of resources, outdoor recreation, public health and safety, and to promote efficient municipal services and avoid urban sprawl (Ventura County 2020). The Ventura County zoning ordinance AE-40 zone "is to preserve and protect commercial agricultural lands as a limited and irreplaceable resource, to preserve and maintain agriculture as a major industry in Ventura County and to protect these areas from the encroachment of nonrelated uses which, by their nature, would have detrimental effects

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<sup>29</sup> As a public utility, SoCalGas has the ability to condemn land through the eminent domain process. Eminent domain is the process by which a government agency or utility can take property for public benefit as long as the property owner is adequately compensated. The eminent domain process is usually exercised only as a last resort.

upon the agriculture industry” (Ventura County 2021a). Additionally, the property is within an area governed by the Save Open-Space and Agricultural Resources (SOAR) initiative.<sup>30</sup>

The surrounding area is primarily developed with agricultural uses and low-density residential development (the nearest residence is approximately 0.7 miles away) and the specific site is used for agricultural purposes, including a portion of which is an avocado orchard. The slope of the property ranges from 0 percent to 70 percent and would require grading and potentially the installation of retaining walls or soil nails to create a level pad for compressor equipment and operational needs. To meet acceptable engineering design standards, a 2:1 slope is typically required, which requires a larger footprint than the actual building pad (“catch points”); given the slope of the site, significant grading to create a level site would be required.

Access to the site via a driveway at least 24 feet wide would be needed to meet SoCalGas and emergency responder access requirements. The access road would require grading and potentially retaining walls to achieve an acceptable grade suitable for fire truck access.

Distribution pipelines would need to be rerouted from the existing compressor station property to the new site location, requiring grading, trenching, pipeline installation, and potentially acquisition of additional pipeline right-of-way. Additionally, other utility connections for electricity, potable water, sewer, and telecommunications would be required. These may be able to be collocated in a utility trench if minimum separation between the utilities can be maintained. It may be feasible to locate the utility trench within the new access road. Otherwise, multiple trenches would be necessary. Electric and telecommunications lines may be located on aboveground utility poles. Water, sewer service, electricity, and telecommunications demand would be anticipated to be consistent with the existing compressor station.

Once access, site grading, and utilities are provided, four new natural gas compressors with 1,900 HP each would be installed in a new compressor building similar to the planned project. A new office and a warehouse similar in size to the planned project structures would be constructed onsite. A perimeter block wall 8 feet in height would be required for security purposes. Cameras and lighting would also be required for operational needs and security. Landscaping, such as trees or hedges, would be installed to help screen the perimeter wall and minimize visibility of the compressor station.

### 3.3.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 2.A: Avocado Site – Natural Gas are presented below and in Table 4.

- Construction of the compressor station, including pad grading, access road, onsite utility installations, buildings, and compressors, would take approximately 60 to 70 months.
- Given the location of the existing transmission pipelines, installation/interconnection of the pipelines to a new compressor station at the Avocado Site would take approximately 6 to 12 months, which would happen concurrently with the onsite work.

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<sup>30</sup> Ventura County voters first approved the countywide SOAR initiative in 1998. In general, and subject to certain exceptions, SOAR requires countywide voter approval of any (1) substantive change to the General Plan’s Agricultural, Open Space, or Rural land use goals or policies and (2) re-designation of land with these General Plan land use designations. In November 2016, Ventura County voters renewed the County’s SOAR initiative and extended its provisions through 2050 (Ventura County 2020).

- Additional acreage would be added to account for required slope cutbacks. Soil nail walls would potentially be used to minimize need for slopes and onsite fill/compaction. Fill soil creates challenges for structural and equipment foundations. Soil nails would allow for a level site with fewer slopes to procure, grade, and maintain.
- Site grading and layout would be performed to integrate into the existing site contours to the extent feasible.

**Table 4. Alternative 2.A Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Project Site Acreage	15.06 acres
Project Site – Demolition	0
Project Site – Grading	1.3 million cubic yards Assumes cut and fill balance onsite
Offsite – Pipeline Corridor 1	3,019 square feet
Offsite – Pipeline Corridor 2	1,563 square feet
Offsite – Water/Sewer Lines	36,945 square feet
Main Line Valve Connection 1	3,750 square feet
Main Line Valve Connection 2	3,750 square feet
Offsite – Roads	Resurface and widen 12,315 linear feet of Taylor Ranch Road to 24 feet, with assumed existing width of 12 feet
Offsite – Staging Area	5.63 acres
SCE Circuit, Substation, and System Name	Grandad Circuit 16 kilovolts Casitas Substation Santa Clara 220/66 System (SCE 2021a)
Offsite – New Electrical Poles	0 Assumes collocated utility trench because electrical demand would not be significant
Estimated Number of Properties Affected*	4

### 3.3.2 Purpose and Need

The Avocado Site – Natural Gas Alternative would meet the stated purpose and need for the planned project. Four new 1,900 HP natural gas compressors would replace the existing aging equipment and would meet the VCAPCD air emission and safety requirements. The proposed 7,600 HP would also maintain sufficient pressure in the existing pipelines and adequate inventory in the La Goleta Storage Field.

The Avocado Site – Natural Gas Alternative would meet some of the stated objectives. New natural gas compressors would replace existing infrastructure with new equipment that would meet VCAPCD and safety regulations and would be capable of meeting operating requirements,

including during power outages. The 15-acre site is sufficient to build a new compressor station. However, the use of the property would not be consistent with the Ventura County land use designation of Open Space or the zoning AE-40 acres. Additionally, the property is within an area governed by the SOAR initiative. Potential environmental impacts, especially related to dust generation, noise, and visual/aesthetics, would occur due to grading, trenching, and installation of new infrastructure. The location is highly visible from the surrounding community because the site is on a hillside above West Ventura.

As described above, the Avocado Site – Natural Gas Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet some of the stated objectives. For these reasons, the Ventura Compressor Station – Hybrid Alternative was carried forward for consideration related to essential site criteria.

### 3.3.3 Essential Site Criteria

The Avocado Site would meet all the essential site criteria.

- The existing property is approximately 15 acres in size.
- The nearest airport to the property is the Oxnard Airport, which is approximately 9.5 miles to the southeast. The use as a compressor station is compatible with the FAA land use regulations as stated in the Airport Comprehensive Land Use Plan for Ventura County Final Report (VCALUC 2000).<sup>31</sup>
- The site is designated by FEMA as having no flood risk (FEMA 2021a).

As such, the Avocado Site – Natural Gas Alternative was carried forward for consideration related to environmental and operational criteria, as discussed in Section 4.

## 3.4 Alternative 2.B: Avocado Site – Hybrid

The Avocado Site – Hybrid Alternative was proposed by SoCalGas to take into consideration feedback provided during town halls in October 2021 and CPUC input to consider electric compressors. This alternative would be identical to the Avocado Site – Natural Gas Alternative except that compression would be provided by two 1,900 HP natural gas compressors and two 1,900 HP electric compressors. Installation of electric compressors would increase the electric demand for the compressor station. Based on preliminary analysis, approximately 5 MW of electric power would be needed, which would require distribution-level service on one unique power line of at least 16 kV. An onsite substation would also be required.

### 3.4.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 2.B: Avocado Site – Hybrid are presented below and in Table 5.

- Construction of the compressor station, including pad grading, access road, onsite utility installations, buildings, and compressors, would take approximately 60 to 70 months.

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<sup>31</sup> The Airport Comprehensive Land Use Plan for Ventura County Final Report addresses the Camarillo, Oxnard, Santa Paula, and NAS Point Mugu airports (VCALUC 2000).

- Given the location of the existing transmission pipelines, installation/interconnection of the pipelines to a new compressor station at the Avocado site would take approximately 6 to 12 months, which would happen concurrently with the onsite work.
- Additional acreage would be added to account for required slope cutbacks. Soil nail walls would potentially be used to minimize need for slopes and onsite fill/compaction. Fill soil creates challenges for structural and equipment foundations. Soil nails would allow for a level site with fewer slopes to procure, grade, and maintain.
- Site grading and layout would be performed to integrate into the existing site contours.

**Table 5. Alternative 2.B Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Project Site Acreage	15.06 acres
Project Site – Demolition	0
Project Site – Grading	1.3 million cubic yards Assumes cut and fill balance onsite
Offsite – Pipeline Corridor 1	3,019 square feet
Offsite – Pipeline Corridor 2	1,563 square feet
Offsite – Water/Sewer Lines	36,945 square feet
Main Line Valve Connection 1	3,750 square feet
Main Line Valve Connection 2	3,750 square feet
Offsite – Roads	Resurface and widen 12,315 linear feet of Taylor Ranch Road to 24 feet, with assumed existing width of 12 feet
Offsite – Staging Area	5.63 acres
SCE Circuit, Substation, and System Name	Grandad Circuit 16 kilovolts Casitas Substation Santa Clara 220/66 System (SCE 2021a)
Offsite – New Electrical Poles	30 poles
Offsite – Electric Poles – Grading	60 cubic yards
Estimated Number of Properties Affected*	4

**Note:**

\* Properties affected include the site, access, infrastructure, and staging areas.

### 3.4.2 Purpose and Need

As with the Avocado Site – Natural Gas Alternative, the hybrid alternative would meet the stated purpose and need. The use of electric compressors with natural gas compressors would provide the necessary redundancy to meet operational needs. This alternative would provide sufficient compression to meet operational needs, would enhance reliability, and would maintain supplies to the La Goleta Storage Field.



As with the Avocado Site – Natural Gas Alternative, the hybrid alternative would meet some of the stated objectives. However, the use of electric compressors would increase electric demand and therefore require additional electric infrastructure to support the project, consequently requiring more grading and overhead electric conduit.

Because the Avocado Site – Hybrid Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet some of the stated objectives, this alternative was carried forward for consideration related to essential site criteria.

### 3.4.3 Essential Site Criteria

As noted in Section 3.3.3, the Avocado Site would meet all essential site criteria. Therefore, the Avocado Site – Hybrid Alternative was carried forward for consideration of environmental and operational criteria, as discussed in Section 4.

## 3.5 Alternative 3.A: Ventura Steel – Natural Gas

The Ventura Steel – Natural Gas Alternative was developed by SoCalGas. This site is located approximately 7,000 feet north of the compressor station property to the east of North Ventura Avenue within the jurisdiction of the County of Ventura. This site is not located on the existing transmission pipeline corridor and is privately owned; therefore, any future project would require the involvement of the landowner, either through a voluntary transfer of needed land rights or through the exercise of eminent domain. The property is approximately 10 acres, on land currently developed with industrial uses, including oil extraction infrastructure, and is designated “Industrial” by the Ventura County general plan and zoned by the Ventura County zoning ordinance as “M3-10,000 sf – General Industrial, 10,000 sf minimum parcel size” (Ventura County 2020. 2021b). The majority of the site is less than 10 percent slope and would require onsite grading related to over-excavation and recompaction for structural foundations and grading to relocate and install pipelines. Access to the site is provided by multiple driveways off North Ventura Avenue and East Shell Road that currently meet SoCalGas and emergency responder access requirements.

Transmission and distribution pipelines would need to be rerouted from the existing compressor station property to the new site location, requiring grading, trenching, pipeline installation, and potentially acquisition of additional pipeline right-of-way. Given the fact that the site is developed with existing industrial uses, other utility connections for electricity, potable water, sewer, and telecommunications are assumed to be available onsite and would require minimal upgrades. Water, sewer service, electricity, and telecommunications demand would be anticipated to be consistent with the existing compressor station.

Four new natural gas compressors with 1,900 HP each would be installed in a new compressor building similar to the planned project. A new office and a warehouse similar in size to the planned project structures would be constructed onsite. A perimeter block wall 8 feet in height would be required for security purposes. Cameras and lighting would also be required for operational needs and security. Landscaping, such as trees or hedges, could be installed to help screen the perimeter wall and minimize visibility of the compressor station.



### 3.5.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 3.A: Ventura Steel – Natural Gas are presented below and in Table 6.

- Construction of the compressor station, including pad grading, access road, onsite utility installations, buildings, and compressors, would take approximately 36 to 48 months.
- Given the location of the existing transmission pipelines, installation/interconnection of the pipelines to a new compressor station at the Ventura Steel site would take approximately 12 months, which would happen concurrently with the onsite work.
- Road closures Ventura Avenue would be necessary, and in order to maintain traffic flow, one lane would be closed for 6 months, then the alternate lane would be closed for 6 months, with traffic control measures in place for the duration of the work.

**Table 6. Alternative 3.A Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Project Site Acreage	10 acres
Project Site – Demolition	49,850 square feet Building 1: 10,600 square feet Building 2: 11,130 square feet Building 3: 24,000 square feet Building 4: 4,200 square feet
Project Site – Grading	4,500 cubic yards
Pipeline Corridor 1	39,685 square feet
Pipeline Corridor 2	38,876 square feet
Water/Sewer Lines	0 square feet
Main Line Valve Connection	7,500 square feet
Depressurization Line	282 square feet
Offsite – Staging Area	4.69 acres
SCE Circuit, Substation, and System Name	Canet Circuit Casitas Substation Santa Clara 220/66 kilovolts (SCE 2021a)
Offsite – New Electrical Poles	0 Assumes existing electrical service is sufficient for natural gas option
Offsite – Electric Poles – Grading	0
Offsite – Roads	3,600 linear feet of new 12-foot-wide road for construction access to new pipeline corridor Assumes existing access from School Canyon Road and Crimea Street Fire Road is adequate

**Table 6. Alternative 3.A Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Estimated Number of Properties Affected*	12

**Note:**

\* Properties affected include the site, access, infrastructure. and staging areas.

### 3.5.2 Purpose and Need

The Ventura Steel – Natural Gas Alternative would meet the stated purpose and need for the planned project. Four new 1,900 HP natural gas compressors would replace the existing aging equipment and would meet the VCAPCD air emission requirements and safety requirements. Both transmission and distribution pipelines would need to be routed to the new location, which would be feasible predicated on detailed engineering design and availability of right-of-way. The proposed 7,600 HP would also maintain sufficient pressure in the existing pipelines and adequate inventory in the La Goleta Storage Field.

The Ventura Steel – Natural Gas Alternative would meet some of the stated objectives. New natural gas compressors would replace existing infrastructure with new equipment that would meet VCAPCD and safety requirements and would be capable of meeting operating requirements, including during power outages. The 10-acre site is sufficient to build a new compressor station. The use of the property would be consistent with the Ventura County land use designation of “Industrial” and the zoning “M3-10,000 sf.” However, potential environmental impacts, especially related to dust generation, noise, and visual/aesthetics, would occur due to grading, trenching, and installation of new infrastructure.

As described above, the Ventura Steel – Natural Gas Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet some of the stated objectives. For these reasons, the Ventura Steel – Natural Gas Alternative was carried forward for consideration related to essential site criteria.

### 3.5.3 Essential Site Criteria

The Ventura Steel site would meet all the essential site criteria.

- The existing property is approximately 10 acres in size.
- The nearest airport to the property is the Oxnard Airport, which is approximately 8.75 miles to the southeast (VCALUC 2000). The use as a compressor station is compatible with the FAA land use regulations as stated in the *Airport Comprehensive Land Use Plan for Ventura County Final Report* (VCALUC 2000).<sup>32</sup>
- The site is designated by FEMA as having no flood risk (FEMA 2021b).

<sup>32</sup> The Airport Comprehensive Land Use Plan for Ventura County Final Report addresses the Camarillo, Oxnard, Santa Paula, and NAS Point Mugu airports (VCALUC 2000).

As such, the Ventura Steel – Natural Gas Alternative was carried forward for consideration related to environmental and operational criteria, as discussed in Section 4.

### 3.6 Alternative 3.B: Ventura Steel – Hybrid

The Ventura Steel – Hybrid Alternative was proposed by SoCalGas to take into consideration CPUC input to consider electric compressors. This alternative would be identical to the Ventura Steel – Natural Gas Alternative except that compression would be provided by two 1,900 HP natural gas compressors and two 1,900 HP electric compressors. Installation of electric compressors would increase the electric demand for the compressor station. Based on preliminary analysis, approximately 5 MW of electric power would be needed, which would require distribution-level service on one unique power line of at least 16 kV. An onsite substation would also be required.

#### 3.6.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 3.B: Ventura Steel – Hybrid are presented below and in Table 7.

- Construction of the compressor station, including pad grading, access road, onsite utility installations, buildings, and compressors, would take approximately 36 to 48 months.
- Given the location of the existing transmission pipelines, installation/interconnection of the pipelines to a new compressor station at the Ventura Steel site would take approximately 12 months, which would happen concurrently with the onsite work.

**Table 7. Alternative 3.B Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Project Site Acreage	10 acres
Project Site – Demolition	49,850 square feet Building 1: 10,600 square feet Building 2: 11,130 square feet Building 3: 24,000 square feet Building 4: 4,200 square feet
Project Site – Grading	4,500 cubic yards
Pipeline Corridor 1	39,685 square feet
Pipeline Corridor 2	38,876 square feet
Water/Sewer Lines	0 square feet
Main Line Valve Connection	7,500 square feet
Depressurization Line	282 square feet
Offsite – Staging Area	4.69 acres
SCE Circuit, Substation, and System Name	San Nicholas Circuit Casitas Substation Santa Clara 220/66 kilovolts
Offsite – New Electrical Poles	2 poles Interconnect to the San Nicholas Circuit

**Table 7. Alternative 3.B Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Offsite – Electric Poles – Grading	4 cubic yards
Offsite – Roads	3,600 linear feet of new 12-foot-wide road for construction access to new pipeline corridor Assumes existing access from School Canyon Road and Crimea Street Fire Road is adequate
Estimated Number of Properties Affected*	12

**Note:**

\* Properties affected include the site, access, infrastructure, and staging areas.

### 3.6.2 Purpose and Need

As with the Ventura Steel – Natural Gas Alternative, the hybrid alternative would meet the stated purpose and need. The use of electric compressors with natural gas compressors would provide the necessary redundancy to meet operational needs. This alternative would provide sufficient compression to meet operational needs, would enhance reliability, and would maintain supplies to the La Goleta Storage Field.

As with the Ventura Steel – Natural Gas Alternative, the hybrid alternative would meet some of the stated objectives. However, the use of electric compressors would increase electric demand and therefore require additional electric infrastructure to support the project, consequently requiring more grading and overhead electric conduit.

Because the Ventura Steel – Hybrid Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet some of the stated objectives, this alternative was carried forward for consideration related to essential site criteria.

### 3.6.3 Essential Site Criteria

As noted in Section 3.5.3, the Ventura Steel site would meet all essential site criteria. Therefore, the Ventura Steel – Hybrid Alternative was carried forward for consideration related to environmental and operational criteria, as discussed in Section 4.

## 3.7 Alternative 4.A: Devil’s Canyon Road – Natural Gas

The Devil’s Canyon Road – Natural Gas Alternative was suggested by members of the public at SoCalGas’ town hall in October 2021. This site is located approximately 5,300 feet northwest of the compressor station property within the jurisdiction of the County of Ventura. The site is privately owned; therefore, any future project would require the involvement of the landowner, either through a voluntary transfer of needed land rights or through the exercise of eminent domain.

The property is approximately 12.88 acres, privately owned, currently used for oil extraction, and designated by the Ventura County general plan as “Open Space” and zoned by the Ventura

County zoning ordinance as “OS-160 ac, Open Space, 160 acres minimum parcel size” with a Habitat Connectivity Corridor mapped along the Ventura River (Ventura County 2020, 2021b). The Ventura County general plan states that the Open Space land use designation encompasses land or water that is essentially unimproved and devoted to an open-space use, including land for preservation of natural resources, managed production of resources, outdoor recreation, public health and safety, and to promote efficient municipal services and avoid urban sprawl (Ventura County 2020). The Ventura County Code states that “the purpose of [the OS] zone is to provide for any of the following on parcels or areas of land or water that are essentially unimproved: ... The managed production of resources, including but not limited to: forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and, areas containing major mineral deposits, including those in short supply” (Ventura County 2021a). The area is developed with oil extraction uses. The slope of the property ranges between 0 percent and 30 percent, with the majority of the site less than 10 percent, and would require grading for over-excavation and recompaction for building foundations and utility trenching.

Access to the site is provided by multiple driveways off Shell Road that meet SoCalGas and emergency responder access requirements. Transmission and distribution pipelines would need to be rerouted from the existing compressor station property to the new site location, requiring grading, trenching, pipeline installation, and potentially acquisition of additional pipeline right-of-way. Given the fact that the site is developed with existing industrial uses, other utility connections for electricity, potable water, sewer, and telecommunications are assumed to be available onsite and would require minimal upgrades. Water, sewer service, electricity, and telecommunications demand would be anticipated to be consistent with the existing compressor station.

Once access, site grading, and utilities are provided, four new 1,900 HP natural gas compressors would be installed in a new compressor building similar to the planned project. A new office and a warehouse similar in size to the planned project structures would be constructed onsite. A perimeter block wall 8 feet in height would be required for security purposes. Cameras and lighting would also be required for operational needs and security. Landscaping, such as trees or hedges, could be installed to help screen the perimeter wall and minimize visibility of the compressor station.

### 3.7.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 4.A: Devil’s Canyon Road – Natural Gas are presented below and in Table 8.

- Construction of the compressor station, including pad grading, access road, onsite utility installations, buildings, and compressors, would take approximately 24 to 30 months.
- Given the location of the existing transmission pipelines, installation/interconnection of the pipelines to a new compressor station at the Devil’s Canyon Road site would take approximately 6 to 12 months, which would happen concurrently with the onsite work.

**Table 8. Alternative 4.A Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Project Site Acreage	12.88 acres
Project Site – Demolition	156,645 square feet Piping/Equipment/Building
Project Site – Grading	4,500 cubic yards
Pipeline Route 1	23,963 square feet
Pipeline Route 2	23,963 square feet
Water/Sewer Lines	0 square feet
Main Line Valve Connection	7,500 square feet
Depressurization Line	0 square feet
Offsite – Staging Area	6.27 acres
SCE Circuit, Substation, and System Name	Circuit 00423 Casitas Substation Subtransmission 66 kilovolts
Offsite – New Electrical Poles	0 Assumes existing electrical service is sufficient for natural gas option
Offsite – Electric Poles – Grading	0 cubic yards
Offsite – Roads	1,892 linear feet Assumes existing access serving facility requires minor leveling and resurfacing
Estimated Number of Properties Affected*	5

**Notes:**

\* Properties affected include the site, access, infrastructure, and staging areas

### 3.7.2 Purpose and Need

The Devil’s Canyon Road – Natural Gas Alternative would meet the stated purpose and need for the planned project. Four new 1,900 HP natural gas compressors would replace the existing aging equipment and would meet the VCAPCD air emission and safety requirements. Both transmission and distribution pipelines would need to be routed to the new location, which would be feasible predicated on detailed engineering design. The proposed 7,600 HP would also maintain sufficient pressure in the existing pipelines and adequate inventory in the La Goleta Storage Field.

The Devil’s Canyon Road – Natural Gas Alternative would meet some of the stated objectives. New natural gas compressors would replace existing infrastructure with new equipment that would meet VCAPCD and safety regulations and be capable of meeting operating requirements, including during power outages. The 12.88-acre site is sufficient to build a new compressor station. The property is designated by the Ventura County general plan as “Open Space” and zoned “OS-160-acres, Open Space 160 acres minimum parcel size” with the Habitat Connectivity and Wildlife Corridors overlay zone. The use of the property would not be consistent with the intent of the Ventura County general plan OS designation or the Ventura County OS-160-acre

zoning because the intent of both the land use designation and the zoning is to preserve land or water that is essentially unimproved and devoted to an open-space use (Ventura County 2021). Potential environmental impacts, especially related to dust generation, noise, and visual/aesthetics, would occur due to grading, trenching, and installation of new infrastructure.

As described above, the Devil’s Canyon Road – Natural Gas Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet some of the stated objectives. For these reasons, the Devil’s Canyon Road – Natural Gas Alternative was carried forward for consideration related to essential site criteria.

### 3.7.3 Essential Site Criteria

The Devil’s Canyon Road site would meet all the essential site criteria.

- The existing property is approximately 12.88 acres in size.
- The nearest airport to the property is the Oxnard Airport, which is approximately 8.90 miles to the southeast. The use as a compressor station is compatible with the FAA land use regulations as stated in the *Airport Comprehensive Land Use Plan for Ventura County Final Report* (VCALUC 2000).<sup>33</sup>
- The site is designated by FEMA as having no flood risk; however, the eastern property is adjacent to the Ventura River and the access road crosses the river and is mapped Zone AE, which is a regulatory floodway (FEMA 2021d).

As such, the Devil’s Canyon Road – Natural Gas Alternative was carried forward for consideration related to environmental and operational criteria, as discussed in Section 4.

## 3.8 Alternative 4.B: Devil’s Canyon Road – Hybrid

The Devil’s Canyon Road – Hybrid Alternative was proposed by SoCalGas to take into consideration CPUC input to consider electric compressors. This alternative would be identical to the Devil’s Canyon Road – Natural Gas Alternative except that compression would be provided by two 1,900 HP natural gas compressors and two 1,900 HP electric compressors. Installation of electric compressors would increase the electric demand for the compressor station. Based on preliminary analysis, approximately 5 MW of electric power would be needed, which would require distribution-level service on one unique power line of at least 16 kV. An onsite substation would also be required.

### 3.8.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 4.B: Devil’s Canyon Road – Hybrid are presented below and in Table 9.

- Construction of the compressor station, including pad grading, access road, onsite utility installations, buildings, and compressors, would take approximately 24 to 30 months.

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<sup>33</sup> The *Airport Comprehensive Land Use Plan for Ventura County Final Report* addresses the Camarillo, Oxnard, Santa Paula, and NAS Point Mugu airports (VCALUC 2000).



- Given the location of the existing transmission pipelines, installation/interconnection of the pipelines to a new compressor station at the Devil’s Canyon Road site would take approximately 6 to 12 months, which would happen concurrently with the onsite work.

**Table 9. Alternative 4.B Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Project Site Acreage	12.88 acres
Project Site – Demolition	156,645 square feet Piping/Equipment/Building
Project Site – Grading	4,500 cubic yards
Pipeline Route 1	23,963 square feet
Pipeline Route 2	23,963 square feet
Water/Sewer Lines	0 square feet
Main Line Valve Connection	7,500 square feet
Depressurization Line	0 square feet
Offsite – Staging Area	6.27 acres
SCE Circuit, Substation, and System Name	Circuit 00423 Casitas Substation Subtransmission 66 kilovolts
Offsite – New Electrical Poles	40 Assumes existing electrical service is sufficient for natural gas option
Offsite – Electric Poles – Grading	80 cubic yards
Offsite – Roads	1,892 linear feet Assumes existing access serving facility requires minor leveling and resurfacing
Estimated Number of Properties Affected*	5

**Notes:** SCE = Southern California Edison.

\* Properties affected include the site, access, infrastructure, and staging areas.

### 3.8.2 Purpose and Need

As with the Devil’s Canyon Road – Natural Gas Alternative, the hybrid alternative would meet the stated purpose and need. The use of electric compressors with natural gas compressors would provide the necessary redundancy to meet operational needs. This alternative would provide sufficient compression to meet operational needs, would enhance reliability, and would maintain supplies to the La Goleta Storage Field.

As with the Devil’s Canyon Road – Natural Gas Alternative, the hybrid alternative would meet some of the stated objectives. However, the use of electric compressors would increase electric demand and therefore require additional electric infrastructure to support the project, consequently requiring more grading and overhead electric conduit.



Because the Devil’s Canyon Road – Hybrid Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet some of the stated objectives, this alternative was carried forward for consideration related to essential site criteria.

### 3.8.3 Essential Site Criteria

As noted in Section 3.7.3, the Devil’s Canyon Road site would meet all essential site criteria; therefore, the Devil’s Canyon Road – Hybrid Alternative was carried forward for consideration related to environmental and operational criteria, as discussed in Section 4.

## 3.9 Alternative 5.A: County Line – Natural Gas

The County Line – Natural Gas Alternative was developed by SoCalGas. This site is located within Ventura County at the county line between Santa Barbara and Ventura counties. It is approximately 11 miles northwest of the compressor station property, generally on the existing transmission pipeline corridor. The site is privately owned; therefore, any future project would require the involvement of the landowner, either through a voluntary transfer of needed land rights or through the exercise of eminent domain. The property is approximately 12.33 acres and vacant, although it appears to have been used for agricultural purposes historically. The property is designated by the Ventura County general plan as “Open Space” and zoned by the Ventura County zoning ordinance as “AE-40 ac – Agricultural Exclusive, 40 acres minimum parcel size” and is within the area governed by the SOAR initiative (Ventura County 2020, 2021a). The area is primarily developed with agricultural uses and low-density residential development. The slope of the property ranges from 0 percent to 70 percent, with the majority between 10 and 40 percent, and would require grading and potentially the installation of retaining walls to create a level pad for compressor equipment and operational needs. To meet acceptable engineering design standards, a 2:1 slope is typically required, which requires a larger footprint than the actual building pad (“catch points”).

Access to the site via a driveway at least 24 feet wide would be needed to meet SoCalGas and emergency responder access requirements. There is an existing access road; however, because its width varies some sections of the road would need to be widened. The access road would require minimal grading to achieve an acceptable grade suitable for fire truck access.

Distribution pipelines would need to be rerouted from the existing compressor station property to the new site location, requiring trenching and pipeline installation, and potentially acquisition of additional pipeline right-of-way. Additionally, other utility connections for electricity, potable water, sewer, and telecommunications would be required. These may be able to be collocated in a utility trench if minimum separation between the utilities can be maintained. Otherwise, multiple trenches would be necessary. Electric and telecommunications lines may be located on aboveground utility poles. Water, sewer service, electricity, and telecommunications demand would be anticipated to be consistent with the existing compressor station.

Once access, site grading, and utilities are provided, five new 1,900 HP natural gas compressors would be installed in a new compressor building similar to the planned project. An additional compressor would be required for this site to overcome a greater pressure differential due to the location being farther north than the other alternative sites (approximately 11 miles). A new office and a warehouse similar in size to the planned project structures would be constructed onsite. A perimeter block wall 8 feet in height would be required for security purposes. Cameras

and lighting would also be required for operational needs and security. Landscaping, such as trees or hedges, could be installed to help screen the perimeter wall and minimize visibility of the compressor station.

### 3.9.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 5.A: County Line – Natural Gas are presented below and in Table 10.

- Construction of the compressor station, including pad grading, onsite utility installations, buildings, and compressors, would take approximately 60 to 70 months.
- Given the location of the existing transmission pipelines, installation/interconnection of the pipelines to a new compressor station at the County Line site would take approximately 6 months, which would happen concurrently with the onsite work.

**Table 10. Alternative 5.A: County Line – Natural Gas – Construction Assumptions/Estimates**

Project Component	Assumptions and Estimates
Project Site Acreage	12.33 acres
Project Site – Demolition	0 square feet Existing agricultural field
Project Site – Grading	600,000 cubic yards Cut and fill balance onsite
Pipeline Route 1	19,973 square feet
Water/Sewer Lines	7,497 square feet
Main Line Valve Connection	7,500 square feet
Depressurization Line	3,197 square feet
Offsite – Staging Area	3.92 acres
SCE Circuit, Substation, and System Name	Circuit 01950 Carpinteria Substation Subtransmission 66 kilovolts
Offsite – New Electrical Poles	0 Assumes collocated utility trench because electrical demand would not be significant
Offsite – Electric Poles – Grading	0 cubic yards
Offsite – Roads	2,499 linear feet Assumes existing access serving site requires minor leveling and resurfacing
Estimated Number of Properties Affected*	5

**Note:**

\* Properties affected include the site, access, infrastructure, and staging areas.

### 3.9.2 Purpose and Need

The County Line – Natural Gas Alternative would meet the stated purpose and need for the planned project. Five new 1,900 HP natural gas compressors would replace the existing aging equipment and would meet the VCAPCD air emission and safety requirements. The proposed 9,500 HP would also maintain sufficient pressure in the existing pipelines and adequate inventory in the La Goleta Storage Field.

The County Line – Natural Gas Alternative would meet some of the stated objectives. New natural gas compressors would replace existing infrastructure with new equipment that would meet VCAPCD and DOT safety regulations and would be capable of meeting operating requirements, including during power outages. The 12.33-acre site is sufficient to build a new compressor station. However, the use of the property would not be consistent with the Ventura County land use designation of Open Space or the zoning AE-40 acres. Additionally, the property is within an area governed by the SOAR initiative. Potential environmental impacts, especially related to dust generation, noise, and visual/aesthetics, would occur due to grading, trenching, and installation of new infrastructure. The location is visible from the surrounding community because the site is on a hillside to the southeast of SR-150.

As described above, the County Line – Natural Gas Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet some of the stated objectives. For these reasons, the County Line – Natural Gas Alternative was carried forward for consideration related to essential site criteria.

### 3.9.3 Essential Site Criteria

The County Line site would meet all the essential site criteria.

- The existing property is approximately 12.33 acres in size.
- The nearest airport to the property is the Oxnard Airport, which is approximately 19 miles to the southeast. The use as a compressor station is compatible with the FAA land use regulations as stated in the *Airport Comprehensive Land Use Plan for Ventura County Final Report* (VCALUC 2000).<sup>34</sup>
- The site is designated by FEMA as having no flood risk; however, the northwesterly perimeter along an existing access road is mapped Zone A, a special flood hazard area without a base flood elevation (FEMA 2021c).

As such, the County Line – Natural Gas Alternative was carried forward for consideration related to environmental and operational criteria, as discussed in Section 4.

## 3.10 Alternative 5.B: County Line – Hybrid

The County Line – Hybrid Alternative was proposed by SoCalGas to take into consideration CPUC input to consider electric compressors. This alternative would be identical to the County Line – Natural Gas Alternative except that compression would be provided by two 1,900 HP natural gas compressors and

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<sup>34</sup> The Airport Comprehensive Land Use Plan for Ventura County Final Report addresses the Camarillo, Oxnard, Santa Paula, and NAS Point Mugu airports (VCALUC 2000).

three 1,900 HP electric compressors. Installation of electric compressors would increase the electric demand for the compressor station. Based on preliminary analysis, approximately 5 MW of electric power would be needed, which would require distribution-level service on one unique power line of at least 16 kV. An onsite substation would also be required.

### 3.10.1 Alternative-Specific Construction Assumptions

The construction assumptions for Alternative 5.B: County Line – Hybrid are presented below and in Table 11.

- Construction of the compressor station, including pad grading, access road, onsite utility installations, buildings, and compressors, would take approximately 60 to 70 months.
- Given the location of the existing transmission pipelines, installation/interconnection of the pipelines to a new compressor station at the County Line site would take approximately 6 to 12 months, which would happen concurrently with the onsite work.

**Table 11. Alternative 5.B: County Line – Hybrid – Construction Assumptions/Estimates**

<b>Project Component</b>	<b>Assumptions and Estimates</b>
Project Site Acreage	12.33 acres
Project Site – Demolition	0 square feet Existing agricultural field
Project Site – Grading	600,000 cubic yards Cut and fill balance onsite
Pipeline Route 1	19,973 square feet
Water/Sewer Lines	7,497 square feet
Main Line Valve Connection	7,500 square feet
Depressurization Line	3,197 square feet
Offsite – Staging Area	3.92 acres
SCE Circuit, Substation, and System Name	Circuit 01950 Carpinteria Substation Subtransmission 66 kilovolts
Offsite – New Electrical Poles	15 Assumes collocated utility trench because electrical demand would not be significant
Offsite – Electric Poles – Grading	30 cubic yards
Offsite – Roads	2,499 linear feet Assumes existing access serving site requires minor leveling and resurfacing
Estimated Number of Properties Affected*	5

**Note:**

\* Properties affected include the site, access, infrastructure, and staging areas.

### 3.10.2 Purpose and Need

As with the County Line – Natural Gas Alternative, the hybrid alternative would meet the stated purpose and need. The use of electric compressors with natural gas compressors would provide the necessary redundancy to meet operational needs. This alternative would provide sufficient compression to meet operational needs, would enhance reliability, and would maintain supplies to the La Goleta Storage Field.

As with the County Line – Natural Gas Alternative, the hybrid alternative would meet some of the stated objectives. However, the use of electric compressors would increase electric demand and therefore require additional electric infrastructure to support the project, consequently requiring more grading and overhead electric conduit.

Because the County Line – Hybrid Alternative would provide sufficient compression to meet operational needs, would enhance reliability, would maintain supplies to the La Goleta Storage Field, and would meet some of the stated objectives, this alternative was carried forward for consideration related to essential site criteria.

### 3.10.3 Essential Site Criteria

As noted in Section 3.9.3, the County Line site would meet all essential site criteria. Therefore, the County Line – Hybrid Alternative was carried forward for consideration related to environmental and operational criteria, as discussed in Section 4.

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## **4 Operational and Environmental Considerations**

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The evaluation of alternative options necessarily accounts for operational and environmental considerations that go beyond the foundational elements of the purpose, need, and objectives of the planned project and the essential site criteria. This section provides an evaluation of the alternatives relative to five supplemental operational criteria. Environmental considerations have been evaluated by Dudek. Their analysis is incorporated in Appendix A.

In order to assess each potential alternative option according to the same criteria, a scoring rubric was developed for both the operational and environmental considerations. The rubric assigns point values from 0 to 9. The criteria within the rubric address topic areas that the CPUC examined in multiple data requests regarding the Ventura Compressor Modernization Project. Operational considerations include topic areas such as safety and resiliency, electrification and power requirements, control systems, system maintenance and gas releases, and siting considerations. Environmental considerations include topic areas such as emissions, climate change, traffic, noise, aesthetics, land use, construction impacts, and wildfire. Additional topic areas were added to expand the environmental evaluation to address cultural resources, natural resources, and CalEnviroScreen pollution burden.

### **4.1 Evaluation Methodology**

The operational considerations evaluation process included a team of six SoCalGas staff members with subject matter expertise in pipeline operations, mechanical engineering, and civil engineering. Each staff member evaluated each alternative and assigned a point score in accordance with the rubric (included as Appendix B) and with the specific category shown in the relevant subsection below. The evaluation was based on a desktop-level analysis that was field-verified by SoCalGas' Construction Department, Gas Transmission Department, and Gas Engineering Department on January 6, 2022. The rubric scores are the average of the scores assigned by each staff member for each line item. Please refer to Appendix B for the complete scoring rubric.

### **4.2 Operational Assessment**

This section provides an analysis of the operational considerations and each alternative option's assigned score in accordance with the scoring rubric (Appendix B).

#### **4.2.1 Auxiliary and Control Systems**

The complexity of auxiliary and control systems relates to alternative options with one operational system instead of two. With a hybrid gas and electric station, the control panel would need to be able to interface with two unique types of unit control panels, instead of one panel with one set of command controls. It would also necessitate two control philosophies, which is the directive of how to run the station based on the system needs at that time (see Table 12).

**Table 12. Auxiliary and Control Systems**

	<b>0</b>	<b>1-2-3</b>	<b>4-5-6</b>	<b>7-8-9</b>
Topic Area	Hybrid option that relies on SCE power for running 50% compressors	Hybrid option that does not rely on SCE power for running 50% compressors	Non-hybrid with backup power feed from SCE to run 50% compressors	Non-hybrid option with onsite backup power generation to run 50% compressors

**Note:** SCE = Southern California Edison.

### All Natural Gas Alternatives

The natural gas alternatives would operate with only natural gas equipment, which would require one operational system. Table 13 presents the auxiliary and control systems point assessments for the natural gas alternatives. Since each option below assumes one operational system, a total of 9 points each was assigned.

**Table 13. Auxiliary and Control Systems – All Natural Gas Alternatives**

<b>Alternative</b>	<b>Auxiliary and Control Systems Total</b>
1.A: Planned Project	9 points
2.A: Avocado Site – Natural Gas	9 points
3.A: Ventura Steel – Natural Gas	9 points
4.A: Devil’s Canyon Road – Natural Gas	9 points
5.A: County Line – Natural Gas	9 points

### All Hybrid Alternatives

The hybrid alternatives would operate with both natural gas equipment and electric equipment, requiring two operational systems, which creates greater challenges when operating the compressor station. Table 14 presents the auxiliary and control systems point assessments for the hybrid alternatives. Since each option below assumes a hybrid operational system creating greater operating complexity, a total of 5 points each was assigned.

**Table 14. Auxiliary and Control Systems – All Hybrid Alternatives**

<b>Alternative</b>	<b>Auxiliary and Control Systems Total</b>
1.B: Ventura Compressor Station – Hybrid	5 points
2.B: Avocado Site – Hybrid	5 points
3.B: Ventura Steel – Hybrid	5 points
4.B: Devil’s Canyon Road – Hybrid	5 points
5.B: County Line – Hybrid	5 points



## 4.2.2 Backup Power Requirements

Backup power requirements relates to the ability for the compressor station to provide sufficient horsepower to move gas into the Coastal System depending on the availability of natural gas and electric infrastructure, especially in black start conditions (see Table 15). Black start is the ability to restart the electric system after a blackout/loss of power. It is used when the grid experiences a blackout and must be restarted from scratch. Black start is central to system restoration and recovery plans for system operators (NREL 2021).

**Table 15. Backup Power Requirements**

	<b>0</b>	<b>1-2-3</b>	<b>4-5-6</b>	<b>7-8-9</b>
Topic Area	No operation possible without SCE power in service	Black start capability and ability to provide less than 50% horsepower without SCE power in service	Black start capability and ability to provide less than 100% down to 50% horsepower without SCE in service	Black start capability and ability to provide 100% horsepower without SCE in service

**Note:** SCE = Southern California Edison.

### All Natural Gas Alternatives

All natural gas alternatives would be only natural gas compression and have black start capability and full compression without SCE service available. Table 16 presents the backup power requirements point assessments for the natural gas alternatives. Since each option below could have black start capability from 50% to 100% capability, a total of 6 points each was assigned.

**Table 16. Backup Power Requirements – All Natural Gas Alternatives**

<b>Alternative</b>	<b>Backup Power Requirements Total</b>
1.A: Planned Project	6 points
2.A: Avocado Site – Natural Gas	6 points
3.A: Ventura Steel – Natural Gas	6 points
4.A: Devil’s Canyon Road – Natural Gas	6 points
5.A: County Line – Natural Gas	6 points

### All Hybrid Alternatives

Hybrid alternatives would have natural gas compression and electric compression. A hybrid option would have black start capability and with backup power available could also have full compression available if power on the SCE system is lost. Table 17 presents the backup power requirements point assessments for the hybrid alternatives. Since each option below could have black start capability from 50% to 100% capability, a total of 6 points each was assigned.

**Table 17. Backup Power Requirements – All Hybrid Alternatives**

<b>Alternative</b>	<b>Backup Power Requirements Total</b>
1.B: Ventura Compressor Station – Hybrid	6 points
2.B: Avocado Site – Hybrid	6 points
3.B: Ventura Steel – Hybrid	6 points
4.B: Devil’s Canyon Road – Hybrid	6 points
5.B: County Line – Hybrid	6 points

### 4.2.3 Emergency Access

Emergency access is related to roadway access for first responders, such as the fire department. The VCFPD Standard 501 “Fire Apparatus Access Standard” requires that emergency access roads be a minimum of 24 feet wide and not exceed a slope of 20 percent, with turnouts every 150 feet (VCFPD 2019). The evaluation of alternatives considers the existing site access and the extent to which roadway improvements must occur to comply with fire department requirements (see Table 18). The availability of onsite or nearby fire water infrastructure may allow the fire department to grant limited waivers for some requirements, such as turnout spacing.

**Table 18. Emergency Access**

	<b>0</b>	<b>1-2-3</b>	<b>4-5-6</b>	<b>7-8-9</b>
Topic Area	Emergency access exceeds 20% grade even with engineered design (including retaining walls)	New access road required or substantial improvements to existing access road	Minor modification to existing access road	No new road improvements

**Note:** Assessment based on desktop analysis using Google Earth field-verified by SoCalGas staff January 6, 2022.

### **Alternative 1.A: Planned Project/Alternative 1.B: Ventura Compressor Station – Hybrid**

The planned project and a hybrid alternative at the existing compressor station would meet all applicable emergency access and safety requirements because the existing compressor station meets all access requirements. The site has access points that connect to Olive Street. The primary entrance (and main access point) is 36 feet wide. A secondary access point is 20 feet wide. The primary entrance is sufficient for fire trucks and other emergency response vehicles that connect to Olive Street. The existing facility also has fire water infrastructure onsite that meets fire department requirements. Table 19 presents the emergency access point assessments for these alternatives. This site scored a 9 because existing access meets fire department requirements and fire water infrastructure is present.

**Table 19. Emergency Access – Alternatives 1.A and 1.B: Ventura Compressor Station**

<b>Alternative</b>	<b>Emergency Access Total</b>
1.A: Planned Project	9 points
1.B: Ventura Compressor Station – Hybrid	9 points

**Alternative 2.A: Avocado Site – Natural Gas/Alternative 2.B: Avocado Site – Hybrid**

The Avocado Site would require a new access road with at least a 24-foot width and slope not exceeding 20 percent. The site has existing agricultural roads for crop access that could be widened and improved with asphalt or other paving. Given the topography of the site, grading, and potentially retaining walls, to establish an acceptable slope would be needed. A fire hydrant may also be required, which would require a new fire water line at a minimum water pressure sufficient for firefighting (typically 20 pounds per square inch [psi]). Table 20 presents the emergency access point assessments for these alternatives. This site scored a 2 because an existing access road (Taylor Ranch Road) is available however substantial grading to establish a 20 percent slope or less and sufficient width would be required.

**Table 20. Emergency Access – Alternatives 2.A and 2.B: Avocado Site**

<b>Alternative</b>	<b>Emergency Access Total</b>
2.A: Avocado Site – Natural Gas	4 points
2.B: Avocado Site – Hybrid	4 points

**Alternative 3.A: Ventura Steel – Natural Gas/Alternative 3.B: Ventura Steel – Hybrid**

The Ventura Steel site is located on an existing industrial property and as such is assumed to meet all applicable emergency access and safety requirements. The site has two access points that are sufficient for fire trucks and other emergency response vehicles and that connect to North Ventura Avenue. A fire hydrant is located at the northeast corner of Shell Road and North Ventura Avenue, approximately 100 feet from the property boundary. Table 21 presents the emergency access point assessments for these alternatives. This site scored a 9 because existing access meets fire department requirements and fire water infrastructure is present.

**Table 21. Emergency Access – Alternatives 3.A and 3.B: Ventura Steel**

<b>Alternative</b>	<b>Emergency Access Total</b>
3.A: Ventura Steel – Natural Gas	9 points
3.B: Ventura Steel – Hybrid	9 points

### **Alternative 4.A: Devil’s Canyon Road – Natural Gas/Alternative 4.B: Devil’s Canyon Road – Hybrid**

The Devil’s Canyon Road site has site access provided by an existing bridge approximately 28 feet in width that crosses the Ventura River. The bridge is sufficient in width for fire apparatus. Fire water infrastructure is located onsite. Table 22 presents the emergency access point assessments for these alternatives. This site scored a 7 because existing access meets fire department requirements however, in the event of a significant rainfall, bridge access could be affected and emergency access would have to be provided elsewhere, likely across adjacent property to the west.

**Table 22. Emergency Access – Alternatives 4.A and 4.B: Devil’s Canyon Road**

<b>Alternative</b>	<b>Emergency Access Total</b>
4.A: Devil’s Canyon Road – Natural Gas	7 points
4.B: Devil’s Canyon Road – Hybrid	7 points

### **Alternative 5.A: County Line – Natural Gas/Alternative 5.B: County Line – Hybrid**

The County Line site would require a new access road with at least a 24-foot width and slope not exceeding 20 percent. The site has existing agricultural roads for crop access that could be widened and improved with asphalt or other paving. A fire hydrant may also be required, which would require a new fire water line at a minimum water pressure sufficient for firefighting (typically 20 psi). Table 23 presents the emergency access point assessments for these alternatives. This site scored a 5 because an existing access road is available and however it would require some widening along sections of the road and surface improvements.

**Table 23. Emergency Access – Alternatives 5.A and 5.B: County Line**

<b>Alternative</b>	<b>Emergency Access Total</b>
5.A: County Line – Natural Gas	5 points
5.B: County Line – Hybrid	5 points

#### **4.2.4 Geotechnical Engineering Constraints**

Soil stability and underlying geology can contribute to soil movement and pipeline damage. Although detailed geologic and geotechnical evaluation under the direction of a licensed geologist, geotechnical engineer, and civil engineer is outside the scope of this feasibility study, a desktop-level evaluation using the County of Ventura’s GIS-based “County View” system has been performed to determine whether known geotechnical constraints associated with high risk of faulting/seismicity, liquefaction, and subsidence are present for each alternative (Ventura

County 2021b).<sup>35,36</sup> Most geotechnical constraints can be addressed by implementing measures at the recommendation of a geologist, geotechnical engineer, and/or civil engineer and following standard building code requirements, such as over-excavating and recompacting soil or installing special building foundations (e.g., piers, caissons). However, significant geotechnical constraints (see Table 24) can cause greater long-term risk to infrastructure and increase overall project cost, including for long-term maintenance. As such, siting of new pipelines and infrastructure should avoid these constraints to the extent feasible.

**Table 24. Geotechnical Engineering Constraints**

	<b>0</b>	<b>1-2-3</b>	<b>4-5-6</b>	<b>7-8-9</b>
Topic Area	Substantial geotechnical constraints	Moderate geotechnical constraints	Minimal geotechnical constraints	No known geotechnical constraints

**Note:** Assessment based on desktop analysis using County of Ventura’s GIS based “County View” system to evaluate liquefaction, faulting/seismicity, and landslide risk.

### **Alternative 1.A: Planned Project/Alternative 1.B: Ventura Compressor Station – Hybrid**

The Ventura Compressor Station site is not mapped with any known earthquake faults, earthquake fault hazards, potential earthquake-induced landslide areas, or subsidence zones. The site is mapped with potential risk for soil liquefaction (Ventura County 2021b). Existing pipelines serving the compressor station also fall within the soil liquefaction area. However, the existing compressor station has not experienced any settling or foundation cracking associated with subsidence or liquefaction. No new natural gas pipelines would be required offsite for this location. New utility connections, such as aboveground electrical and telecommunication conduit, for a hybrid alternative could be sited and installed based on geotechnical field conditions. Table 25 presents the geotechnical engineering constraint point assessments for these two alternative options. This site scored a 6 because of mapped potential risk for soil liquefaction however, standard engineering design and compliance with building code requirements can reduce liquefaction risk. Furthermore, a compressor station has been onsite for almost 100 years with no known challenges from liquefaction.

**Table 25. Geotechnical Engineering Constraints – Alternatives 1.A and 1.B: Ventura Compressor Station**

<b>Alternative</b>	<b>Geotechnical Engineering Constraints Total</b>
1.A: Planned Project	6 points
1.B: Ventura Compressor Station – Hybrid	6 points

<sup>35</sup> As defined by the U.S. Geological Survey, “Liquefaction takes place when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking. Liquefaction occurring beneath buildings and other structures can cause major damage during earthquakes” (USGS 2021).

<sup>36</sup> As defined by the U.S. Geological Survey, “Land subsidence is a gradual settling or sudden sinking of the Earth’s surface due to removal or displacement of subsurface earth materials. The principal causes include: aquifer-system compaction associated with groundwater withdrawals; drainage of organic soils; underground mining; natural compaction or collapse, such as with sinkholes or thawing permafrost” (USGS 2019).

### **Alternative 2.A: Avocado Site – Natural Gas/ Alternative 2.B: Avocado Site – Hybrid**

The Avocado Site is not mapped with any known earthquake faults, earthquake fault hazards, liquefaction risk, or subsidence zones. The site is mapped with potential earthquake-induced landslide areas. New pipeline infrastructure and new utility connections would be required within the area mapped as a potential earthquake-induced landslide area. Table 26 presents the geotechnical engineering constraint point assessments for these alternatives. This site scored a 4 because of mapped potential landslide risk from an earthquake. While engineering design and compliance with building code requirements will reduce risk, an earthquake induced landslide could cause significant damage to a compressor station.

**Table 26. Geotechnical Engineering Constraints – Alternatives 2.A and 2.B: Avocado Site**

<b>Alternative</b>	<b>Geotechnical Engineering Constraints Total</b>
2.A: Avocado Site – Natural Gas	4 points
2.B: Avocado Site – Hybrid	4 points

### **Alternative 3.A: Ventura Steel – Natural Gas/Alternative 3.B: Ventura Steel – Hybrid**

The Ventura Steel site is not mapped with any known earthquake faults, earthquake fault hazards, or subsidence zones. However, there is a mapped earthquake fault to the west of SR-33/Ventura River approximately 2,500 feet from the property boundary. The site is also mapped with liquefaction risk. New pipeline infrastructure and new utility connections would be required within the area mapped with liquefaction risk. Table 27 presents the geotechnical engineering constraint point assessments for these alternatives. This site scored a 6 because of mapped potential risk for soil liquefaction however, standard engineering design and compliance with building code requirements can reduce liquefaction risk.

**Table 27. Geotechnical Engineering Constraints – Alternatives 3.A and 3.B: Ventura Steel**

<b>Alternative</b>	<b>Geotechnical Engineering Constraints Total</b>
3.A: Ventura Steel – Natural Gas	6 points
3.B: Ventura Steel – Hybrid	6 points

### **Alternative 4.A: Devil’s Canyon Road – Natural Gas/Alternative 4.B: Devil’s Canyon Road – Hybrid**

The Devil’s Canyon Road site is mapped with a known earthquake fault approximately 700 feet north of the limits of ground disturbance. However, there is no mapped earthquake fault hazard zone or subsidence zone. The site is also mapped with liquefaction risk. New pipeline infrastructure and new utility connections would be required within the area mapped with liquefaction risk and could be in proximity to the fault, although engineering design could address most of the fault risk. Table 28 presents the geotechnical engineering constraint point assessments for these alternatives. This site scored a 5 because of mapped potential risk for

soil liquefaction and proximity to a known fault. Standard engineering design and compliance with building code requirements can reduce liquefaction and risk related to seismic shaking.

**Table 28. Geotechnical Engineering Constraints – Alternatives 4.A and 4.B: Devil’s Canyon Road**

Alternative	Geotechnical Engineering Constraints Total
4.A: Devil’s Canyon Road – Natural Gas	5 points
4.B: Devil’s Canyon Road – Hybrid	5 points

**Alternative 5.A: County Line – Natural Gas/Alternative 5.B: County Line – Hybrid**

The County Line site is mapped with a known earthquake fault approximately 500 feet north of the limits of ground disturbance. Two additional mapped faults are located near a tie-in point to the existing distribution system. However, there is no mapped earthquake fault hazard zone, subsidence zone, or liquefaction hazard. New pipeline infrastructure and new utility connections would be required and could be in proximity to the fault, and may actually cross the fault, although engineering design could address most of the fault risk. Table 29 presents the geotechnical engineering constraint point assessments for these alternatives. This site scored a 6 because of proximity to a known fault. Standard engineering design and compliance with building code requirements can reduce risk related to seismic shaking

**Table 29. Geotechnical Engineering Constraints – Alternatives 5.A and 5.B: County Line**

Alternative	Geotechnical Engineering Constraints Total
5.A: County Line – Natural Gas	6 points
5.B: County Line – Hybrid	6 points

#### 4.2.5 Proximity to Distribution System

The ability to mitigate or eliminate emissions from a gas release to atmosphere for operations and maintenance (referred to as a “blowdown”) is heavily influenced by the type of system that is being blown down.<sup>37</sup> The operating pressure of a pipeline system is a critical factor when evaluating the ability to limit or eliminate emissions during a blowdown (see Table 30). Cross compression is a technique used to help minimize release of natural gas. Portable compression equipment is used to bring down gas pressure on an isolated pipeline segment and redirect the gas downstream of the isolated segment. Cross compression requires an adjacent pipeline with an operating pressure and capacity compatible with the existing pressure conditions of the line to be vacated (AGA 2020).

The location of the compressor station in relationship to the distribution pipeline system creates the option to engineer a system that can passively collect and redirect natural gas and route to

<sup>37</sup> Generally defined, a blowdown is the release of gas from a pipeline to the atmosphere to relieve pressure in the pipe so that maintenance, testing, or other activities can take place (MJB&A 2016).



the distribution system instead of needing to bring additional compression equipment onsite to perform cross compression.<sup>38</sup>

**Table 30. Proximity to Distribution System**

	<b>0</b>	<b>1-2-3</b>	<b>4-5-6</b>	<b>7-8-9</b>
Topic Area	No access to distribution system without substantial pipeline installation	Distribution system greater than 0.5 miles away	Distribution system access outside of the facility and less than 0.5 miles away	Distribution system is within the facility

### **Alternative 1.A: Planned Project/Alternative 1.B: Ventura Compressor Station – Hybrid**

The Ventura Compressor Station site is already connected to the distribution system. The planned project and a hybrid alternative at the existing site would be able to connect to the distribution system enabling passive rerouting without the need to bring cross compression equipment onsite. Table 31 presents the proximity to distribution system point assessments for these alternatives. This site scored a 9 because existing distribution lines are located within the property enabling the ability to limit or eliminate emissions during a blowdown.

**Table 31. Proximity to Distribution System – Alternatives 1.A and 1.B: Ventura Compressor Station**

<b>Alternative</b>	<b>Proximity to Distribution System Total</b>
1.A: Planned Project	9 points
1.B: Ventura Compressor Station – Hybrid	9 points

### **Alternative 2.A: Avocado Site – Natural Gas/Alternative 2.B: Avocado Site – Hybrid**

The Avocado Site could not be connected to the distribution pipeline system without significant pipeline installation. The new pipeline route would connect to the south at the junction of Taylor Ranch Road/US 101. Table 32 presents the proximity to distribution system point assessments for these alternatives. This site scored a 1 because access to the existing distribution lines is more than 0.5 mile away.

**Table 32. Proximity to Distribution System – Alternatives 2.A and 2.B: Avocado Site**

<b>Alternative</b>	<b>Proximity to Distribution System Total</b>
2.A: Avocado Site – Natural Gas	1 point
2.B: Avocado Site – Hybrid	1 point

<sup>38</sup> In the event of an unplanned release or emergency, the emergency shutdown (ESD) system is designed to automatically evacuate natural gas rapidly, which may not enable cross-compression. At the Ventura Compressor Station, the ESD stack vents to atmosphere. As noted by the EPA, “rerouting combustible gases eliminates potential hazards in the operating area as well as reducing methane emissions” (EPA 2011).

### **Alternative 3.A: Ventura Steel – Natural Gas/Alternative 3.B: Ventura Steel – Hybrid**

The Ventura Steel site would require a connection to existing distribution pipe within Ventura Avenue or a new distribution pipeline would be required from the existing compressor station site and north within Ventura Avenue. Table 33 presents the proximity to distribution system point assessments for these alternatives. This site scored a 5 because the distribution system access outside of the facility and less than 0.5 miles away.

**Table 33. Proximity to Distribution System – Alternatives 3.A and 3.B: Ventura Steel**

<b>Alternative</b>	<b>Proximity to Distribution System Total</b>
3.A: Ventura Steel – Natural Gas	5 points
3.B: Ventura Steel – Hybrid	5 points

### **Alternative 4.A: Devil’s Canyon Road – Natural Gas/Alternative 4.B: Devil’s Canyon Road – Hybrid**

The Devil’s Canyon Road site would require a distribution system connection to the east across the Ventura River and SR-33 at the Shell Road exit. Existing infrastructure potentially could be adapted to support the distribution interconnection. Table 34 presents the proximity to distribution system point assessments for these alternatives. This site scored a 2 because the distribution system access is greater than 0.5 miles away but closer to the distribution system than the Avocado Site.

**Table 34. Proximity to Distribution System – Alternatives 4.A and 4.B: Devil’s Canyon Road**

<b>Alternative</b>	<b>Proximity to Distribution System Total</b>
4.A: Devil’s Canyon Road – Natural Gas	2 points
4.B: Devil’s Canyon Road – Hybrid	2 points

### **Alternative 5.A: County Line – Natural Gas/Alternative 5.B: County Line – Hybrid**

The County Line site would require a new connection that would extend from the site north to the existing distribution pipeline system. Table 35 presents the proximity to distribution system point assessments for these alternatives. This site scored a 5 because the distribution system access is outside of the facility and less than 0.5 miles away.

**Table 35. Proximity to Distribution System – Alternatives 5.A and 5.B: County Line**

<b>Alternative</b>	<b>Proximity to Distribution System Total</b>
5.A: County Line – Natural Gas	5 points
5.B: County Line – Hybrid	5 points

## 4.3 Operational Assessment Summary

Table 36 presents the results of Sections 4.2.1 through 4.2.5 regarding the relative point values assessed for each operational consideration discussed in Section 4.2.

**Table 36. Operational Assessment Summary Table**

Alternative	Points
<b>Auxiliary and Control Systems – All Natural Gas Alternatives</b>	
1.A: Planned Project	9 points
2.A: Avocado Site – Natural Gas	9 points
3.A: Ventura Steel – Natural Gas	9 points
4.A: Devil’s Canyon Road – Natural Gas	9 points
5.A: County Line – Natural Gas	9 points
<b>Auxiliary and Control Systems – All Hybrid Alternatives</b>	
1.B: Ventura Compressor Station – Hybrid	5 points
2.B: Avocado Site – Hybrid	5 points
3.B: Ventura Steel – Hybrid	5 points
4.B: Devil’s Canyon Road – Hybrid	5 points
5.B: County Line – Hybrid	5 points
<b>Backup Power Requirements – All Natural Gas Alternatives</b>	
1.A: Planned Project	6 points
2.A: Avocado Site – Natural Gas	6 points
3.A: Ventura Steel – Natural Gas	6 points
4.A: Devil’s Canyon Road – Natural Gas	6 points
5.A: County Line – Natural Gas	6 points
<b>Backup Power Requirements – All Hybrid Alternatives</b>	
1.B: Ventura Compressor Station – Hybrid	6 points
2.B: Avocado Site – Hybrid	6 points
3.B: Ventura Steel – Hybrid	6 points
4.B: Devil’s Canyon Road – Hybrid	6 points
5.B: County Line – Hybrid	6 points
<b>Emergency Access – All Alternatives</b>	
1.A: Planned Project	9 points
1.B: Ventura Compressor Station – Hybrid	9 points
2.A: Avocado Site – Natural Gas	4 points
2.B: Avocado Site – Hybrid	4 points
3.A: Ventura Steel – Natural Gas	9 points
3.B: Ventura Steel – Hybrid	9 points
4.A: Devil’s Canyon Road – Natural Gas	7 points
4.B: Devil’s Canyon Road – Hybrid	7 points

**Table 36. Operational Assessment Summary Table**

<b>Alternative</b>	<b>Points</b>
5.A: County Line – Natural Gas	5 points
5.B: County Line – Hybrid	5 points
<b>Geotechnical Engineering Constraints – All Alternatives</b>	
1.A: Planned Project	6 points
1.B: Ventura Compressor Station – Hybrid	6 points
2.A: Avocado Site – Natural Gas	4 points
2.B: Avocado Site – Hybrid	4 points
3.A: Ventura Steel – Natural Gas	6 points
3.B: Ventura Steel – Hybrid	6 points
4.A: Devil’s Canyon Road – Natural Gas	5 points
4.B: Devil’s Canyon Road – Hybrid	5 points
5.A: County Line – Natural Gas	6 points
5.B: County Line – Hybrid	6 points
<b>Proximity to Distribution System – All Alternatives</b>	
1.A: Planned Project	9 points
1.B: Ventura Compressor Station – Hybrid	9 points
2.A: Avocado Site – Natural Gas	1 point
2.B: Avocado Site – Hybrid	1 point
3.A: Ventura Steel – Natural Gas	5 points
3.B: Ventura Steel – Hybrid	5 points
4.A: Devil’s Canyon Road – Natural Gas	2 points
4.B: Devil’s Canyon Road – Hybrid	2 points
5.A: County Line – Natural Gas	5 points
5.B: County Line – Hybrid	5 points

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# 5 Cost Estimate and Schedule Analysis

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This section provides an analysis of cost and project schedule for each alternative option carried forward. Detailed information regarding cost estimates is included in Appendix C and schedule is in Appendix D.

## 5.1 Cost Estimate

SoCalGas uses accepted industry practices when estimating cost. The recognized expert in cost estimating and scheduling is the American Association of Cost Engineers (AACE). The AACE has established Recommended Practices (RPs) that are “intended to be the main technical foundation of ... educational, and certification products and services. The RPs are a series of documents that contain valuable reference information that has been subject to a rigorous review process and recommended for use by the [AACE] Technical Board” (AACE 2022). Cost estimating is based on characteristics that can be used to categorize project cost estimate types as outlined in AACE RP 10S-90, “Cost Engineering Terminology.” The level of project definition determines the information available to the estimating process (AACE 2021). Cost estimates are designated within a particular class from 1 to 5, based on the level of project definition available at the time of estimation. A Class 1 estimate is the closest to full project definition and maturity and a Class 5 is based on the lowest level of project definition (AACE 2021).

SoCalGas, with support from BMCD and SPEC Services, developed cost estimates in accordance with AACE RP 10S-90 for the various alternatives. Given the level of information available as of the date of this feasibility study, the planned project (Alternative 1.A) cost estimate is at Class 3 because the engineering analysis has been completed to a greater level of detail. Cost estimates for all other alternatives have been developed based on preliminary site considerations, an average site size of 15 acres, and construction assumptions outlined in Section 3 and are at Class 5.<sup>39</sup>

Project development costs are related to the one-time cost to implement the alternative. These costs include, but are not limited to, compressors, piping, land and easement acquisition, building materials, site and roadway grading and retaining walls, electrical conduit, power poles, and engineering design. To normalize project cost, a standard contingency of 30 percent was applied to the estimated total cost for each option. This percent contingency may overstate the

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<sup>39</sup> In accordance with AACE RP 10S-90 (AACE 2021), cost estimates are classified as follows:  
3. COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 3 ESTIMATE – (Typical level of project definition required: 10% to 40% of full project definition.) Class 3 estimates are generally prepared to form the basis for budget authorization, appropriation, and/or funding. Class 3 estimates are typically prepared to support full project funding requests and become the first of the project phase “control estimate” against which all actual costs and resources will be monitored for variations to the budget. They are used as the project budget until replaced by more detailed estimates. In many owner organizations, a Class 3 estimate may be the last estimate required and could well form the only basis for cost/schedule control. ...  
5. COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 1 ESTIMATE – (Typical level of project definition required: 65% to 100% of full project definition.) Class 1 estimates are generally prepared for discrete parts or sections of the total project rather than for the entire project. The parts of the project estimated at this level of detail will typically be used by subcontractors for bids, or by owners for check estimates. The updated estimate is often referred to as the current control estimate and becomes the new baseline for cost/schedule control of the project. Class 1 estimates may be prepared for parts of the project to comprise a fair price estimate or bid check estimate to compare against a contractor’s or vendor’s bid estimate, or to evaluate/dispute claims or change orders (AACE 2021).

planned project's cost (Alternative 1.A) because the cost estimate is at a Class 3 and typically a lower contingency would be applied. However, this adjustment allows project cost to be evaluated consistent with other alternative options carried forward.

Operational costs are related to the ongoing annual cost incurred to operate the compressor station. A hybrid station requires more electric power; as such, SCE electricity is a greater portion of the operational cost. The County Line Alternative would require five compressors (either five natural gas [Alternative 5.A.] or two natural gas and three electric [Alternative 5.B.]), which is the reason for the greater cost differential compared to other sites with four compressors. Please refer to Appendix C for detailed cost estimate information and Table 37 below for summary costs.

**Table 37. Ventura Compressor Station Alternatives – Cost Estimates**

<b>Alternative</b>	<b>Project Development Cost (Nonrecurring)</b>	<b>Operational Cost (Annual Recurring)</b>
1.A: Planned Project	\$421MM	\$0.904MM
1.B: Current Site – Hybrid	\$464MM	\$1,778MM
2.A: Avocado Site – Natural Gas	\$677MM	\$0.949MM
2.B: Avocado Site – Hybrid	\$707MM	\$1,823MM
3.A: Ventura Steel – Natural Gas	\$607MM	\$0.909MM
3.B: Ventura Steel – Hybrid	\$635MM	\$1,783MM
4.A: Devil's Canyon Road – Natural Gas	\$566MM	\$0.919MM
4.B: Devil's Canyon Road – Hybrid	\$594MM	\$1,793MM
5.A: County Line – Natural Gas	\$593MM	\$1.124MM
5.B: County Line – Hybrid	\$622MM	\$2,522MM

**Source:** SCE 2019.

**Notes:** MM = million.

Costs are presented in 2022 dollars with escalation/inflation included.

Electric rates were based on SCE fixed tariff Schedule TOU-GS-2 (SCE 2019).

## 5.2 Schedule Analysis

SoCalGas, with technical support from BMCD and SPEC Services, developed schedule estimates for each alternative. Schedule estimates were also based on accepted industry standards using AACE RP 91R-16, "Schedule Development" (AACE 2020). Schedules are differentiated by the degree of detail available at the time of estimation, with the least detailed being a Level 1 schedule and the most detailed being a Level 5 schedule.<sup>40</sup> The schedule for the planned project

<sup>40</sup> In accordance with AACE RP 91R-16 (AACE 2020), schedules are classified as follows:

Level 1: A Level 1 schedule is a high-level schedule that reflects key milestones and summary activities by major phase, stage or project being executed. This schedule level may represent summary activities of an execution stage, specifically engineering, procurement, construction and start-up activities. Typically represented in Gantt format and depending upon when and how developed, a Level 1 schedule may or may not be the summary roll-up of a more detailed CPM schedule. Level 1 schedules provide high-level information that assist in the decision making process (go/no go prioritization and criticality of projects). ...

Level 3: Level 3 schedules are generally prepared to communicate the execution of the deliverables for each of the contracting parties. The schedule should reflect the interfaces between key workgroups, disciplines,



(Alternative 1.A) is a Level 3 and all other alternatives are at a Level 1. Because schedule delays can have a variety of outcomes, including increased maintenance, obsolete replacement parts, lack of staffing and/or equipment resources, and increased cost, alternatives were evaluated based on three categories reflected in the scoring rubric related to schedule. Furthermore, as noted in the CPUC's Decision D.19-09-051 on SoCalGas' 2019 GRC application, "We do however encourage SoCalGas to place a high priority on critical projects under this category as most of its compressors are over 50 years old and because of key risks that need to be mitigated in this area" (D.19-09-051 at pp. 116-117). The consideration of schedule aligns with the CPUC's input.

Permitting assumptions are preliminary and are based on the level of detail available for each alternative at this time and could change depending on the ultimate selection of the site layout and equipment. Please refer to Appendix B for the scoring rubric and Appendix D for the schedule estimates.

### 5.2.1 Applicability of Local Agency Permits

An important consideration related to permitting and its impact on a particular alternative's schedule is the overarching authority of the CPUC to regulate natural gas utilities. Article XII, Section 8 of the California Constitution establishes the CPUC's preemptive authority over matters which the Legislature has granted the CPUC regulatory powers:

A city, county, or other public body may not regulate matters over which the Legislature grants regulatory power to the Commission. This section does not affect power over public utilities relating to the making and enforcement of police, sanitary, and other regulations concerning municipal affairs pursuant to a city charter existing on October 10, 1911, unless that power has been revoked by the city's electors, or the right of any city to grant franchises for public utilities or other businesses on terms, conditions, and in the manner prescribed by law.

CPUC decisions,<sup>41</sup> as well as California courts, have confirmed the CPUC's preemptory powers. As such, no local discretionary (e.g., rezone, land use) permits would be required because the CPUC has preemptive jurisdiction over the siting, construction, maintenance, and operation of natural gas facilities in California. The CPUC's authority does not preempt special districts, such as air quality management districts, other state agencies, or the federal government. Additionally, SoCalGas would still have to obtain all ministerial permits from local jurisdictions. Local agency permits are discussed for each alternative to provide awareness to the reader.

### 5.2.2 Alternatives Evaluation of Schedule

This section evaluates the estimated schedule for each potential alternative. As noted above, permitting assumptions are preliminary and are based on the level of detail available for each

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or crafts involved in the execution of the stage. Typically presented in Gantt or CPM network format and is generally the output of CPM scheduling software. Level 3 schedules provide enough detail to identify critical activities. Level 3 schedules assist the team in identifying activities that could potentially affect the outcome of a stage or phase of work, allowing for mitigation and course correction in short course. Audiences for this type of schedule include, but are not limited to program or project managers, CMs or owner's representatives, superintendents, and general foremen (AACE 2020).

41 In D.94-06-014 (CPUC 2019), "[t]he Commission has restated its exclusive jurisdiction over the location and construction of public utility facilities in numerous decisions."

alternative at this time and could change depending on the ultimate selection of the site layout and equipment (see Table 38).

**Table 38. Alternatives Evaluation of Schedule**

<b>Scheduling Component</b>	<b>0</b>	<b>1-2-3</b>	<b>4-5-6</b>	<b>7-8-9</b>
Project Permitting Complexity	Substantial permitting complexity	Moderate permitting complexity	Minimal permitting complexity	None or negligible permitting complexity
Property/Right-of-Way Acquisition Required	Greater than 10 properties/ROW acquisition	5 to 9 properties/ ROW acquisition	1 to 4 properties/ ROW acquisition	No permanent properties/ROW acquisition, only temporary construction access
Construction Duration	Longer than 4 years	3 to 4 years	2 to 3 years	Less than 2 years

**Notes:** ROW = right-of-way.

Permitting complexity relates to the number of agency permits anticipated for a particular alternative.

Construction duration is assumed to begin upon issuance of permits through commissioning of equipment.

### **Alternative 1.A: Planned Project**

A permit to construct (PTC) was filed with the VCAPCD in March 2020. Coverage under the National Pollutant Discharge Elimination System (NDPES) would be required through filing a Notice of Intent with the Los Angeles Regional Water Quality Control Board as well as implementation of a Stormwater Pollution Prevention Plan during construction, since greater than one acre would be disturbed. Ministerial permits for site construction activities, such as building permits, will be required from the City of Ventura. These types of permits are typically granted within three to six months and applications would be filed upon completion of final engineering. Temporary construction and access easements will be required for two staging areas/laydown yards from private landowners adjacent to the facility, but no other offsite easements are anticipated. Construction would begin upon issuance of applicable permits and is anticipated to take 24 months due to site preparation, pipeline and utility modifications, and building construction and equipment installation. The points assessments of the three schedule components for this alternative are presented in Table 39.

**Table 39. Evaluation of Schedule – Alternative 1.A: Planned Project**

<b>Scheduling Component</b>	<b>Points</b>
Project Permitting	8
Property/Right-of-Way Acquisition	8
Construction Duration	8

### **Alternative 1.B: Ventura Compressor Station – Hybrid**

As noted above, a PTC was filed with the VCAPCD in March 2020. However, the application addresses the planned project configuration of four new natural gas compressors, whereas Alternative 1B would include two natural gas and two electric compressors. As such, the PTC

application would need to be amended to modify the proposed equipment. The VCAPCD process typically takes 6 to 18 months from application filing to issuance of a permit. Coverage under the NDPES would be required through filing a Notice of Intent with the Los Angeles Regional Water Quality Control Board and the implementation of a Stormwater Pollution Prevention Plan during construction, since greater than one acre would be disturbed. Ministerial permits for site construction activities, such as building permits, would be required from the City of Ventura. Coordination with SCE would also be required to address any electrical upgrades, such as replacement of poles or conduit, which may require the filing of an advice letter with the CPUC in accordance with General Order 131-D.<sup>42</sup> Temporary construction and access easements will be required for staging areas/laydown yards and potentially for electrical lines if SCE does not already have easements/right-of-way in place. However, based on aerial imagery and publicly accessible SCE information, electrical infrastructure is located adjacent to the site. Construction would begin upon issuance of applicable permits and is anticipated to take 30 to 36 months due to site preparation, pipeline and utility modifications, minimal SCE electrical system modifications, and building construction and equipment installation. The points assessments of the three schedule components for this alternative are presented in Table 40.

**Table 40. Evaluation of Schedule – Alternative 1.B: Ventura Compressor Station – Hybrid**

Scheduling Component	Points
Project Permitting	7
Property/Right-of-Way Acquisition	8
Construction Duration	6

**Alternative 2.A: Avocado Site – Natural Gas**

Alternative 2.A would require a PTC from the VCAPCD for the four new natural gas compressors. The VCAPCD process typically takes 6 to 18 months from application filing to issuance of a permit. The site and potential pipeline and utility corridors may impact riparian habitat associated with tributaries that flow to the Ventura River, potentially requiring a U.S. Army

<sup>42</sup> General Order (GO) 131-D applies to the construction of electric power line and substation facilities designed to operate between 50 and 200 kV. Section III, Subsection B.1, exempts a utility from the CPUC’s requirement to file an application requesting authority to construct if a project meets specific conditions, such as: replacing existing power line facilities or supporting structures with equivalent facilities or structures; minor relocation of existing power facilities up to 2,000 feet in length or intersetting of additional support structures between existing support structures. When electrical improvements are exempt from GO 131-D, a utility must file an informational advice letter with the Commission Advisory and Compliance Division (CACD) and the CPUC Public Advisor in accordance with GO 96-A. GO131-D, Section III, A. requires a Certificate of Public Convenience and Necessity (CPCN) when “any new electric generating plant having in aggregate a net capacity available at the busbar in excess of 50 megawatts (MW), or of the modification, alteration, or addition to an existing electric generating plant that results in a 50 MW or more net increase in the electric generating capacity available at the busbar of the existing plant, or of major electric transmission line facilities which are designed for immediate or eventual operation at 200 kV or more... .” GO131-D, Section III, B. requires a or Permit to Construct (PTC) when “any electric power line facilities or substations which are designed for immediate or eventual operation at any voltage between 50 kV or 200 kV or new or upgraded substations with high side voltage exceeding 50 kV.”

Corps of Engineers Clean Water Act (CWA) Section 404 Nationwide Permit (404 NWP),<sup>43</sup> CWA Section 401 Water Quality Certification (401 Certification),<sup>44</sup> and California Department of Fish and Wildlife (CDFW) streambed alteration agreement (SAA).<sup>45</sup> The southerly portion of the proposed Taylor Ranch Road roadway improvements would extend into the State Coastal Zone, potentially requiring a coastal development permit issued by the County of Ventura.<sup>46</sup>

Local agency discretionary permits would not apply, as discussed in Section 5.2.1. However, local agency permits are discussed to provide awareness to the reader. The property is zoned by the County of Ventura as “AE-40 ac – Agricultural Exclusive, 40 acres minimum parcel size” (Ventura County 2021b). Section 8105-4 – Permitted Uses in Open Space, Agricultural, Residential and Special Purpose Zones states that pipelines require a conditional use permit (CUP) subject to approval by the Planning Director and that “Public Service/Utility Facilities” that include “Public Service/Utility Offices And Service Yards, When Located On Lots Containing The Majority Of The Agency’s Facilities” are not allowed in the AE zone. Additionally, the site is within the SOAR initiative area, which in general requires countywide voter approval of (1) any substantive change to the General Plan’s Agricultural, Open Space, or Rural land use goals or policies and (2) re-designation of land with these General Plan land use designations.

Ministerial permits for site construction activities, such as building permits, will be required from the County of Ventura. Coordination with SCE would also be required to address any electrical upgrades, such as new poles or conduit, which may require the filing of an advice letter with the CPUC or a PTC in accordance with General Order 131-D.

Substantial property and access rights across adjacent properties to the nearest public right-of-way would need to be acquired. The land is currently planted with an active avocado orchard, affecting the value of the property. Temporary construction and access easements would also be required for a staging area/laydown yard and potentially for electrical lines if SCE does not already have easements/right-of-way in place. Construction would begin upon issuance of

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<sup>43</sup> CWA Section 404 establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. For most discharges that will have only minimal adverse effects, a general permit may be suitable. General permits are issued on a nationwide, regional, or state basis for particular categories of activities. An NWP is a general permit that authorizes activities across the country, unless revoked by a district or division commander. NWPs authorize a wide variety of activities such as mooring buoys, residential developments, utility lines, road crossings, mining activities, wetland and stream restoration activities, and commercial shellfish aquaculture activities (EPA 2022).

<sup>44</sup> CWA Section 401 establishes the State Water Resources Control Board and the Regional Water Quality Control Boards’ authority to regulate discharges of dredged or fill material to waters of the state; it also establishes the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). CWA Section 401 water quality certifications are issued to applicants for a federal license or permit for activities that may result in a discharge into waters of the United States, including but not limited to the discharge or dredged or fill material. Waste discharge requirements under the Porter-Cologne Act are issued for discharges of dredged or fill material to waters of the state (California Water Boards 2022).

<sup>45</sup> California Fish and Game Code Section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following: divert or obstruct the natural flow of any river, stream, or lake; change the bed, channel, or bank of any river, stream, or lake; use material from any river, stream, or lake; or deposit or dispose of material into any river, stream, or lake (CDFW 2022).

<sup>46</sup> The California Coastal Act established the California Coastal Commission (Coastal Commission) and requires certification by the Coastal Commission of a Local Coastal Program (LCP) to govern decisions that determine the short- and long-term conservation and use of coastal resources within a local agency’s jurisdiction. After an LCP has been approved, state coastal permitting authority over most new development is transferred from the Coastal Commission to the local government, which then applies the requirements of the LCP in reviewing proposed development. Ventura County’s LCP was certified by the Coastal Commission on June 7, 2017 (Coastal Commission 2022; Ventura County 2017).

applicable permits and is anticipated to take 60 to 70 months due to roadway installation, utility installation, significant site preparation and grading due to the slope of the property (see Table 4: Alternative 2.A Construction Assumptions/Estimates), SCE electrical system improvements, and building construction and equipment installation. The points assessments of the three schedule components for this alternative are presented in Table 41.

**Table 41. Evaluation of Schedule – Alternative 2.A: Avocado Site – Natural Gas**

<b>Scheduling Component</b>	<b>Points</b>
Project Permitting	5
Property/Right-of-Way Acquisition	4
Construction Duration	0

### **Alternative 2.B: Avocado Site – Hybrid**

As discussed in Alternative 2.A above, a PTC from the VCAPCD would be required, however only for two natural gas compressors. All other federal and state permits noted in Alternative 2.A would be anticipated for Alternative 2.B. Local agency discretionary permits would not apply, as discussed in Section 5.2.1; however, local agency permits related to this site are discussed above in Alternative 2.A to provide awareness to the reader. Ministerial permits for site construction activities, such as building permits, would be required from the County of Ventura. Coordination with SCE would also be required to address any electrical upgrades, which may require the filing of an advice letter with the CPUC or a PTC in accordance with General Order 131-D. The electrical interconnection would require at least 5 MW, necessitating additional infrastructure.

Substantial property and access rights across adjacent properties to the nearest public right-of-way would need to be acquired. The land is currently planted with an active avocado orchard, affecting the value of the property. Temporary construction and access easements would also be required for a staging area/laydown yard and potentially for electrical lines if SCE does not already have easements/right-of-way in place. Construction would begin upon issuance of applicable permits and is anticipated to take 60 to 70 months due to roadway installation, utility installation, significant site preparation and grading due to the slope of the property (see Table 5: Alternative 2.B Construction Assumptions/Estimates), SCE electrical system improvements, and building construction and equipment installation. The points assessments of the three schedule components for this alternative are presented in Table 42.

**Table 42. Evaluation of Schedule – Alternative 2.B: Avocado Site – Hybrid**

<b>Scheduling Component</b>	<b>Points</b>
Project Permitting	4
Property/Right-of-Way Acquisition	4
Construction Duration	0

### Alternative 3.A: Ventura Steel – Natural Gas

Alternative 3.A would require a PTC from the VCAPCD for the four new natural gas compressors. The property is currently developed with industrial uses, including oil extraction infrastructure, and is zoned by the Ventura County zoning ordinance as “M3-10,000 sf – General Industrial, 10,000 sf minimum parcel size” (Ventura County 2020, 2021b). The site and potential pipeline and utility corridors may impact riparian habitat associated with tributaries that flow to the Ventura River, potentially requiring a 404 NWP, 401 Certification, and SAA.

Local agency discretionary permits would not apply, as discussed in Section 5.2.1. However, local agency permits are discussed to provide awareness to the reader. Section 8105-5, Permitted Uses in Commercial and Industrial Zones, states that pipelines require a CUP subject to approval by the Planning Director and a Public Utility Facility requires a Planning Director approval.

Ministerial permits for site construction activities, such as building permits, would be required from the County of Ventura. Coordination with SCE would also be required to address any electrical upgrades, which may require the filing of an advice letter with the CPUC or a PTC in accordance with General Order 131-D.

The property would need to be acquired from the landowner although access to the site is immediately adjacent to a public right-of-way (Ventura Avenue). To install two new transmission pipelines, significant rights-of-way would be required (anticipated to be at least 12 properties). Land is currently developed with industrial land uses, including oil extraction. Construction would begin upon completion of oil extraction activity remediation, transfer of property and issuance of applicable permits and is anticipated to take 36 to 48 months due to roadway installation, utility installation, site preparation and grading, SCE electrical system modifications, and building construction and equipment installation (see Table 6: Alternative 3.A Construction Assumptions/Estimates). The points assessments of the three schedule components for this alternative are presented in Table 43.

**Table 43. Evaluation of Schedule – Alternative 3.A: Ventura Steel – Natural Gas**

Scheduling Component	Points
Project Permitting	6
Property/Right-of-Way Acquisition	0
Construction Duration	5

### Alternative 3.B: Ventura Steel – Hybrid

As discussed in Alternative 3.A, a PTC from the VCAPCD would be required, however only for two new natural gas compressors. All other federal and state permits noted in Alternative 3.A would be anticipated for Alternative 3.B. Local agency discretionary permits would not apply, as discussed in Section 5.2.1; however, local agency permits related to this site are discussed in Alternative 3.A to provide awareness to the reader. Ministerial permits for site construction activities, such as building permits, would be required from the County of Ventura. Coordination with SCE would also be required to address any electrical upgrades, which may require the filing of an advice letter with the CPUC or a PTC in accordance with General Order 131-D. The electrical interconnection would require at least 5 MW, necessitating additional infrastructure.



Significant property would need to be acquired from the landowner although access to the site is immediately adjacent to a public right-of-way (Ventura Avenue). To install two new transmission pipelines, significant right-of-way would be required (anticipated to be at least 12 properties). The land is currently developed with industrial land uses, including oil extraction. Construction would begin upon completion of oil extraction activity remediation, transfer of property and issuance of applicable permits and is anticipated to take 36 to 48 months due to roadway installation, utility installation, site preparation and grading, SCE electrical system improvements, and building construction and equipment installation (see Table 7: Alternative 3.B Construction Assumptions/Estimates). The points assessments of the three schedule components for this alternative are presented in Table 44.

**Table 44. Evaluation of Schedule – Alternative 3.B: Ventura Steel – Hybrid**

<b>Scheduling Component</b>	<b>Points</b>
Project Permitting	5
Property/Right-of-Way Acquisition	0
Construction Duration	4

#### **Alternative 4.A: Devil’s Canyon Road – Natural Gas**

Alternative 4.A would require a new application for a PTC from the VCAPCD for four new natural gas compressors. The property is currently used for oil extraction and is zoned by the Ventura County zoning ordinance as “OS-160 ac, Open Space, 160 acres minimum parcel size” with a Habitat Connectivity Corridor mapped along the Ventura River (Ventura County 2020, 2021b). The site and potential pipeline and utility corridors may impact riparian habitat associated with tributaries that flow to the Ventura River, potentially requiring a 404 NWP, 401 Certification, and SAA.

Local agency discretionary permits would not apply, as discussed in Section 5.2.1. However, local agency permits are discussed to provide awareness to the reader. Pursuant to Section 8105-4, Permitted Uses in Open Space, Agricultural, Residential and Special Purpose Zones, pipelines require a CUP subject to approval by the Planning Director and a Public Utility Facility requires a Planning Commission CUP approval. Ministerial permits for site construction activities, such as building permits, would be required from the County of Ventura. Coordination with SCE would also be required to address any electrical upgrades, which may require the filing of an advice letter with the CPUC or a PTC in accordance with General Order 131-D.

Significant property would need to be acquired from the landowner although access to the site is available from an existing driveway to a public right-of-way. To install new transmission pipelines, five properties are anticipated to require pipeline easements. The land is currently developed with industrial land uses, including oil extraction. Construction would begin upon completion of oil extraction activity remediation, transfer of property and issuance of applicable permits and is anticipated to take 24 to 30 months due to utility modifications, site preparation and grading, building construction, and equipment installation (see Table 8: Alternative 4.A Construction Assumptions/Estimates). The points assessments of the three schedule components for this alternative are presented in Table 45.



**Table 45. Evaluation of Schedule – Alternative 4.A: Devil’s Canyon Road – Natural Gas**

<b>Scheduling Component</b>	<b>Points</b>
Project Permitting	6
Property/Right-of-Way Acquisition	2
Construction Duration	6

**Alternative 4.B: Devil’s Canyon Road – Hybrid**

As discussed in Alternative 4.A, a new application for a PTC from the VCAPCD would be required, however only for two new natural gas compressors. All other federal and state permits noted in Alternative 4.A would be anticipated for Alternative 4.B. Local agency discretionary permits would not apply, as discussed in Section 5.2.1; however, local agency permits related to this site are discussed in Alternative 4.A to provide awareness to the reader. Ministerial permits for site construction activities, such as building permits, would be required from the County of Ventura. Coordination with SCE would also be required to address any electrical upgrades, which may require the filing of an advice letter with the CPUC or a PTC in accordance with General Order 131-D. The electrical interconnection would require at least 5 MW, necessitating additional infrastructure.

Significant property would need to be acquired from the landowner although access to the site is available from an existing driveway to a public right-of-way. To install new transmission pipelines, five properties are anticipated to require pipeline easements. The land is currently developed with industrial land uses. Construction would begin upon completion of oil extraction activity remediation, transfer of property and issuance of applicable permits and is anticipated to take 24 to 30 months due to utility modifications, site preparation and grading, SCE electrical system improvements, and building construction and equipment installation (see Table 9: Alternative 4.B Construction Assumptions/Estimates). The points assessments of the three schedule components for this alternative are presented in Table 46.

**Table 46. Evaluation of Schedule – Alternative 4.B: Devil’s Canyon Road – Hybrid**

<b>Scheduling Component</b>	<b>Points</b>
Project Permitting	5
Property/Right-of-Way Acquisition	2
Construction Duration	5

**Alternative 5.A: County Line – Natural Gas**

Alternative 5.A would require a PTC from the VCAPCD for five new natural gas compressors. The site and potential pipeline and utility corridors may impact riparian habitat associated with Rincon Creek and/or tributaries that flow to Rincon Creek, potentially requiring a 404 NWP, 401 Certification, and SAA. The southerly portion of the project site and staging area may extend into the State Coastal Zone, potentially requiring a coastal development permit issued by the County of Ventura.

Local agency discretionary permits would not apply, as discussed in Section 5.2.1. However, local agency permits are discussed to provide awareness to the reader. The property is zoned by the Ventura County zoning ordinance as “AE-40 ac – Agricultural Exclusive, 40 acres minimum parcel size” and is within the area governed by SOAR initiative (Ventura County 2020, 2021a). Section 8105-4 – Permitted Uses in Open Space, Agricultural, Residential and Special Purpose Zones states that pipelines require a CUP subject to approval by the Planning Director and that “Public Service/Utility Facilities” that include “Public Service/Utility Offices And Service Yards, When Located On Lots Containing The Majority Of The Agency’s Facilities” are not allowed in the AE zone. Ministerial permits for site construction activities, such as building permits, would be required from the County of Ventura. Coordination with SCE would also be required to address any electrical upgrades, such as new poles or conduit, which may require the filing of an advice letter with the CPUC or a PTC in accordance with General Order 131-D.

Moderate property and access rights across adjacent properties to the nearest public right-of-way would need to be acquired. To install new transmission pipelines, five properties are anticipated to require pipeline easements; the subject land is currently vacant. Construction would begin upon issuance of applicable permits and is anticipated to take 60 to 70 months due to roadway installation, utility installation, significant site preparation and grading due to the slope of the property (see Table 10: Alternative 5.A Construction Assumptions/Estimates), and building construction and equipment installation. The points assessments of the three schedule components for this alternative are presented in Table 47.

**Table 47. Evaluation of Schedule – Alternative 5.A: County Line – Natural Gas**

<b>Scheduling Component</b>	<b>Points</b>
Project Permitting	5
Property/Right-of-Way Acquisition	2
Construction Duration	0

### **Alternative 5.B: County Line – Hybrid**

As discussed in Alternative 5.A, a new application for a PTC from the VCAPCD would be required, however only for two new natural gas compressors. Local agency discretionary permits would not apply, as discussed in Section 5.2.1; however, local agency permits related to this site are discussed in Alternative 5.A to provide awareness to the reader. All other federal and state permits noted in Alternative 5.A would be anticipated for Alternative 5.B. Ministerial permits for site construction activities, such as building permits, would be required from the County of Ventura. Coordination with SCE would also be required to address any electrical upgrades, which may require the filing of an advice letter with the CPUC or a PTC in accordance with General Order 131-D. The electrical interconnection would require at least 5 MW, necessitating additional infrastructure.

Moderate property would need to be acquired from the landowner. To install new transmission pipelines, five properties are anticipated to require pipeline easements; the subject land is currently vacant. Construction would begin upon issuance of applicable permits and is anticipated to take 60 to 70 months due to roadway installation, utility installation, significant site preparation and grading due to the slope of the property (see Table 11: Alternative 5.B Construction Assumptions/Estimates), SCE electrical system improvements, and building

construction and equipment installation. The points assessments of the three schedule components for this alternative are presented in Table 48.

**Table 48. Evaluation of Schedule – Alternative 5.B: County Line – Hybrid**

<b>Scheduling Component</b>	<b>Points</b>
Project Permitting	4
Property/Right-of-Way Acquisition	2
Construction Duration	0

## 6 Results of Evaluation

SoCalGas appreciates the community's and CPUC's collaboration regarding the Ventura Compressor Station. As discussed in Section 1.2 Feasibility Study Methodology, there is no prescriptive format or template for a feasibility study. As such, SoCalGas developed this study based on the foundational purpose, need and objectives of the project, essential site criteria and five supplemental considerations. If an alternative site or technology did not meet the foundational purpose, need and most objectives or essential site criteria, it was dismissed from further consideration. Those alternatives that were carried forward were analyzed in accordance with a scoring rubric (Appendix B) in five areas including: operational considerations, environmental considerations, project cost, operational cost, and schedule. The top three alternative options were identified in each of the five areas that were evaluated. As noted below, however, there are additional factors (such as age of facility equipment, timing, and ability to acquire alternative sites considered in this study) which are not captured by this feasibility analysis and impact the results of this evaluation. The results of the evaluation are shown in Table 49. Results of Evaluation.

**Table 49. Results of Evaluation**

Ranking Order	Operational Considerations	Environmental Considerations	Project Cost	Operational Cost	Schedule
1	1A Planned Project	4B Devil's Canyon Road – Hybrid	1A Planned Project	1A Planned Project	1A Planned Project
2	3A Ventura Steel – Natural Gas	1B Current Site – Hybrid	1B Current Site – Hybrid	3A Ventura Steel – Natural Gas	1B Current Site – Hybrid
3	1B Current Site – Hybrid	3B Ventura Steel – Hybrid	4A Devil's Canyon Road – Natural Gas	4A Devil's Canyon Road – Natural Gas	4A Devil's Canyon Road – Natural Gas

**Note:** Environmental considerations were evaluated by Dudek and the results in Table 49 reflect their analysis.

Overall, Alternative 1.A Planned Project received the highest scores in four of the five categories (operational considerations, project cost, operational cost, and schedule). Alternative 1.B Current Site- Hybrid received the second highest score in the most categories. Alternative 4.B Devil's Canyon Road – Hybrid received the highest score in the environmental considerations.

The results indicate that the top three alternative options for environmental considerations are existing industrial sites with a hybrid compressor configuration. The top three alternative options for long-term operational costs are existing industrial sites with a natural gas compressor configuration. The remaining categories include both natural gas and hybrid options at existing industrial sites as the top three alternative options.

## 6.1 Preferred Alternative

Although Alternative 1.A Planned Project received the highest rankings in the most categories, SoCalGas has selected Alternative 1.B Current Site – Hybrid, which received the second highest rankings in the most categories, as the preferred alternative.

### 6.1.1 Greater Reliability Benefits

Based on the natural gas forecast of the 2020 California Gas Report (CGEU 2020), natural gas use is anticipated to slowly decline with greater emphasis on renewable sources such as solar and wind, placing a greater emphasis on operational flexibility and the ability of equipment to ramp up and down quickly. The Ventura Compressor Station is situated to support the Central Coast and meet reliability needs. It is the last compressor station on SoCalGas' Coastal System and the main feed to support storage injection at the La Goleta Storage Field as well as support customers on the Central Coast. Gas stored at the La Goleta Storage Field ultimately is used by customers on the Central Coast, including Ventura.

A recent study performed by the CPUC confirms the importance of maintaining gas storage to support overall gas demand.<sup>47</sup> This study includes modeling forecasts that are based on six scenarios developed by the CPUC that account for receipt point utilization, (the percent of the total capacity used at locations where gas enters the SoCalGas system), unplanned outages and storage withdrawal capacity (Abdelaziz et al. 2021). The results of the study reinforce the need to maintain available storage capacity, especially during winter peak demand, through at least 2030.

SoCalGas identified the need to proceed with a modernization of the 1980s facility equipment in 2013 (see SoCalGas DR- 4). Since 2016, SoCalGas has had a collective total of 73 maintenance events and cumulative total of 461 days when a compressor unit has been out of service (see SoCalGas DR-2). SoCalGas' trained maintenance staff are routinely performing inspections of the compressor equipment, but the risk of equipment failure increases the longer the aging equipment remains in use. Alternative site locations, such as those discussed in this study, would require site acquisition and pipeline easements over multiple properties, and in the event a landowner did not voluntarily sell land, SoCalGas could be forced to condemn land, which may take years and is not certain to be approved through an adjudicative process. Additionally, the condemnation process would consider whether other feasible locations not requiring condemnation are available, and given that SoCalGas currently operates a compressor station in the current location, the ability to condemn is not straight forward. Consequently, the analysis of alternative site acquisition is uncertain and beyond the scope of this feasibility study.

Given the age of the existing infrastructure, the uncertainty associated with acquiring alternative sites, and the time it would take to, permit, and construct a compressor station at a new location, constructing the modernization project at the current site would best support the fundamental purpose of the project, which is to (1) continue providing reliable compression to customers in Ventura and along the central coast, (2) enhance reliability by modernizing aging infrastructure; and (3) support gas deliveries to the La Goleta Storage Field.

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<sup>47</sup> "Gas demand falls into three categories: (1) core (residential, commercial, industrial, municipal, and wholesale); (2) noncore, non-electric generation (commercial, industrial, refinery, and enhanced oil recovery); and (3) noncore, electric generation (EG). SoCalGas sells gas to core customers, whereas noncore customers buy their gas from other sources and SoCalGas delivers it" (Abdelaziz et al. 2021).

### 6.1.2 Greater Emission Reductions

SoCalGas is committed to taking measurable steps to reduce emissions and decarbonize its operations. Ventura County, where the compressor station is located, is in nonattainment with both the 2008 and 2015 federal 8-hour ozone standards. Both the all-natural gas options and the hybrid options significantly reduce permitted oxides of nitrogen (NO<sub>x</sub>) emissions as compared to the existing facility’s permitted emissions. Moreover, a hybrid option will reduce permitted emissions beyond those of a natural gas option. Specifically, a hybrid option would result in approximately 75% reduction in permitted NO<sub>x</sub> emissions as compared to the existing facility’s permitted NO<sub>x</sub> emissions.

In addition, the hybrid option will decrease potential carbon dioxide equivalent (CO<sub>2e</sub>) emissions by approximately 30% as compared to the all-gas option. As discussed in Section 1.1.4, reducing carbon intensity across all economic sectors is foundational to achieving California’s net zero GHG emission goals.

### 6.1.3 Cost

As a prudent operator, SoCalGas must consider the short-term project costs and the long-term operational costs in relationship to the associated effects on ratepayers. No additional weighting was given to operational cost in comparison to project development cost despite the fact that operational costs are recurring for the life of the project.

As discussed in Section 5.1, SoCalGas’ cost estimates for the 10 alternatives were based on the accepted AACE cost estimating practices. The top three alternatives for project development cost are shown in Table 50. Alternative 1.A Planned Project is the lowest total cost because no land acquisition for site development or ancillary infrastructure (pipelines, electric lines) is required. Furthermore, the existing pipeline infrastructure within the footprint of the existing compressor station is in place and only requires minor modification to connect to the proposed compressor building. As with 1.A, Alternative 1.B Current Site – Hybrid minimizes costs because no land acquisition for site development is required and pipeline infrastructure is already in place. The incremental \$43 million (MM) is related to the additional onsite infrastructure required for a hybrid option (substation, electric drop). The third lowest project development cost, Alternative 4.A Devil’s Canyon Road – Natural Gas, is approximately \$100MM greater in cost than 1.B and \$145MM greater in cost than 1.A.

**Table 50. Ventura Compressor Station Alternatives  
– Project Development Cost Estimates – Top 3**

<b>Alternative</b>	<b>Project Development Cost (Nonrecurring)</b>
1.A: Planned Project	\$421MM
1.B: Current Site – Hybrid	\$464MM
4.A: Devil’s Canyon Road – Natural Gas	\$566MM

**Note:** MM = million.

Overall, natural gas options have significantly less overall operational costs. The primary operational cost driver for all hybrid alternatives is the cost of SCE electricity. The top three alternatives for operational cost are provided in Table 51. For the hybrid alternatives, 1.B is the lowest annual operating cost and it is still \$1.685MM above 1.A. Estimates were developed by

SPEC Services and calculated the fuel/power usage required to operate the engine/motor and multiplied it by the SCE anticipated rate (SCE 2019).

**Table 51. Ventura Compressor Station Alternatives  
– Operational Cost Estimates – Top 3**

<b>Alternative</b>	<b>Operational Cost (Recurring)</b>
1.A: Planned Project	\$0.904MM
3.A: Ventura Steel – Natural Gas	\$0.909MM
4.A: Devil’s Canyon Road – Natural Gas	\$0.919MM

**Note:** MM = million.

Although the long-term operational costs of any hybrid option will be greater than a natural gas option, the emission reductions and overall progression towards a net zero future achieved with 1.B outweighs the lower cost of 1.A.

For the reasons noted above, SoCalGas believes that 1.B Current Site – Hybrid best achieves the project’s purpose of continuing to provide reliable service, while supporting decarbonization and reducing emissions at the lowest cost to ratepayers.

## 6.2 Next Steps

This feasibility study will be shared on SoCalGas’ Ventura project website accessible here: [www.socalgas.com/ventura](http://www.socalgas.com/ventura), no later than March 25, 2022. The feasibility study will be presented to the community and CPUC in March/April 2022 during Public Forum meetings. It is SoCalGas’ intention to move forward with Alternative 1.B Current Site – Hybrid and continue to place a high priority on this critical project to address the fundamental needs of SoCalGas’ transmission system and replace the aging equipment consistent with Commission Decision D.19-09-051.



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# **Appendix A**

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## Dudek Environmental Technical Report





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Environmental Evaluation of  
Potential Alternatives

# Ventura Compressor Station Modernization Project

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**MARCH 2022**

*Prepared for:*

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# Acronyms and Abbreviations

Acronym/Abbreviation	Definition
APN	Assessor's Parcel Number
ATC	Authority to Construct
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CDFW	California Department of Fish and Wildlife
CHRIS	California Historical Resources Information System
CHSC	California Health and Safety Code
CO <sub>2e</sub>	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CY	cubic yards
dB	decibel
dBA	A-weighted decibel
FHSZ	fire hazard severity zone
GHG	greenhouse gas
HCWC	Habitat Connectivity and Wildlife Corridor
HFTD	High Fire-Threat District
L <sub>eq</sub>	energy equivalent level
LRA	Local Responsibility Area
MLV	mainline valve
MT	metric tons
NRHP	National Register of Historic Places
NO <sub>x</sub>	oxides of nitrogen
OEHHA	Office of Environmental Health Hazard Assessment
PM <sub>10</sub>	coarse particulate matter
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SOAR	Save Open-Space and Agricultural Resources
SoCalGas	Southern California Gas Company
SRA	State Responsibility Area
USFWS	U.S. Fish and Wildlife Service
VCAPCD	Ventura County Air Pollution Control District



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# 1 Introduction

## 1.1 Project Background

Southern California Gas Company (SoCalGas) is the owner and operator of the existing Ventura Compressor Station, located at 1555 North Olive Street in the City of Ventura, California. SoCalGas has prepared a “Feasibility Study of Potential Alternatives – Ventura Compressor Station Modernization Project” (Feasibility Study; SoCalGas 2022), which evaluates the feasibility of potential alternative site locations and equipment configurations for the planned Ventura Compressor Station Modernization Project (Planned Project). The Feasibility Study addresses the operational needs of the integrated natural gas pipeline system. The existing Ventura Compressor Station Site (Existing Site) currently provides compression, powered by natural gas engine-driven compressors, to move natural gas within the existing pipeline system to customers both within the City of Ventura (the City) and north of the City along the Central Coast, to meet local distribution needs as well as supply the La Goleta Storage Field.

The Existing Site’s compression equipment was installed in the 1980s. Due to changes to the operating environment of SoCalGas’s integrated natural gas pipeline transmission system, the functionality of the existing 40-year-old equipment, the ability to maintain compression on existing pipelines, and the critical importance of maintaining adequate natural gas inventory in the La Goleta Storage Field, SoCalGas is proposing to modernize the Ventura Compressor Station. This modernization would include replacement of three existing natural gas compressors with four new natural gas compressors within a new compressor building and other associated improvements (i.e., the Planned Project).

## 1.2 Purpose of Evaluation

Dudek was retained by SoCalGas to prepare an environmental evaluation as part of the Feasibility Study of potential alternative site locations and equipment configurations to the Planned Project. Dudek is a 700-person national, multidisciplinary environmental and engineering firm founded in 1980 and is ranked as one of the top 120 U.S. Environmental Firms (Engineering News-Record 2021). This environmental evaluation is prepared in response to requests from the California Public Utility Commission (CPUC). The CPUC requested that SoCalGas prepare a feasibility study that: (1) fully analyzes all options considered for the compressor station upgrade; (2) provides the basis for rejecting any alternatives that were considered, including but not limited to electric compressors for all or part of the project; (3) discusses all alternative sites that were considered but rejected and SoCalGas’s reasons for rejecting them; and (4) provides an explanation of how the project factors into both local and statewide safe and reliable service and the state’s decarbonization goals.

The purpose of this evaluation is limited to the environmental considerations of the Planned Project, the alternative sites, and the two alternative technologies. The scoring criteria presented in Section 3.1 of this evaluation, as provided by SoCalGas, serve as the basis of the environmental evaluation. Dudek conducted a desktop environmental analysis based upon the Planned Project and alternative-related information provided by SoCalGas, which is based upon reasonable assumptions detailed within the Feasibility Study. No site visits were conducted and existing conditions at each site may vary slightly from what was analyzed. However, a good-faith effort was made to accurately assess the environmental considerations set forth in Section 3.1. SoCalGas’ Feasibility Study considers several other criteria, such as purpose, need, and objectives of the compressor modernization project, essential site criteria, and cost and schedule considerations, which are outside the scope of Dudek’s evaluation.

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## 2 Alternative Options

Alternatives to the Planned Project at the Ventura Compressor Station were developed including feedback from the community as part of SoCalGas's Town Hall meetings hosted in October 2021. All alternatives suggested by the community during the Town Hall meetings and comment period were considered as part of the Feasibility Study. All proposed alternatives were screened based on the ability of an alternative to meet the foundational purpose, need, and objectives of the Planned Project, as stated by SoCalGas in their Feasibility Study (see Section 1.2, Purpose of Evaluation). If an alternative met the foundational purpose, need and objectives, the alternative was carried forward for further consideration based on its ability to comply with SoCalGas's identified essential site criteria, including property acreage requirements, Federal Aviation Administration (FAA) compatibility, and avoidance of Federal Emergency Management Agency (FEMA) mapped floodways. A total of five sites, with two technology options at each site, qualified for further evaluation. A brief discussion of technology alternatives and each of the evaluated alternative sites is provided below and discussed in SoCalGas's Feasibility Study.

### 2.1 Technology Options

The two technology options described below were determined to meet SoCalGas's operational needs and comply with emissions thresholds, and therefore were evaluated at each potential site.

#### 2.1.1 Natural Gas

The existing Ventura Compressor Station uses three natural gas compressors, each of which is rated at 1,100 horsepower (HP). The Natural Gas Option includes the use of only natural gas engine-driven compressor technology at each potential alternative location, including the Existing Site.<sup>1</sup> The Planned Project would include replacement of the three existing 1,100 HP natural gas engine-driven compressors (referred to in this evaluation as *natural gas compressors*) with new, more efficient equipment, consisting of four new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. The new compressors and infrastructure would meet all applicable regulatory requirements, including those associated with environmental, engineering, and safety standards. Other planned structures on the Existing Site include a new warehouse building, new office building, and stormwater infiltration basins. The Natural Gas Option at all of the evaluated alternative sites would include development of a facility similar to that described above for the Planned Project at the Existing Site. One variation is the County Line Site, which would require one additional compressor for the Natural Gas Option when compared to the other sites.

#### 2.1.2 Hybrid (Natural Gas and Electric)

The Hybrid Option would require construction of new infrastructure, similar to the Natural Gas Option. However, instead of installing four natural gas compressors, the Hybrid Option would include two new 1,900 HP natural gas compressors and two new 1,900 HP electric motor-driven compressors (referred to in this evaluation as *electric compressors*) installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric

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<sup>1</sup> The natural gas compressors are the same for all alternatives; only the technology of the driver is different. Either a natural gas engine or an electric motor may drive a compressor. For ease of reference in this evaluation, we are referring to the natural gas engine-driven compressors as *natural gas compressors* and the electric motor-driven compressors as *electric compressors*.

service capacity and therefore would require an on-site electrical substation for the Hybrid Option. The new compressors and infrastructure would meet regulatory requirements, including those associated with environmental, engineering, and safety standards. Other planned structures under consideration for each alternative site would include a new warehouse building, a new office building, and stormwater infiltration basins. The Hybrid Option at all the evaluated alternative sites would include development of the same on-site facilities, with the exception of the County Line Site, which would require one additional electric compressor for the Hybrid Option when compared to the other sites.

## 2.2 Alternative Sites

This section provides a brief overview of the five alternative sites that are evaluated in this analysis. For each alternative site, both natural gas and hybrid technologies are described below and evaluated in accordance with the methodology outlined in Section 3.2, Evaluation Methodology. For a detailed description of site characteristics at each location, please refer to the Feasibility Study prepared by SoCalGas and dated March 2022. Table 1 provides an overview of the alternative sites.

**Table 1. Ventura Compressor Modernization Project Potential Alternative Sites**

Alternative	Identified by	Land Use/ Zoning	Location
Option 1A: Existing Site – Natural Gas (Planned Project)	SoCalGas	Industry/M-2	Existing site of the current Ventura Compressor Station – Approximately 8.42 ac parcel located on the west side of the City of Ventura
Option 1B: Existing Site – Hybrid			
Option 2A: Avocado Site – Natural Gas	Community	Open Space/ AE–40 ac	Approximately 15.06 ac agricultural site located approximately 3,000 ft west of the existing Ventura Compressor Station, on privately held land currently developed with an avocado orchard within the County of Ventura
Option 2B: Avocado Site – Hybrid			
Option 3A: Ventura Steel – Natural Gas	SoCalGas	Industrial/M3–10,000 sf	Approximately 10.00 ac industrial site located approximately 8,000 ft north of the existing Ventura Compressor Station within the County of Ventura
Option 3B: Ventura Steel – Hybrid			
Option 4A: Devil’s Canyon Road – Natural Gas	Community	Open Space/OS–160 ac/HCWC	Approximately 12.88 ac oil extraction site located approximately 6,000 ft to the north of the existing Ventura Compressor Station on the west side of SR-33 within the County of Ventura
Option 4B: Devil’s Canyon Road – Hybrid			

**Table 1. Ventura Compressor Modernization Project Potential Alternative Sites**

Alternative	Identified by	Land Use/ Zoning	Location
Option 5A: County Line – Natural Gas	SoCalGas	Open Space/AE– 40 ac	Approximately 12.33 ac vacant parcel of land designated and zoned for agriculture located within County of Ventura at the Santa Barbara County line approximately 12 mi northwest of the existing Ventura Compressor Station
Option 5B: County Line – Hybrid			

**Notes:** ac = acre; ft = feet; sf = square feet; HCWC = Habitat Connectivity and Wildlife Corridors overlay zone; SR = State Route; mi = miles.

## 2.2.1 Existing Site

The Existing Site is the location of the Planned Project. The Planned Project was developed by SoCalGas and consists of the existing approximately 8.42-acre compressor station site located within the City of Ventura (Figure 1, Project Location – Existing Site). The site is zoned for industrial purposes and owned by SoCalGas. Land use on site consists of a compressor station, which has been present since at least 1923 and has existed in its current configuration since the 1980s. The site is fully graded and developed and is connected to the existing natural gas pipeline system. An approximately 2.53-acre temporary construction staging area would be located adjacent to the west side of the Existing Site.

No road improvements, pipeline extensions, or other permanent off-site infrastructure would be necessary to construct the Planned Project (the Natural Gas Option) or the Hybrid Option on the Existing Site.

## 2.2.2 Avocado Site

This alternative, which was suggested by members of the public, consists of an approximately 15.06-acre site located approximately 3,000 feet west of the Existing Site on the existing pipeline corridor within the jurisdiction of the County of Ventura (the County; Figure 2, Project Location – Avocado Site). The surrounding area is primarily developed with agricultural uses and oil/gas fields, and the nearest residence is approximately 0.7 miles away. The Avocado Site itself is undeveloped hillside land adjacent to an avocado orchard.

Development of this site would require the following new off-site infrastructure: (1) widening, regrading, and paving of Taylor Ranch Road to be a minimum of 24 feet wide with less than a 20% grade to meet Fire Department standards; (2) approximately 0.18 miles of a new pipeline system with two mainline valves that would tie into the existing natural gas system pipelines; and (3) subterranean utility lines beneath the existing Taylor Ranch Road that would tie into existing facilities at West Main Street. An approximately 5.63-acre temporary construction staging area would be located at the base of Taylor Ranch Road and West Main Street. For the Hybrid Option, approximately 0.83 miles (including 30 new poles) of off-site aboveground electrical utility extensions would also be required.

## 2.2.3 Ventura Steel Site

This alternative was developed by SoCalGas and consists of an approximately 10.00-acre site located approximately 7,000 feet north of the Existing Site, to the east of North Ventura Avenue within County jurisdiction (also within the City's sphere of influence) (Figure 3, Project Location – Ventura Steel Site). This site is relatively flat and there are existing active oil wells on site.

Development of this site would require the following new off-site infrastructure: (1) approximately 1.61 miles of subterranean pipeline system beneath the alignment of North Ventura Avenue that would tie into the existing natural gas system pipelines; (2) approximately 3.16 miles of a subterranean pipeline system through oil/gas fields and undeveloped hillsides that would tie into the existing natural gas system pipelines using two mainline valves; (3) a 121-foot depressurization line; and (4) 3,600 linear feet of a new permanent 12-foot-wide road for construction access to the new pipeline corridor. The pipelines would be constructed in a phased process within North Ventura Avenue to minimize the extent of required lane closures, ensure adequate northbound-southbound traffic flow during roadway construction, and allow for adequate space between the new pipelines and existing utility lines. An approximately 4.69-acre temporary construction staging area would be located north of the Ventura Steel Site. For the Hybrid Option, approximately 0.02 miles of off-site aboveground electrical utility extensions (including 2 new poles) would also be required.

## 2.2.4 Devil's Canyon Road Site

This alternative was suggested by members of the public and consists of an approximately 12.88-acre site located approximately 5,300 feet northwest of the Existing Site within County jurisdiction (Figure 4, Project Location – Devil's Canyon Road Site). The site is relatively flat. It has been previously developed with oilfield operations and is currently partially occupied by oil wells.

Development of this site would require the following new off-site infrastructure: (1) approximately 0.97 miles of a subterranean pipeline system beneath Devil's Canyon Road that would tie into the existing natural gas system pipelines using two mainline valves and (2) minor upgrades to an approximately 0.36-mile-long existing access road to accommodate the project. An approximately 6.27-acre construction staging area would be located northwest of the intersection of Shell Road and Ventura River Trail, approximately 0.25 miles from the existing access road to the Devil's Canyon Road Site. For the Hybrid Option, approximately 0.85 miles of off-site aboveground electrical utility extensions (including 40 new poles) would also be required.

## 2.2.5 County Line Site

This alternative was developed by SoCalGas and consists of an approximately 12.33-acre site located within Ventura County at the Santa Barbara County line. This site is approximately 11 miles northwest of the Existing Site, generally on the existing natural gas pipeline corridor (Figure 5, Project Location – County Line Site). This site is on a hillside, and it would require a large amount of grading to construct the compressor station in this hillside area.

Development of this site would require the following new off-site infrastructure: (1) approximately 1.15 miles of a subterranean pipeline system with two mainline valves that would tie into the existing natural gas system pipelines and (2) approximately 0.47 miles of improvements to the existing access road so it is a minimum of 24 feet wide with less than a 20% grade, meeting Fire Department standards. An approximately 3.92-acre staging area would be directly northwest of the County Line Site. For the Hybrid Option only, approximately 0.27 miles of off-site aboveground electrical utility extensions (including 15 new poles) would also be required. Additionally, the County Line Site would require construction of an additional compressor for both the Natural Gas Option and the Hybrid Option. This site would require five new natural gas compressors for the Natural Gas Option and would require two new natural gas compressors and three new electric compressors for the Hybrid Option.



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## 3 Environmental Evaluation Methodology

The following section describes the methodology that was used in the environmental evaluation of the potential alternatives. The scoring and ranking of all alternatives are provided in Chapter 4, Environmental Scoring and Ranking, and a detailed discussion of each environmental topic area is provided in Chapter 5, Ranking Analysis.

### 3.1 Scoring Criteria

As shown in Table 2, a detailed numeric ranking system was developed for the environmental topic areas, which includes operational considerations and construction considerations (for both on-site construction and off-site construction).

**Table 2. Scoring Criteria**

Topic Area	Ranking			
	0	1-2-3	4-5-6	7-8-9
<b>Operational Considerations</b>				
Aesthetics/ Visual Resources	Substantially alters a defined scenic resource, as determined by adopted plans (e.g., scenic vistas, scenic highways, ridgelines)	Substantially alters the character of a site and/or its surroundings and is highly visible	Minimally alters the character of a site and/or its surroundings and is highly visible	Project is either not visible or does not alter the character of the surrounding community
Air Quality	NO <sub>x</sub> emissions ≥12 tons per year	NO <sub>x</sub> emissions ≥8 tons per year but <12 tons per year	NO <sub>x</sub> emissions ≥4 tons per year but <8 tons per year	NO <sub>x</sub> emissions <4 tons per year
CalEnviroScreen	91% to 100% pollution burden	61% to 90% pollution burden	31% to 60% pollution burden	1% to 30% pollution burden
Greenhouse Gas Emissions	GHG emissions ≥50,000 MT/yr CO <sub>2</sub> e	GHG emissions ≥25,000 MT/yr CO <sub>2</sub> e but <50,000 MT/yr CO <sub>2</sub> e	GHG emissions ≥10,000 MT/yr CO <sub>2</sub> e but <25,000 MT/yr CO <sub>2</sub> e	GHG emissions <10,000 MT/yr CO <sub>2</sub> e
Land Use Designation	Non-industrial/manufacturing zone and adjacent to sensitive receptors	Industrial/manufacturing zone and adjacent to sensitive receptors	Non-industrial/manufacturing zone and not adjacent to sensitive receptors	Industrial/manufacturing zone and not adjacent to sensitive receptors
Noise (Operations Assuming 80 dBA)	≥65 dBA at the property line, taking into account non-industrial land uses <sup>a</sup>	≥55 dBA but <65 dBA at the property line, taking into account non-industrial land uses <sup>a</sup>	≥45 dBA but <55dBA at the property line, taking into account non-industrial land uses <sup>a</sup>	<45 dBA at the property line, taking into account non-industrial land uses <sup>a</sup>
Wildfire	Within a very high fire hazard severity zone	Within a high fire hazard severity zone	Within a moderate fire hazard severity zone	Not within a fire hazard severity zone
<b>On-Site Construction Considerations</b>				
Air Quality	NO <sub>x</sub> emissions ≥80,000 pounds and PM <sub>10</sub> ≥10,000 pounds	NO <sub>x</sub> emissions <80,000 pounds and ≥40,000 pounds and PM <sub>10</sub> emissions <10,000 pounds and ≥6,000 pounds	NO <sub>x</sub> emissions <40,000 pounds and ≥8,000 pounds and PM <sub>10</sub> emissions <6,000 pounds and ≥2,000 pounds	NO <sub>x</sub> emissions <8,000 pounds and PM <sub>10</sub> <2,000 pounds

**Table 2. Scoring Criteria**

Topic Area	Ranking			
	0	1-2-3	4-5-6	7-8-9
Cultural Resources	Significant cultural resources are present and the project has the potential to impact the significance of those resources	Significant cultural resources are present and project impacts would be less than significant with minimization measures incorporated in the project, or the project is in a location that is highly sensitive for potentially significant cultural resources	Significant cultural resources are present, but project does not have the potential to impact the significance of those resources, or the project is in a location that is moderately sensitive for potentially significant cultural resources	No significant cultural resources are present based on records search results and the project is in a location that is not sensitive for potentially significant cultural resources
Greenhouse Gas Emissions	GHG emissions $\geq 20,000$ MT CO <sub>2e</sub>	GHG emissions $\geq 10,000$ MT CO <sub>2e</sub> but $< 20,000$ MT CO <sub>2e</sub>	GHG emissions $\geq 5,000$ MT CO <sub>2e</sub> but $< 10,000$ MT CO <sub>2e</sub>	GHG emissions $< 5,000$ MT CO <sub>2e</sub>
Natural Resources	Site contains sensitive plant or animal species and/or habitats or wetlands that would be directly impacted and require mitigation	Site is adjacent to sensitive plant or animal species and/or habitats or wetlands that would be indirectly impacted and would require mitigation	Site contains or is adjacent to plant or animal species and/or habitats that would be directly or indirectly impacted but would not require mitigation	No sensitive biological resources on site or no potential to affect sensitive biological resources
Noise (Assuming 100+ dBA at Site)	Non-industrial land uses <sup>a</sup> are located within 0–50 feet of site construction ( $\geq 90$ dBA or greater)	Non-industrial land uses <sup>a</sup> are located within 51–100 feet of site construction ( $< 90$ dBA to $\geq 84$ dBA)	Non-industrial land uses <sup>a</sup> located within 101–250 feet of site construction ( $< 84$ dBA to $\geq 75$ dBA)	Non-industrial land uses <sup>a</sup> located greater than 251 feet from site construction ( $< 75$ dBA)
Slope, Topography, and Grading	Average slope of property is equal to or greater than 40%; substantial over-excavation/recompaction requiring $\geq 75,000$ CY	Average slope of property is 30%–39%; moderate over-excavation/recompaction requiring $\geq 25,000$ but $< 75,000$ CY	Average slope of property is 20%–29%; minimal over-excavation/recompaction requiring $\geq 10,000$ CY but $< 25,000$ CY	Average slope of property is less than 20%; negligible/no over-excavation/recompaction requiring $< 10,000$ CY

**Table 2. Scoring Criteria**

Topic Area	Ranking			
	0	1-2-3	4-5-6	7-8-9
Traffic – Construction	Heavy truck traffic (i.e., import/export) through residential areas or roadway-constrained areas for 1 year or longer	Heavy truck traffic (i.e., import/export) through residential areas or roadway-constrained areas for 6 months to less than 1 year	Heavy truck traffic (i.e., import/export) through residential areas or roadway-constrained areas for less than 6 months	Heavy truck traffic (i.e., import/export) NOT occurring through residential areas or roadway-constrained areas
<b>Off-Site Construction for Routing Utilities Considerations</b>				
Air Quality <sup>b</sup>	Substantial linear construction (e.g., ≥15,000 feet)	Moderate linear construction (e.g., ≥10,000 but <15,000 feet)	Minimal linear construction (e.g., ≥5,000 and <10,000 feet)	None or negligible linear construction (e.g., <5,000 feet)
Cultural Resources	Significant cultural resource(s) are present and the project has the potential to impact the significance of those resources	Significant cultural resource(s) are present and project impacts will be less than significant with minimization measures incorporated in the project; or, the project is in a location that is highly sensitive for potentially significant cultural resources	Significant cultural resources are present, but project does not have the potential to impact the significance of that resource; or, the project is in a location that is moderately sensitive for potentially significant cultural resources	No significant cultural resources are present based on records search results and the project is in a location that is not sensitive for potentially significant cultural resources.
Greenhouse Gas Emissions	GHG emissions ≥2,000 MT CO <sub>2e</sub>	GHG emissions ≥1,000 MT CO <sub>2e</sub> but <2,000 MT CO <sub>2e</sub>	GHG emissions ≥500 MT CO <sub>2e</sub> but <1,000 MT CO <sub>2e</sub>	GHG emissions <500 MT CO <sub>2e</sub>
Natural Resources	Site contains sensitive plant or animal species and/or habitats or wetlands that would be directly impacted and would require mitigation	Site is adjacent to sensitive plant or animal species and/or habitats or wetlands that would be indirectly impacted and would require mitigation	Site contains or is adjacent to plant or animal species and/or habitats that would be directly impacted but would not require mitigation	No sensitive biological resources on site or no potential to affect sensitive biological resources

**Table 2. Scoring Criteria**

Topic Area	Ranking			
	0	1-2-3	4-5-6	7-8-9
Noise (Assuming 100+ dBA at Site)	Non-industrial land uses <sup>a</sup> are located within 0–50 feet of site construction (>90 dBA or greater)	Non-industrial land uses <sup>a</sup> are located within 51–100 feet of site construction (≤90 dBA to >84 dBA)	Non-industrial land uses <sup>a</sup> located within 101–250 feet of site construction (≤84 dBA to >75 dBA)	Non-industrial land uses <sup>a</sup> located greater than 251 feet from site construction (≤75 dBA)
Traffic – Roadway Construction	Substantial roadway construction on existing roads (e.g., lane closures of more than 5,001 feet)	Moderate roadway construction on existing roads (e.g., lane closures of 2,501 to 5,000 feet)	Minimal roadway construction on existing roads (e.g., lane closures of 501 to 2,500 feet)	None or negligible roadway construction (e.g., lane closures of less than 500 feet)
Utilities/Service Systems	Substantial off-site ground disturbance (more than 100,000 square feet)	Moderate off-site ground disturbance (99,999 to 50,000 square feet)	Minimal off-site ground disturbance (49,999 to 25,000 square feet)	Negligible off-site ground disturbance (less than 24,999 square feet)

**Notes:** NO<sub>x</sub> = oxides of nitrogen; ≥ = greater than or equal to; < = less than; GHG = greenhouse gas; MT/yr = metric tons per year; CO<sub>2</sub>e = carbon dioxide equivalent; FHSZ = fire hazard severity zone; dBA = A-weighted decibel; CY = cubic yard.

<sup>a</sup> For noise, the scoring assessment location is where the noise level crosses the boundary of the nearest non-industrial (residential, commercial, or institutional [e.g., school] zoned property or at the location of the nearest occupied structure of an agricultural land use (e.g., inhabited house of a farm or vineyard).

<sup>b</sup> As the linear distance of off-site construction increases, the emissions from heavy equipment and ground disturbance would also increase.

## 3.2 Evaluation Methodology

The site names used in this environmental evaluation refer to the alternative site locations for the compressor station (e.g., Avocado Site, Ventura Steel Site, County Line Site); however, additional components, such as staging areas and ancillary improvements such as off-site pipelines, mainline valve (MLV) stations, and/or roadway improvements, are also identified and evaluated, as applicable. “On site” refers to land area accommodating the compressor station and associated infrastructure, while “off site” refers to any required components or improvements not located within the boundaries of the compressor station land area. To adequately evaluate each topic area, the following methodologies were used.

### 3.2.1 Aesthetics/Visual Resources

Public visibility to each alternative site was assessed based on aerial maps and KML files of alternative sites and infrastructure/components. Scenic resources and vantage points including scenic highways and public trails were identified via review of adopted plans (specifically, the 2005 Ventura General Plan), the State Scenic Highway System managed by the California Department of Transportation (Caltrans), and the public database of trails maintained by the AllTrails application (alltrails.com). The severity of view alteration of/to a known scenic resource and alteration of existing visual character was determined based on assumed visual prominence of construction and operations at the analyzed site as experienced from available vantage points, as well as the approximate distance between the analyzed site and available vantage point, the estimated duration of view exposure, and the presence (or lack thereof) of comparable development and visual contrasts in the viewshed.

For the rubric determination, the following criteria were used to determine the score for each alternative:

- **Ranking 0:** Due to proposed characteristics of components (e.g., bulk, scale) or site location, the project alternative would be visible and would result in the substantial alteration (either through blockage or interruption) of a view from a defined scenic resource (e.g., scenic vista, scenic highway) or development of the project alternative would substantially alter or disturb a defined scenic landscape resource such as a ridgeline.
- **Ranking 1-2-3:** Due to proposed characteristics of components (e.g., bulk, scale), site location, or use, the project alternative would be highly visible to viewers in the surrounding area and would result in noticeable (and substantial) contrast with surrounding development, uses, or landscape elements.
- **Ranking 4-5-6:** While highly visible due to proposed characteristics of components (e.g., bulk, scale) or site location, the project alternative is overall compatible with existing uses in the surrounding area and would result in generally weak contrast with existing development and/or landscape elements.
- **Ranking 7-8-9:** Due to proposed characteristics of components (e.g., bulk, scale), site location, or intervening screening elements (e.g., vegetation, development, terrain), the project alternative is not visible (or is well screened) from public and private vantage points in the surrounding area. Alternatively, the project alternative is compatible with existing uses in the surrounding area and would result in no contrast with existing development and/or landscape elements.

## 3.2.2 Air Quality and Greenhouse Gas Emissions

Yorke Engineering LLC, an environmental consulting firm with expertise in air quality and greenhouse gas (GHG) matters, evaluated the air quality and GHG impacts from construction (on site and off site) as well as operational impacts of each equipment configuration at each potential alternative site location. The full air quality and GHG emissions analysis and supporting data are included as Attachment 1, Air Quality and Greenhouse Gas Emissions Analysis, of this evaluation.

### 3.2.2.1 Operational Considerations

#### Representative Data

For operational emissions for the Natural Gas Option, calculations for the four new proposed natural gas engines were taken from the Authority to Construct (ATC) application that was submitted to the Ventura County Air Pollution Control District (VCAPCD) in March 2020 for the Ventura Compressor Station Modernization Project at the Existing Site. Operational emissions for the Hybrid Option were based on only having two of the natural gas compressors operating, plus additional GHG emissions associated with the indirect electricity needed to operate two electric compressors. Operational emissions for the Natural Gas Option equipment configurations were assumed to be the same at all analyzed sites, with the exception of County Line, which would require an additional compressor. Similarly, the Hybrid Option would have similar operational emissions across all sites, with the exception of the County Line Site, which would require an additional electric compressor and therefore have additional indirect GHG emissions associated with the electricity needed to operate it. It is assumed the additional electricity required for electric compressors would not be supplied from the Southern California Edison (SCE) Green Tariff.

#### Emission Factors and Calculations

As noted above, operational emissions for the Natural Gas Option for the four proposed 1,900 HP engines were based on the ATC application submitted to the VCAPCD for modernization of the existing Ventura Compressor Station. These emissions calculations relied on the engine manufacturer's data, as well as standard natural gas fired combustion for the proposed engines and took into account emission reductions associated with installation of emissions control equipment to satisfy VCAPCD's best available control technology requirements. The analysis conservatively assumes that the Natural Gas Option would operate all compressors 24 hours per day, 7 days per week (i.e., 8,760 hours per unit per year). In practice, the compressors typically operate between 3,000 to 4,000 hours per unit per year; however, for ease of quantification in this analysis, a conservative assumption was made.

Operational oxides of nitrogen (NO<sub>x</sub>) emissions for the Hybrid Option were scaled based on two, rather than four, natural gas-fired engines. The analysis conservatively assumes that the Hybrid Option would operate all compressors (both natural gas and electric) 24 hours per day, 7 days per week. As stated above, the compressors are not operated full-time; however, for ease of quantification in this analysis, a conservative assumption was made.

The Western Electricity Coordinating Council (WECC) California and Mexico subregion (CAMX) emission factor was used to estimate indirect GHG emissions for electricity use for the electric compressors under the Hybrid Option. This factor is an average of the regional power mix, accounting for renewable energy generation as well as fossil-fueled generation, to determine an average emission factor for pounds of CO<sub>2</sub>e per megawatt-hour produced. The

analysis conservatively assumes that the Hybrid Option will operate all compressors (both natural gas and electric) 24 hours per day, 7 days per week.

### 3.2.2.2 On-Site Construction Considerations

To standardize across variations, common phases of a construction project were grouped into activity categories. Rankings of sites within the rubric are based on construction activities expected at each site:

- **Grading – Flat:** grading on a relatively flat surface, without any major elevation changes needed
- **Grading – Elevated:** grading where large amounts of earthwork may be involved, including excavation of hillsides, and typically involves more equipment than Grading – Flat
- **Power Line:** linear construction for new or upgraded electrical transmission lines; includes trenching and power pole erection as well as pulling and reconductoring of lines
- **Pipeline – Street:** linear construction for new gas pipeline under existing roadway to connect into existing main lines, and includes equipment used for trenching, backfilling, and paving
- **Pipeline – Open Space:** linear construction for new gas pipeline in undeveloped land to connect into existing main lines, and includes trenching and backfill
- **Compressor Station:** construction of the footprint of the new facility and structures housing the new compressor station equipment
- **Substation:** construction of a new substation at the compressor facility

For each alternative site, the activity-based emission factors were generated to evaluate the air quality and GHG impacts from the various construction activities given site conditions (see Table 3). These activities are based on the typical phases of a compressor station construction project and were applied to the various alternatives depending on the site-specific construction requirements. On-site construction emissions include site preparation, grading, and construction within the footprint of the future compressor station. Activity-based emission factors used for this evaluation are Grading – Flat, Grading – Elevated, Compressor Station, and Substation (where applicable). These factors represent the maximum emissions per unit of measure to provide a conservative estimate.

Representative construction equipment and schedule data from other recent, similar pipeline and compressor station modernization projects were extracted for input into the California Emissions Estimator Model (CalEEMod) to estimate construction emissions. Equipment inventories were developed based on representative project phases and consolidated to correlate to the activity categories above.



**Table 3. On-Site Construction Activity-Based Emission Factors**

Construction Activity	NO <sub>x</sub> (lb/acre)	Exhaust PM <sub>10</sub> (lb/acre)	CO <sub>2</sub> e (MT/acre)
Grading – flat	1,855	495	224
Grading – elevated	5,186	675	822
Compressor station	2,678	512	395
Substation	2,081	118	466

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb/acre = pounds per acre; PM<sub>10</sub> = coarse particulate matter; CO<sub>2</sub>e = carbon dioxide equivalent; MT/acre = metric tons per acre.

### Emission Factors and Calculations

To generate emission factors for the various construction activities, CalEEMod version 2020.4.0 was used. CalEEMod is the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and GHG emissions associated with the construction and operation of projects. The model quantifies direct emissions from construction and vehicle use, as well as indirect emissions such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model, published by the California Air Resources Board (CARB), include the Pavley standards and Low Carbon Fuel Standards. The emissions model also identifies project design features, regulatory measures, and selectable mitigation measures to reduce criteria pollutant and GHG emissions, along with calculating the benefits achieved from the selected measures. CalEEMod was developed by the California Air Pollution Control Officers Association in collaboration with California air districts. Default land use data (e.g., emission factors, trip lengths, meteorology, source inventory) were provided by the various California air districts such as VCAPCD to account for local requirements and conditions.

Each representative equipment inventory was entered into CalEEMod, along with an average duration of equipment use and a unit measurement appropriate to the construction activity involved. For example, *per acre* was used for grading and *per mile* was used for pipeline construction. The CalEEMod simulations were run to determine the amount of pollutants that would be emitted for construction during each activity. After the selected scenarios were run, the emissions were normalized to produce the emission factors that can be applied to scale for each location based on the types and amount of activity required. Emission factors were identified as associated with either an on-site or an off-site construction activity.

On-site construction emissions included site preparation, grading, and construction within the footprint of the compressor station location being evaluated. Activity-based emission factors used for this evaluation are grading – flat, grading – elevated, compressor station, and substation (where applicable). Emission factors for these activities are shown in Table 3. These factors represent the maximum emissions per unit of measure to provide a conservative estimate.

#### 3.2.2.3 Off-Site Construction Considerations

Off-site construction emissions include those from equipment used for pipeline, power line, and road work. Activity-based emission factors used for this evaluation are pipeline – street, pipeline – open space, and power line.

Emission factors for these activities are shown in Table 4. These factors represent the maximum emissions per unit of measure to provide a conservative estimate.

**Table 4. Off-Site Construction Activity-Based Emission Factors**

Construction Activity	NO <sub>x</sub> (lb/mile)	Exhaust PM <sub>10</sub> (lb/mile)	CO <sub>2e</sub> (MT/mile)
Power line	1,308	55	166
Pipeline – street	1,815	83	186
Pipeline – open space	725	36	78
Roads	1,815	83	186

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb/mile = pounds per mile; PM<sub>10</sub> = coarse particulate matter; CO<sub>2e</sub> = carbon dioxide equivalent; MT/mile = metric tons per mile.

### Ranking Criteria for Operations

The ranking ranges for operational NO<sub>x</sub> emissions are as follows:

- **Ranking 0:** ≥12 tons/year
- **Ranking 1-2-3:** ≥8 tons/year but <12 tons/year
- **Ranking 4-5-6:** ≥4 tons/year but <8 tons/year
- **Ranking 7-8-9:** <4 tons/year

The ranking ranges for GHG emissions are:

- **Ranking 0:** ≥50,000 MT/yr CO<sub>2e</sub>
- **Ranking 1-2-3:** ≥25,000 MT/yr CO<sub>2e</sub> but <50,000 MT/yr CO<sub>2e</sub>
- **Ranking 4-5-6:** ≥10,000 MT/yr CO<sub>2e</sub> but <25,000 MT/yr CO<sub>2e</sub>
- **Ranking 7-8-9:** <10,000 MT/yr CO<sub>2e</sub>

### Rubric Ranking Criteria for On-Site Construction

In the ranking rubric, air quality for the on-site construction activities is rated according to the amount of off-road construction equipment on site and duration of activity. The NO<sub>x</sub> and coarse particulate matter (PM<sub>10</sub>; particulate matter with an aerodynamic diameter of 10 microns or less) emissions were combined to provide one ranking score.

- **Ranking 0:** NO<sub>x</sub> emissions ≥80,000 pounds and PM<sub>10</sub> emissions ≥10,000 pounds
- **Ranking 1-2-3:** NO<sub>x</sub> emissions <80,000 pounds and ≥40,000 pounds and PM<sub>10</sub> emissions <10,000 and ≥6,000 pounds
- **Ranking 4-5-6:** NO<sub>x</sub> emissions <40,000 pounds and ≥8,000 pounds and PM<sub>10</sub> emissions <6,000 and ≥2,000 pounds
- **Ranking 7-8-9:** emissions <8,000 pounds and PM<sub>10</sub> emissions <2,000 pounds

The GHG impact is rated according to the metric tons of CO<sub>2</sub>e that are directly produced (from construction equipment on site) and indirectly produced (i.e., resulting from activities related to construction but not immediately on site).

- **Ranking 0:** ≥20,000 MT CO<sub>2</sub>e
- **Ranking 1-2-3:** ≥10,000 MT CO<sub>2</sub>e but <20,000 MT CO<sub>2</sub>e
- **Ranking 4-5-6:** ≥5,000 MT CO<sub>2</sub>e but <10,000 MT CO<sub>2</sub>e
- **Ranking 7-8-9:** <5,000 MT CO<sub>2</sub>e

### Rubric Ranking Criteria for Off-Site Construction

In the ranking rubric, scoring for air quality impacts from off-site construction is based on the total length of the linear construction associated with each site and was calculated based on mapping data. As the linear distance of off-site construction increases, the emissions from heavy equipment and ground disturbance would also increase. Ranking levels were set to best differentiate the potential impacts for each site.

- **Ranking 0:** Substantial; ≥15,000 feet
- **Ranking 1-2-3:** Moderate; ≥10,000 and <15,000 feet
- **Ranking 4-5-6:** Minimal; ≥5,000 and <10,000 feet
- **Ranking 7-8-9:** Negligible; <5,000 feet

The GHG impact is rated according to the metric tons of CO<sub>2</sub>e that are directly produced (from the types of construction equipment expected for the linear components) and indirectly produced (i.e., resulting from activities related to construction but not directly from the equipment used).

- **Ranking 0:** ≥2,000 MT CO<sub>2</sub>e
- **Ranking 1-2-3:** ≥1,000 MT CO<sub>2</sub>e but <2,000 MT CO<sub>2</sub>e
- **Ranking 4-5-6:** ≥500 MT CO<sub>2</sub>e but <1,000 MT CO<sub>2</sub>e
- **Ranking 7-8-9:** <500 MT CO<sub>2</sub>e

### 3.2.3 CalEnviroScreen

CalEnviroScreen is a mapping tool managed by the California Office of Environmental Health Hazard Assessment (OEHHA) that helps identify California communities that are most affected by many sources of pollution and where people are often especially vulnerable to pollution's effects. The CalEnviroScreen model uses environmental, health and socioeconomic information to produce scores for every census tract in the state. Scores from each census tract are compared and areas with a higher score are ones that experience a higher pollution burden than areas with low scores (OEHHA 2022a). The CalEnviroScreen data show the combined Pollution Burden scores for the Census tracts, which are made up of indicators from the Exposures and Environmental Effects components of the CalEnviroScreen model. Pollution Burden represents the potential exposures to pollutants and the adverse environmental conditions caused by pollution.

The pollution burden scores are based on Census Tract and are not site or technology specific. Therefore, the pollution burden scores would be the same for a site regardless of whether the Natural Gas or Hybrid Options are constructed.

After the percent of pollution burden has been determined using the CalEnviroScreen maps, scores were assigned based on the following criteria:

- **Ranking 0:** 100% to 91% Pollution Burden
- **Ranking 1-2-3:** 90% to 61% Pollution Burden
- **Ranking 4-5-6:** 60% to 31% Pollution Burden
- **Ranking 7-8-9:** 30% to 0% Pollution Burden

### 3.2.4 Cultural Resources

The primary objective of the cultural resource analysis is to determine if cultural resources exist within the boundaries of each alternative site and, if so, the extent to which the proposed project would impact any significant cultural resources. For purposes of this analysis, a “significant resource” is defined as a cultural resource, either archaeological (at or beneath the ground surface) or built (an extant structure) that has the potential to uniquely contribute to the understanding of historic or prehistoric periods.

The cultural resources analysis considered multiple sources of information to determine not only the presence of known cultural resources but the potential for yet unidentified cultural resources to exist within each alternative site and, the potential impact the proposed project might have on cultural resources. The data sources that were used to analyze the presence or potential for presence of cultural resources includes a review of SoCalGas’s database of the California Historic Resources Information System (CHRIS) archaeological site records and previously conducted cultural resource studies; state and local historic landmark and inventory lists; historic maps and aerial photographs; and various sources that provide information about the natural environment. Following is a summary of the methodology used for each data and rubric ranking criteria.

#### 3.2.4.1 Records Search and Literature Review

The general purpose of a cultural resource database records search and literature review is to:

- Identify previously recorded cultural resources that may be located within the current study area.
- Determine whether the current study area has been subjected to previous cultural resource investigations, including pedestrian surveys, subsurface testing, information gleaned from archaeological monitoring or inadvertent discoveries.
- Ascertain what previously conducted cultural resource studies and site records for previously identified cultural resources reveal regarding the potential for unknown cultural resources to exist within the current study area.

The data gleaned from the records search is considered in concert with the study location’s site conditions, both natural and human induced, to determine whether a proposed project has the potential to impact a significant cultural resource. Additionally, the potential for yet unknown cultural resources to be impacted should be

considered, especially if the current study area has not yet been physically studied employing field methods such as a pedestrian survey and subsurface testing.

The records search conducted for this analysis employed SoCalGas's in-house database of the CHRIS records and studies, using data obtained from the Southern Central Coastal Information Center (SCCIC) and SoCalGas's internal collection of cultural reports/records. The search of the SoCalGas CHRIS database included previously recorded cultural resources and investigations within a 1-mile radius of each alternative site. The following lists were also reviewed for this study: National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR), the California Points of Historical Interest, and the California Historical Landmarks. Each site record for those cultural resources identified within a 1-mile radius were reviewed to better understand the nature of the resource. If the resource(s) were located outside of the on- or off-site locations for the project alternative, they were reviewed for traits that may reveal potential for unknown resources to exist within the project alternative boundaries. If a cultural resource had been identified within the project alternative boundaries, the site record was reviewed to determine whether the resource as described fit the aforementioned definition for a significant resource. Finally, for built cultural resources a 500-foot buffer surrounding the resource was employed to assess the potential for the project to impact the built resource. This is a conventional buffer for built environment studies as certain project conditions have the potential to indirectly impact a built resource. The records search results and analysis are summarized within each section respective to the alternative sites. Additionally, detailed records search results utilized in the analysis are provided in Attachment 2, Cultural Resources Analysis.

#### 3.2.4.2 Archival Research, Historic Maps and Aerial Photographs

Historic topographic maps and aerial photographs were consulted through the Nationwide Environmental Title Research LLC to better understand any natural or human-made changes to the alternative site locations and surrounding properties over time. A review of all available historic aerial photographs was conducted and included the following years: 1947, 1967, 1978, 1980, 1984, 1994, 2005, 2009, 2010, 2012, 2014, 2016, and 2018 (NETR 2021a). Through careful comparative review of historic aeriels, changes to the landscape of a study area may be revealed. Disturbance to the study area is specifically important as it helps determine if soils within the study area are capable of sustaining intact archaeological deposits. Additionally, historic aeriels have the potential to reveal whether a study area was subjected to alluvial deposits by way of flooding, debris flows or mudslides, as well as placement of artificial or foreign fill soils that may have buried intact archaeological deposits. A review of available topographic maps was conducted and included the following years: 1904, 1910, 1918, 1921, 1938, 1946, 1952, 1955, 1961, 1964, 1966, 1968, 1972, 2012, 2015, and 2018 (NETR 2021b). Topographic maps depict not only elevation of the study area as well as the areas surrounding it, but they also illustrate the location of roads and some buildings. Although topographic maps are not comprehensive, they are another tool in determining whether a study area has been disturbed and sometimes to what approximate depth.

#### 3.2.4.3 Natural Landscape Setting

A review of the current natural setting as well as historical natural settings was conducted to understand the potential for yet unknown archaeological sites within the project alternative sites. Depending on the type of site, archaeological resources tend to be located in areas with consistent natural traits including within close proximity to fresh water sources and habitats for exploitation of flora and faunal food sources and locals that are safe from natural events such as flooding, debris flows and mudslides. Additionally, similar to historic aerial photographs and topographic maps, understanding the current natural landscape in contrast to the previous landscape traits is an

excellent tool in determining potential ground disturbance. Those sources that were employed to better understand the natural environment include Chumash Ethnobotany (Timbrook 2007), California Native Plant Society Inventory of Rare and Endangered Plants (Inventory) (CNPS 2022a); Calflora's What Grows Here database (Calflora 2022); CDFW Biogeographic Information and Observation System (CDFW 2022b); CDFW California Sensitive Natural Communities (CDFW 2021); Vegetation - Ventura County GIS data layer (David Magney Environmental Consulting 2008); USFWS National Wetlands Inventory data (USFWS 2022b).

#### 3.2.4.4 Rubric Scoring Criteria

For the rubric determination, the following criteria were used to determine the score for each alternative:

- Ranking 0:
  - Records Search and Literature Review: as a result of the records search, a significant cultural resource(s) has been identified within the project alternative boundaries (or within 500 feet for built cultural resources) and implementation of the project has the potential to impact the significance of that resource(s).
- Ranking 1-2-3:
  - Records Search and Literature Review: as a result of the records search, a significant cultural resource(s) has been identified within the project alternative boundaries (or within 500 feet for built cultural resources), but implementation of the project will incur less than significant impacts with minimization measures incorporated; or
  - Historic Maps and Aerial Photographs and Natural Landscape Setting: evidence available through review of historic aerial photographs, topographic maps, and resources capable of revealing current and previous natural landscape traits demonstrate that the project alternative is in a location that is highly sensitive for potentially significant cultural resources.
- Ranking 4-5-6:
  - Records Search and Literature Review: as a result of the records search, a significant cultural resource(s) has been identified within the project alternative boundaries (or within 500 feet for built cultural resources), but implementation of the project does not have the potential to impact the significance of that resource(s); or
  - Historic Maps and Aerial Photographs and Natural Landscape Setting: evidence available through review of historic aerial photographs, topographic maps, and resources capable of revealing current and previous natural landscape traits demonstrate that the project alternative is in a location that is moderately sensitive for potentially significant cultural resources.
- Ranking 7-8-9:
  - Records Search and Literature Review: as a result of the records search, no significant cultural resource(s) has been identified within the project alternative boundaries (or within 500 feet for built cultural resources); and
  - Historic Maps and Aerial Photographs and Natural Landscape Setting: evidence available through review of historic aerial photographs, topographic maps, and resources capable of revealing current and previous natural landscape traits demonstrate that the project alternative has been subjected to considerable ground disturbance and is in a location that is not sensitive for potentially significant cultural resources.

### 3.2.5 Land Use

Information contained in the land use analysis is based on site reconnaissance, satellite imagery from Esri and Google Earth, the County General Plan, the County Code of Ordinances, the County Geographic Information Systems (GIS) County View application, the City of Ventura (City) General Plan, the City Municipal Code, and GIS data prepared by Dudek and SoCalGas. Other sources consulted are listed in Section 6, References Cited.<sup>2</sup> Attachment 3, Land Use and Zoning Maps, details the General Plan Land Use Designations and Zoning Classifications for each of the five prospective sites.

In the ranking rubric, scoring for land use considers the currently applicable on-site zoning as well as the site's proximity to sensitive receptors. The four ranking levels are as follows:

- **Ranking 0:** The alternative is within a non-industrial/manufacturing zone and is adjacent to sensitive receptors.
- **Ranking 1-2-3:** The alternative is within an industrial/manufacturing zone and is adjacent to sensitive receptors.
- **Ranking 4-5-6:** The alternative is within a non-industrial/manufacturing zone and is not adjacent to sensitive receptors.
- **Ranking 7-8-9:** The alternative is within an industrial/manufacturing zone and is not adjacent to sensitive receptors.

#### Land Use Ranking Criteria Definitions

***“...sensitive receptors”:*** Per California Health and Safety Code (CHSC) Section 25200.21, sensitive receptors shall include “schools, childcare facilities, residences, hospitals, elder care facilities, and other sensitive locations.”

***“...within a non-industrial/manufacturing zone”:*** The alternative is located within a land area or parcel with a County or City of Ventura zoning designation that does not support the types of uses required for operation of a Natural Gas Option or Hybrid Option compressor station (e.g., agricultural, open space).<sup>3</sup>

***“...within an industrial/manufacturing zone”:*** The alternative is located within a land area or parcel with a County or City of Ventura zoning designation that supports the types of uses required for operation of a Natural Gas Option or Hybrid Option compressor station (e.g., industrial, manufacturing).

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<sup>2</sup> The official title for the City and County is “San Buenaventura”; however, this document refers to the jurisdictions as the City and County of “Ventura,” which is the common nomenclature.

<sup>3</sup> CPUC has overarching authority of natural gas utilities. Article XII, Section 8 of the California Constitution establishes CPUC's preemptive authority over matters over which the Legislature has granted CPUC regulatory powers. CPUC decisions, as well as California courts, have confirmed CPUC's preemptory powers. As such, no local discretionary (e.g., rezone, land use) permits would be required because CPUC has preemptive jurisdiction over the siting, construction, maintenance, and operation of natural gas facilities in California. CPUC's authority does not preempt special districts, such as air quality management districts, other state agencies, or the federal government. Additionally, SoCalGas would still have to obtain all ministerial permits from local jurisdictions.



***“...adjacent to sensitive receptors”:***

The parcel(s) on which the alternative site is located share(s) a boundary or boundaries with an adjacent parcel with zoning that would suggest CHSC designated sensitive receptors are present (e.g., residential, institutional).

OR

The site is within 500 feet of a CHSC designated sensitive receptor (e.g., a school, childcare facility, residence) or is within 500 feet of a parcel with zoning that would suggest CHSC designated sensitive receptors are present (e.g., residential, institutional).

***“...not adjacent to sensitive receptors”***

The parcel(s) on which the alternative site is located *do(es) not* share a boundary(ies) with an adjacent parcel with zoning that would suggest CHSC designated sensitive receptors are present (e.g., residential, institutional).

OR

The site *is not* within 500 feet of a CHSC designated sensitive receptor (e.g., a school, childcare facility, residence) or within 500 feet of a parcel with zoning that would suggest CHSC designated sensitive receptors are present (e.g., residential, institutional).

In addition to the criteria described above, the rubric determination also takes into consideration the presence of active, on-site gas and oil wells. The Avocado, Ventura Steel, and Devil’s Canyon Road Sites are located either fully or partially within an active oil/gas field (e.g., Ventura Oil Field), while the Existing Site is located approximately 0.5 miles south of the oil/gas field boundary (DOC 2019, 2022). The total number of wells—if any—present on a given site will be noted in the land use analysis subsections for each alternative.

Because the ranking criteria as described would have little to no impact on the technology used for the compressor station, the same score is applied to both the Natural Gas Options and the Hybrid Options.

## California Public Utility Commission Preemptory Powers

CPUC has preemptory powers as relates to discretionary permitting, which have been confirmed by California courts. As such, no local discretionary land use (e.g., rezone, land use) permits would be required on any of the site locations to the extent that CPUC’s preemptive jurisdiction applies to the siting, construction, maintenance, and operation of natural gas facilities in California. Nonetheless, this analysis uses the land use criteria to assess the compatibility of siting a compressor station at a potential site.

## 3.2.6 Natural Resources

The purpose of this review was to determine whether special-status plant and wildlife species are known to occur in the vicinity of or within the study area. The following data sources were reviewed to assist with the desktop assessment of biological resources and are included in Attachment 4, Natural Resources Analysis, of this evaluation:

- U.S. Fish and Wildlife Service (USFWS) Critical Habitat and Species Occurrence Data (2022a)
- USFWS National Wetlands Inventory data (USFWS 2022b)
- National Hydrography Dataset and Watershed Boundary Dataset (USGS 2022)



- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CDFW 2022a)
- California Native Plant Society Inventory of Rare and Endangered Plants (Inventory) (CNPS 2022)
- Calflora's What Grows Here database (Calflora 2022)
- CDFW Biogeographic Information and Observation System (CDFW 2022b)
- CDFW California Sensitive Natural Communities (CDFW 2021)
- Vegetation - Ventura County GIS data layer (David Magney Environmental Consulting 2008)
- CDFW California Natural Community Conservation Plans, April 2019 (CDFW 2019)
- Google Earth desktop application (Google 2022)

The California Natural Diversity Database and California Native Plant Society Inventory were queried based on the USGS 7.5-minute topographic quadrangle map for where the alternatives are located, as well as the surrounding eight USGS 7.5-minute quadrangle maps. The results of the queries are provided in Attachment 4. The purpose of this review was to determine whether special-status plant and wildlife species are known to occur in the vicinity of or within the study area. Other literature reviewed included A Manual of California Vegetation, Online Edition (CNPS 2022b); the California Natural Community list (CDFW 2021) (provided in Attachment 4); and the CDFW Special Animals List (CDFW 2022c).

The California Natural Diversity Database and critical habitat data are illustrated in Figure NR-1, and the vegetation and National Wetlands Inventory data are illustrated in Figure NR-2 (see Attachment 4 for all NR [Natural Resources] figures).

For the rubric determination, the following criteria were used to determine the score for each alternative:

- Ranking 0 (sensitive resources would be impacted):
  - Sensitive Species (Plant/Animals): the alternative would directly impact designated critical habitat or suitable habitat of a federal/state listed species that has recent (within 50 years) records (CDFW 2022a) within 0.25 miles of the alternative.
  - Sensitive Habitats: the alternative would directly impact vegetation that is considered sensitive by CDFW (2021) that typically require compensatory mitigation.
  - Wetlands: the alternative would directly impact features that have been recorded in the National Wetlands Inventory (USFWS 2022b) that typically require compensatory mitigation.
- Ranking 1-2-3 (the lower the score the higher the probability of indirect impacts occurring to sensitive resources due to the resources proximity to the project limits):
  - Sensitive Species (Plant/Animals): the alternative is adjacent to (within 500 feet of)<sup>4</sup> designated critical habitat or suitable habitat of a federal/state listed species that has recent (within 50 years) records (CDFW 2022a) within 0.25 miles of the alternative or contains suitable habitat of non-listed sensitive species within 3 miles, and avoidance and minimization measures (e.g., seasonal constraints, pre-construction surveys, noise monitoring, erosion control, etc.) cannot eliminate the potential of indirectly impacting the sensitive species.

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<sup>4</sup> The U.S. Fish and Wildlife Service typically uses 500 feet as the outer distance for determining potential indirect impacts for many species, including least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*).

- Sensitive Habitats: avoidance and minimization measures would be expected to avoid indirect impacts that require compensatory mitigation to the features.
- Wetlands: avoidance and minimization measures would be expected to avoid direct and indirect impacts that require compensatory mitigation to the features.
- Ranking 4-5-6 (the lower the score the higher the probability of indirect impacts occurring to the resource):
  - Sensitive Species (Plant/Animals): the alternative is adjacent to (i.e., within 500 feet of) designated critical habitat or suitable habitat of a federal/state listed species that has recent (within 50 years) records (CDFW 2022a) within 0.25 miles of the alternative or contains suitable habitat of non-listed sensitive species within 3 miles, and avoidance and minimization measures (e.g., seasonal constraints, pre-construction surveys, noise monitoring, erosion control) are likely to avoid or eliminate the potential of indirectly impacting the sensitive species.
  - Sensitive Habitats: avoidance and minimization measures would be expected to avoid direct and indirect impacts that require compensatory mitigation to the features.
  - Wetlands: avoidance and minimization measures would be expected to avoid direct and indirect impacts that require compensatory mitigation to the features.
- Ranking 7-8-9 (the highest score [9] indicates that the alternative is within an already developed environment, while the lesser scores indicate partially developed or heavily disturbed sites):
  - Sensitive Species (Plant/Animals): the alternative is not adjacent to (i.e., within 500 feet of) designated critical habitat or suitable habitat of a federal/state species that has recent (within 50 years) records (CDFW 2022a), does not contain suitable habitat for non-listed sensitive species, and is not adjacent to sensitive habitats or wetlands.
  - Sensitive Habitats: the alternative does not contain or is not adjacent to this sensitive resource.
  - Wetlands: the alternative does not contain or is not adjacent to this sensitive resource.

## 3.2.7 Noise

Noise modeling was completed to evaluate the potential operational impacts and construction impacts (on site and off site) for each of the two technology configurations at the five alternative site locations. The operation noise analysis output, depicted as noise level contours, are included within Attachment 5, Noise Modeling Output Figures, and visually display the modeled operation noise for each of the 10 scenarios.

### 3.2.7.1 Operational Considerations

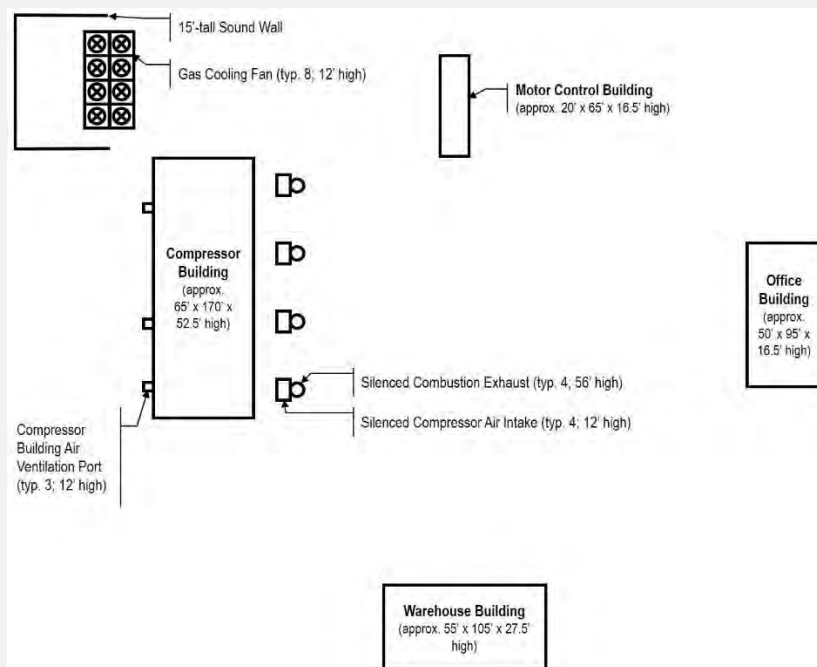
The analysis assumes that operation of the new gas compressor station would be 24 hours per day, 7 days per week and would feature durable operations noise control and sound abatement measures incorporated into the facility design. A noise emission level of 80 A-weighted decibels (dBA) is assumed for operations, but there is no associated distance value for reference; therefore, the following detailed assumptions were made as follows:

- The 80 dBA noise emission level is a sound pressure level at a reference distance of 1 meter (3.28 feet) from the source of sound emission.

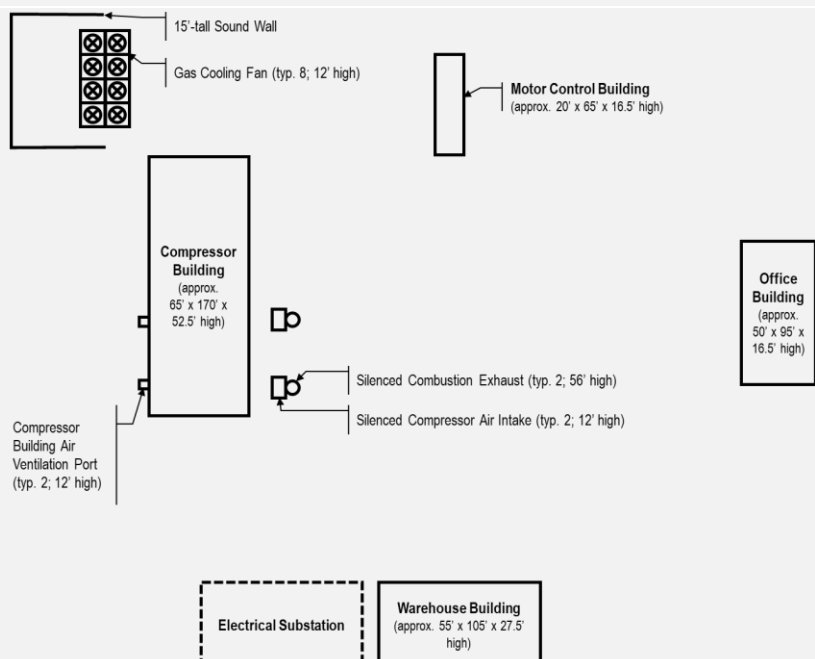
- It was assumed the facility would feature typical major noise-producing components, such as the compressor unit air intakes and combustion exhausts, the new compressor building and its ventilation system, and a gas cooling system.

The analysis assumes the layout for any of the compressor station options would be similar to what is shown in Exhibit 1, Conceptual Compressor Station for Noise Assumptions, with features differing based on the source of power to drive the compressors (either a Natural Gas Option or a Hybrid Option). For the County Line – Natural Gas alternative, however, the layout would feature an additional fifth compressor unit air intake and combustion exhaust along the same side of the building.

### Exhibit 1. Conceptual Compressor Station for Noise Assumptions



NATURAL GAS OPTION



HYBRID OPTION

**Note:** Assumed gas compressor station facility layouts (*top*: four compressors, each powered with natural gas combustion; *bottom*: hybrid [i.e., two compressors powered by natural gas and two others within compressor building powered by electric motors]). Indicated heights are with respect to a common grade level.

For the Natural Gas Option and Hybrid Option per Exhibit 1, an outdoor noise prediction model was prepared to analyze aggregate noise emission from the operating components. These components are listed as follows:

**Natural Gas Option:**

- Each of the following was assigned a 91 dBA sound power level (i.e., yielding 80 dBA energy equivalent level [ $L_{eq}$ ] sound pressure level at 1 meter) point-type source: compressor air intake, compressor building air ventilator, combustion exhaust, and natural gas cooling system fan cell.
- Compressor building façade (for each of four: north, east, south, west) modeled with a vertical area source having sound power level density of approximately 77.3 dBA per square meter of façade exterior surface.

**Hybrid Option:**

- Each of the following was assigned a 91 dBA sound power level (i.e., yielding 80 dBA  $L_{eq}$  sound pressure level at 1 meter): compressor air intake, compressor building air ventilator, combustion exhaust, natural gas cooling system fan cell, and electrical substation transformer.
- Compressor building façade (for each of four: north, east, south, west) modeled with a vertical area source having sound power level density of approximately 74.3 dBA per square meter of façade exterior surface. Note that the magnitude is less based on the assumption that there are only two natural gas compressors within the building, in contrast with four per the Natural Gas Option.

For purposes of this analysis, the added fifth operating compressor for the County Line alternative would not change the compressor building façade noise radiation—the change in aggregate noise level from four to five identical compressor units, per acoustic principles, would be less than 1 decibel (dB).

The prediction model assumed that the new compressor station buildings and feature layout, as depicted in Exhibit 1, would generally be centrally located within the boundary of the studied site alternative so that the buildings as sized and spaced apart in relation to one another would fit. By adopting this convention and using Exhibit 1 layouts (and therefore location of operational sound sources within a facility) commonly for each of the five site alternatives, the prediction model enabled an estimate of aggregate operational facility noise at the relevant property boundaries.

For noise, the scoring assessment location is where the noise level crosses the boundary of the nearest non-industrial (residential, commercial, or institutional [e.g., school] zoned property or at the location of the nearest occupied structure of an agricultural land use (e.g., inhabited house of a farm or vineyard). Consistent with the scoring rubric, assessment of facility operation noise at the property boundary (or at the nearest boundary of a non-industrial land use) would break out as follows:

- **Ranking 0:**  $\geq 65$  dBA at the property line, taking into account non-industrial land uses
- **Ranking 1-2-3:**  $\geq 55$  dBA but  $< 65$  dBA, taking into account non-industrial land uses
- **Ranking 4-5-6:**  $\geq 45$  dBA but  $< 55$  dBA, taking into account non-industrial land uses
- **Ranking 7-8-9:**  $< 45$  dBA, taking into account non-industrial land uses

The Attachment 5 figures display predicted aggregate operational noise from the studied scenarios superimposed atop semi-transparent aerial images of the facility site surroundings, thus showing where expected decibel levels would occur and thus substantiate the scoring values.

### 3.2.7.2 On-Site Construction Considerations

The scoring rubric quantity ranges for on-site construction noise emission reflect the application of geometric divergence (a.k.a., the “6 dB per doubling of distance” rule of thumb for sound propagation from a point source or an area source having a dimension that is small compared to the distance to the receiver) as sound travels away from the construction site. In other words, the greater the distance between construction activity and the studied receiver, the lower the noise exposure level and thus the higher rubric scoring opportunity. Assumptions made to support the on-site construction analysis include the following:

- Since each site alternative requires site-wide disturbance (e.g., grading) and/or the erection of a perimeter solid wall (consistent with the Feasibility Study assumptions), then the site parcel boundary conservatively defines the location of construction activity (e.g., grading occurs up to the boundary line, and installation of the wall itself would—of course—be on or just within the boundary line).
- While details of the specific construction activities and involved equipment on site to install the new gas compressor station are not known, and although construction would take place throughout the whole site, it is assumed the aggregate noise emission of a set of concurrently operating construction equipment would emanate sound as if from a point source on the boundary of the property parcel. The assumed combined magnitude of concurrently operating on-site construction equipment noise propagating from this point position is 90 dBA  $L_{eq}$  at 50 feet, which would be consistent with anticipated sample reference  $L_{max}$  (at 50 feet) sound emission data from the Federal Highway Administration Roadway Construction Noise Model User’s Guide.

Based on these parameters and assumptions, this rubric was scored per the following criteria:

- **Ranking 0:** Where on-site construction noise exposure at the nearest non-industrial land use is expected to be  $\geq 90$  dBA  $L_{eq}$ , corresponding with a source-to-receptor distance of less than 50 feet
- **Ranking 1-2-3:** Where on-site construction noise exposure at the nearest non-industrial land use is expected to be  $< 90$  dBA and  $\geq 84$  dBA  $L_{eq}$ , and when the source-to-receptor distance is between 51 and 100 feet
- **Ranking 4-5-6:** Where on-site construction noise exposure at the nearest non-industrial land use is expected to be  $< 84$  dBA and  $\geq 75$  dBA  $L_{eq}$ , and when the source-to-receptor distance is between 101 and 250 feet
- **Ranking 7-8-9:** Where on-site construction noise exposure at the nearest non-industrial land use is expected to be  $< 75$  dBA  $L_{eq}$ , and when the source-to-receptor distance is greater than 251 feet

The assessment position to determine scoring is where the predicted construction noise level from the site parcel boundary crosses the boundary of the nearest non-industrial (residential, commercial, or institutional [e.g., school] zoned property or at the location of the nearest occupied structure of an agricultural land use (e.g., inhabited house of a farm or vineyard).

### 3.2.7.3 Off-Site Construction Considerations

For off-site construction, the following assumption was made: an “off-site” construction activity could include new road construction or upgrading of an existing access route, installation of a new pipeline segment or electrical connection, or constructing a new mainline valve (MLV). For purposes of predictive assessment and corresponding scoring herein, the aggregate construction noise emission level from a set of concurrently operating equipment to perform such off-site activities would be the same as described for on-site activities (90 dBA  $L_{eq}$  at 50 feet). The scoring granularity for off-site construction activity is also the same as presented for on-site construction activity.

## 3.2.8 Slope, Topography, and Grading

The primary considerations of the slope, topography, and grading ranking criteria are: (1) to quantify and analyze the average slope of the main compressor station site; and (2) to quantify and analyze the grading requirements for the on-site construction scenario. The four ranking levels for slope, topography, and grading are as follows:

- **Ranking 0:** The average slope of the property is greater than 40% and/or substantial over-excavation/recompaction requires  $\geq 75,000$  cubic yards (CY).
- **Ranking 1-2-3:** The average slope of property is 30%–39% and/or moderate over-excavation/recompaction requires  $>25,000$  but  $<75,000$  CY.
- **Ranking 4-5-6:** The average slope of property is 20%–29% and/or minimal over-excavation/recompaction requires  $\geq 10,000$  CY but  $<25,000$  CY.
- **Ranking 7-8-9:** The average slope of property is less than 20% and negligible/no over-excavation/recompaction requires  $<10,000$  CY.

### Slope, Topography, and Grading Criteria Definitions

<b>“...the property”:</b>	The land area or parcel on which the main compressor station site is located.
<b>“...over-excavation/recompaction”</b>	The over-excavation or recompaction (i.e., grading) of soils and/or other fill materials, often requiring import to or export from the site.
<b>“...substantial”:</b>	Construction of the on-site component(s) would require over-excavation/recompaction of materials $\geq 75,000$ CY.
<b>“...moderate”:</b>	Construction of the on-site component(s) would require over-excavation/recompaction of materials $\geq 25,000$ but $<75,000$ CY.
<b>“...minimal”:</b>	Construction of the on-site component(s) would require over-excavation/recompaction of materials $\geq 10,000$ CY but $<25,000$ CY.
<b>“...negligible/no”:</b>	Construction of the on-site component(s) would require over-excavation/recompaction of materials equivalent to $<10,000$ CY.

**“...on-site component(s)”** The components located within the site boundaries identified to support the Natural Gas Option or Hybrid Option compressor station.

## Slope Methodology

Percent slope was calculated using Esri’s Spatial Analyst Toolset and a digital elevation model (DEM) acquired from the U.S. Geological Survey (USGS) 3D Elevation Program (3DEP). In addition to the spatial analysis, a weighted average methodology was used to better capture the ranking score criteria, which breaks down the site acreage into “classes” based on their slope. The classes were defined manually as 0%–10%, >10%–20%, >20%–30%, etc. The topography and slope maps for each of the five sites are provided in Attachment 6. Calculations were made based on the minimum, average, and maximum slope percentages within each range class (e.g., for the 0%–10% range, averages were calculated for each site at 0%, 5%, and 10% for the corresponding acreage). The average slope range calculations for each site are provided within the Slope, Topography, and Grading discussions of Chapter 5, Ranking Analysis.

## Grading Methodology

The grading calculations were provided by SoCalGas and are expressed in cubic yards (CY). Determination of grading significance was informed by the County Department of Public Works’ discretionary grading permit triggers, which provide that any project where the average grade exceeds 10% and the amount of excavation or fill exceeds 10,000 CY shall be subject to discretionary review (County of Ventura 2022).

Because the on-site grading requirements and slope considerations would be the same for both the Natural Gas Option and Hybrid Option, the same ranking is given to both alternatives. Off-site grading requirements may be discussed for informational purposes but are not given significant weight in the ranking calculations, per the specified criteria (see Section 3.1, Scoring Criteria).

## 3.2.9 Traffic

### 3.2.9.1 On-Site Construction

The traffic evaluation scoring for each alternative is based on the potential length of time that heavy truck traffic would travel through residential areas or roadway-constrained areas to support on-site construction. The evaluation focuses on public roadways that could be affected by project-related congestion. While minor consideration is given to construction occurring on private access roads, for the purposes of this evaluation, private access roads are not considered to be constrained roadways, as they are not subject to commuter traffic. Dudek identified the existing roadways providing direct access to the alternative sites and reviewed the City and County roadway classifications as appropriate, the existing land uses along those roadways, and the estimated schedule of import and export activities. These criteria only evaluate construction duration involving heavy truck traffic (i.e., import/export of soils or materials via dump trucks and oversized vehicles) and location (i.e., using roadways adjacent to residential areas or roadways that are constrained due to urban/commuter traffic). Roadway-constrained areas are identified as local public roads (as opposed to major highways and arterials that are designed to accommodate heavy truck traffic). The analysis does not quantify existing traffic volumes or the number of heavy trucks traveling through an area.

The rubric ranking criteria for on-site construction are summarized below.



- **Ranking 0:** Heavy truck traffic would travel through either residential areas or roadway-constrained areas for 1 year or longer. Roadway-constrained areas are identified as local public roads (as opposed to major highways and arterials that are designed to accommodate heavy truck traffic).
- **Ranking 1-2-3:** Heavy truck traffic would travel through either residential areas or roadway-constrained areas for 6 months to less than 1 year. The lower the score the higher the potential for impacts occurring due to schedule duration, proximity of sensitive land uses, travel on a public road, or a combination of these factors.
- **Ranking 4-5-6:** Heavy truck traffic would travel through either residential areas or roadway-constrained areas for less than 6 months. The lower the score the higher the potential for impacts occurring due to schedule duration, proximity of sensitive land uses, travel on a public road, or a combination of these factors.
- **Ranking 7-8-9:** Heavy truck traffic would not likely occur through residential areas or roadway-constrained areas. The lower the score the higher the potential for impacts occurring due to schedule duration, proximity of sensitive land uses, travel on a public road, or a combination of these factors.

### 3.2.9.2 Off-Site Construction

The traffic evaluation for the off-site construction for routing of utilities rates each alternative on the extent of roadway construction on existing roads. Similar to the criteria above, the evaluation focuses on trenching within public roadways. While these criteria are focused on the extent of construction on existing public roads, the characteristics (e.g., urban, rural) of the existing roadways, whether public or private, are considered to provide a more refined level of evaluation.

The rubric ranking criteria for off-site construction are summarized below.

- **Ranking 0:** Off-site routing alignment and trenching requires that substantial roadway construction (e.g., lane closures greater than 5,001 feet) would occur on existing public roads.
- **Ranking 1-2-3:** Off-site routing alignment and trenching requires that moderate roadway construction (e.g., lane closures of 2,501 to 5,000 feet) would occur on existing public roads. The lower the score the higher the potential for impacts occurring due length of trenching required, number of roadway crossings, or a combination of these factors.
- **Ranking 4-5-6:** Off-site routing alignment and trenching requires that minimal roadway construction (e.g., lane closures of 501 to 2,500 feet) would occur on existing public roads. The lower the score the higher the potential for impacts occurring due length of trenching required, number of roadway crossings, or a combination of these factors.
- **Ranking 7-8-9:** Off-site routing alignment and trenching requires that no roadway construction or negligible roadway construction (e.g., construction less than 500 feet) would occur on existing public roads. The lower the score the higher the potential for impacts occurring due length of trenching required, number of roadway crossings, or a combination of these factors.

### 3.2.10 Utilities/Service Systems

The analysis of utilities/service systems was based primarily on the need for utility extensions and associated ground disturbance required to develop the alternative sites. Off-site ground disturbance for both the Natural Gas and Hybrid Options considered under this analysis would include the off-site construction of the following:

- The new natural gas pipeline system, including pipelines and depressurization lines, is required to connect to the existing pipeline system. For this assessment, the square footage of trenching was calculated using the linear feet of the trench width for the new pipeline system and a trench width of 28 inches.
- A new mainline valve (MLV) station would be required at each connection location where a new pipeline system would connect to the existing natural gas pipeline system. The ground disturbance was calculated assuming 50 feet by 75 feet of disturbance to accommodate the new valve station, depending on the configuration of the existing pipeline system.
- New utility infrastructure (water, sewer, and electrical) would be required to serve the on-site staff operations at the Avocado Site and County Line Alternatives. For this assessment, the square footage of trenching was calculated using the linear feet of the trench width for the new pipelines and a trench width of 3 feet.
- The Hybrid Option would also include ground disturbance for the construction of new footings for the electrical line interconnection from sites to the existing SCE system. This calculation assumes pole foundations would be 2 feet by 7 feet and spaced approximately every 100 to 150 feet.

The square footage for all ground disturbance associated with the estimated energy and utility-related construction was calculated based on the site-specific information prepared for each alternative.

The rubric scoring was determined based on the estimated total square footage of ground disturbance and the scoring rubric ranking of 0 to 9 was categorized as follows:

- **Ranking 0:** >100,000 square feet of off-site ground disturbance
- **Ranking 1-2-3:** Between 99,999 and 50,000 square feet of off-site ground disturbance
- **Ranking 4-5-6:** Between 49,999 and 25,000 square feet of off-site ground disturbance
- **Ranking 7-8-9:** <24,999 square feet of off-site ground disturbance

### 3.2.11 Wildfire

The purpose of the wildfire evaluation is to evaluate whether the alternative site locations—particularly for the land areas containing the compressor station—are located within fire hazard severity zones (FHSZs), as determined by the California Department of Forestry and Fire Protection (CAL FIRE).<sup>5</sup> According to the Ventura County Fire Protection District, the State of California’s Strategic 2018 Fire Plan anticipates that “trends in wildland fires will continue. The effects of climate change, prolonged drought, tree mortality, and development into the wildland urban interface will continue to increase the number and severity of wildland fires” (VCFPD 2021). The typical fire season in Ventura County begins in May or June, with vegetative fuel loads reaching “critical moisture levels” in late summer and early fall (VCFPD 2021). Together with the advent of strong east winds (Santa Anas) throughout the County, this environment produces the perfect conditions for “catastrophic fire weather” (VCFPD 2021). All site alternatives under consideration are located within the Ventura or Casitas Fuel Beds, which act as an unbroken distribution of vegetative

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<sup>5</sup> According to the Office of the State Fire Marshall (OSFM), the FHSZ maps evaluate “hazard” as opposed to “risk.” Hazard is based on “...the *physical conditions that create a likelihood and expected fire behavior* over a 30 to 50 year period without considering short-term modifications such as fuel reduction effort” while “risk” is evaluates the “*potential damage a fire can do to the area under existing conditions, including any modifications such as fuel reduction projects, defensible space, and ignition resistant building construction*” (OSFM 2022).

fuel sources, including oak woodland, chaparral, coastal sage scrub, and grass (VCFPD 2021). The fuel beds are bordered by State Route (SR) 150 to the east and the Santa Barbara–Ventura County line to the west (VCFPD 2021). Together these fuel beds have sustained over a dozen large scale fires (e.g., more than 300 acres), the most recent being the Thomas Fire in December 2017, which burned approximately 281,893 acres (VCFPD 2021).

In the ranking rubric, scoring for wildfire considers the site's FHSZ. The four ranking levels are as follows:

- **Ranking 0:** The alternative is within a very high fire hazard severity zone
- **Ranking 1-2-3:** The alternative is within a high fire hazard severity zone
- **Ranking 4-5-6:** The alternative is within a moderate fire hazard severity zone
- **Ranking 7-8-9:** The alternative is not within a fire hazard severity zone

### 3.2.11.1 Wildfire Ranking Criteria Definitions

#### CAL FIRE Fire Hazard Severity Zones

The FHSZ classifications are based on “a combination of how fire will behave and the probability of flames and embers threatening buildings” (OSFM 2022). The model places an emphasis on the spread of burning embers, as these embers can travel long distances in the wind and can ignite surrounding vegetation and infrastructure (OSFM 2022). A region is divided into discrete areas, which vary in size based on such factors as topography and land use (e.g., from 20-acre urban areas to larger wildland zones with a minimum of 200 acres). Each area receives a score for flame length, embers, and the likelihood of the area burning, which are then averaged over the zone area. The final zone classes for “very high,” “high,” and “moderate” fire hazard severity are based on the average area scores across the zone(s) (OSFM 2022).

The CAL FIRE FHSZ maps differentiate between State Responsibility Areas (SRAs) and Local Responsibility Areas (LRAs) (CAL FIRE 2017; OSFM 2022). According to CAL FIRE and the Office of the State Fire Marshal (OSFM), the SRA is “land where the State of California is financially responsible for the prevention and suppression of wildfires,” while the LRA denotes areas where *local* governments have financial responsibility for the prevention and suppression of wildfires (CAL FIRE 2017; OSFM 2022). Most notably, in SRAs there are three levels of fire hazard severity: moderate, high, and very high, while the LRA model only recognizes a single fire hazard severity level (very high) (OSFM 2022).

#### Additional Scoring Criteria

After the determination has been made for the type of FHSZ present on site, within each scoring criteria range, points were added or subtracted based on three primary factors:

- **Proximity to other FHSZs:** Considerations include whether the site is on the outskirts or far removed from a FHSZ or surrounded by a FHSZ.
- **Availability of vegetative fuel load:** While all sites are located within an identified fuel bed area, special considerations include whether the site is located in an urban area or is located in an open space area with an abundance of natural fuel (e.g., grassland, woodland, chaparral) on and/or adjacent to an open space area.
- **Reliance on electricity/electrical transmission:** Considerations include whether the an electrical interconnect is required to power the compressor station would be required, and if aboveground

transmission lines used to power the compressor station would be extensive, isolated, and/or traveling through a CPUC High Fire-Threat District. Sites (see discussion below), which would represent an increased wildfire risk to the surrounding community (CPUC 2021a, 2021b).

### CPUC Fire-Threat Maps and the High Fire-Threat District

In October 2007, “devastating wildfires driven by strong Santa Ana winds burned hundreds of square miles in Southern California. Several of the worst wildfires were reportedly ignited by overhead utility power lines and aerial communication facilities near power lines” (CPUC 2021a). In response to these wildfires, the CPUC Fire-Threat Map was created.<sup>6</sup> The CPUC Fire-Threat Map is a statewide map showing areas where there is a higher risk for power line fires igniting and spreading rapidly (CPUC 2021a). The Tier 2 and Tier 3 fire-threat areas on the CPUC Fire-Threat Map are integrated into the designated CPUC High Fire-Threat District (HFTD) maps, which also include Tier 1 High Hazard Zones (HHZs) from the U.S. Forest Service/CAL FIRE joint map of Tree Mortality HHZs (CPUC 2021a). Tier 1 HHZs are zones near communities, roads, and utility lines, and are a direct threat to public safety (CPUC 2021a). Tier 2 fire-threat areas outline areas where there is a higher risk (including likelihood and potential impacts on people and property) from utility related wildfires (CPUC 2021a). Tier 3 fire-threat areas outline areas where there is an extreme risk (including likelihood and potential impacts on people and property) from utility related wildfires (CPUC 2021a). Electric utilities and communication infrastructure within areas identified as CPUC “high fire threat areas” (e.g., areas within the HFTD), are required to adopt additional fire-safety regulations, as provided by CPUC Rulemaking 08-11-005 and General Order 95 (CPUC 2021a).

Because the HFTD is intended to “represent an area based upon mapping products (i.e., CPUC Fire-Threat Map) developed specifically for the purpose of scoping [electrical and communications] utility regulations,” the HFTD is incorporated into the analysis for the hybrid compressor station technology options, which, depending upon the alternative, may require additional electrical utility infrastructure, including above-ground electrical poles and associated overhead electrical conduit (CPUC 2021a).

The applicable CAL FIRE FHSZ and CPUC HFTD maps are provided in Attachment 7.

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<sup>6</sup> According to CPUC, “[...]the main people handling the development of the CPUC Fire-Threat Map was a group of utility mapping experts known as the Peer Development Panel (PDP), with oversight from a team of independent experts known as the Independent Review Team (IRT). The members of the IRT were selected by CAL FIRE and CAL FIRE served as the Chair of the IRT. The development of CPUC Fire-Threat Map includes input from many stakeholders, including investor-owned and publicly owned electric utilities, communications infrastructure providers, public interest groups, and local public safety agencies” (CPUC 2021a).

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## 4 Environmental Scoring and Ranking

Table 5 summarizes the scoring of each of the environmental criteria for the five sites for both the Natural Gas and Hybrid Options, as detailed below. Scores for the operational, on-site construction, and off-site construction considerations were totaled, and an overall environmental score was calculated.

The scores in the “Operational Considerations” category were multiplied by a factor of 10. The scores were weighted because operational considerations would have long-term implications for the environment over the life of the modernization project and thus should be considered as more consequential, whereas short-term construction activities are temporary. The factor of 10 was determined to be appropriate by considering the duration of construction impacts in the context of the life of the project. The duration of site construction activities would vary according to site-specific considerations described in Chapter 2, Alternative Options, and the average length of construction activity for all 10 development scenarios would be 3.8 years. The anticipated useful lifespan of the modernization project is estimated to be 40 years. As such, increasing the numeric scoring for the “Operational Considerations” category by a factor of 10 was determined to adequately capture the environmental consequences of short-term construction vs. long-term operational impacts.

**Table 5. Environmental Scoring Rubric**

Topic Areas	Existing Site		Avocado Site		Ventura Steel Site		Devil's Canyon Road Site		County Line Site	
	Natural Gas	Hybrid	Natural Gas	Hybrid	Natural Gas	Hybrid	Natural Gas	Hybrid	Natural Gas	Hybrid
<b>Operational Considerations</b>										
Aesthetics/Visual	8	8	0	0	6	5	8	7	0	0
Air Quality	1	5	1	5	1	5	1	5	0	5
CalEnviroScreen	1	1	2	2	3	3	2	2	2	2
Greenhouse Gas Emissions	3	5	3	5	3	5	3	5	2	4
Land Use Designation	1	1	6	6	9	9	6	6	6	6
Noise	4	4	9	9	7	8	8	9	4	6
Wildfire	8	8	2	1	0	0	2	1	3	2
<i>Subtotal</i>	26	32	23	28	29	35	30	35	17	25
<i>Subtotal (×10)</i>	260	320	230	280	290	350	300	350	170	250
<b>On-Site Construction Considerations</b>										
Air Quality	6	6	0	0	6	6	6	6	2	2
Cultural Resources	8	8	6	6	7	7	7	7	8	8
Greenhouse Gas Emissions	8	8	2	2	8	8	8	8	4	4
Natural Resources	9	9	8	8	9	9	4	4	6	6
Noise	3	3	9	9	9	9	9	9	7	7
Slope, Topo, and Grading	8	8	0	0	8	8	8	8	3	3
Traffic – Construction	6	6	7	7	9	9	9	9	2	2
<i>Subtotal</i>	48	48	32	32	56	56	51	51	32	32

**Table 5. Environmental Scoring Rubric**

Topic Areas	Existing Site		Avocado Site		Ventura Steel Site		Devil's Canyon Road Site		County Line Site	
	Natural Gas	Hybrid	Natural Gas	Hybrid	Natural Gas	Hybrid	Natural Gas	Hybrid	Natural Gas	Hybrid
<b>Off-Site Construction for Routing Utilities Considerations</b>										
Air Quality	9	9	2	0	0	0	5	3	5	4
Cultural Resources	8	8	6	6	8	8	6	7	7	6
Greenhouse Gas Emissions	9	9	7	6	4	4	7	7	9	9
Natural Resources	8	8	0	0	0	0	0	0	8	8
Noise	9	9	9	9	0	0	9	9	0	0
Traffic-Roadway Construction	9	9	7	7	0	0	7	7	7	7
Utilities/Service Systems	9	9	4	4	1	1	3	3	4	4
<i>Subtotal</i>	61	61	35	32	13	13	37	35	39	38
<b>Total Environmental Score</b>	<b>369</b>	<b>429</b>	<b>297</b>	<b>344</b>	<b>359</b>	<b>419</b>	<b>389</b>	<b>437</b>	<b>241</b>	<b>320</b>

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## 5 Ranking Analysis

### 5.1 Existing Site

The scoring rationale for each of the environmental topic areas for the Existing Site Alternative is described below.

#### 5.1.1 Natural Gas Option

##### 5.1.1.1 Operational Considerations

###### 5.1.1.1.1 Aesthetics and Visual Resources

The Existing Site is partially screened from motorists on SR-33, an eligible State Scenic Highway (Caltrans 2022). Existing structural development to the east of the SR-33 corridor, and state route median and shoulder terrain and vegetation, routinely obstructs the Existing Site from the view of passing motorists. Eligible State Scenic Highways are routinely identified as scenic by the local jurisdiction, which has yet to adopt (or draft) a corridor protection plan that would install development controls or consideration over properties within the viewshed of the highway in question. Where visible, the duration of views to the Existing Site will be brief (lasting seconds) and the compressor building would not substantially block or interrupt available views to hills and mountains to the east of SR-33 that are identified as a major visual component of Ventura in the Final Environmental Impact Report for the City's existing General Plan (City of Ventura 2005b). Due to their assumed height of 15 feet or less, the office trailer, storage containers, and access roads are not anticipated to be visible from SR-33.

Due to distance and the presence of intervening terrain, vegetation, and development, the Existing Site is not visible from U.S. Route 101, an eligible state scenic highway. For the same reasons, potential development on the site would not be visible from U.S. Route 101 (or from Ventura Avenue, a locally designated scenic corridor; City of Ventura 2005b) and as such, would not alter the character of the community as experienced from U.S. Route 101 (or from Ventura Avenue).

Lastly, while the Existing Site is within the viewshed of elevated vantage points available at Grant Park (located approximately 0.85 miles to the southeast of the Existing Site and at an approximate elevation of 370 feet above mean sea level), potential development at the property is not anticipated to be visually prominent. The valued view available at Grant Park (a locally designated scenic corridor; City of Ventura 2005b) and more specifically, at Father Serra Cross, is generally focused to the south (toward the ocean). Views to the narrow valley to the west and east of SR-33 are available from the Father Serra Parking Lot; however, due to the elevational difference between Grant Park and the Existing Site, and the presence of existing development on the site, potential development would not result in any blockage or interruption of an identified scenic resource (such as local hillsides). For these reasons, potential development would have a nominal effect on the visual character of the community. Based on the assessment provided above, this alternative received a score of 8 points.

###### 5.1.1.1.2 Air Quality

The Natural Gas Option would include the installation of four new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the

Air Quality and Greenhouse Gas Emissions Analysis (AQ/GHG Analysis) in Attachment 1, the natural gas-powered compressor station is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption.

Operation of the natural gas compressors is calculated to result in 11 tons/year of NO<sub>x</sub> emissions. As such, the Natural Gas Option would fall within the ≥8 tons/year but <12 tons/year category, which would score from 1 to 3. Because 11 tons/year is closer to the upper end of the NO<sub>x</sub> emissions range, the Natural Gas Option received a score of 1 point.

#### 5.1.1.1.3 CalEnviroScreen

OEHHA CalEnviroScreen 4.0 Maps indicate that the Existing Site is in Census Tract 6111002300, which has a population of approximately 6,534. This tract has a total pollution burden score of 87%, which took into consideration the exposure indicator and environmental effect scores in Table 6 (OEHHA 2022b). This score means that this census tract has more pollution burden than 87% of all census tracts within California.

**Table 6. Pollution Burden for Census Tract 6111002300**

Exposure Indicator	Score (Percentile)
Ozone	27
Fine Particulate Matter (PM <sub>2.5</sub> )	29
Diesel Particulate Matter	51
Pesticides	97
Toxic Releases	18
Traffic	39
Drinking Water Contaminants	66
Lead in Housing	79
Cleanups	83
Groundwater Threats	90
Hazardous Waste	89
Impaired Water	59
Solid Waste	36
<b>Pollution Burden</b>	<b>87</b>

Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the Existing Site received a score of 1 point because a pollution burden of 87% is within the 81% to 90% scoring range.

#### 5.1.1.1.4 Greenhouse Gases

This option would include the installation of four new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of carbon dioxide (CO<sub>2</sub>) equivalent (MT CO<sub>2e</sub>) that are directly produced from equipment and indirectly produced as a result of activities related to

operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). Indirect GHG emissions for the operation of the natural-gas facilities were not quantified for the Natural Gas Option because anything attributable to indirect GHG emissions would be consistent across all the proposed alternative sites and would be minimal.

The estimated emissions for the Natural Gas Option were calculated to be 27,836 MT CO<sub>2</sub>e/year, which would fall within the  $\geq 25,000$  MT CO<sub>2</sub>e/year but  $< 50,000$  MT CO<sub>2</sub>e/year category and therefore would score from 1 to 3. Since 27,836 MT CO<sub>2</sub>e/year is closer to the lower end of the emission range, the Natural Gas Option received a score of 3 points.

#### 5.1.1.1.5 Land Use Designation

##### Regional Site Location

As shown in Figure 1, the approximately 8-acre Existing Site is located within the City of Ventura on North Olive Street, slightly west of SR-33. The on-site components are located within a single Assessor's Parcel Number (APN), APN 680142030, which has the same boundaries as the existing compressor station (City of Ventura 2022a; 2022b). Adjacent APNs impacted by the temporary staging area include APN 8888159266; APN 680142020; APN 680142100; APN 680142220; APN 680142065; APN 680142070; and APN 680132015. Under existing conditions, regional access to the site is via U.S. Route 101 (City of Ventura 2022a; 2022b).

##### Surrounding Land Uses

The General Plan Land Use and Zoning maps in Attachment 3 show the land use and zoning on and adjacent to the Existing Site (including off-site components). Land uses adjacent to the Existing Site include the City General Plan land use designations of Industry to the north, west, and south. There is a small parcel (APN 680090340) designated Industry adjacent to the northeast corner of the Existing Site, which separates the property from North Olive Street (the site borders this parcel for approximately 190 feet). Although zoned M-2 (General Industrial Zone) and designated for industrial/manufacturing uses, according to a desktop analysis, this APN appears to include a single-family residence (Google Maps 2021; City of Ventura 2021), which would be considered a "sensitive receptor" as it applies to the land use analysis. The Existing Site is located on the west side of North Olive Street, which is approximately 60 feet wide. The land uses on the east side of North Olive Street include several sensitive receptors, including E.P. Foster Elementary School, which is a potential historic landmark (City of Ventura 2022a; 2022b), and residences to the east (City of Ventura 2005a). The adjacent land areas to the north, west, and south and the parcel adjacent to the Existing Site's northeast corner (APN 680090340) are zoned M-2, per the City of Ventura zoning ordinance (City of Ventura 2021; 2022b). The parcels adjacent to the Existing Site on the east side of North Olive Street include zoning for R-1 (Single Family Zone) and M-1 (Limited Industrial Zone). Other zoning east of the Existing Site and North Olive Street include C-2 (General Commercial Zone), RPD (Residential Planned Development), R-2 (Two-Family Zone), and R-3 (Multiple Family Zone) (City of Ventura 2020, 2021).

##### Project Component Land Uses

The Existing Site's operational components are located within a single APN (APN 680142030), which has the same boundaries as the compressor station. As shown on the General Plan Land Use and Zoning maps in Attachment 3, the current City of Ventura land use (Industry) and zoning (M-2) designations for the property (and staging area

located immediately adjacent to the southwest of the compressor station site) support industrial and manufacturing uses. The City's General Plan describes the Industry land use as encouraging "intensive manufacturing, processing, warehousing and similar uses, as well as light, clean industries and support offices" (City of Ventura 2005a). Allowable uses within the M-2 zone include Utility or Equipment Substations, which are defined as "electrical substations, *natural gas pumping stations*, transmitters, or translators, and utility relay or monitoring facilities" (emphasis added; City of Ventura 2021, Section 24.115.3440 and 24.262.030).<sup>7</sup> As such, selection of the Natural Gas Option or Hybrid Option is consistent with the existing land use and zoning designations. Additionally, the staging area would be located on land immediately west of the Existing Site that is also designated Industry and zoned M-2. However, the staging area would be removed once the site becomes operational and therefore it is not incorporated into the operational land use analysis.

## Evaluation and Score

All operational components are located within parcels with City zoning that supports industrial and/or manufacturing uses (City of Ventura 2021; County of Ventura 2005a); however, the nearest sensitive receptor (residence) is located adjacent to the eastern property line of the Existing Site. In addition, while industrial and/or manufacturing uses are also located adjacent to the Existing Site parcel to the north, west, and south, the predominant uses on the east side of North Olive Street include a public elementary school (E.P. Foster Elementary School) and various residential uses. As such, within the ranking criteria range of 1 to 3, "Industrial/manufacturing zone and adjacent to sensitive receptors," the Existing Site received a score of 1 point, due in large part to its proximity to sensitive receptors, which include a single-family residence adjacent to the compressor station site on APN 680090340 and a public school (E.P. Foster Elementary School) on the east side of North Olive Street.

### 5.1.1.1.6 Noise

The nearest non-industrial land use to the Existing Site is the adjacent single-family home in the northeast corner of the property. Based on the assessment provided in Attachment 5, Noise Modeling Output Figures, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-industrial land use (as defined in Section 3.2.7, Noise) of less than 55 dBA. Therefore, this alternative received a score of 4 points.

### 5.1.1.1.7 Wildfire

As shown on the SRA and LRA FHSZ Maps in Attachment 7, none of the operational components of the Existing Site are located within an FHSZ. The nearest very high FHSZ is located approximately 0.23 miles east of the existing compressor station site, while the nearest high FHSZ is located approximately 0.27 miles to the west on the west side of the Ventura River corridor (CAL FIRE 2022). The site is also located in a non-vegetated, urban area. Therefore, based on the ranking score range of 7 to 9 for sites not within an FHSZ, the Existing Site Alternative received a score of 8 points. The site did not receive a 9 because of its relative proximity to high and very high FHSZs to the west and east, as well as its location within a known fuel bed (Ventura Fuel Bed) that could still present a hazard (VCFPD 2021).

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<sup>7</sup> The "Utility or Equipment Substations" use type is permitted within the M-2 Zone subject to the provisions of Chapter 24.262 of the zoning code, and further provided that a use permit is approved pursuant to Chapter 24.520 (City of Ventura 2021).

## 5.1.1.2 On-Site Construction Considerations

### 5.1.1.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> were calculated from on-site activities such as site preparation, grading, and construction within the footprint of the future compressor station. For the purposes of the earthwork required to inform the air quality analysis, it was estimated that the site consisted of flat areas that required minimal grading. The total NO<sub>x</sub> and PM<sub>10</sub> emissions from on-site construction of the Existing Site Alternative – Natural Gas Option are shown in Table 7.

**Table 7. On-Site Construction Emissions: Existing Site - Natural Gas**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Emissions (lb)
Grading – flat	872	233
Grading – elevated	0	0
Compressor station	10,578	2,022
Substation	0	0
<b>Total<sup>a</sup></b>	<b>11,450</b>	<b>2,255</b>

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The amount of on-site diesel equipment would be minimal, and the duration of grading activities would be limited. NO<sub>x</sub> emissions would be in the <40,000 pounds and ≥8,000 pounds range and PM<sub>10</sub> emissions would be in the <6,000 pounds and ≥2,000 pounds range. Therefore, this alternative received a score of 6 points.

### 5.1.1.2.2 Cultural Resources

A total of 19 cultural resources have been previously recorded within a 1-mile radius of the Existing Site; however, no significant cultural resources have been identified on the Existing Site. One cultural resource comprising two buildings that are older than 45 years is present on site. The buildings were evaluated in 2021 and were found ineligible for listing in the NRHP or the CRHR or for designation as Historic Landmarks or Points of Interest; therefore, they are not significant resources (Sapphos 2021). The closest off-site resource is P-56-152841, a built environment resource located 0.18 miles to the southeast, that was formally evaluated and found ineligible for listing in the NRHP or the CRHR or for designation as Historic Landmarks or Points of Interest and is therefore not significant. No resources listed on any federal, state, or local registry are located within the Existing Site.

A total of 47 previously conducted studies have been undertaken within a 1-mile radius of the Existing Site between 1973 and 2021. Sapphos (2021) conducted a built environment study and evaluation of two buildings on the Existing Site. In addition, one of these studies, VN-02627, addressed the on-site portion of the Existing Site; however, it did not include a pedestrian survey or subsurface testing and no recommendations regarding existence or treatment of cultural resources were provided (King 1993).

The Existing Site has been subject to ground disturbance at least as early as 1923 when SoCalGas began installing a wide variety of compressor station equipment to upgrade an already existing gas plant site. Ground disturbance

associated with operation and maintenance of the SoCalGas facility occurs regularly on site. The Existing Site is located approximately 1,148 feet east of the Ventura River, 2.6 miles north of the Pacific Ocean, and 3.8 miles south of the Santa Ynez Mountains. It is not close to a natural landmark capable of depositing sediment, such as a river or the base of a foothill; therefore, it has a low potential for unknown archaeological material to be buried under natural sediment.

In summary, no known significant cultural resources exist within the Existing Site. Although the on-site component of the Existing Site has not been subjected to a pedestrian survey, the considerable and continual ground disturbance extending over 100 years and the lack of resources identified within close proximity suggests that the potential for yet unknown and intact cultural resources is low. Therefore, the Existing Site is in a location that is not sensitive for potentially significant cultural resources. Based on the above findings, the on-site component of the Existing Site received a score of 8 points.

#### 5.1.1.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the future compressor station were calculated. The total GHG emissions from on-site construction of the Existing Site Alternative are shown in Table 8.

**Table 8. On-Site GHG Construction Emissions: Existing Site - Natural Gas**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Grading – flat	105
Grading – elevated	0
Compressor station	1,560
Substation	0
<b>Total<sup>a</sup></b>	<b>1,666</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The GHG emissions for on-site construction are anticipated to be below the 5,000 MT CO<sub>2</sub>e threshold. Accordingly, this alternative received a score of 8 points.

#### 5.1.1.2.4 Natural Resources

The Existing Site is fully developed and partially occupied with buildings from the existing compressor station operations. The Existing Site is surrounded by development and is not adjacent to (within 500 feet of) natural, open space habitat, as shown in Figure NR-2A in Attachment 4. No sensitive plant or animal species have been recorded on or adjacent to the Existing Site, as shown in Figure NR-1A in Attachment 4 and none are expected due to the developed conditions. As such, the Existing Site is not expected to directly or indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands on site and received a score of 9 points.

#### 5.1.1.2.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (single-family residence adjacent to Existing Site) would be approximately 85 dBA at a distance of 90 feet, and thus between 50 and 100 feet from the construction activity; therefore, this alternative received a score of 3 points.

#### 5.1.1.2.6 Slope, Topography, and Grading

The topography and slope maps in Attachment 6 show the slope for the Existing Site and surrounding area. The site is located in an urban area, which has been previously graded and improved, resulting in a subtle slope range of between 0% and 10%, for the both the compressor site and the surrounding area. Based on conceptual engineering analysis, grading for this site would entail approximately 4,500 CY of over-excavation/recompaction under the footprint of the various on-site structures. For the purposes of this analysis, 4,500 CY would be considered “negligible” as this amount, together with the average slope of the property, would not exceed the thresholds for a grading permit (County of Ventura 2022). Additionally, a slope of less than 10% indicates a high-ranking score is appropriate, as it does not exceed the 20% slope threshold defined in the scoring criteria (see Section 3.1). The average slope range calculations for the site are provided in Table 9.

**Table 9. Average Slope Calculations**

Class Range	% Slope Range	Acres	% Slope	Avg Avg	% Slope	Min Avg	% Slope	Max Avg
<b>Existing Site – 8.42 Acres</b>								
Site Classes: 0%–10%	0%–10%	8.42	5%	0.42	0%	0	10%	0.84
<i>Site Averages</i>				5%		0%		10%

As such, within the score range of 7 to 9, where the “average slope of the property is less than 20%” and “negligible/no over-excavation/recompaction is required” (see Section 3.1), the Existing Site received a score of 8 points.

#### 5.1.1.2.7 Traffic

The Existing Site is in an industrial area, with direct access to the site from U.S. Route 101 to SR-33 to Stanley Avenue and Olive Street. Stanley Avenue and Olive Street are both classified as secondary arterials in the City of Ventura General Plan (City of Ventura 2005a), which provide access to primary arterials, other secondary arterials, and collector streets, with some access to local roads and major traffic-generating land uses. With direct access to the site provided via highways and arterials, vehicles traveling to/from the project site would not traverse through a road-constrained area. Furthermore, access to the site via a driveway at least 24 feet wide is currently available on Olive Street and would be maintained to meet SoCalGas and emergency responder access requirements.

Construction of the compressor station, including pad grading, buildings, and compressors, would take approximately 24 to 36 months. However, heavy earthwork is assumed to occur for less than 6 months because the site is already developed, and no major import/export of soils or materials via dump trucks and oversized vehicles would be needed. While industrial and/or manufacturing uses are located adjacent to the Existing Site



parcel to the north, west, and south, the predominant uses on the east side of North Olive Street include a public elementary school (E.P. Foster Elementary School) and various residential uses. Because construction would occur for less than 6 months but would occur near some residential uses and a school, this alternative received a score of 6 points.

### 5.1.1.3 Off-Site Construction Considerations

#### 5.1.1.3.1 Air Quality

The Existing Site Alternative would not require any new off-site linear construction. Therefore, this alternative received a score of 9 points.

#### 5.1.1.3.2 Cultural Resources

A total of 19 cultural resources have been previously recorded within a 1-mile radius of the off-site staging area for the Existing Site; however, no significant cultural resources have been identified within the staging area. The closest resources are two buildings on the Existing Site and P-56-000849, a prehistoric site located 0.37 miles west of the staging area. No resources listed on any federal, state, or local registry are located within the staging area.

Similar to the Existing Site, a total of 47 previously conducted studies have been undertaken within a 1-mile radius of the staging area between 1973 and 2021. Only VN-02627 addressed the off-site staging area, but it did not include a pedestrian survey or subsurface testing for resources (King 1993).

According to the historic aerial photographs and topographic maps, the staging area has been subject to ground disturbance at least as early as 1947 through at least as late as 1994, including structure and road construction, grading, installation of utilities, and pavement and demolition. The staging area is not close to a natural landmark capable of depositing sediment, such as a river or the base of a foothill; therefore, it has a low potential for unknown archaeological material to be buried under natural sediment.

In summary, although the off-site component of the Existing Site has not been subjected to a cultural resource study that specifically addressed the site, there are no known cultural resources within the off-site staging area. The property has been subject to considerable ground disturbance for at least 70 years and the staging area is not located close to a natural landmark capable of depositing sediment and burying yet unidentified cultural resources. Therefore, the potential for unknown and intact cultural resources is low and the off-site staging area is in a location that is not sensitive for potentially significant cultural resources. Based on the above findings, the staging area for the Existing Site received a score of 8 points.

#### 5.1.1.3.3 Greenhouse Gases

This alternative would not require off-site linear construction; therefore, total GHG contribution would be zero. This alternative received a score of 9 points.

#### 5.1.1.3.4 Natural Resources

No new off-site infrastructure pipelines, natural gas pipelines, or access roads are necessary for the Natural Gas Option.



The proposed off-site staging area is within a developed area, no sensitive plant or animal species have been recorded on it, and none are expected due to the developed conditions. However, the staging area is within 500 feet of riparian habitat associated with the Ventura River that has been designated as critical habitat for southwestern willow flycatcher (*Empidonax traillii extimus*) and southern steelhead (*Oncorhynchus mykiss* pop. 10). SR-33 is expected to provide a substantial barrier between the staging area and the Ventura River. As such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands in off-site areas. However, due to the proximity of the staging area to the sensitive riparian habitat, this alternative received a score of 8 points.

#### 5.1.1.3.5 Noise

The Existing Site Alternative – Natural Gas Option would not involve any planned off-site construction activities. As such, there would be no noise exposure associated with off-site construction activity for this alternative, which therefore received a score of 9 points.

#### 5.1.1.3.6 Traffic

Construction of the Existing Site Alternative would occur entirely on site, with no roadway construction required because there would be no required pipeline construction. The staging area is immediately adjacent to the east of the Existing Site and would not require any roadway access. Therefore, this alternative received a score of 9 points.

#### 5.1.1.3.7 Utilities/Service Systems

The Existing Site Alternative would not require additional utilities or service systems because the infrastructure required to operate the existing compressor station would be used to operate the proposed compressor station. Therefore, this alternative received a score of 9 points.

### 5.1.2 Hybrid Option

#### 5.1.2.1 Operational Considerations

##### 5.1.2.1.1 Aesthetics and Visual Resources

There would be no difference in potential effects to aesthetics and visual resources between the Hybrid Option and the Natural Gas Option. As with the components of the Natural Gas Option, scenic views to components would generally be available from mobile vantage points and would not block scenic views to area hillsides and would not result in substantial alteration of existing visual character. For these reasons, potential development would have a nominal effect on the visual character of the community. Based on the assessment provided above, this alternative received a score of 8 points.

##### 5.1.2.1.2 Air Quality

This option would include the installation of two new 1,900 HP natural gas compressors and two new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, the Hybrid Option is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption. The Hybrid Option has fewer

internal combustion engines and thus fewer direct emissions than the Natural Gas Option. The replacement of two of the internal combustion engines with two electric compressors of equivalent horsepower would essentially cut the expected direct emissions in half.

Operation of the Hybrid Option was calculated to result in 5.6 tons/year of NO<sub>x</sub> emissions. As such, the Natural Gas Option would fall within the  $\geq 4$  tons/year but  $< 8$  tons/year category, which would score from 4 to 6. Because 5.6 tons/year is in the middle of the NO<sub>x</sub> emissions range, the hybrid technology received a score of 5 points.

#### 5.1.2.1.3 CalEnviroScreen

OEHHA CalEnviroScreen 4.0 Maps indicate that the Existing Site is in Census Tract 6111002300, which has a population of approximately 6,534. This tract has a total pollution burden score of 87%, which means that this census tract has more pollution burden than 87% of all census tracts within California (OEHHA 2022b). Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the Existing Site received a score of 1 point because a pollution burden of 87% is within the 81% to 90% scoring range.

#### 5.1.2.1.4 Greenhouse Gases

This option would include the installation of two new 1,900 HP natural gas compressors and two new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of CO<sub>2</sub> equivalent that are directly produced from equipment and indirectly produced as a result of activities related to operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). The total direct GHG emissions would be 13,918 MT CO<sub>2</sub>e/year and indirect GHG emissions would be 5,500 MT CO<sub>2</sub>e/year from operational activities at the Existing Site.

The shift from the Natural Gas Option to a Hybrid Option reduces the localized emissions of criteria pollutants and direct GHG emissions, but the increased power demand from the electric compressors would increase indirect GHG emissions depending on how the required power is generated. The estimated emissions for the hybrid technology were calculated to be 19,418 MT CO<sub>2</sub>e/year, which would fall within the  $\geq 10,000$  MT CO<sub>2</sub>e/year but  $< 25,000$  MT CO<sub>2</sub>e/year category and would score from 4 to 6. Because 19,418 MT CO<sub>2</sub>e/year is in the middle of the emission range, the Hybrid Option received a score of 5 points.

#### 5.1.2.1.5 Land Use Designation

All the operational Existing Site Alternative – Hybrid Option components are located on parcels with City zoning that supports industrial and/or manufacturing uses (City of Ventura 2021). While industrial and/or manufacturing uses are also located adjacent to the Existing Site to the north, west, and south, the nearest sensitive receptor is located adjacent to the eastern property line of the Existing Site. In addition, the predominant uses on the east side of North Olive Street include a public elementary school (E.P. Foster Elementary School) and various residential uses. As such, within the ranking criteria range of 1 to 3, Industrial/manufacturing zone and adjacent to sensitive receptors, the Existing Site received a score of 1 point, due to its proximity to sensitive receptors adjacent to the site and east of North Olive Street.

#### 5.1.2.1.6 Noise

The nearest non-industrial land use to the Existing Site is the adjacent single-family home in the northeast corner of the property. Based on the assessment provided in Attachment 5, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-industrial land use (as defined in Section 3.2.7) of less than 55 dBA. Therefore, this alternative received a score of 4 points.

#### 5.1.2.1.7 Wildfire

Although the Hybrid Option would have increased reliance on electrical power for the compressor station, the existing electrical utility infrastructure would be sufficient to provide power to the site. In addition, the site is within an urban area, where the immediate electrical utility infrastructure does not pass through a CPUC HFTD (CPUC 2021b) or a CAL FIRE FHSZ (CAL FIRE 2022). Based on the highest ranking score range of 7 to 9 for sites not within an FHSZ, the Existing Site Alternative received a score of 8 points. The site received a slightly reduced score due to its relative proximity to high and very high FHSZs to the west and east, which could still represent a hazard, as well as its location within a known fuel bed (i.e., Ventura Fuel Bed) (VCFPD 2021).

### 5.1.2.2 On-Site Construction Considerations

#### 5.1.2.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> were calculated from on-site activities such as site preparation, grading, and construction within the footprint of the future compressor station. The total NO<sub>x</sub> and PM<sub>10</sub> emissions from on-site construction of the Existing Site Alternative – Hybrid Option are shown in Table 10.

**Table 10. On-Site Air Quality Construction Emissions: Existing Site - Hybrid**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Emissions (lb)
Grading – flat	872	233
Grading – elevated	0	0
Compressor station	10,578	2,022
Substation	1,311	74.3
<b>Total<sup>a</sup></b>	<b>12,761</b>	<b>2,329</b>

**Note:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The amount of on-site diesel equipment would be minimal, and the duration of grading activities would be limited. NO<sub>x</sub> emissions would be in the <40,000 pounds and ≥8,000 pounds range and PM<sub>10</sub> emissions would be in the <6,000 pounds and ≥2,000 pounds range. Therefore, this alternative received a score of 6 points.

#### 5.1.2.2.2 Cultural Resources

There are no differences in the Existing Site Alternative's results for on-site construction considerations as it relates to cultural resources for the Hybrid Option when compared to the Natural Gas Option. Therefore, this alternative received a score of 8 points.

#### 5.1.2.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the future compressor station were calculated. The total GHG emissions from on-site construction of the Existing Site Alternative are shown in Table 11.

**Table 11. On-Site GHG Construction Emissions: Existing Site - Hybrid**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Grading – flat	105
Grading – elevated	0
Compressor station	1,560
Substation	294
<b>Total<sup>a</sup></b>	<b>1,959</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The GHG emissions for on-site construction are anticipated to be well below the <5,000 MT CO<sub>2</sub>e threshold. Accordingly, this alternative received a score of 8 points.

#### 5.1.2.2.4 Natural Resources

The Hybrid Option would not alter any conditions related to on-site natural resources and this alternative is not expected to directly or indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands on site. Therefore, the Hybrid Option received a score of 9 points.

#### 5.1.2.2.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use for the Hybrid Option for this alternative would be the same as the Natural Gas Option; therefore, the Hybrid Option received a score of 3 points.

#### 5.1.2.2.6 Slope, Topography, and Grading

The Hybrid Option would have the same slope, topography, and grading requirements as the Natural Gas Option. As such, within the score range of 7 to 9, where the “average slope of the property is less than 20%” and “negligible/no over-excavation/recompaction is required” (see Section 3.1, Scoring Criteria), the Hybrid Option also received a score of 8 points.

#### 5.1.2.2.7 Traffic

There would be a negligible difference between construction of the Hybrid Option and the Natural Gas Option. Construction of the compressor station, including pad grading, buildings and compressors, and electrical interconnection would take approximately 30 to 36 months, with major earthwork occurring for less than 6 months and briefly passing through residential areas. Access to the site would be the same as the Natural Gas Option. Therefore, this alternative received a score of 6 points.

### 5.1.2.3 Off-Site Construction Considerations

#### 5.1.2.3.1 Air Quality

Scoring for off-site air quality impacts were based on the total amount of off-site linear construction required for the alternative. The Existing Site currently has an electrical line servicing the site and no additional off-site construction would be required. Therefore, this alternative received a score of 9 points.

#### 5.1.2.3.2 Cultural Resources

There are no differences in results for off-site construction considerations for the Hybrid Option and the Natural Gas Option. Therefore, this alternative received a score of 8 points.

#### 5.1.2.3.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions for off-site construction are anticipated to be 0 MT CO<sub>2</sub>e because no off-site construction would be required. Accordingly, this alternative received a score of 9 points.

#### 5.1.2.3.4 Natural Resources

No new off-site infrastructure is necessary for the Hybrid Option. Construction of the Hybrid Option would require the same off-site staging area to be used. Therefore, this alternative also received a score of 8 points.

#### 5.1.2.3.5 Noise

No predicted off-site construction noise exposure would occur for this alternative; therefore, the alternative received a score of 9.

#### 5.1.2.3.6 Traffic

Construction of the Hybrid Option would be the same as the Natural Gas Option because no roadway construction on existing roads would be required. Therefore, this alternative received a score of 9 points.

#### 5.1.2.3.7 Utilities/Service Systems

The Existing Site Alternative would require no off-site ground disturbance because the infrastructure required to operate the existing compressor station would be used to operate the Hybrid Option. For the Hybrid Option, the

existing electrical lines on site would be used and no additional construction would be required. Therefore, this alternative received a score of 9 points.

## 5.2 Avocado Site

The scoring rationale for each of the environmental topic areas for the Avocado Site Alternative is described below.

### 5.2.1 Natural Gas Option

#### 5.2.1.1 Operational Considerations

##### 5.2.1.1.1 Aesthetics and Visual Resources

The Avocado Site encompasses high-elevation hillside terrain and includes a ridgeline visible from SR-33. The site is also briefly visible from Ventura Avenue and other locally designated scenic corridors, including Grant Park. While terrain adjacent to the site has been developed, such development is limited to agriculture (row crops); therefore, development of a compressor station would be highly visible and would contrast with the existing character of local hillsides and ridgelines.

Because development of the Avocado Site would be visible from identified scenic corridors and a scenic highway (Ventura Avenue, Grant Park, and SR-33) and would result in the substantial alteration of a ridgeline and a prominent visual component of the local landscape (i.e., hillsides), this alternative received a score of 0 points.

##### 5.2.1.1.2 Air Quality

This option would include the installation of four new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the AQ/GHG Analysis in Attachment 1, the natural gas-powered compressor station is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption.

Operation of the natural gas compressors is calculated to result in 11 tons/year of NO<sub>x</sub> emissions. As such, the Natural Gas Option would fall within the ≥8 tons/year but <12 tons/year category, which would score from 1 to 3. Because 11 tons/year is closer to the upper end of the NO<sub>x</sub> emissions range, the Natural Gas Option received a score of 1 point.

##### 5.2.1.1.3 CalEnviroScreen

OEHA CalEnviroScreen 4.0 Maps indicate that the Avocado Site is in Census Tract 6111001206, which has a population of approximately 778. This tract has a total pollution burden score of 79%, which took into consideration the exposure indicator and environmental effect scores in Table 12 (OEHA 2022b). This score means that this census tract has more pollution burden than 79% of all census tracts within California.

**Table 12. Pollution Burden for Census Tract 6111001206**

Exposure Indicator	Score (Percentile)
Ozone	27
Fine Particulate Matter (PM <sub>2.5</sub> )	17
Diesel Particulate Matter	10
Pesticides	88
Toxic Releases	14
Traffic	75
Drinking Water Contaminants	45
Lead in Housing	58
Cleanups	72
Groundwater Threats	67
Hazardous Waste	76
Impaired Water	90
Solid Waste	80
<b>Pollution Burden</b>	<b>79</b>

Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the Avocado Site received a score of 2 points because a pollution burden of 79% is within the 71% to 80% scoring range.

#### 5.2.1.1.4 Greenhouse Gases

This option would include the installation of four new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of CO<sub>2</sub> equivalent that are directly produced from equipment and indirectly produced as a result of activities related to operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). Indirect GHG emissions for the operation of the natural-gas facilities were not quantified for the Natural Gas Option since anything attributable to indirect GHG emissions would be consistent across all the proposed alternative sites.

The estimated emissions for the all-Natural Gas Option were calculated to be 27,836 MT CO<sub>2</sub>e/year, which would fall within the ≥25,000 MT CO<sub>2</sub>e/year but <50,000 MT CO<sub>2</sub>e/year category and therefore would score from 1 to 3. Because 27,836 MT CO<sub>2</sub>e/year is closer to the lower end of the emission range, the Natural Gas Option received a score of 3 points.

#### 5.2.1.1.5 Land Use Designation

##### Regional Site Location

As shown in Figure 2, the Avocado Site is in southwest Ventura County, located slightly east of SR-33 and the City of Ventura, approximately 3,800 feet west of the Existing Site on North Olive Street. The Avocado Site lies across a



small portion of two larger APNs within Ventura County: APN 060031017 to the north (Northern Parcel) and APN 060031018 to the south (Southern Parcel). Under existing conditions, regional access to the Avocado Site is provided via U.S. Route 101 to Taylor Rancho Road; however, construction of a new compressor station at this location would require improvements to the roadway to accommodate emergency access. This roadway extent would be accessible directly from U.S. Route 101 via West Main Street. The Avocado Site would require the construction of one off-site staging area; however, because the staging area would not be required during the operational phase of the Avocado Site Alternative, this area is not discussed further in this section.

## Surrounding Land Uses

As shown on the General Plan Land Use and Zoning maps in Attachment 3, the surrounding land uses of the Avocado Site are predominantly open space and agricultural, with minimum lot sizes ranging from 1 to 160 acres. These include the County General Plan (2020) land use designation of Open Space in all directions, as well as County zoning of Agricultural Exclusive (AE-40); Coastal Agricultural (CA-40) to the south; Open Space (OS-160) to the north, west, and east; Rural Agriculture (RA-1) to the east; and a Habitat Connectivity and Wildlife Corridor (HCWC) overlay zone to the east running along the Ventura River riparian corridor west of SR-33 (County of Ventura 2021). The Avocado Site is not adjacent to any sensitive receptors. The nearest sensitive receptor is a residence located approximately 0.7 miles away.

## Project Component Land Uses

The General Plan Land Use and Zoning maps in Attachment 3 show that the approximately 15-acre Avocado Site, MLV stations, and the required access road are all located on privately held lands in Ventura County, the portions of which are currently developed with agricultural uses.

The northern half of the Avocado Site lies within APN 060031017 (Northern Parcel), a 557-acre parcel with a land use designation of Open Space (County of Ventura 2020; 2021). According to the Ventura County General Plan (2020) the “Open Space [General Plan land use] designation encompasses land, as defined under Section 65560 of the [California] Government Code, as any parcel or area of land or water which is essentially unimproved and devoted to an open-space use” (County of Ventura 2020). Zoning for the northern parcel is predominantly AE-40, which has a minimum lot area of 40 acres (County of Ventura 2008, Section 8103-0). The AE-40 zone is intended to preserve agricultural land and protect these areas from “nonrelated uses” that could have a negative impact on the County’s agriculture industry (County of Ventura 2008, Section 8104-1.2). Although APN 060031017 also includes a small segment of CA-40 zoning to the west and a HCWC overlay designation to the east, the northern half of the Avocado Site is entirely within land area zoned AE-40 (County of Ventura 2021).

The southern half of the Avocado Site lies within APN 060031018 (Southern Parcel), a 562.79-acre parcel that also has a Ventura County land use designation of Open Space (County of Ventura 2020; 2021). Zoning for the Southern Parcel includes primarily AE-40 on the northern half, and CA-40 on the southern half, both of which have a minimum lot area of 40 acres (County of Ventura 2008a, Section 8103-0; 2012, Section 8175-2[c]; 2021). The Southern Parcel also includes an HCWC overlay zone to the east running along the Ventura River riparian corridor; however, the southern half of the plot identified for the Avocado Site is entirely within land area zoned AE-40 (County of Ventura 2021). Required improvements to 2.37 miles of Taylor Ranch Road to provide construction access to the Avocado Site would take place within land area zoned CA-40-sdf (slope-density formula), with a slope ranging from 0% to 35% (County of Ventura 2012, Section 8175-2[c]).



Notwithstanding the CPUC's preemptory authority discussed in Section 3.2.5, Land Use, the selection of the Avocado Site would require changes to existing land use and zoning for the on-site location to facilitate the types of operational uses required by the project. Selection of the Avocado Site would also likely require a lot split, because the existing on-site parcels are each several hundred acres in size. In addition, the underlying land use of the Avocado Site is included in the County of Ventura Measure C, Save Open-Space and Agricultural Resources Initiative—2050 (SOAR), which states that “lands designated as Agricultural, Rural, or Open Space on the County of Ventura's General Plan will remain so designated until December 31, 2050 unless the land is redesignated ... by vote of the people or redesignated by the Board of Supervisors for the County of Ventura” (County of Ventura 2016). Further, the Board of Supervisors may only elect to redesignate said land uses to more “intensive” uses if “certain findings can be made, including (among other things) that the land is proven to be unsuitable for any form of utilitarian use, and redesignation is necessary to avoid an unconstitutional taking of property without just compensation” (County of Ventura 2016). While this does not explicitly impact the ranking as defined by the scoring criteria, the SOAR designation has been incorporated into the land use analysis and scoring for both the Natural Gas and Hybrid Options. The SOAR initiative was initially adopted by vote in 1998 and set to expire in December 2020; however, the initiative was extended by vote to 2050 after readoption in 2016.

## Oil Wells

While the Avocado Site lies partially within the active Ventura Oil Field, there are no active wells present on site (DOC 2019, 2022).

## Evaluation and Score

All Avocado Site Alternative – Natural Gas Option operational components are located within and/or adjacent to parcels with County zoning that does not support industrial and/or manufacturing uses. Additionally, the primary compressor station site is within an area governed by the SOAR initiative. No portion of the site is adjacent to any sensitive receptors. The nearest industrial land use to the Avocado Site is approximately 0.75 miles to the northeast (APN 068001001), while the nearest sensitive land use is approximately 0.76 miles to the east (APN 0680163255). Based on the above analysis and using the scoring criteria for a site which is within a Non-Industrial/manufacturing zone not adjacent to sensitive receptors (Section 3.1, Scoring Criteria), the Avocado Site Alternative – Natural Gas Option received a score of 6 points. Within the 4 to 6 point range, the score was influenced by the following factors: (1) while the primary compressor station for the Avocado Site would be located partially within the active Ventura Oil Field, there are no active wells on site, which suggests the potential for oil/gas exploration but does not create complications related to active well operations, and (2) while the Avocado Site is zoned for agricultural use and is part of active agricultural parcels, aerial views of the site show no current crop production on the main compressor station site.

### 5.2.1.1.6 Noise

The nearest non-industrial land use to the Avocado Site is approximately 0.7 miles to the east. Based on the assessment provided in Attachment 5, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-industrial land use (as defined in Section 3.2.7) of less than 35 dBA. Therefore, this alternative received a score of 9 points.

#### 5.2.1.1.7 Wildfire

All operational components of the Avocado Site are located within an SRA FHSZ within the Casitas Fuel Bed (VCFPD 2021; CAL FIRE 2022). As shown on the FHSZ Maps in Attachment 7, approximately one-third of the compressor station for the Avocado Site would be within a very high FHSZ, while the rest of the site, as well as the access road and all ancillary equipment, are within a high FHSZ. Therefore, based on the ranking score range of 1 to 3 for sites within high FHSZs, the Avocado Site Alternative – Natural Gas Option received a score of 2 points due to (1) a portion of the site being located in a very high FHSZ and (2) the presence of vegetative fuel sources in the surrounding areas, particularly the unimproved areas to the north and east (Radeloff 2010; VCFPD 2021).

### 5.2.1.2 On-Site Construction Considerations

#### 5.2.1.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> were calculated from on-site activities such as site preparation, grading, and construction within the footprint of the future compressor station. For the purposes of the earthwork required to inform the air quality analysis, it was estimated that the site consisted of mostly hillside/elevated land and some flat areas that required grading. The total NO<sub>x</sub> and PM<sub>10</sub> emissions from on-site construction of the Avocado Site Alternative are shown in Table 13.

**Table 13. On-Site Construction Emissions: Avocado Site - Natural Gas**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Emissions (lb)
Grading – flat	1,150	307
Grading – elevated	74,886	9,747
Compressor station	10,578	2,022
Substation	0	0
<b>Total<sup>a</sup></b>	<b>86,614</b>	<b>12,076</b>

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The Avocado Site is very hilly and would require a large amount of grading to be suitable for use. The Avocado Site currently has no industrial development. Emissions are greater than 80,000 pounds for NO<sub>x</sub> and 10,000 pounds for PM<sub>10</sub>; therefore, this alternative received a score of 0 points.

#### 5.2.1.2.2 Cultural Resources

A total of 74 cultural resources have been previously recorded within a 1-mile radius of the Avocado Site; however, there are no resources within a 0.25-mile radius of the site and no cultural resources have been identified within the Avocado Site. Additionally, no resources listed on any federal, state, or local registry are located on the Avocado Site.

A total of 120 previously conducted studies have been undertaken within a 1-mile radius of the Avocado Site between 1973 and 2021. Investigations VN-519 (Singer 519) and VN-688 (Singer and Atwood 1987) included conducting pedestrian surveys in portions of the Avocado Site and provide recommendations that the general area

surrounding the Ventura River be avoided and left unaltered until further studies can be conducted, including archaeological and ethnographic analyses to determine the exact nature and scope of the potential resources. The authors also express that the general area should be considered culturally and/or scientifically significant.

According to the historic aerial photographs and topographic maps, the Avocado Site has remained undeveloped and covered in vegetation since at least 1904. The Avocado Site is located approximately 1,970 feet east of the Ventura River, 1.5 miles north of the Pacific Ocean at the southern base of the Santa Ynez Mountains. The Avocado Site is close to the base of the Santa Ynez Mountains, which are capable of having deposited alluvial sediments, likely prior to human habitation of the area, and also within a foothill area capable of having deposited colluvial sediments during human habitation of the area. Therefore, the Avocado Site has potential for unknown archaeological material to be buried under natural alluvial sediment.

In summary, the Avocado Site and the surrounding area have been subjected to multiple cultural resource studies, yet no cultural resources have been identified on site or within a 0.25-mile radius. Considering the lack of previous disturbance, potential alluvial and colluvial deposits capable of burying unidentified cultural resources, and the recommendations of two previous studies, the potential for yet unknown and intact cultural resources to exist is moderate. Therefore, the Avocado Site is in a location that is moderately sensitive for potentially significant cultural resources. Based on the above findings, the on-site components of the Avocado Site received a score of 6 points.

#### 5.2.1.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. Acreages for grading were based on the “new disturbance” areas from the construction assumptions and the total GHG emissions from on-site construction of the Avocado Site Alternative are shown in Table 14.

**Table 14. On-Site GHG Construction Emissions: Avocado Site - Natural Gas**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Grading – flat	139
Grading – elevated	11,870
Compressor station	1,560
Substation	0
<b>Total<sup>a</sup></b>	<b>13,569</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The GHG emissions for on-site construction are anticipated to fall within the ≥10,000 MT CO<sub>2</sub>e to <20,000 MT CO<sub>2</sub>e range. This would be due to an increase in the amount of off-road equipment usage that would be needed to properly grade the site for use. Accordingly, this alternative received a score of 2 points.

#### 5.2.1.2.4 Natural Resources

The Avocado Site is within undeveloped open space that was previously mapped as *Salvia mellifera*–*Salvia leucophylla* association<sup>8</sup> (David Magney Environmental Consulting 2008), as shown in Figure NR-2B in Attachment 4. This association is not a sensitive habitat (CDFW 2021). Based on recent aerial imagery, portions of the site have been disturbed but shrubs are still present, and there is shrub-dominated habitat to the north and west of the site and orchards to the south and east. No wetlands or riparian habitat have been previously recorded or are visible on aerial imagery. No sensitive plant or animal species have been recorded on or adjacent to the site, as shown in Figure NR-2B in Attachment 4. The 27 sensitive plant and animal species and habitats with previously recorded occurrences within 3 miles have a low potential to occur or are not expected to occur on the site. As such, the Avocado Site Alternative is not expected to directly or indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands on site, and it received a score of 8 points due to the presence of natural vegetation within the site's limits.

#### 5.2.1.2.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (as defined in Section 3.2.7), which is more than 1,000 feet from the construction activity, would be less than 64 dBA for this alternative; therefore, the site received a score of 9.

#### 5.2.1.2.6 Slope, Topography, and Grading

The topography and slope maps in Attachment 6 show the slope for the Avocado Site and surrounding area. The site itself is currently being used for agriculture. The average slope range calculations for the site are provided in Table 15.

**Table 15. Average Slope Calculations**

Class Range	% Slope Range	Acres	% Slope	Avg Avg	% Slope	Min Avg	% Slope	Max Avg
<b>Avocado Site – 15.06 Acres</b>								
Site Classes: 0%–70%	0%–10%	0.08	5%	0	0%	0	10%	0.01
	>10%–20%	0.54	15%	0.08	10%	0.05	20%	0.11
	>20%–30%	1.7	25%	0.43	20%	0.34	30%	0.51
	>30%–40%	6.52	35%	2.28	30%	1.96	40%	2.61
	>40%–50%	3.75	45%	1.69	40%	1.5	50%	1.88
	>50%–60%	2.13	55%	1.17	50%	1.07	60%	1.28
	>60%–70%	0.34	65%	0.22	60%	0.2	70%	0.24
Site Averages				39%		34%		44%

As shown above, the on-site slope ranges from a low of 0% to a high of over 60%, with a site average of approximately 39%. Based on conceptual engineering analysis, grading for this site would entail approximately 1.3 million CY of over-excavation/recompaction, which would be balanced on site. Relative to the size and type of

<sup>8</sup> An association is a vegetation classification unit defined by a diagnostic species, a characteristic range of species composition, general form or appearance, and distinctive habitat conditions (Jennings et al. 2006).

project, the required over-excavation/recompaction of more than 1.3 million CY would be considered substantial. Additionally, an average slope of almost 40% exceeds several of the slope thresholds defined by the scoring criteria (see Section 3.1). Therefore, because the average slope of the property is greater than 40% and/or substantial over-excavation/recompaction is required, the Avocado Site Alternative received a score of 0 points.

#### 5.2.1.2.7 Traffic

The Avocado Site is approximately 3,800 feet west of the existing Ventura Compressor Station. The site has direct access from U.S. Route 101 to Taylor Ranch Road. The Avocado Site, whether the Natural Gas or the Hybrid Option, would require a new access road at least 24 feet in width and with a slope not exceeding 20%. Taylor Ranch Road is a narrow, unpaved road currently used for crop access that could be widened and improved with asphalt or other paving to meet the site's access requirements.

The surrounding area is primarily developed with agricultural uses and low-density residential development (the nearest residence is approximately 0.33 miles away) and the site is used for agriculture. Construction of the compressor station, including pad grading, access road, on-site utility installations, buildings, and compressors would require substantial amounts of grading and would take approximately 60 to 70 months, with heavy earthwork estimated to occur for more than 1 year.

While construction of the Avocado Site would continue for more than 1 year, heavy truck traffic would not occur on a constrained roadway, because direct access to Taylor Ranch Road (private road) is provided via a major highway (U.S. Route 101). However, because construction would impact Taylor Ranch Road, which might occasionally be used for access to the avocado groves, this alternative received a score of 7 points.

### 5.2.1.3 Off-Site Construction Considerations

#### 5.2.1.3.1 Air Quality

Scoring for air quality impacts from off-site construction was based on the total distance of linear construction of the proposed pipeline system, power line, and access road construction. The Natural Gas Option at the Avocado Site would require construction of approximately 982 linear feet of a pipeline system to connect to the existing main pipelines. It would also require grading, widening, and paving of approximately 12,315 linear feet of the existing road to accommodate plant traffic to the new site. The linear construction totals approximately 13,297 feet, which is in the moderate range. Therefore, this alternative received a score of 2 points.

#### 5.2.1.3.2 Cultural Resources

A total of 74 cultural resources have been previously recorded within a 1-mile radius of the Avocado Site off-site components; however, no cultural resources have been identified within the off-site components of the Avocado Site. The closest resources to the off-site components of the Avocado Site are P-56-000481 and P-56-000849; a third prehistoric site, P-56-120026, is located 0.2 miles west of the Access Road. A site record summary of the cultural resources P-56-000481 and P-56-000849 is provided below.

- P-56-000481 is a prehistoric archaeological milling stone site located on the west terrace bank of the Ventura River within very close proximity of the off-site staging area and access road. Surface collection of artifacts included manos, metates, hammerstones, and flakes consisting of quartzite, jasper, and

chalcedony. The site was recorded in 1976 by M. Capelli and R. Browne, who noted the site appeared to date to the Oak Grove Period. The site record does not mention the occurrence of subsurface testing, so it is assumed the site boundary is based on surface observation and that the subsurface extent has yet to be determined.

- P-56-000849 is a prehistoric archaeological site comprising ground stone artifacts including hundreds of biface manos, metate fragments, and other tools. The site is located on top of an ancient terrace west of the Ventura River about 2.5 kilometers (1.6 miles) due north of the river mouth, within very close proximity of the off-site access road and according to the site record, near a buried gas line and cattle trough. The site was recorded in 1987 by Clay A Singer, who noted that subsurface testing had not occurred at the site but depth of archaeological deposits was suspected to be more than 50 centimeters (20 inches). The site record acknowledges that the site has been impacted by mechanical clearing operations and cattle grazing but no signs of large-scale disturbance or that of significant depth has occurred.

No resources listed on any federal, state, or local registry are located within the off-site components of the Avocado Site.

A total of 120 previously conducted studies have been undertaken within a 1-mile radius of the off-site components of the Avocado Site between 1973 and 2021. Investigations VN-519 (Singer 519) and VN-688 (Singer and Atwood 1987) conducted pedestrian surveys in portions of the off-site components and provide recommendations that the general area surrounding the Ventura River be avoided and left unaltered until further studies can be conducted, including archaeological and ethnographic analyses to determine the exact nature and scope of the potential resources. The authors also expressed that the general area should be considered culturally and/or scientifically significant.

According to the historic aerial photographs and topographic maps, the off-site components have been subject to ground disturbance. The off-site staging area has been subject to agricultural ground disturbance since at least 1967. The off-site access road component has been previously disturbed by road grading and construction at least as early as 1904. Some portions of the off-site pipeline component do not appear to have been previously disturbed, where other portions appear to be disturbed by agricultural use. With the exception of small portions, the off-site components are not within close proximity to a natural landmark capable of depositing sediment and therefore have a low potential for unknown archaeological material to be buried under natural sediment.

In summary, no known cultural resources are present within the off-site components of the Avocado Site. A majority of the off-site components of the Avocado Site have been subject to considerable ground disturbance for over 100 years, including road grading construction and agricultural use, with a small portion of the pipeline component appearing to have remained undisturbed. Generally, the off-site components of the Avocado Site are not located close to a natural landmark capable of depositing sediment and burying yet unidentified cultural resources, and no cultural resources have been identified within the off-site components of the Avocado Site.

However, three cultural resources have been identified within a 0.25-mile radius and two of them are very close to portions of the off-site component. These resources have not been subjected to subsurface testing but based on the site description, both cultural resources appear to be significant and may include buried deposits that potentially extend into the off-site components. If the adjacent resources do extend into the access road and staging area, the Avocado Site Alternative would have a potential to impact a significant resource; however, the adjacent resources' current site boundaries do not extend into the off-site components. Therefore, the off-site components



of the Avocado Site are in a location that is moderately sensitive for potentially significant cultural resources. Based on the above findings, the off-site components of the Avocado Site received a score of 6 points.

#### 5.2.1.3.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in CO<sub>2</sub>e) resulting from off-site activities such as construction of power lines, pipelines, and roads outside the footprint of the compressor station were calculated. The total GHG emissions from off-site construction of the Avocado Site Alternative are shown in Table 16.

**Table 16. Off-Site GHG Construction Emissions: Avocado Site - Natural Gas**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Power line	0
Pipeline – street	0
Pipeline – open space	15
Road construction	433
<b>Total<sup>a</sup></b>	<b>448</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

GHG emissions from off-site construction would be close to the <500 MT CO<sub>2</sub>e threshold. Therefore, this alternative received a score of 7 points.

#### 5.2.1.3.4 Natural Resources

This alternative would require improvements to the access road and two new pipeline corridors. Grading of 12,600 linear feet of Taylor Ranch Road would be needed and is primarily within orchards, but there are portions that are in areas previously mapped as *Salvia mellifera*–*Salvia leucophylla* association (David Magney Environmental Consulting 2008), as shown in Figure NR-2B in Attachment 4. The proposed road improvements cross five linear wetland features (mapped as riverine) that could be impacted by road improvement. The proposed pipeline corridors and tie-ins are primarily within the adjacent orchards and would not cross any riverine features. The proposed staging area consists of developed lands and areas of potential coastal sage scrub based upon available imagery. No sensitive plant and animal species have been recorded on or adjacent to (within 500 feet of) the off-site components, as shown in Figure NR-1B in Attachment 4. The 27 sensitive plant and animal species and habitats with previously recorded occurrences within 3 miles have a low potential to occur or are not expected to occur in the off-site areas. As such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species and habitats in off-site areas, but there may be impacts to wetlands off site due to access road improvements; therefore, the alternative received a score of 0 points.

#### 5.2.1.3.5 Noise

Predicted off-site construction noise exposure at the nearest non-industrial land use (as defined in Section 3.2.7), which is more than 1,000 feet from the construction activity, would be less than 64 dBA for this alternative; therefore, the alternative received a score of 9 points.

#### 5.2.1.3.6 Traffic

The Avocado Site Alternative would require grading, trenching, and natural gas pipeline installation in the agricultural fields adjacent to the site, but not beneath existing roadways. Additionally, other utility connections for electrical, potable water, sewer, and telecommunications would be conducted via trenching beneath Taylor Ranch Road. This alternative would require resurfacing and widening Taylor Ranch Road to 24 feet to meet SoCalGas and emergency responder access requirements. There would be no construction on public roadways, because Taylor Ranch Road is a private unpaved road used to provide access to the agricultural fields. While construction would impact Taylor Ranch Road, there would be no construction on public roadways that could cause new congestion or exacerbate existing traffic conditions. Therefore, this alternative received a score of 7 points.

#### 5.2.1.3.7 Utilities/Service Systems

The Avocado Site Alternative – Natural Gas Option would require approximately 41,528 square feet of off-site ground disturbance for pipelines and utilities and approximately 7,500 square feet for the MLV connections, for a total of approximately 49,028 square feet of off-site ground disturbance. All off-site ground disturbance is summarized in Table 17 and would be conducted within and surrounded by non-urbanized and agricultural land; therefore, it would not impact urban roadways or otherwise impede commuter traffic.

**Table 17. Off-Site Ground Disturbance: Avocado Site – Natural Gas**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
Pipeline Corridor 1 (to the east)	3,019
Pipeline Corridor 2 (to the south)	1,563
Utility Lines	36,945
<i>Subtotal Off-Site Ground Disturbance – Pipelines and Utilities</i>	<i>41,528</i>
<b>Mainline Valve Connections</b>	
Mainline Valve Connection 1	3,750
Mainline Valve Connection 2	3,750
<i>Subtotal Off-Site Ground Disturbance – Mainline Valve Connections</i>	<i>7,500</i>
<b>Depressurization Line</b>	
Depressurization Line	0
<i>Subtotal Off-Site Ground Disturbance – Depressurization Line</i>	<i>0</i>
<b>Electrical Pole Footings</b>	
Electrical Pole Footings	0
<i>Subtotal Off-Site Ground Disturbance – Electrical Pole Footings</i>	<i>0</i>
<b>Total Off-Site Ground Disturbance for All Construction Elements<sup>a</sup></b>	<b>49,028</b>

**Note:**

<sup>a</sup> Totals may not sum precisely due to rounding.



This alternative received a score of 4 points because of the minimal amount of off-site ground disturbance required.

## 5.2.2 Hybrid Option

### 5.2.2.1 Operational Considerations

#### 5.2.2.1.1 Aesthetics and Visual Resources

Due to the need for approximately 30 new 50-foot-high electrical poles to accommodate the anticipated electrical demand and because a number of the poles would be visible from SR-33 (and could cross the scenic highway), the Hybrid Option would potentially result in greater visual impacts comparative to the Natural Gas Option. However, because both options would require over 650,000 CY of new disturbance on hillside and ridgeline terrain and would substantially alter the existing terrain, the Hybrid Option received a score of 0 points.

#### 5.2.2.1.2 Air Quality

This option would include the installation of two new 1,900 HP natural gas compressors and two new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, the Hybrid Option is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption. The Hybrid Option has fewer internal combustion engines and thus fewer direct emissions than the Natural Gas Option. The replacement of two of the internal combustion engines with two electric compressors of equivalent horsepower would essentially cut the expected direct emissions in half.

Operation of the Hybrid Option was calculated to result in 5.6 tons/year of NO<sub>x</sub> emissions. As such, it would fall within the  $\geq 4$  tons/year but  $< 8$  tons/year category, which is scored from 4 to 6. Because 5.6 tons/year is in the middle of the NO<sub>x</sub> emissions range, the Hybrid Option received a score of 5 points.

#### 5.2.2.1.3 CalEnviroScreen

OEHHA CalEnviroScreen 4.0 Maps indicate that the Avocado Site is in Census Tract 6111001206, which has a population of approximately 778. This tract has a total pollution burden score of 79%, which means that this census tract has more pollution burden than 79% of all census tracts within California (OEHHA 2022b). Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the Avocado Site received a score of 2 points because a pollution burden of 79% is within the 71% to 80% scoring range.

#### 5.2.2.1.4 Greenhouse Gases

This option would include the installation of two new 1,900 HP natural gas compressors and two new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of CO<sub>2</sub> equivalent that are directly produced from equipment and indirectly produced as a result of activities related to operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). The total direct GHG emissions would be 13,918 MT CO<sub>2</sub>e/year and indirect GHG emissions would be 5,500 MT CO<sub>2</sub>e/year from operational activities at the Avocado Site.

The shift from the Natural Gas Option to a Hybrid Option reduces the localized emissions of criteria pollutants and direct GHG emissions, but the increased power demand from the electric compressors would increase indirect GHG emissions depending on how the power that is used is generated. The estimated emissions for the hybrid technology were calculated to be 19,418 MT CO<sub>2</sub>e/year, which would fall within the  $\geq 10,000$  MT CO<sub>2</sub>e/year but  $< 25,000$  MT CO<sub>2</sub>e/year category and therefore would score from 4 to 6. Because 19,418 MT CO<sub>2</sub>e/year is in the middle of the emission range, the Hybrid Option received a score of 5 points.

#### 5.2.2.1.5 Land Use Designation

In addition to the components previously discussed in Section 5.2.1.1.5, the hybrid alternative would require 30 new electrical poles and approximately 3,000 linear feet of overhead electrical line to accommodate the anticipated electrical demand. The electrical interconnect would have an underlying land use designation of Open Space (County of Ventura 2020) and zoning of AE-40 (County of Ventura 2008) and CA-40-sdf (County of Ventura 2012). Based on the above analysis and using the scoring criteria for a site that is within a Non-industrial/manufacturing zone and not adjacent to sensitive receptors, the Avocado Site Alternative – Hybrid Option received a score of 6 points. Within the 4 to 6 point range, the score was influenced by the following factors: (1) while the primary compressor station site is located partially within the active Ventura Oil Field, there are no active wells on site, which suggests the potential for oil/gas exploration but does not create complications related to active well operations, and (2) while the Avocado Site is zoned for agricultural use and is part of active agricultural parcels, aerial views of the site show no current crop production on the main compressor station site.

#### 5.2.2.1.6 Noise

The nearest non-industrial land use to the Avocado Site is approximately 0.7 miles to the east. Based on the assessment provided in Attachment 5, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-industrial land use (as defined in Section 3.2.7) of less than 35 dBA. Therefore, this alternative received a score of 9 points.

#### 5.2.2.1.7 Wildfire

Due to the exposed nature of the electrical interconnect—30 poles and 3,000 linear feet of overhead electrical lines along Taylor Ranch Road—located in a Tier 3 HFTD, the electrical interconnect would represent an increased fire risk to the surrounding community due to potentially downed power lines (see maps in Attachment 7). Therefore, based on the ranking criteria for sites within high FHSZs, the Avocado Site Alternative – Hybrid Option received a score of 1 point, because the entirety of the electrical interconnect would travel through an HFTD.

### 5.2.2.2 On-Site Construction Considerations

#### 5.2.2.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> were calculated from on-site activities such as site preparation, grading, and construction within the footprint of the future compressor station. The total NO<sub>x</sub> and PM<sub>10</sub> emissions from on-site construction of the Avocado Site Alternative are shown in Table 18.

**Table 18. On-Site Construction Emissions: Avocado Site - Hybrid**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Emissions (lb)
Grading – flat	1,150	307
Grading – elevated	74,886	9,747
Compressor station	10,578	2,022
Substation	1,311	74
<b>Total<sup>a</sup></b>	<b>87,925</b>	<b>12,150</b>

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The Avocado Site is very hilly and would require grading and excavation to be suitable for use. The Avocado Site currently has no industrial development. The Hybrid Option would also require additional construction activity for a substation. The total NO<sub>x</sub> emissions are greater than 80,000 pounds and PM<sub>10</sub> emissions are greater than 10,000 pounds; therefore, this alternative received a score of 0 points.

#### 5.2.2.2.2 Cultural Resources

There are no differences in the results for on-site construction considerations for the Hybrid Option and the Natural Gas Option. Therefore, this alternative received a score of 6 points.

#### 5.2.2.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2e</sub>) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the future compressor station were calculated. The total GHG emissions from on-site construction of the Avocado Site Alternative are shown in Table 19.

**Table 19. On-Site GHG Construction Emissions: Avocado Site - Hybrid**

Activity	Total CO <sub>2e</sub> Emissions (MT)
Grading – flat	139
Grading – elevated	11,870
Compressor station	1,560
Substation	294
<b>Total<sup>a</sup></b>	<b>13,862</b>

**Notes:** GHG = greenhouse gas; CO<sub>2e</sub> = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The Hybrid Option would require the construction of a substation on the site, thus increasing the amount of on-site GHG emissions when compared to the Natural Gas Option. The GHG emissions for on-site construction are anticipated to fall within the >10,000 MT CO<sub>2e</sub> to <20,000 MT CO<sub>2e</sub> range. This would be due to an increase in the amount of off-road equipment usage that would be needed. Accordingly, this alternative received a score of 2 points.

#### 5.2.2.2.4 Natural Resources

The Hybrid Option would not alter any conditions related to on-site natural resources and as such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands on site. Because of this lack of impact and considering the presence of natural vegetation within the site's limits, the alternative received a score of 8 points.

#### 5.2.2.2.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (as defined in Section 3.2.7), which would be more than 1,000 feet from the construction activity, would be less than 64 dBA for this alternative; therefore, this alternative received a score of 9 points.

#### 5.2.2.2.6 Slope, Topography, and Grading

The Hybrid Option would include an electrical interconnect, requiring approximately 60 CY of additional grading. This additional grading does not impact the ranking because the over-excavation required for the electrical alignment is a relatively negligible amount, compared to the overall amount. In addition, per the scoring criteria provided in Section 3.1, the slope, topography, and grading scenarios for the site, regardless of the electrical interconnect requirement, already qualify the site for a score of 0 points.

#### 5.2.2.2.7 Traffic

There would be a negligible difference between construction of the Hybrid Option and the Natural Gas Option related heavy truck traffic for on-site construction activity. Therefore, this alternative received a score of 7 points.

### 5.2.2.3 Off-Site Construction Considerations

#### 5.2.2.3.1 Air Quality

Scoring for air quality impacts from off-site construction was based on the total distance of linear construction of the proposed pipeline system, power line, and access road construction. The Hybrid Option at the Avocado Site would require construction of approximately 982 linear feet of a pipeline system to connect to the existing main pipelines. It would also require grading, widening, and paving of approximately 12,315 linear feet of the existing road to accommodate compressor plant traffic to the new site. In addition, approximately 4,359 linear feet of electrical interconnect would be required to accommodate the increased demand from the electric compressors. The linear construction would total approximately 17,656 feet, which is in the substantial range. Therefore, this alternative received a score of 0 points.

#### 5.2.2.3.2 Cultural Resources

There are no differences in the results for off-site construction considerations for the Hybrid Option and the Natural Gas Option; therefore, this alternative received a score of 6 points.

#### 5.2.2.3.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from off-site activities such as construction of power lines, pipelines, and roads outside the footprint of the future compressor station were calculated. The total GHG emissions from off-site construction of the Avocado Site Alternative are shown in Table 20.

**Table 20. Off-Site GHG Construction Emissions: Avocado Site - Hybrid**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Power line	137
Pipeline – street	0
Pipeline – open space	15
Road construction	433
<b>Total<sup>a</sup></b>	<b>585</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

GHG emissions from off-site construction would be just above the <500 MT CO<sub>2</sub>e threshold. Therefore, this alternative received a score of 6 points.

#### 5.2.2.3.4 Natural Resources

The Hybrid Option would require new off-site electric poles to connect the station to the existing SCE transmission line. The alternative requires 3,000 linear feet of overhead electrical line, with 30 poles, that is primarily through orchards but is also in areas previously mapped as *Salvia mellifera*–*Salvia leucophylla* association (David Magney Environmental Consulting 2008), as shown in Figure NR-2B in Attachment 4. The electrical line alignment also intersects four ephemeral wetland features (riverine); however, it is assumed that the poles can be sited outside the limits of these features. The proposed staging area consists of developed lands and areas of potential coastal sage scrub based upon available imagery. The same off-site staging area would be required for the Hybrid Option. No sensitive plant and animal species have been recorded on or adjacent to (within 500 feet of) the off-site components, as shown in Figure NR-1B in Attachment 4. As such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species and habitats in off-site areas, but there may be impacts to wetlands off site due to access road improvements. Therefore, this option also received a score of 0 points.

#### 5.2.2.3.5 Noise

Predicted off-site construction activity noise exposure level at the nearest non-industrial land use (as defined in Section 3.2.7), which would be more than 1,000 feet from the construction activity, would be less than 64 dBA for this alternative; therefore, this alternative received a score of 9 points.

#### 5.2.2.3.6 Traffic

Construction of the Hybrid Option would be the same as the Natural Gas Option, with the exception of the extension of electrical utilities. However, no roadway construction on existing roads for electrical utilities would be required. Therefore, this alternative received a score of 7 points.

#### 5.2.2.3.7 Utilities/Service Systems

The Avocado Site would require approximately 41,528 square feet of off-site ground disturbance for pipelines and utilities, approximately 7,500 square feet for the MLV connections, and an additional 420 square feet of off-site ground disturbance required for electrical poles, for a total of 49,448 square feet of off-site ground disturbance. All off-site ground disturbance is summarized in Table 21 and would be conducted within and surrounded by non-urbanized and agricultural land; therefore, it would not impact urban roadways or otherwise impede commuter traffic.

**Table 21. Off-Site Ground Disturbance: Avocado Site - Hybrid**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
Pipeline Corridor 1 (to the east)	3,019
Pipeline Corridor 2 (to the south)	1,563
Utility Lines	36,945
<i>Subtotal Off-Site Ground Disturbance – Pipelines and Utilities</i>	<i>41,528</i>
<b>Mainline Valve Connections</b>	
Mainline Valve Connection 1	3,750
Mainline Valve Connection 2	3,750
<i>Subtotal Off-Site Ground Disturbance – Mainline Valve Connections</i>	<i>7,500</i>
<b>Depressurization Line</b>	
Depressurization Line	0
<i>Subtotal Off-Site Ground Disturbance – Depressurization Line</i>	<i>0</i>
<b>Electrical Pole Footings</b>	
Electrical Pole Footings	420
<i>Subtotal Off-Site Ground Disturbance – Electrical Pole Footings</i>	<i>420</i>
<b>Total Off-Site Ground Disturbance for All Construction Elements<sup>a</sup></b>	<b>49,448</b>

**Note:**

<sup>a</sup> Totals may not sum precisely due to rounding.

The additional disturbance for the electrical poles would not substantively alter the amount of off-site ground disturbance required; therefore, this alternative received a score of 4 points.

## 5.3 Ventura Steel Site

The scoring rationale for each of the environmental topic areas for the Ventura Steel Site is described in this section.

### 5.3.1 Natural Gas Option

#### 5.3.1.1 Operational Considerations

##### 5.3.1.1.1 Aesthetics and Visual Resources

The Ventura Steel site is located within the local valley landscape to the east of SR-33 (and east of Ventura Avenue). While the site is visible from SR-33, the valley landscape has been visibly altered by previous development including oil wells, storage tanks, storage yards, and wooden and metallic siding structures supporting industrial and commercial businesses. Development of the site with the Natural Gas Option would not result in damage to a scenic resource (the site encompasses relatively flat and previously developed terrain) and would not obstruct or otherwise degrade an existing view to a valued scenic resource such as hillsides. Construction of off-site pipelines is likely to result in temporary contrasting lines and scars on hillsides that would be visible from SR-33; however, due to the temporal nature of the disturbance (which would revegetate over time) and the degraded character of the visible oil/gas uses in the vicinity, pipeline installation is not anticipated to create substantial effects to existing visual character. Development of this site would require a permanent access road (approximately 3,600 feet long by 12feet wide) that would result in linear visual disturbance on hillside visible from SR-33. However, as stated above, the presence of oil and gas infrastructure in the nearby SR-33 viewshed would reduce the severity of visual character effects. It should be noted that while adjacent to Ventura Boulevard, the site and segment of the roadway are north of the scenic corridor boundaries as identified by the City of Ventura (City of Ventura 2005b). Lastly, the Ventura Steel Site is not anticipated to be visible from Grant Park due to the presence of an intervening ridgeline that effectively blocks the site from view of Grant Park visitors.

Development of the Ventura Steel Site with the Natural Gas Option would minimally alter the existing visual character and the site is minimally to moderately visible from an identified scenic resource (i.e., SR-33, an eligible state scenic highway). However, contrasting lines and hillside scars created by the construction of off-site pipelines and a permanent access road lowers the overall score associated with development of the Ventura Steel Site, which received a score of 6 points.

##### 5.3.1.1.2 Air Quality

This option would include the installation of four new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the AQ/GHG Analysis in Attachment 1, the natural gas-powered compressor station is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption.

Operation of the natural-gas only compressors is calculated to result in 11 tons/year of NO<sub>x</sub> emissions. As such, the Natural Gas Option would fall within the  $\geq 8$  tons/year but  $< 12$  tons/year category, which is scored from 1 to 3. Because 11 tons/year is closer to the upper end of the NO<sub>x</sub> emissions range, the Natural Gas Option received a score of 1 point.

#### 5.3.1.1.3 CalEnviroScreen

As shown on the OEHHA CalEnviroScreen 4.0 Maps, the Ventura Steel Site is in Census Tract 6111001204, which has a population of approximately 3,036. This tract has a total pollution burden score of 69%, which took into consideration the exposure indicator and environmental effect scores in Table 22 (OEHHA 2022b). This score means that this census tract has more pollution burden than 69% of all census tracts within California.

**Table 22. Pollution Burden for Census Tract 6111001204**

Exposure Indicator	Score (Percentile)
Ozone	47
Fine Particulate Matter (PM <sub>2.5</sub> )	23
Diesel Particulate Matter	2
Pesticides	61
Toxic Releases	18
Traffic	23
Drinking Water Contaminants	65
Lead in Housing	81
Cleanups	64
Groundwater Threats	67
Hazardous Waste	77
Impaired Water	77
Solid Waste	59
<b>Pollution Burden</b>	<b>69</b>

Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the Ventura Steel Site received a score of 3 points because a pollution burden of 69% is within the 61% to 70% scoring range.

#### 5.3.1.1.4 Greenhouse Gases

This option would include the installation of four new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of CO<sub>2</sub> equivalent that are directly produced from equipment and indirectly produced as a result of activities related to operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). Indirect GHG emissions for the operation of the natural-gas facilities were not quantified for the Natural Gas Option since anything attributable to indirect GHG emissions would be consistent across all the proposed alternative sites.

The estimated emissions for the Natural Gas Option were calculated to be 27,836 MT CO<sub>2</sub>e/year, which would fall within the ≥25,000 MT CO<sub>2</sub>e/year but <50,000 MT CO<sub>2</sub>e/year category and therefore would score from 1 to 3.



Because 27,836 MT CO<sub>2</sub>e/year is closer to the lower end of the emission range, the Natural Gas Option received a score of 3 points.

#### 5.3.1.1.5 Land Use Designation

As shown on Figure 3, the approximately 10.00-acre Ventura Steel Site is located within the County of Ventura, approximately 0.31 miles north of the City of Ventura boundary, and within the City's sphere of influence (City of Ventura 2022, 2022), slightly west of SR-33. The Ventura Steel Site's on-site components are located across portions of several APNs, including APN 063021012 (8.77 acres), APN 063022014 (3.46 acres), APN 063022015 (1.49 acres), APN 063022016 (1.68 acres), and a slim portion of APN 063021009 (County of Ventura 2021). Under existing conditions, regional access to the site is provided by Ventura Avenue via SR-33 and U.S. Route 101.

#### Surrounding Land Uses

The General Plan Land Use and Zoning maps within Attachment 3 show the land use and zoning on and adjacent to the Ventura Steel Site (including off-site components). Land uses adjacent to the Ventura Steel Site include the County General Plan land use designations of Industrial to the north, west, and south, as well as Open Space directly adjacent and to the east. The adjacent land areas to the north, west, and south are zoned M-3 (General Industrial Zone with a 10,000-square-foot lot area minimum), per the County of Ventura non-coastal zoning ordinance (County of Ventura 2008; 2021). The parcel adjacent to the southeast corner of the site is zoned OS-160, requiring a minimum lot area of 160 acres, with an additional parcel located approximately 78 feet to the east zoned AE-40 which has a minimum lot size requirement of 40 acres (County of Ventura 2008). The Ventura Steel Site is not adjacent to any sensitive receptors. The nearest sensitive land use is a residentially zoned parcel (APN 0690151105) in the City of Ventura, approximately 0.33 miles to the south of the site boundary.

#### Project Component Land Uses

The Ventura Steel Site's operational components are located across portions of several APNs within the County. As shown in the General Plan Land Use and Zoning maps in Attachment 3, the current County of Ventura land use and zoning for the compressor station site are Industrial and M-3, which has a 10,000-square-foot lot area minimum. The Ventura Steel Site Alternative would require over 19,000 feet of additional pipeline. There are two main pipeline corridors proposed: one would be located primarily in the public right-of-way along Ventura Avenue connecting to an existing pipeline on the existing compressor station site (City of Ventura 2022, 2022). The other would be located east of the City's urban area skirting the City/County boundary line (see Attachment 3, Figure LU-1C, Land Use – Ventura Steel). This corridor would travel through County parcels with a land use designation of Open Space as well as a City parcel with a land use designation of Neighborhood Low (County of Ventura 2020; City of Ventura 2005a). Zoning for these parcels includes Residential Planned Development (RPD) (City), OS-160 (County), AE-40 (County), and M-3 (County). Because the compressor station site would be located on land areas designated for industrial and/or manufacturing uses, selection of this alternative would be consistent with existing land use and/or zoning. Additionally, the proposed staging area for the Ventura Steel Site Alternative would be spread across multiple parcels to the northeast of the compressor station site, all of which are similarly designated Industrial and zoned M-3; however, this component would be removed once the site becomes operational and is therefore not incorporated into the operational land use analysis.

## Oil Wells

The Ventura Steel Site is located within the south-central portion of the active Ventura Oil Field (DOC 2022). According to the U.S. Department of Conservation (DOC 2022), there are at least 11 currently active wells located on the proposed compressor station site, in addition to a number of active wells operating in the near vicinity.

## Evaluation and Score

This Ventura Steel Site is in an interface area between urban/suburban and open space/agricultural uses just north of the City line. It is proposed on land areas designated for industrial and/or manufacturing uses and not adjacent to any sensitive receptors. Industrial and/or manufacturing uses are located adjacent to the site to the north, west, and south, and the predominant land uses to the east of the site are open space and agricultural (County of Ventura 2020). Within the ranking criteria range of 7 to 9, “Industrial/manufacturing zone and not adjacent to sensitive receptors,” the Ventura Steel Site Natural Gas Option received a score of 9 points.

### 5.3.1.1.6 Noise

The nearest non-industrial land use to the Ventura Steel Site is a residentially zoned parcel in the City of Ventura approximately 0.33 miles to the south of the site boundary. Based on the assessment provided in Attachment 5, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-industrial land use (as defined in Section 3.2.7) of less than 40 dBA. Therefore, this alternative received a score of 7 points.

### 5.3.1.1.7 Wildfire

All the operational components of the Ventura Steel Site are partially within an SRA or LRA very high FHSZ (CAL FIRE 2022). As shown on the FHSZ Maps in Attachment 7, the majority of the proposed compressor station site is within a very high FHSZ, and both off-site MLV stations and the majority of the eastern pipeline corridor are also within a very high FHSZ. The compressor station site is classified as a non-vegetated area within the Ventura Fuel Bed and is located immediately adjacent and to the west of a vegetated area within the Ventura Fuel Bed (Radeloff 2010; VCFPD 2021). While the eastern pipeline corridor would be undergrounded, access roads would still be required for maintenance and would be located in an unimproved, high fuel load area. As such, workers would be exposed to very high FHSZ conditions, particularly in the later summer and early fall. Therefore, based on the ranking score range for sites “within a very high fire hazard severity zone,” the Ventura Steel Natural Gas Option received a score of 0 points because (1) the main project component (the compressor station) is predominantly within a very high FHSZ and adjacent to a very high FHSZ and (2) the pipeline corridor to the east is predominantly within a very high FHSZ and vegetated fuel load area, which would present a fire hazard for workers, particularly during the fire season.

## 5.3.1.2 On-Site Construction Considerations

### 5.3.1.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> were calculated from on-site activities such as site preparation, grading, and construction within the footprint of the future compressor station. For the purposes of the earthwork required to inform the air quality analysis, it was

estimated that the site consisted of flat areas that required minimal grading. The total NO<sub>x</sub> and PM<sub>10</sub> emissions from on-site construction of the Ventura Steel Site are shown in Table 23.

**Table 23. On-Site Construction Emissions: Ventura Steel - Natural Gas**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Emissions (lb)
Grading – flat	872	233
Grading – elevated	0	0
Compressor station	10,578	2,022
Substation	0	0
<b>Total<sup>a</sup></b>	<b>11,450</b>	<b>2,255</b>

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The Ventura Steel Site is flat, the amount of on-site diesel equipment would be minimal, and the duration of grading activities would be limited. The total emissions are in the <40,000 pounds and ≥8,000 pounds range for NO<sub>x</sub> and the <6,000 pounds and ≥2,000 pounds range for PM<sub>10</sub>; therefore, this alternative received a score of 6 points.

#### 5.3.1.2.2 Cultural Resources

A total of 18 cultural resources have been previously recorded within a 1-mile radius of the Ventura Steel Site; however, no cultural resources have been identified on the Ventura Steel Site. One resource within a 0.25-mile radius of the Ventura Steel Site was identified and is summarized below:

- P-56-001109H is a historic site known as the Nordhoff Spur of the Ventura River and Ojai Valley Railroad, the first and only spur to enter the Ojai Valley. This linear site is approximately 275 feet west of the Ventura Steel Site. The track has been removed but the grade is still present, and portions of the railroad have been repurposed to accommodate cyclists and horses as part of the Ojai Trail. Because the railroad has been removed and the potential of intact archaeological deposits to exist is unlikely, this cultural resource is not considered significant.

No resources listed on any federal, state, or local registry are located within the Ventura Steel Site.

A total of 55 previously conducted studies have been undertaken within a 1-mile radius of the Ventura Steel Site between 1974 and 2014. Of these 55 reports, 11 reports (VN-214, VN-228, VN-1102, VN-1634, VN-1752, VN-1849, VN-1851, VN-2534, VN-2541, VN-2627, and VN-3117) address portions of the Ventura Steel Site. Most of the recommendations provided in the overlapping reports were meant to address concerns associated with the study area addressed in each report, portions of which are outside the Ventura Steel Site, and the recommendations do not appear to be intended to mitigate any specific cultural resources. It does not appear that the existing buildings located within the Ventura Steel Site have been previously evaluated, and it appears as if at least some of the buildings are older than 45 years.

According to the historic aerial photographs and topographic maps, the Ventura Steel Site has been subject to ground disturbance at least as early as 1952 and continuing through at least 2014, including construction of structures and likely grading and installation of utilities and pavement. The Ventura Steel Site is located

approximately 1,970 feet east of the Ventura River, 3 miles north of the Pacific Ocean, and 1.75 miles south of the Santa Ynez Mountains. The Ventura Steel Site is not within close proximity to a natural landmark capable of depositing sediment, such as a river or the base of a foothill, and therefore has a low potential for unknown archaeological material to be buried under natural sediment.

In summary, no known significant cultural resources exist within the Ventura Steel Site and only one known cultural resource is located within 0.25 miles; however, this resource is not considered significant. Some of the on-site buildings are older than 45 years; thus, the buildings could be historic due to their age. However, the buildings have not been evaluated and their significance is not known. Continual ground disturbance and lack of resources identified within close proximity to the site suggests that the potential for yet unknown and intact archaeological resources is low, and the on-site component of the Ventura Steel Site has an unknown sensitivity for built environment cultural resources. Thus, the project is in a location that is not sensitive for potentially significant cultural resources. Based on the above findings, the on-site component of the Ventura Steel Site received a score of 7 points.

#### 5.3.1.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. The total GHG emissions from on-site construction of the Ventura Steel Site Alternative are shown in Table 24.

**Table 24. On-Site GHG Construction Emissions: Ventura Steel - Natural Gas**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Grading – flat	105
Grading – elevated	0
Compressor station	1,560
Substation	0
<b>Total<sup>a</sup></b>	<b>1,666</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The GHG emissions for on-site construction are anticipated to be well below the <5,000 MT CO<sub>2</sub>e threshold. Accordingly, this alternative received a score of 8 points.

#### 5.3.1.2.4 Natural Resources

This alternative is within a developed area; however, there is some scattered ruderal vegetation present on site.<sup>9</sup> The site is adjacent to developed areas on the north, south, and west, and the area to the east was previously mapped as developed, due to oil extraction facilities, but shrubs and ruderal vegetation are present in this area on

<sup>9</sup> “Ruderal” refers to vegetation that is often composed of invasive species, whether exotic or native, that have expanded in extent and abundance due to human disturbances (Faber-Langendoen et al. 2014).

aerial imagery. Undisturbed open space habitat to the north of the oil extraction facilities has previously been mapped as *Salvia mellifera*–*Salvia leucophylla* association (David Magney Environmental Consulting 2008), as shown in Figure NR-2C in Attachment 4, which is not a sensitive community (CDFW 2021). No sensitive plant or animal species have been recorded on or adjacent to (within 500 feet of) the site, as shown in Figure NR-1C in Attachment 4. The 33 sensitive plant and animal species and habitats with previously recorded occurrences within 3 miles have a low potential to occur or are not expected to occur on the site. As such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands on site, and received a score of 9 points.

#### 5.3.1.2.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (as defined in Section 3.2.7), which would be more than 1,000 feet from the construction activity, would be less than 64 dBA for this alternative; therefore, this alternative received a score of 9 points.

#### 5.3.1.2.6 Slope, Topography, and Grading

The topography and slope maps in Attachment 6 show the slope for the Ventura Steel Site and surrounding area. The land area for this site is located in an interface zone between urban/suburban and agricultural/open space uses near the northeastern boundary of the City of Ventura. The average slope range calculations for the site are provided in Table 25.

**Table 25. Average Slope Calculations**

Class Range	% Slope Range	Acres	% Slope	Avg Avg	% Slope	Min Avg	% Slope	Max Avg
<b>Ventura Steel Site – 10.00 Acres</b>								
Site Classes: 0%–30%	0%–10%	8.97	5%	0.45	0%	0	10%	0.9
	>10%–20%	0.98	15%	0.15	10%	0.1	20%	0.2
	>20%–30%	0.05	25%	0.01	20%	0.01	30%	0.02
Site Averages				6%		1%		11%

The site has been previously graded and developed, resulting in an average on-site slope of approximately 6%. The surrounding area is similarly improved to the north, west, and southeast, with slopes of less than 20%. Based on conceptual engineering analysis, grading for the on-site components would entail approximately 4,500 CY of over-excavation/recompaction. In addition, the access road would require approximately 1,600 CY of over-excavation/recompaction, however, this would take place off site. For the purposes of this analysis, a total of 6,100 CY, together with a slope of less than 10%, would be considered “negligible.” Additionally, an average slope of approximately 6% would suggest a high-ranking score is appropriate, as it would not exceed the 20% slope threshold defined in the scoring criteria (see Section 3.1). As such, within the score range of 7 to 9, where the “average slope of the property is less than 20%” and “negligible/no over-excavation/recompaction is required,” the Ventura Steel Site received a score of 8 points.

#### 5.3.1.2.7 Traffic

The Ventura Steel Site Alternative is an industrial site located approximately 8,000 feet north of the Existing Site. The Ventura Steel Site has direct access from U.S. Route 101 to SR-33 to the Shell Road interchange and North Ventura Avenue. The County of Ventura General Plan (Ventura County 2020) classifies Shell Road as a minor road and North Ventura Avenue as a collector. North Ventura Avenue is also identified in the General Plan as a major County Road. Although Shell Road is classified as a minor road, trucks would travel to and from the interchange for approximately 1,800 feet or less along this road. Therefore, with direct access to the site provided via highways and a major County roadway, the project is not considered to travel through a road-constrained area. Furthermore, access to the site is provided by multiple driveways off North Ventura Avenue and East Shell Road that currently meet SoCalGas and emergency responder access requirements.

Construction of the compressor station, including pad grading, access road, on-site utility installations, buildings, and compressors, would take approximately 36 to 48 months, with major earthwork and heavy truck traffic occurring for less than 1 year due to the flat/graded nature of the property. Given the location of the site and sufficient existing access, heavy trucks would not travel through residential areas or roadway-constrained areas. Therefore, this alternative received a score of 9 points.

#### 5.3.1.3 Off-Site Construction Considerations

##### 5.3.1.3.1 Air Quality

Scoring for air quality impact from off-site construction was based on the distance of linear construction of the proposed pipeline, power line, and access road construction. The Natural Gas Option at the Ventura Steel Site would require extensive construction of approximately 26,786 linear feet of pipeline systems to connect to existing main pipelines and approximately 3,600 linear feet of access road construction. The linear construction totals approximately 30,386 linear feet, which is above the substantial range. Therefore, this alternative received a score of 0 points.

##### 5.3.1.3.2 Cultural Resources

A total of 19 cultural resources have been previously recorded within a 1-mile radius of the off-site components of the Ventura Steel Site; however, no cultural resources have been identified within the off-site components. There is only one resource within a 0.25-mile radius of the off-site component of the Ventura Steel Site, which is P-56-001109H (Nordhoff Spur of the Ventura River and Ojai Valley Railroad). This resource has been described previously and is not considered a culturally significant resource. No resources listed on any federal, state, or local registry are located within the off-site components of the Ventura Steel Site.

A total of 56 previously conducted studies have been undertaken within a 1-mile radius of the off-site components of the Ventura Steel Site between 1974 and 2021. Of these 55 studies, 4 (VN-01851, VN-02534, VN-02541, and VN-003177) address portions of the off-site components of the Ventura Steel Site, and not all off-site components have been subject to a cultural resources study. Recommendations provided in the reports that are relevant to the off-site components are comprehensive in nature and appear to be developed as preemptive measures.

According to the historic aerial photographs and topographic maps, the off-site components of the Ventura Steel Site have been subject to ground disturbance at least as early as 1947, including structure and road construction, grading, and installation of utilities and pavement. The off-site staging area component has been subject to ground disturbance since at least 1947, including grading, construction, and subsequent demolition of cisterns occupied by an orchard, and as result has been subjected to ground disturbance for more than half a century. Portions of the off-site pipeline components have been previously disturbed by road grading and construction, as well as occupation of an oil facility, and other portions do not appear to have been previously disturbed. The off-site components are not close to a natural landmark capable of depositing sediment, such as a river or the base of a foothill; therefore, it has a low potential for unknown archaeological material to be buried under natural sediment.

In summary, no known cultural resources exist within the off-site components of the Ventura Steel Site. The off-site components of the Ventura Steel Site have been subject to multiple cultural resources studies, yet no cultural resources have been identified within the off-site component boundary. Continual ground disturbance and lack of resources identified within close proximity suggests that the potential for yet unknown and intact cultural resources to exist is low. Therefore, the off-site components of the Ventura Steel Site are in a location that is not sensitive for potentially significant cultural resources. Based on the above findings, the off-site components of the Ventura Steel Site received a score of 8 points.

#### 5.3.1.3.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in CO<sub>2</sub>e) resulting from off-site activities such as construction of power lines, pipelines, and roads outside the footprint of the compressor station were calculated. The total GHG emissions from off-site construction of the Ventura Steel Site Alternative are shown in Table 26.

**Table 26. Off-Site GHG Construction Emissions: Ventura Steel - Natural Gas**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Power line	0
Pipeline – street	599
Pipeline – open space	144
Road construction	126
<b>Total<sup>a</sup></b>	<b>870</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

GHG emissions from off-site construction would be in the ≥500 MT CO<sub>2</sub>e but <1,000 MT CO<sub>2</sub>e range. Therefore, this alternative received a score of 4 points.

#### 5.3.1.3.4 Natural Resources

No electrical interconnect is proposed for this alternative, but three pipeline corridors are proposed. One of the proposed pipeline corridors is within Ventura Avenue to the west of the site and is within the developed roadway and highly disturbed areas. The other two proposed pipeline corridors and associated tie-ins are within the oil



extraction facilities to the east and into areas previously mapped as non-native grasslands (at the series level but mapped as *Danthonia californica* association [David Magney Environmental Consulting 2008], or California oat grass, which is a species that has not been recorded in Ventura County) and *Salvia mellifera*–*Salvia leucophylla* association, as shown in Figure NR-2C in Attachment 4. These pipeline corridors cross one linear wetland feature (mapped as freshwater forest/shrub wetland), which may be impacted during construction. A proposed access road would be constructed for portions of the eastern proposed pipeline corridors. The proposed staging area is adjacent to the northwest of the site within developed areas. No sensitive plant or animal species have been recorded on or adjacent to (within 500 feet of) the proposed pipeline corridors, access roads, or staging area, as shown in Figure NR-1C in Attachment 4. Coastal whiptail (*Aspidoscelis tigris stejnegeri*) and American badger (*Taxidea taxus*), both CDFW Species of Special Concern, have potential to occur in the eastern proposed pipeline corridors and associated access road; however, only avoidance and minimization measures would be needed to prevent impacts to the species. The remaining 31 sensitive plant or animal species and habitats with previously recorded occurrences within 3 miles have a low potential to occur or are not expected to occur within the off-site areas. As such, this alternative is not expected to directly or indirectly impact sensitive habitats or sensitive plant or animal species, but it may directly impact wetlands in off-site areas; it received a score of 0 points.

#### 5.3.1.3.5 Noise

Due to pipeline installation along Ventura Avenue, predicted off-site construction noise exposure at the nearest non-industrial land use, which would be between 0 and 50 feet from the construction activity for this alternative, received a score of 0 points.

#### 5.3.1.3.6 Traffic

The Ventura Steel Site Alternative would require natural gas pipelines to be constructed beneath Ventura Avenue, requiring grading, trenching, and pipeline installation and potentially acquisition of additional pipeline right-of-way. Construction of the Ventura Steel Site Alternative would require road closures on Ventura Avenue. Roadway construction would be phased to ensure that disruption for lane closures would still allow for adequate roadway functions and emergency access. To maintain traffic flow, one lane would be closed for 6 months and then the alternate lane would be closed for 6 months, with traffic control measures in place for the duration of the work. Pipeline Corridor 1 would require 9,398 linear feet of pipelines located within Ventura Avenue. Because construction would require lane closures greater than 5,000 linear feet, this alternative received a score of 0 points.

#### 5.3.1.3.7 Utilities/Service Systems

The Ventura Steel Site Alternative would require approximately 78,561 square feet of off-site ground disturbance for pipelines, approximately 282 square feet of depressurization line, and approximately 7,500 square feet for the MLV connections, for a total of approximately 86,343 square feet of off-site ground disturbance. One pipeline route would be within open space/hillside areas and surrounded by non-urbanized land and would not impact urban roadways or otherwise impede commuter traffic. The other pipeline route would be constructed beneath the alignment of North Ventura Avenue, which is a primary thoroughfare for commuter traffic in the area. Pipeline construction would require staged construction, with one pipeline trenched, constructed, and completed beneath one portion of the road, followed by the second pipeline's trenching, construction, and completion. This staged construction within North Ventura Avenue would be required to minimize the extent of required lane closures,



ensure adequate northbound–southbound traffic flow during roadway construction, and allow for adequate space between pipelines and avoidance of existing utility lines. All off-site ground disturbance is summarized in Table 27.

**Table 27. Off-Site Ground Disturbance: Ventura Steel – Natural Gas**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
Pipeline Corridor 1 (North Ventura Avenue)	39,685
Pipeline Corridor 2 (Hills)	38,876
Utility Lines	0
<i>Subtotal Off-Site Ground Disturbance – Pipelines and Utilities</i>	78,561
<b>Mainline Valve Connection</b>	
Mainline Valve Connection 1	3,750
Mainline Valve Connection 2	3,750
<i>Subtotal Off-Site Ground Disturbance – Mainline Valve Connection</i>	7,500
<b>Depressurization Line</b>	
Depressurization Line	282
<i>Subtotal Off-Site Ground Disturbance – Depressurization Line</i>	282
<b>Electrical Pole Footings</b>	
Electrical Pole Footings	0
<i>Subtotal Off-Site Ground Disturbance – Electrical Pole Footings</i>	0
<b>Total Off-Site Ground Disturbance for All Construction Elements<sup>a</sup></b>	<b>86,343</b>

**Note:**

<sup>a</sup> Totals may not sum precisely due to rounding.

This alternative received a score of 1 point because of the moderate amount of off-site ground disturbance required.

## 5.3.2 Hybrid Option

### 5.3.2.1 Operational Considerations

#### 5.3.2.1.1 Aesthetics and Visual Resources

Compared to the Natural Gas Option, which would not include new electrical poles, the Ventura Steel Site – Hybrid Option would require approximately 37 electrical poles to extend to an existing electrical line to the San Nicholas Circuit. The installation of poles would slightly expand the viewshed of project components and would result in some additional view degradation, although the surrounding area currently includes multiple utility poles/lines that traverse the area and Ventura Avenue. Therefore, compared to the Natural Gas Option, the Hybrid Option would result in slightly increased potential impacts to aesthetics and visual resources and received a score of 5 points.

#### 5.3.2.1.2 Air Quality

This option would include the installation of two new 1,900 HP natural gas compressors and two new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, the Hybrid Option is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption. The Hybrid Option has fewer internal combustion engines and thus fewer direct emissions than the Natural Gas Option. The replacement of two of the internal combustion engines with two electric compressors of equivalent horsepower would essentially cut the expected direct emissions in half.

Operation of the Hybrid Option was calculated to result in 5.6 tons/year of NO<sub>x</sub> emissions. As such, the Natural Gas Option would fall within the  $\geq 4$  tons/year but  $< 8$  tons/year category, which would score from 4 to 6. Because 5.6 tons/year is in the middle of the NO<sub>x</sub> emissions range, the Hybrid Option received a score of 5 points.

#### 5.3.2.1.3 CalEnviroScreen

OEHA CalEnviroScreen 4.0 Maps indicate that the Ventura Steel Site is in Census Tract 6111001204, which has a population of approximately 3,036. This tract has a total pollution burden score of 69%, which means that this census tract has more pollution burden than 69% of all census tracts within California (OEHA 2022b). Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the Ventura Steel Site received a score of 3 points because a pollution burden of 69% is within the 61% to 70% scoring range.

#### 5.3.2.1.4 Greenhouse Gases

This option would include the installation of two new 1,900 HP natural gas compressors and two new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of CO<sub>2</sub> equivalent that are directly produced from equipment and indirectly produced as a result of activities related to operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). The total annual direct GHG emissions would be 13,918 MT CO<sub>2</sub>e/year and indirect GHG emissions would be 5,500 MT CO<sub>2</sub>e/year from operational activities at the Ventura Steel Site.

The shift from natural gas to a Hybrid Option reduces the localized emissions of criteria pollutants and direct GHG emissions, but the increased power demand from the electric compressors would increase indirect GHG emissions depending on how the power that is used is generated. The estimated emissions for the Hybrid Option were calculated to be 19,418 MT CO<sub>2</sub>e/year, which would fall within the  $\geq 10,000$  MT CO<sub>2</sub>e/year but  $< 25,000$  MT CO<sub>2</sub>e/year category and therefore would score from 4 to 6. Because 19,418 MT CO<sub>2</sub>e/year is in the middle of the emission range, the Hybrid Option received a score of 5 points.

#### 5.3.2.1.5 Land Use Designation

The Hybrid Option would not require the installation of extensive off-site electrical infrastructure. Within the ranking criteria range of 7 to 9, "Industrial/manufacturing zone and not adjacent to sensitive receptors," the Ventura Steel Site Alternative – Hybrid Option received a score of 9 points.

#### 5.3.2.1.6 Noise

The nearest non-industrial land use to the Ventura Steel Site is a residentially zoned parcel in the City of Ventura approximately 0.33 miles to the south of the site boundary. Based on the assessment provided in Attachment 5, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-industrial land use of less than 40 dBA. Therefore, this alternative received a score of 8 points.

#### 5.3.2.1.7 Wildfire

The main project component (the compressor station) is predominantly within a very high FHSZ and is adjacent to a very high FHSZ. In addition, the location of off-site components in a very high FHSZ would present a hazard to workers. As such, the Ventura Steel Hybrid Option received a score of 0.

### 5.3.2.2 On-Site Construction Considerations

#### 5.3.2.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> were calculated from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station. The total NO<sub>x</sub> and PM<sub>10</sub> exhaust emissions from on-site construction of the Ventura Steel Site are shown in Table 28.

**Table 28. On-Site Construction Emissions: Ventura Steel - Hybrid**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Emissions (lb)
Grading – flat	872	233
Grading – elevated	0	0
Compressor station	10,578	2,022
Substation	1,311	74
<b>Total<sup>a</sup></b>	<b>12,761</b>	<b>2,329</b>

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The property is flat, with a minimal amount of new disturbance area requiring grading. The Hybrid Option would require the construction of a substation, slightly increasing the amount of NO<sub>x</sub> and PM<sub>10</sub> emissions when compared to the Natural Gas Option. The total emissions are in the <40,000 pounds and ≥8,000 pounds range for NO<sub>x</sub> and <6,000 pounds and ≥2,000 pounds range for PM<sub>10</sub>; therefore, this alternative received a score of 6 points.

#### 5.3.2.2.2 Cultural Resources

There are no differences in the results for on-site construction considerations for the Hybrid Option and the Natural Gas Option. Therefore, this alternative received a score of 7 points.

#### 5.3.2.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the future compressor station were calculated. The total GHG emissions from on-site construction of the Ventura Steel Site Alternative are shown in Table 29.

**Table 29. On-Site GHG Construction Emissions: Ventura Steel - Hybrid**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Grading – flat	105
Grading – elevated	0
Compressor station	1,560
Substation	294
<b>Total<sup>a</sup></b>	<b>1,959</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The Hybrid Option would require the construction of a substation on the site, thus increasing the amount of on-site GHG emissions when compared to the Natural Gas Option. The expected GHG emissions for on-site construction would be well below the <5,000 MT CO<sub>2</sub>e threshold. Accordingly, this alternative received a score of 8 points.

#### 5.3.2.2.4 Natural Resources

The Hybrid Option would not alter any conditions related to on-site natural resources and as such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands on site, and received a score of 9.

#### 5.3.2.2.5 Noise

Predicted on-site construction noise exposure at the nearest non-industrial land use, which would be more than 1,000 feet from the construction activity for this alternative, received a score of 9 points.

#### 5.3.2.2.6 Slope, Topography, and Grading

The Hybrid Option would include an electrical interconnect, requiring approximately 74 CY of additional over-excavation/recompaction to install the required electrical poles. The electrical interconnect does not impact the ranking because the additional earthwork required (74 CY) is a relatively negligible amount and the total cubic yardage for the project site would remain under 10,000 (County of Ventura 2022). As such, within the score range of 7 to 9, where the “average slope of the property is less than 20%” and “negligible/no over-excavation/recompaction is required” (see Section 3.1, Scoring Criteria), the Ventura Steel Site received a score of 8 under both compressor station technology scenarios.

#### 5.3.2.2.7 Traffic

There would be a negligible difference between construction of the Hybrid Option and the Natural Gas Option related to heavy truck traffic for on-site construction activity. Therefore, this alternative received a score of 9 points.

### 5.3.2.3 Off-Site Construction Considerations

#### 5.3.2.3.1 Air Quality

Scoring for air quality impacts from off-site construction was based on the total distance of linear construction of the proposed pipeline system, power line, and access road construction. The Hybrid Option at the Ventura Steel Site would require the extensive construction of approximately 26,786 linear feet of pipeline systems to connect to existing main pipelines and approximately 3,600 linear feet of access road construction. In addition, approximately 122 linear feet of electrical interconnect would be required to accommodate the increased demand from the electric compressors. The linear construction totals approximately 30,508 linear feet, which is far above the substantial range. Therefore, this alternative received a score of 0 points.

#### 5.3.2.3.2 Cultural Resources

There are no differences in results for off-site construction considerations for the Hybrid Option and the Natural Gas Option. Therefore, this alternative received a score of 8 points.

#### 5.3.2.3.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from off-site activities such as construction of power lines, pipelines, and roads outside the footprint of the compressor station were calculated. The total GHG emissions from off-site construction of the Ventura Steel Site Alternative are shown in Table 30.

**Table 30. Off-Site GHG Construction Emissions: Ventura Steel - Hybrid**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Power line	4
Pipeline – street	599
Pipeline – open space	144
Road construction	126
<b>Total<sup>a</sup></b>	<b>873</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

GHG emissions from off-site construction would be in the ≥500 MT CO<sub>2</sub>e but <1,000 MT CO<sub>2</sub>e range. Therefore, this alternative received a score of 4 points.

#### 5.3.2.3.4 Natural Resources

The Hybrid Option would require new off-site electric poles needed to connect the station to the existing SCE transmission line. The proposed electrical interconnect would require two new electrical poles, but it is assumed that these poles would be within developed or disturbed areas. The same three pipeline corridors (two of which

could impact wetlands) and off-site staging area would be required for the Hybrid Option and the Natural Gas Option. As such, this alternative is not expected to directly or indirectly impact sensitive habitats or sensitive plant or animal species, but it may directly or indirectly impact wetlands in off-site areas; therefore, it received a score of 0 points.

#### 5.3.2.3.5 Noise

Predicted off-site construction activity noise exposure level at the nearest non-industrial land use (as defined in Section 3.2.7) would be greater than 90 dBA and between 0 and 50 feet from the construction activity for this alternative; therefore, this alternative received a score of 0 points.

#### 5.3.2.3.6 Traffic

Off-site construction of the Hybrid Option would be the same as the Natural Gas Option, with the exception of the extension of electrical utilities. This alternative would require natural gas pipelines to be constructed beneath Ventura Avenue, requiring grading, trenching, and pipeline installation and potentially acquisition of additional pipeline right-of-way and road closures on Ventura Avenue. Roadway construction would be phased to ensure that disruption for lane closures would still allow for adequate roadway functions and emergency access. To maintain traffic flow, one lane would be closed for 6 months and then the alternate lane would be closed for 6 months, with traffic control measures in place for the duration of the work. However, no roadway construction on existing roads for electrical utilities would be required. Therefore, this alternative received a score of 0 points.

#### 5.3.2.3.7 Utilities/Service Systems

The Ventura Steel Site Alternative – Hybrid Option would require approximately 78,561 square feet of off-site ground disturbance for pipelines and utilities, approximately 282 square feet of depressurization line, approximately 7,500 square feet for the MLV connections, and an additional 28 square feet of footings for the required electrical poles, for a total of approximately 86,371 square feet of off-site ground disturbance. As with the Natural Gas Option, for the Hybrid Option one pipeline route would be within open space/hillside areas and surrounded by non-urbanized land and would not impact urban roadways or otherwise impede commuter traffic. The other pipeline route would be constructed beneath the alignment of North Ventura Avenue, which is a primary thoroughfare for commuter traffic in the area. Pipeline construction would require staged construction, with one pipeline trenched, constructed, and completed beneath one portion of the road, followed by the second pipeline's trenching, construction, and completion. This staged construction within North Ventura Avenue would be required to minimize the extent of required lane closures, ensure adequate northbound-southbound traffic flow during roadway construction, and allow for adequate space between pipelines and avoidance of existing utility lines. All off-site ground disturbance is summarized in Table 31.

**Table 31. Off-Site Ground Disturbance: Ventura Steel - Hybrid**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
Pipeline Corridor 1 (North Ventura Ave)	39,685
Pipeline Corridor 2 (Hills)	38,876
Utility Lines	0

**Table 31. Off-Site Ground Disturbance: Ventura Steel - Hybrid**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
<i>Subtotal Off-Site Ground Disturbance – Pipelines and Utilities</i>	<b>78,561</b>
<b>Mainline Valve Connection</b>	
Mainline Valve Connection 1	3,750
Mainline Valve Connection 2	3,750
<i>Subtotal Off-Site Ground Disturbance – Mainline Valve Connection</i>	<b>7,500</b>
<b>Depressurization Line</b>	
Depressurization Line	282
<i>Subtotal Off-Site Ground Disturbance – Depressurization Line</i>	<b>282</b>
<b>Electrical Pole Footings</b>	
Electrical Pole Footings	28
<i>Subtotal Off-Site Ground Disturbance – Electrical Pole Footings</i>	<b>28</b>
<b>Total Off-Site Ground Disturbance for All Construction Elements<sup>a</sup></b>	<b>86,371</b>

**Note:**

<sup>a</sup> Totals may not sum precisely due to rounding.

The additional disturbance for the electrical poles would not substantively alter the amount of off-site ground disturbance required; therefore, this alternative received a score of 1 point.

## 5.4 Devil's Canyon Road Site

The scoring rationale for each of the environmental topic areas for the Devil's Canyon Road Site is described in this section.

### 5.4.1 Natural Gas Option

#### 5.4.1.1 Operational Considerations

##### 5.4.1.1.1 Aesthetics and Visual Resources

The Devil's Canyon Road Site is relatively flat and has been visually altered by previous oil/gas related development. The implementation of the Natural Gas Option would not alter an identified scenic resource, such as hillside or ridgeline terrain, because the site is located on previously developed land that included industry-related structures. Further, the site presents minimal visibility from SR-33 because existing roadside-adjacent trees and vegetation regularly blocks the site from view of passing motorists. Thus, the site is not highly visible from most publicly accessible vantage points in the surrounding area including roads, scenic corridors, parks, and the Ojai–Ventura Bike Path. Given the lack of public visibility, this alternative received a score of 8 points.



#### 5.4.1.1.2 Air Quality

This option would include the installation of four new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the AQ/GHG Analysis in Attachment 1, the natural gas-powered compressor station is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption.

Operation of the natural gas compressors is calculated to result in 11 tons/year of NO<sub>x</sub> emissions. As such, the Natural Gas Option would fall within the  $\geq 8$  tons/year but  $< 12$  tons/year category, which would score from 1 to 3. Because 11 tons/year is closer to the upper end of the NO<sub>x</sub> emissions range, the Natural Gas Option received a score of 1 point.

#### 5.4.1.1.3 CalEnviroScreen

OEHHA CalEnviroScreen 4.0 Maps indicate that the Devil's Canyon Road Site is in Census Tract 6111001206, which has a population of approximately 778. As described in Section 5.2.1.1.3, CalEnviroScreen, this tract has a total pollution burden score of 79%, which means that this census tract has more pollution burden than 79% of all census tracts within California (OEHHA 2022b). Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the Devil's Canyon Road Site received a score of 2 points because a pollution burden of 79% is within the 71% to 80% scoring range.

#### 5.4.1.1.4 Greenhouse Gases

This option would include the installation of four new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of CO<sub>2</sub> equivalent that are directly produced from equipment and indirectly produced as a result of activities related to operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). Indirect GHG emissions for the operation of the natural-gas facilities were not quantified for the Natural Gas Option because anything attributable to indirect GHG emissions would be consistent across all the proposed alternative sites.

The estimated emissions for the all-Natural Gas Option were calculated to be 27,836 MT CO<sub>2</sub>e/year, which would fall within the  $\geq 25,000$  MT CO<sub>2</sub>e/year but  $< 50,000$  MT CO<sub>2</sub>e/year category and therefore would score from 1 to 3. Because 27,836 MT CO<sub>2</sub>e/year is closer to the lower end of the emission range, the Natural Gas Option received a score of 3 points.

#### 5.4.1.1.5 Land Use Designation

##### Regional Site Location

As shown on Figure 4, the proposed Devil's Canyon Road Site is in southwest Ventura County, located slightly east of SR-33 and the City of Ventura, approximately 6,000 feet northwest of the Existing Site. The Devil's Canyon Road Site and all on-site project components are located within a single approximately 336-acre parcel (APN 060031016), with off-site components—including two existing transmission pipelines and two MLV stations (one at the terminus of each proposed pipeline)—located on portions of adjacent APN 060031015, APN 060031017, APN 060031018, and APN 060030004. Regional access to the site is currently provided from SR-33 via U.S. Route 101.



Site access from the highway is provided by an existing access road and bridge approximately 28 feet in width that crosses the Ventura River, also located within APN 060031016.

## Surrounding Land Uses

The surrounding land uses of the Devil's Canyon Road Site are predominantly open space and agricultural, with minimum lot sizes ranging from 40 to 160 acres. These include the County General Plan (2020) land use designation of Open Space in all directions, as well as County zoning of AE-40 to the southwest; OS-160 to the north, south, west, and east; and an HCWC overlay zone to the east running along the Ventura River riparian corridor west of SR-33 (County of Ventura 2021). The nearest industrial land use (County—Industrial) and zoning (County—General Industrial Zone [M-3] with a 10,000-square-foot lot area minimum) is located approximately 1,300 feet to the east on the east side of SR-33 (APN 068001001) (County of Ventura 2021). The Devil's Canyon Road Site is not adjacent to any sensitive receptors. The nearest sensitive land use is a residentially zoned parcel (APN 0690141135) in the City of Ventura, approximately 0.54 miles east of the site boundary on the east side of SR-33.

## Project Component Land Uses

As shown on the General Plan Land Use and Zoning maps in Attachment 3, the approximately 15-acre Devil's Canyon Road Site, MLV station, and the required access road are all located on privately held lands within Ventura County. The site selected for the compressor station is currently developed with oil extraction uses. The Devil's Canyon Road Site and all on-site project components are located on a portion of much larger single parcel (APN 060031016, approximately 336 acres) that has an underlying County General Plan land use designation of Open Space (County of Ventura 2020; 2021) and County zoning of OS-160, requiring a minimum parcel size of 160 acres (County of Ventura 2008). Although largely extending off site, the Devil's Canyon Road Site's two required ancillary pipelines and MLV station would also be within land areas designated as Open Space and zoned OS-160 (County of Ventura 2008, 2020, 2021). According to the currently available aerial views, the proposed site for the off-site MLV station appears to be developed with an active avocado orchard. As previously discussed in Section 5.2.1.1.5, the open space designation is applied to parcels or areas of land that are essentially unimproved and devoted to an open-space use. The OS-160 designation allows for generally passive uses, including preservation of natural resources, managed production of resources, outdoor recreation, and areas requiring special management due to hazardous or special conditions (e.g., earthquake fault zones, unstable soil areas, flood plains, high fire severity areas), among others (County of Ventura 2008, Section 8104-1.1). Oil and gas exploration and production is permitted with a conditional use permit (County of Ventura 2008, Section 8105-4).

The selection of the Devil's Canyon Road Site is not consistent with existing land use and zoning for the on-site location to facilitate the types of operational uses required by the project. In addition, the underlying land use of the compressor station site is included in the County of Ventura Measure C, SOAR Initiative—2050 (County of Ventura 2016).

## Oil Wells

The Devil's Canyon Road Site is located within the south-central portion of the active Ventura Oil Field (DOC 2022). According to the U.S. Department of Conservation (DOC 2022), there are at least five currently active wells located on the proposed compressor station site, in addition to a number of active wells operating in the near vicinity.

## Evaluation and Score

All the Devil's Canyon Road – Natural Gas Option's operational components are located within parcels with County zoning that does not support industrial and/or manufacturing uses. Additionally, the primary compressor station site is within an area governed by the SOAR initiative. No portion of the site is adjacent to any sensitive receptors. The nearest industrially zoned land use parcel is approximately 0.25 miles to the east of the compressor station boundary (APN 068001001), while the nearest sensitive land use is a residentially zoned parcel (APN 0690141135) in the City of Ventura, approximately 0.54 miles from the Devil's Canyon Road Site (County of Ventura 2021). The proposed staging area is located within a parcel zoned for industrial uses; however, this feature would not be required during project operation and is therefore not incorporated into this land use analysis. Additionally, the primary compressor station site is within an area governed by the SOAR initiative. Based on the above analysis and using the scoring criteria for a site that is within a "Non-Industrial/manufacturing zone and not adjacent to sensitive receptors," the Devil's Canyon Road – Natural Gas Option received a score of 6 points.

### 5.4.1.1.6 Noise

The nearest non-industrial land use to the Devil's Canyon Road Site is a residentially zoned parcel in the City of Ventura approximately 0.54 miles to the east of the site boundary on the east side of SR-33. Based on the assessment provided in Attachment 5, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-industrial land use (as defined in Section 3.2.7) of less than 40 dBA. Therefore, this alternative received a score of 8 points.

### 5.4.1.1.7 Wildfire

All operational components of the Devil's Canyon Road Site are fully or partially within FHSZ and within the Casitas Fuel Bed (VCFPD 2021; CAL FIRE 2022). As shown on the FHSZ Maps in Attachment 7, a little over half of the compressor station site is within a very high FHSZ, while the rest, along with the required MLV, are within a high FHSZ. The access road passes through a high, moderate, and very high FHSZ. Given the ranking criteria for sites within high FHSZs, the Devil's Canyon Road – Natural Gas Option received a score of 2 points because the portion of the site located in a very high FHSZ and the presence of vegetative fuel sources in the surrounding areas (Radeloff 2010; VCFPD 2021).

## 5.4.1.2 On-Site Construction Considerations

### 5.4.1.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. For the purposes of the earthwork required to inform the air quality analysis, it was estimated that the site consisted of flat areas that required minimal grading. The total PM<sub>10</sub> exhaust emissions from on-site construction of the Devil's Canyon Road Site are shown in Table 32.

**Table 32. On-Site Construction Emissions: Devil's Canyon Road - Natural Gas**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Emissions (lb)
Grading – flat	872	233
Grading – elevated	0	0
Compressor station	10,578	2,022
Substation	0	0
<b>Total<sup>a</sup></b>	<b>11,450</b>	<b>2,255</b>

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The Devil's Canyon Road Site is generally flat, the amount of on-site diesel equipment would be minimal, and the duration of grading activities would be limited. NO<sub>x</sub> emissions would be in the <40,000 pounds and ≥8,000 pounds range and PM<sub>10</sub> emissions would be in the <6,000 pounds and ≥2,000 pounds range; therefore, this alternative received a score of 6 points.

#### 5.4.1.2.2 Cultural Resources

A total of 12 cultural resources have been previously recorded within a 1-mile radius of the Devil's Canyon Road Site; however, no cultural resources have been identified within the Devil's Canyon Road Site. There are no cultural resources within a 0.25-mile radius of the Devil's Canyon Road Site, nor are there any resources listed on any federal, state, or local registry within the on-site component of the Devil's Canyon Road Site.

A total of 58 previously conducted studies have been undertaken within a 1-mile radius of the Devil's Canyon Road Site between 1974 and 2021. Of these 58 studies, 1 addresses approximately 5% of the Devil's Canyon Road Site and recommends the general area surrounding the Ventura River be avoided and left unaltered until further studies can be conducted, including archaeological and ethnographic analyses to determine the exact nature and scope of the potential resources. The author also expressed that the general area should be considered culturally and/or scientifically significant.

According to the historical aerial photographs and topographic maps reviewed, the Devil's Canyon Road Site has been disturbed as early as 1947, including road and building construction and grading associated with industrial development. The Devil's Canyon Road Site is located approximately 492 feet east of the Ventura River, 2.3 miles north of the Pacific Ocean and at the southern base of the Santa Ynez Mountains. The Devil's Canyon Road Site is within close proximity to the base of the Santa Ynez Mountains, which are capable of depositing sediment; therefore, the site has potential for unknown archaeological material to be buried under natural alluvial sediment.

In summary, no known cultural resources are present within the Devil's Canyon Road Site. The Devil's Canyon Road Site has been minimally addressed by one cultural resources study; however, the surrounding area has been subjected to multiple cultural resources studies and no significant cultural resources have been identified within a 0.25-mile radius. The considerable and continual ground disturbance extending over 70 years and the lack of resources identified within close proximity suggests that the potential for yet unknown and intact cultural resources is low. Therefore, the Devil's Canyon Road Site is in a location that is not sensitive for potentially significant cultural

resources. Based on the above findings, the on-site component of the Devil's Canyon Road Site received a score of 7 points.

#### 5.4.1.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. The total GHG emissions from on-site construction of the Devil's Canyon Road Alternative are shown in Table 33.

**Table 33. On-Site GHG Construction Emissions: Devil's Canyon Road - Natural Gas**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Grading – flat	105
Grading – elevated	0
Compressor station	1,560
Substation	0
<b>Total<sup>a</sup></b>	<b>1,666</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The expected GHG emissions for on-site construction are well below the <5,000 MT CO<sub>2</sub>e threshold. Accordingly, this alternative received a score of 8 points.

#### 5.4.1.2.4 Natural Resources

This alternative is primarily within a developed area (oil extraction facilities), with the very southeast corner previously mapped as *Salix lasiolepis* association (David Magney Environmental Consulting 2008), which is typically associated with riparian habitat (i.e., the Ventura River). The site has developed areas (oil extraction facilities) to the north and west, and riparian habitats to the south and east. No sensitive plant or animal species have been recorded on site; however, the site is adjacent to the Ventura River (to the east of the site), it has designated critical habitat for southwestern willow flycatcher and southern steelhead, and it has records for the federal and state listed least Bell's vireo (*Vireo bellii pusillus*); in addition, two CDFW Species of Special Concern, western pond turtle (*Emys marmorata*) and two-striped gartersnake (*Thamnophis hammondi*), have nearby records. Avoidance and minimization measures could be used if needed to prevent direct impacts to these 5 species and their associated riparian habitat; the remaining 29 sensitive plant or animal species and habitats with previously recorded occurrences within 3 miles have low potential to occur or are not expected to occur on site. As such, this alternative may indirectly impact sensitive habitats or sensitive animal species and received a score of 4 points.

#### 5.4.1.2.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (as defined in Section 3.2.7), which would be more than 1,000 feet from the construction activity, would be less than 64 dBA for this alternative; thus, the alternative received a score of 9 points.

#### 5.4.1.2.6 Slope, Topography, and Grading

The topography and slope maps in Attachment 6 show the slope for the Devil's Canyon Road Site and surrounding area. The site has been previously graded and developed and currently supports an oil extraction facility with multiple active wells. The average slope range calculations for the site are provided in Table 34.

**Table 34. Average Slope Calculations**

Class Range	% Slope Range	Acres	% Slope	Avg Avg	% Slope	Min Avg	% Slope	Max Avg
<b>Devil's Canyon Road Site – 12.88 Acres</b>								
Site Classes: 0%–30%	0%–10%	11.98	5%	0.6	0%	0	10%	1.2
	>10%–20%	0.71	15%	0.11	10%	0.07	20%	0.14
	>20%–30%	0.19	25%	0.05	20%	0.04	30%	0.06
Site Averages				6%		1%		11%

The on-site slope ranges from a low of 0% to a high of over 30%, with a site average of approximately 6%. Based on conceptual engineering analysis, grading for this site would entail approximately 4,500 CY of over-excavation/recompaction. For the purposes of this analysis, a total of 4,500 CY, together with a slope of less than 10%, would be considered “negligible.” As such, within the score range of 7 to 9, where the “average slope of the property is less than 20%” and “negligible/no over-excavation/recompaction is required” (see Section 3.1, Scoring Criteria), the Devil's Canyon Road Site received a score of 8 points.

#### 5.4.1.2.7 Traffic

The Devil's Canyon Road Site would be located at an existing oil extraction site located approximately 6,000 feet to the north of the existing Ventura Compressor Station, on the west side of SR-33. The site is located in an industrial and agricultural area. The site has direct access from U.S. Route 101 to SR-33 to the Shell Road/Mill Canyon Road interchange to Shell Road and Devils Canyon Road. Shell Road (west of SR-33) and Devils Canyon Road are both unpaved roads with negligible vehicular traffic and are primarily used for private access to the oil/gas field. Therefore, with direct access to the site provided via major highways, the project is not considered to be in a road-constrained area. Furthermore, access to the site is provided by multiple driveways off Shell Road that meet SoCalGas and emergency responder access requirements. It is assumed that the existing access serving the site is sufficient.

Construction of the compressor station, including pad grading, access road, on-site utility installations, buildings, and compressors, would take approximately 24 to 30 months, with major earthwork occurring for less than 1 year due to the flat/graded nature of the property. Given the location of the site and sufficient existing access, heavy trucks would not travel through residential areas or roadway-constrained areas. Therefore, this alternative received a score of 9 points.

### 5.4.1.3 Off-Site Construction Considerations

#### 5.4.1.3.1 Air Quality

Scoring for air quality impacts from off-site construction was based on the total distance of linear construction of the proposed pipeline system, power line, and access road construction. The Natural Gas Option at the Devil's Canyon Road Site would require construction of approximately 5,135 linear feet of new pipeline systems, as well as approximately 1,892 linear feet of access road work. The linear construction totals approximately 7,027 linear feet, which is in the middle of the minimal range. Therefore, this alternative received a score of 5 points.

#### 5.4.1.3.2 Cultural Resources

A total of 12 cultural resources have been previously recorded within a 1-mile radius of the off-site components of the Devil's Canyon Road Site; however, no cultural resources have been identified within the off-site components. The only resource within a 0.25-mile radius of the off-site component of the Devil's Canyon Road Site is the P-56-001109H (Nordhoff Spur of the Ventura River and Ojai Valley Railroad), which was determined not to be a significant resource and was previously described in Section 5.3.1.2.2. No resources listed on any federal, state, or local registry are located within the off-site components of the Devil's Canyon Road Site.

A total of 58 previously conducted studies have been undertaken within a 1-mile radius of the off-site components of the Devil's Canyon Road Site between 1974 and 2021. Two of these studies address approximately 5% of the off-site components of the Devil's Canyon Road Site. Only VN-00519 (Singer 1987) surveyed portions of the pipeline system and MLV station and recommends the general area surrounding the Ventura River be avoided and left unaltered until further studies can be conducted including archaeological and ethnographic analyses to determine the exact nature and scope of the potential resources. The author also expressed that the general area should be considered culturally and/or scientifically significant.

According to the historical aerial photographs and topographic maps reviewed, the off-site components of the Devil's Canyon Road Site have been disturbed at least as early as 1904 with industrial development as well as road grading and construction. The off-site staging area component has been disturbed as early as 1947 with industrial cisterns and evidence of grading. The off-site access road component along Mill Canyon Road and Devil's Canyon Road has been developed as a roadway at least as early as 1904. The off-site roadway and pipeline components appear to have also been developed as a roadway at least as early as 1904.

A segment of the off-site pipeline component intersects the Ventura River, which is capable of depositing sediment, and therefore has potential for unknown archaeological material to be buried under natural sediment. The Ventura River would have served as a freshwater resource in prehistoric and historic periods. Some of the off-site components appear to be too close to the river to be a hospitable location for habitation due to the propensity for flooding. Other components are farther from the river, increasing the potential for the area to be hospitable to habitation. However, depending on the depth and timing of depositional sediment as well as the depth of previous disturbance, unknown cultural resources, if present, may have been destroyed, displaced, and/or buried deeper than the proposed depth of disturbance. Conversely, some off-site components of the Devil's Canyon Road Site are located within a potentially sensitive area because of the close proximity to a freshwater source.



In summary, no known cultural resources exist within the off-site components of the Devil's Canyon Road Site. The off-site component of the Devil's Canyon Road Site has been minimally addressed by previous cultural resources studies. However, the surrounding area has been subjected to multiple cultural resource studies with only one non-significant cultural resource identified within a 0.25-mile radius. Considering the continual ground disturbance extending over 100 years and the lack of resources identified within close proximity to the off-site components, the potential for yet unknown and intact cultural resources is low. Therefore, the off-site component of the Devil's Canyon Road Site is in a location that is not sensitive for potentially significant cultural resources. Based on the above findings, the off-site component of the Devil's Canyon Road Site received a score of 7 points.

#### 5.4.1.3.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in CO<sub>2</sub>e) resulting from off-site activities such as construction of power lines, pipelines, and roads outside the footprint of the compressor station were calculated. The total GHG emissions from off-site construction of the Devil's Canyon Road Alternative are shown in Table 35.

**Table 35. Off-Site GHG Construction Emissions: Devil's Canyon Road - Natural Gas**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Power line	0
Pipeline – street	181
Pipeline – open space	0
Road construction	67
<b>Total<sup>a</sup></b>	<b>248</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

GHG emissions from off-site construction would be in the <500 MT CO<sub>2</sub>e range. Therefore, this alternative received a score of 7.

#### 5.4.1.3.4 Natural Resources

No electrical interconnect is proposed for this alternative. The proposed staging area is within a developed area but adjacent to a wetland feature (freshwater forested/shrub wetland). The proposed tie-in is within an orchard and the proposed pipeline corridor is also within developed areas (oil extraction facilities) and areas previously mapped as *Salvia mellifera*–*Salvia leucophylla* association (David Magney Environmental Consulting 2008), as shown in Figure NR-2D in Attachment 4. The pipeline corridor crosses one linear wetland feature (mapped as riverine). The access road improvements are not expected to occur on the bridge or within the support structures and footings within the Ventura River. The pipeline corridor and access road improvements are within 500 feet of designated critical habitat for southwestern willow flycatcher and southern steelhead and records for the federally and state-listed least Bell's vireo and two CDFW Species of Special Concern (western pond turtle and two-striped gartersnake), as shown in Figure NR-1D in Attachment 4. The remaining 29 sensitive plant or animal species and habitats with previously recorded occurrences within 3 miles have low potential to occur or are not expected to occur in off-site areas. Avoidance and minimization measures could be used if needed to prevent direct impacts to the five species listed

above and to their riparian habitat; however, a wetland feature is crossed by the pipeline corridor. As such, this alternative may indirectly impact sensitive animal species and directly and indirectly impact wetlands in adjacent off-site areas; therefore, it received a score of 0 points.

#### 5.4.1.3.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (as defined in Section 3.2.7), which would be more than 1,000 feet from the construction activity, would be less than 64 dBA for this alternative; thus, the alternative received a score of 9 points.

#### 5.4.1.3.6 Traffic

The Devil's Canyon Road Site would require the construction of pipelines through the oil/gas hillside area, requiring grading, trenching, and pipeline installation and potentially acquisition of additional pipeline right-of-way. The project would require construction of 5,280 linear feet of new pipeline within or near Devil's Canyon Road. It is assumed that there would be moderate construction on Devil's Canyon Road, with the potential for lane closures along several segments (representing at least 2,500 linear feet). However, Devil's Canyon Road is a private unpaved road and is primarily used for private access to the oil/gas field.

Construction would have some impact on Devil's Canyon Road; however, there would be no construction on public roadways that could cause new congestion or exacerbate existing traffic conditions. Therefore, this alternative received a score of 7 points.

#### 5.4.1.3.7 Utilities/Service Systems

The Devil's Canyon Road Site – Natural Gas Option would require approximately 47,927 square feet of off-site ground disturbance for pipelines and approximately 7,500 square feet for the MLV connection, for a total of approximately 55,427 square feet of off-site ground disturbance. All off-site ground disturbance is summarized in Table 36 and would be conducted within and surrounded by non-urbanized and industrial land.

**Table 36. Off-Site Ground Disturbance: Devil's Canyon Road – Natural Gas**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
Pipeline Corridor 1 (Devil's Canyon Road)	23,963
Pipeline Corridor 2 (Also Devil's Canyon Road)	23,963
Utility Lines	0
<i>Subtotal Off-Site Ground Disturbance – Pipelines and Utilities</i>	<i>47,927</i>
<b>Mainline Valve Connection</b>	
Mainline Valve Connection	7,500
<i>Subtotal Off-Site Ground Disturbance – Mainline Valve Connection</i>	<i>7,500</i>
<b>Depressurization Line</b>	
Depressurization Line	0



**Table 36. Off-Site Ground Disturbance: Devil's Canyon Road - Natural Gas**

Construction Element	Square Feet
<i>Subtotal Off-Site Ground Disturbance – Depressurization Line</i>	0
<b>Electrical Pole Footings</b>	
Electrical Pole Footings	0
<i>Subtotal Off-Site Ground Disturbance – Electrical Pole Footings</i>	0
<b>Total Off-Site Ground Disturbance for All Construction Elements<sup>a</sup></b>	<b>55,427</b>

**Note:**

<sup>a</sup> Totals may not sum precisely due to rounding.

Therefore, this alternative received a score of 3 points because of the moderate amount of off-site ground disturbance required.

## 5.4.2 Hybrid Option

### 5.4.2.1 Operational Considerations

#### 5.4.2.1.1 Aesthetics and Visual Resources

Implementation of the Hybrid Option at the Devil's Canyon Road Site would require the installation of approximately 40 electrical poles to connect to an existing SCE subtransmission line. Although electrical poles are likely to be visible from public roads due to their height and the number of poles needed, electrical poles are commonplace throughout the area and are unlikely to require substantial alteration of an identified scenic resource or result in substantial alteration of existing character that encompasses previous on-site development and oil well sites in the hillsides to the west. As with the Natural Gas Option, development of the site with a compressor building and other associated infrastructure/features would generally be obscured from public view due to the presence of existing vegetation that blocks the site from most public roads, accessible vistas, and trails. Therefore, due to new electrical pole installation, this alternative received a score of 7 points.

#### 5.4.2.1.2 Air Quality

This option would include the installation of two new 1,900 HP natural gas compressors and two new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, the Hybrid Option is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption. The Hybrid Option has fewer internal combustion engines and thus fewer direct emissions than the Natural Gas Option. The replacement of two of the internal combustion engines with two electric compressors of equivalent horsepower would essentially cut the expected direct emissions in half.

Operation of the Hybrid Option was calculated to result in 5.6 tons/year of NO<sub>x</sub> emissions. As such, the Hybrid Option would fall within the  $\geq 4$  tons/year but  $< 8$  tons/year category, which would score from 4 to 6. Because 5.6 tons/year is in the middle of the NO<sub>x</sub> emissions range, the Hybrid Option received a score of 5 points.

#### 5.4.2.1.3 CalEnviroScreen

OEHHA CalEnviroScreen 4.0 Maps indicate that the Devil's Canyon Road Site is in Census Tract 6111001206, which has a population of approximately 778. As described in Section 5.2.1.1.3, this tract has a total pollution burden score of 79%, which means that this census tract has more pollution burden than 79% of all census tracts within California (OEHHA 2022b). Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the Devil's Canyon Road Site received a score of 2 points because a pollution burden of 79% is within the 80% to 71% scoring range.

#### 5.4.2.1.4 Greenhouse Gases

This option would include the installation of two new 1,900 HP natural gas compressors and two new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of CO<sub>2</sub> equivalent that are directly produced from equipment and indirectly produced as a result of activities related to operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). The total direct GHG emissions would be 13,918 MT CO<sub>2</sub>e/year and indirect GHG emissions would be 5,500 MT CO<sub>2</sub>e/year from operational activities at the Devil's Canyon Road Site.

The shift from natural gas to a Hybrid Option reduces the localized emissions of criteria pollutants and direct GHG emissions, but the increased power demand from the electric compressors would increase indirect GHG emissions depending on how the power that is used is generated. The estimated emissions for the hybrid technology were calculated to be 19,418 MT CO<sub>2</sub>e/year, which would fall within the  $\geq 10,000$  MT CO<sub>2</sub>e/year but  $< 25,000$  MT CO<sub>2</sub>e/year category and therefore would score from 4 to 6. Because 19,418 MT CO<sub>2</sub>e/year is in the middle of the emission range, the Hybrid Option received a score of 5 points.

#### 5.4.2.1.5 Land Use Designation

The Devil's Canyon Road – Hybrid Option would require the installation of approximately 40 electrical poles and associated overhead electrical conduit to connect to an existing subtransmission line; however, the location and underlying land use(s) of the electrical interconnect are not primary considerations for the land use criteria as described in Section 3.1 and as such, do not significantly influence the score for this site. All the Devil's Canyon Road – Hybrid Option's operational components are located within parcels with County zoning that does not support industrial and/or manufacturing uses. Additionally, the primary compressor station site is within an area governed by the SOAR initiative. No portion of the site is adjacent to any sensitive receptors. The nearest industrially zoned land use parcel is approximately 0.25 miles to the east of the compressor station boundary (APN 068001001), while the nearest sensitive land use is a residentially zoned parcel (APN 0690141135) in the City of Ventura, approximately 0.54 miles from the site (County of Ventura 2021). Using the scoring criteria for a site which is within a "Non-Industrial/manufacturing zone and not adjacent to sensitive receptors," the Devil's Canyon Road – Hybrid Option received a score of 6 points.

#### 5.4.2.1.6 Noise

Based on the assessment provided in Attachment 5, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-industrial land use (defined per Section 3.2.7) of less than 35 dBA. Therefore, this alternative received a score of 9 points.

#### 5.4.2.1.7 Wildfire

The Hybrid Option alternative would require installation of 40 poles and associated overhead electrical lines to provide adequate power to the compressor stations. Due to the exposed nature of the electrical interconnect—traveling through a Tier 3 HFTD—the electrical interconnect could represent an increased fire risk to the surrounding community due to potentially downed power lines (CPUC 2021a; 2021b) (see maps in Attachment 7). As such, the Hybrid Option received a score of 1 point. This score is due to the location of the electrical interconnect within a Tier 3 HFTD and the number of required poles/exposed length of conduit within a Tier 3 HFTD (CPUC 2021a; 2021b; Radeloff 2010; VCFPD 2021).

### 5.4.2.2 On-Site Construction Considerations

#### 5.4.2.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. The total NO<sub>x</sub> and PM<sub>10</sub> emissions from on-site construction of the Devil's Canyon Road Site are shown in Table 37.

**Table 37. On-Site Construction Emissions: Devil's Canyon Road - Hybrid**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Emissions (lb)
Grading – flat	872	233
Grading – elevated	0	0
Compressor station	10,578	2,022
Substation	1,311	74.3
<b>Total<sup>a</sup></b>	<b>12,761</b>	<b>2,329</b>

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The amount of on-site diesel equipment would be minimal, and the duration of grading activities would be limited. The Hybrid Option would also require additional construction activity for a substation. NO<sub>x</sub> emissions would be in the <40,000 pounds and ≥8,000 pounds range and PM<sub>10</sub> emissions would be in the <6,000 pounds and ≥2,000 pounds range. Therefore, this alternative received a score of 6 points.

#### 5.4.2.2.2 Cultural Resources

There are no differences in results for on-site construction considerations for the Hybrid Option and the Natural Gas Option. Therefore, this alternative received a score of 7 points.

#### 5.4.2.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. The total GHG emissions from on-site construction of the Devil's Canyon Road Alternative are shown in Table 38.

**Table 38. On-Site GHG Construction Emissions: Devil's Canyon Road - Hybrid**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Grading – flat	105
Grading – elevated	0
Compressor station	1,560
Substation	294
<b>Total<sup>a</sup></b>	<b>1,959</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The GHG emissions for on-site construction are anticipated to be well below the <5,000 MT CO<sub>2</sub>e threshold. Accordingly, this alternative received a score of 8 points.

#### 5.4.2.2.4 Natural Resources

The Hybrid Option may directly or indirectly impact wetlands that support sensitive wildlife species and habitat. As such, this alternative may indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands adjacent to the site, and received a score of 4 points.

#### 5.4.2.2.5 Noise

The nearest non-industrial land use to the Devil's Canyon Road Site is a residentially zoned parcel in the City of Ventura approximately 0.54 miles to the east of the site boundary on the east side of SR-33. Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (as defined in Section 3.2.7), which would be more than 1,000 feet from the construction activity, would be less than 64 dBA for this alternative; thus, the alternative received a score of 9 points.

#### 5.4.2.2.6 Slope, Topography, and Grading

The Hybrid Option would include an electrical interconnect, requiring approximately 80 CY of over-excavation/recompaction in addition to the 4,500 CY required for the on-site components. The additional 80 CY does not impact the ranking because the over-excavation is a relatively negligible amount and the total cubic yardage for the project site would remain under 10,000 (County of Ventura 2022). As such, within the score range of 7 to 9, where the “average slope of the property is less than 20%” and “negligible/no over-excavation/recompaction is required” (see Section 3.1, Scoring Criteria), the Devil's Canyon Road Site received a score of 8 points.

#### 5.4.2.2.7 Traffic

There would be a negligible difference between construction of the Hybrid Option and the Natural Gas Option related to heavy truck traffic for on-site construction activity. Therefore, this alternative also received a score of 9 points.

### 5.4.2.3 Off-Site Construction Considerations

#### 5.4.2.3.1 Air Quality

Scoring for air quality impacts from off-site construction was based on the total distance of linear construction of the proposed pipeline system, power line, and access road construction. The Hybrid Option at the Devil's Canyon Road Site would require construction of approximately 5,135 linear feet of new pipeline systems, as well as approximately 1,892 linear feet of access road work. In addition, approximately 4,507 linear feet of electrical interconnect would be required to accommodate the increased demand from the electric compressors. The linear construction totals approximately 11,534 linear feet, which is in the moderate range. Therefore, this alternative received a score of 3 points.

#### 5.4.2.3.2 Cultural Resources

There are no differences in results for off-site construction considerations for the Hybrid Option and the Natural Gas Option. Therefore, this alternative received a score of 7 points.

#### 5.4.2.3.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from off-site activities such as construction of power lines, pipelines, and roads outside the footprint of the future compressor station were calculated. The total GHG emissions from off-site construction of the Devil's Canyon Road Alternative are shown in Table 39.

**Table 39. Off-Site GHG Construction Emissions: Devil's Canyon Road - Hybrid**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Power line	141
Pipeline – street	181
Pipeline – open space	0
Road construction	67
<b>Total<sup>a</sup></b>	<b>389</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

GHG emissions from off-site construction would be in the <500 MT CO<sub>2</sub>e range. Therefore, this alternative received a score of 7 points.

#### 5.4.2.3.4 Natural Resources

The proposed electrical interconnect for this alternative is within developed areas with areas of shrubs and crosses one wetland feature (freshwater forested/shrub wetland) and one sensitive habitat (southern coast live oak riparian forest); however, individual pole siting could avoid or minimize impacts to wetlands and sensitive habitats. The proposed tie-in is within an orchard and the proposed pipeline corridor is within developed areas (oil extraction facilities) and areas previously mapped as *Salvia mellifera*–*Salvia leucophylla* association (David Magney Environmental Consulting 2008), as shown in Figure NR-2D in Attachment 4. The same staging area would be required for the Hybrid Option. The proposed pipeline corridor would cross one wetland feature. As such, this alternative may indirectly impact sensitive animal species in adjacent habitats and directly impact sensitive habitats or wetlands in off-site areas; therefore, it received a score of 0 points.

#### 5.4.2.3.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (as defined in Section 3.2.7), which would be more than 1,000 feet from the construction activity, would be less than 64 dBA for this alternative; thus, the alternative received a score of 9 points.

#### 5.4.2.3.6 Traffic

Construction of the Hybrid Option would be the same as the Natural Gas Option, with the exception of the extension of electrical utilities. However, no roadway construction on existing roads for electrical utilities would be required. Therefore, this alternative received a score of 7 points.

#### 5.4.2.3.7 Utilities/Service Systems

The Devil's Canyon Road – Hybrid Option would require approximately 47,927 square feet of off-site ground disturbance for pipelines, approximately 7,500 square feet for the MLV connection, and 636 square feet of footings required for electrical poles, for a total of 55,978 square feet of ground disturbance. All off-site ground disturbance is summarized in Table 40 and would be conducted within and surrounded by non-urbanized and industrial land.

**Table 40. Off-Site Ground Disturbance: Devil's Canyon Road - Hybrid**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
Pipeline Corridor 1 (Devil's Canyon Road)	23,963
Pipeline Corridor 2 (Also Devil's Canyon Road)	23,963
Utility Lines	0
<i>Subtotal Off-Site Ground Disturbance – Pipelines and Utilities</i>	<i>47,927</i>
<b>Mainline Valve Connection</b>	
Mainline Valve Connection	7,500
<i>Subtotal Off-Site Ground Disturbance – Mainline Valve Connection</i>	<i>7,500</i>

**Table 40. Off-Site Ground Disturbance: Devil's Canyon Road - Hybrid**

Construction Element	Square Feet
<b>Depressurization Line</b>	
Depressurization Line	0
<i>Subtotal Off-Site Ground Disturbance – Depressurization Line</i>	0
<b>Electrical Pole Footings</b>	
Electrical Pole Footings	560
<i>Subtotal Off-Site Ground Disturbance – Electrical Pole Footings</i>	560
<b>Total Off-Site Ground Disturbance for All Construction Elements<sup>a</sup></b>	<b>55,987</b>

**Note:**

<sup>a</sup> Totals may not sum precisely due to rounding.

The additional disturbance for the electrical poles would not substantively alter the amount of off-site ground disturbance required; therefore, this alternative received a score of 3 points.

## 5.5 County Line Site

The scoring rationale for each of the environmental topic areas for the County Line Site Alternative is described below.

### 5.5.1 Natural Gas Option

#### 5.5.1.1 Operational Considerations

##### 5.5.1.1.1 Aesthetics and Visual Resources

The County Line Site is within the viewshed of SR-150 (an eligible state scenic highway) over an approximately 0.7-mile-long segment extending north from approximately Rincon Hill Road. Over this segment, the site is occasionally blocked from view by nearby native vegetation and agricultural crops; however, site development is likely to remain visible above adjacent vegetation due to the inclusion of hillsides on the County Line Site. Depending on the location of grading limits, development of the site could result in substantial alteration to the established visual character of a scenic roadway and to the open space character of the surrounding areas including the currently undeveloped site. Both the visual character of scenic roadways and the open space character of lands outside of existing communities are identified as scenic resources in the Ventura County General Plan (County of Ventura 2020). Due to the potential visibility of site development, potentially available views from a scenic roadway/eligible state scenic highway, and the existing undeveloped and open space character of the site, development of the Natural Gas Option received a score of 0 points.

##### 5.5.1.1.2 Air Quality

This option would include the installation of five new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the AQ/GHG



Analysis in Attachment 1, the natural gas-powered compressor station is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption.

Operation of the natural gas compressors is calculated to result in 14 tons/year of emissions. As such, the Natural Gas Option would fall within the >12 tons/year category. Therefore, the Natural Gas Option received a score of 0 points.

#### 5.5.1.1.3 CalEnviroScreen

OEHHA CalEnviroScreen 4.0 Maps indicate that the County Line Site is in Census Tract 6111001206, which has a population of approximately 778. As described in Section 5.2.1.1.3, this tract has a total pollution burden score of 79%, which means that this census tract has more pollution burden than 79% of all census tracts within California (OEHHA 2022b). Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the County Line Site received a score of 2 points because a pollution burden of 79% is within the 71% to 80% scoring range.

#### 5.5.1.1.4 Greenhouse Gases

This option would include the installation of five new 1,900 HP natural gas compressors equipped with state-of-the-art emission control technology that would be installed in a new compressor building. As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of CO<sub>2</sub> equivalent that are directly produced from equipment and indirectly produced as a result of activities related to operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). Indirect GHG emissions for the operation of the natural-gas facilities were not quantified for the Natural Gas Option since anything attributable to indirect GHG emissions would be consistent across all the proposed alternative sites.

The estimated emissions for the all-Natural Gas Option were calculated to be 34,795 MT CO<sub>2</sub>e/year, which would fall within the ≥25,000 MT CO<sub>2</sub>e/year but <50,000 MT CO<sub>2</sub>e/year category and therefore would score from 1 to 3. Because 34,795 MT CO<sub>2</sub>e/year is in the middle of the emission range, the Natural Gas Option received a score of 2 points.

#### 5.5.1.1.5 Land Use Designation

##### Regional Site Location

As shown on Figure 5, the County Line Site is in southwest Ventura County, located just west of the Ventura County–Santa Barbara County line, and approximately 22.18 miles east west and slightly north of the Existing Site. The County Line Site lies across a small portion of two larger APNs within Ventura County: APN 008016048 to the northeast and APN 008016047 to the southwest. Regional access to the site and the adjacent staging area—located directly to the northeast of the compressor station site—is via U.S. Route 101 to SR-10/Rincon Road.

##### Surrounding Land Uses

As shown on the General Plan Land Use and Zoning maps within Attachment 3, the surrounding land uses of the County Line Site are predominantly open space and agricultural, with minimum lot sizes ranging from 40 to 160 acres (County of Ventura 2021). These include County General Plan (2020) land use designations of Open Space in all directions, as well as zoning of AE-40 to the northeast and southeast, OS-160 to the northeast, and



CA-40 to the northwest and southwest (County of Ventura 2021). Land uses northwest of SR-150/Rincon Road and the Santa Barbara County line are also predominantly open space and agriculture, including the County of Santa Barbara Comprehensive Plan (2016) land use designation of Agriculture II, and a minimum parcel size of 100 acres (A-II-100) (County of Santa Barbara 2016; 2021). While the County Line Site compressor station site is not directly adjacent to any sensitive receptors, according to the currently available aerial views, there appears to be a residential development (e.g., sensitive land use area) located approximately 0.24 miles to the northeast.

### **Project Component Land Uses**

The approximately 12.33 acres County Line Site compressor station site is located within Ventura County. The proposed locations for much of the required pipelines and off-site MLV station, and the County Line tie-in for depressurization would be on currently developed land, including approximately 0.93 miles of existing dirt roadway and several operational agricultural lots. All the operational components are within parcels with County General Plan (2020) land use designations of Open Space and County zoning of either CA-40 (Coastal Agricultural; minimum lot size of 40 acres) (County of Ventura 2008) or AE-40 (Agricultural Exclusive; minimum lot size of 40 acres) (County of Ventura 2012). While the County Line Site is located on part of an active agricultural parcel, the available aerial views of the site appear to show no current crop production.

The selection of the County Line Alternative would require changes to for a compressor station would not be is not consistent with the existing land use and zoning for the on-site location to facilitate the types of operational uses required by the project. In addition, Additionally, the primary compressor station site is within an area governed by the SOAR initiative.

### **Oil Wells**

The County Line Site is adjacent to a small, abandoned oil field (e.g., Rincon Creek) (DOC 2019). There are no active wells present on or adjacent to the site (DOC 2022).

### **Evaluation and Score**

While the County Line Site Natural Gas Option's compressor station site is not directly adjacent to any sensitive receptors (i.e., within 500 feet), all the site's operational components are located within parcels with County zoning that does not support the types of industrial and/or manufacturing uses required by the project. Additionally, the primary compressor station site is within an area governed by the SOAR initiative. While the County Line Site is part of an active agricultural parcel, the currently available aerial views of the site show no current crop production. The nearest industrially designated land use to the County Line Site is 0.83 miles to the southeast (APN 060010030). The nearest sensitive land use to the compressor station site is approximately 0.24 miles away. Using the scoring criteria for a site that is within a Non-Industrial/manufacturing zone and is not adjacent to sensitive receptors, the County Line – Natural Gas Option received a score of 6 points.

#### **5.5.1.1.6 Noise**

The nearest non-industrial land use to the County Line Site is a residential area located approximately 0.24 miles to the northeast of the site. Based on the assessment provided in Attachment 5, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-

industrial land use (defined per Section 3.2.7) of less than 55 dBA. Therefore, this alternative received a score of 4 points.

#### 5.5.1.1.7 Wildfire

As shown on the SRA and LRA FHSZ Maps in Attachment 7, approximately two-thirds of the County Line Site is located within a very high FHSZ (CAL FIRE 2022). The other third of the site is located within a moderate FHSZ (CAL FIRE 2022). All operational project components are located within a vegetated area of a known fuel bed (i.e., Casitas Fuel Bed) (Radeloff 2010; VCFPD 2021). Because this site is located on the westernmost edge of a very high FHSZ and because the surrounding area to the north, south, and west are identified as being moderate FHSZs, this site received a score of 3 points under the scoring criteria. The score of 3 is provided with an understanding that the site is not within a high FHSZ; however, portions of the site are within both very high and moderate FHSZs, and the site is bordered by moderate FHSZs to the north, west, and south (CAL FIRE 2022).

### 5.5.1.2 On-Site Construction Considerations

#### 5.5.1.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. For the purposes of the earthwork required to inform the air quality analysis, it was estimated that the site consisted of hillside/elevated land and flat areas that required grading. The total NO<sub>x</sub> and PM<sub>10</sub> emissions from on-site construction of the County Line Site are shown in Table 41.

**Table 41. On-Site Construction Emissions: County Line - Natural Gas**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Exhaust Emissions (lb)
Grading – flat	8,218	2,193
Grading – elevated	41,021	5,339
Compressor station	10,578	2,022
Substation		0
<b>Total<sup>a</sup></b>	<b>59,817</b>	<b>9,555</b>

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The County Line Site is very hilly and would require substantial grading to be suitable for use. The County Line Site currently has no industrial development. NO<sub>x</sub> emissions would be in the <80,000 pounds and ≥40,000 pounds range and PM<sub>10</sub> emissions would be in the <10,000 pounds and ≥6,000 pounds range; therefore, this alternative received a score of 2 points.

#### 5.5.1.2.2 Cultural Resources

A total of 5 cultural resources have been previously recorded within a 1-mile radius of the County Line Site; however, no cultural resources have been identified within the site and there are no resources within a 0.5-mile radius of the

County Line Site. Additionally, no resources listed on any federal, state, or local registry are located within the on-site component of the County Line Site.

A total of 28 previously conducted studies have been undertaken within a 1-mile radius of the County Line Site between 1962 and 2014. Of these 28 studies, none addresses the County Line Site.

According to the historic aerial photographs and topographic maps, the County Line Site has been subject to ground disturbance at least as early as 1947 because it was occupied by an orchard from at least 1947 until 2002. The County Line Site is located approximately 787 feet east of Rincon Creek, 8,825 feet north of the Pacific Ocean, and 1.3 miles south of the Santa Ynez Mountains. The County Line Site is not close to a natural landmark capable of depositing sediment, such as a river or the base of a foothill; therefore, it has a low potential for unknown archaeological material to be buried under natural sediment.

In summary, no known cultural resources exist within the County Line Site or within close proximity. Although the on-site component of the County Line Site has not been subjected to a cultural resource study, the continual ground disturbance and lack of resources identified within close proximity suggests that the potential for yet unknown and intact cultural resources is low. Therefore, the on-site component of the County Line Site in a location that is not sensitive for potentially significant cultural resources. Based on the above findings, the on-site component of the County Line Site received a score of 8 points.

#### 5.5.1.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. The total GHG emissions from on-site construction of the County Line Alternative are shown in Table 42.

**Table 42. On-Site GHG Construction Emissions: County Line - Natural Gas**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Grading – flat	992
Grading – elevated	6,502
Compressor station	1,560
Substation	0
<b>Total<sup>a</sup></b>	<b>9,055</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The GHG emissions for on-site construction are anticipated to fall slightly under the <10,000 MT CO<sub>2</sub>e threshold. Accordingly, this alternative received a score of 4 points.

#### 5.5.1.2.4 Natural Resources

Based on aerial imagery, this alternative is located on a former orchard, leaving disturbed habitat and some shrub growth in the eastern portion of the site that may include species of the historically mapped lower montane mixed chaparral. A linear wetland feature (mapped as freshwater emergent wetland) is located along the southern

boundary. No sensitive plant or animal species have been recorded on or adjacent to the site. The 15 sensitive plant and animal species and habitats with previously recorded occurrences within 3 miles have a low potential to occur or are not expected to occur on the site. As such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species or sensitive habitats on site but may directly or indirectly impact on-site and adjacent wetlands; therefore, it received a score of 6 points.

#### 5.5.1.2.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (defined per Section 3.2.7), the apparent occupied farmhouse east of Rincon Road, which would be between 250 and 500 feet from the construction activity, would be less than 75 dBA for this alternative; therefore, this alternative received a score of 7 points.

#### 5.5.1.2.6 Slope, Topography, and Grading

The topography and slope maps in Attachment 6 show the slope for the County Line Site and surrounding area. The site itself currently supports agricultural uses and does not appear to have been subject to previous substantial grading or other intensive use-type improvements. The on-site slope ranges from a low of 0% to a high of over 60%, with a site average of approximately 26%. The average slope range calculations for the site are provided in Table 43.

**Table 43. Average Slope Calculations**

Class Range	% Slope Range	Acres	% Slope	Avg Avg	% Slope	Min Avg	% Slope	Max Avg
<b>County Line Site – 12.33 Acres</b>								
Site Classes: 0%–70%	0%–10%	1.48	5%	0.07	0%	0	10%	0.15
	>10%–20%	2.95	15%	0.44	10%	0.3	20%	0.6
	>20%–30%	3.39	25%	0.85	20%	0.68	30%	1.02
	>30%–40%	2.35	35%	0.82	30%	0.71	40%	0.94
	>40%–50%	1.8	45%	0.81	40%	0.72	50%	0.9
	>50%–60%	0.3	55%	0.17	50%	0.15	60%	0.18
	>60%–70%	0.07	65%	0.05	60%	0.04	70%	0.05
<i>Site Averages</i>				26%		21%		31%

Based on conceptual engineering analysis, grading for this site would entail approximately 600,000 CY of over-excavation/recompaction. The grading requirements for the County Line Site are substantially greater than the other sites (with the exception of the Avocado Site at 1.3 million CY), due in large part to the fact that this site is in a relatively unimproved area and is surrounded to the south and east by slopes in exceedance of 30%. The average slope within the area that would be developed is also approximately 26%. As such, the County Line Site received a score of 3 points, with the understanding that grading would be substantial, and the slope would be less impactful on the constructability than the established ranking criteria would suggest.

#### 5.5.1.2.7 Traffic

The County Line Alternative would be located on a vacant parcel of land at the county line between Santa Barbara and Ventura Counties. The area is primarily developed with agricultural uses and low-density residential

development. The site has direct access from U.S. Route 101 to SR-150 to Avocado Hill Road, an existing dirt access road. Access to the site via a minimum 24-foot-wide driveway would be needed to meet SoCalGas and emergency responder access requirements. The width of the existing access road varies, and some portions would need to be widened and graded to achieve an acceptable grade suitable for fire truck access. Construction of the compressor station, including pad grading, access road, on-site utility installations, buildings, and compressors, would take approximately 60 to 70 months, with major earthwork occurring for approximately 1 year due to the amount of grading required.

While construction of the County Line Site would occur for approximately 1 year, heavy truck traffic would not travel on a constrained roadway. However, heavy truck travel would occur near low-density residential uses along SR-150 and would also impact Avocado Hill Road (a private road). Therefore, this alternative received a score of 2 points.

### 5.5.1.3 Off-Site Construction Considerations

#### 5.5.1.3.1 Air Quality

Scoring for air quality impacts from off-site construction was based on the total distance of linear construction of the proposed pipeline system, power line, and access road construction. The Natural Gas Option at the County Line Site would require construction of approximately 5,650 linear feet of a pipeline system to connect to an existing main pipeline and approximately 2,499 linear feet of access road improvements. The linear construction totals approximately 8,149 linear feet, which is in the minimal range. Therefore, this alternative received a score of 5 points.

#### 5.5.1.3.2 Cultural Resources

A total of 5 cultural resources have been previously recorded within a 1-mile radius of the County Line Site search; however, no cultural resources have been identified within the off-site components of the County Line Site. There is one resource within a 0.5-mile radius of the off-site component of the County Line Site, a historic building (P-56-152756) approximately 500 feet northwest of the off-site component pipeline system. No resources listed on any federal, state, or local registry are located within the off-site components of the County Line Site.

A total of 28 previously conducted studies have been undertaken within a 1-mile radius of the off-site components of the County Line Site between 1962 and 2014. Of these 28 studies, 3 address the off-site components of the County Line Site. Approximately 5% of the off-site components of the County Line Site, including portions of the access road widening, electrical interconnect, pipeline system, depressurization line, and staging area, have been previously surveyed and are documented by studies conducted in 1981, 1983, and 2012 (VN-00636, VN-00426, and VN-03064). Only one of the reports (VN-00426) provides recommendations including an inadvertent discovery clause and archaeological monitoring recommendation.

According to the historic aerial photographs and topographic maps, the off-site components of the County Line Site have been subject to ground disturbance at least as early as 1947. The staging area portion of the off-site component of the County Line Site was occupied by an orchard from at least 1947 until 2009 and historic aerials show evidence of grading disturbance beginning in 2018. The potential access road and pipeline remain partially undisturbed at least as early as 1904 to present where other portions have been disturbed by road grading and construction.

Portions of the off-site components of the County Line Site are within close proximity to Rincon Creek, which is capable of depositing sediment. Therefore, some components have potential for unknown archaeological material to be buried under natural sediment. Although Rincon Creek would have served as a freshwater resource in prehistoric and historic periods, the off-site components appear to be too close to be a hospitable location for habitation due to the propensity for flooding. Depending on the depth and timing of depositional sediment as well as the depth of disturbance incurred as a result of road construction and agricultural activities, unknown cultural resources, if present, may have been destroyed, displaced, and /or buried deeper than the proposed depth of disturbance. These conditions are in part the reason previous cultural resources studies have recommended an inadvertent discovery clause and archaeological monitoring.

In summary, no known cultural resources exist within or in close proximity to the off-site component of the County Line Site. One built resource is located approximately 500 feet northwest of the off-site pipeline component. The continual ground disturbance and lack of resources identified within close proximity suggest that the potential for yet unknown and intact cultural resources is low. However, consideration should be given to the proximity of Rincon Creek to the staging area and other off-site components outside the floodplain of the creek in that the creek would have served as a freshwater resource in prehistoric and historic periods, presenting a hospitable location for habitation. Thus, the off-site component of the County Line Site is in a location that is moderately sensitive for potentially significant cultural resources and the off-site components of the County Line Site received a score of 6 points.

5.5.1.3.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in CO<sub>2</sub>e) resulting from off-site activities such as construction of power lines, pipelines, and roads outside the footprint of the future compressor station were calculated. The total GHG emissions from off-site construction of the County Line Alternative are shown in Table 44.

**Table 44. Off-Site GHG Construction Emissions: County Line - Natural Gas**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Power line	0
Pipeline – street	0
Pipeline – open space	84
Road construction	87
<b>Total<sup>a</sup></b>	<b>171</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

GHG emissions from off-site construction would be well below the <500 MT CO<sub>2</sub>e threshold. Therefore, this alternative received a score of 9 points.

5.5.1.3.4 Natural Resources

No electrical interconnect is proposed for this alternative. The proposed pipeline corridors, associated tie-ins, and access road improvements are within orchards, and one linear wetland feature (mapped as freshwater

forested/shrub wetland) is crossed. However, based upon aerial imagery, this feature appears to have been removed by the creation of the orchard. The 15 sensitive plant and animal species and habitats with previously recorded occurrences within 3 miles have a low potential to occur or are not expected to occur on the site. As such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands in off-site areas, and received a score of 8 points due to the low potential for the wetland feature.

#### 5.5.1.3.5 Noise

Predicted off-site construction activity noise exposure level, associated with potential pipeline and access road locations east of Rincon Road and apparently in the vicinity of the Rincon Del Mar Ranch property, at the nearest non-industrial land use (defined per Section 3.2.7), which would be between 0 and 50 feet from the construction activity, would be approximately 90 dBA for this alternative; therefore, this alternative received a score of 0 points.

#### 5.5.1.3.6 Traffic

The County Line Alternative would require the construction of a pipeline system through the oil/gas hillside area, requiring grading, trenching and pipeline installation and potentially acquisition of additional pipeline right-of-way. The project would construct 5,280 linear feet of new pipeline, with some segments of the pipeline occurring along Avocado Hill Road. It is anticipated that minimal roadway construction would be needed and there would be less than 2,500 feet of lane closures. Avocado Hill Road is a private dirt road with low traffic volumes that is primarily used to access the agricultural fields, and there would be no construction on public roadways. Therefore, this alternative would receive a score of 7 points.

#### 5.5.1.3.7 Utilities/Service Systems

The County Line Site – Natural Gas Option would require approximately 27,470 square feet of off-site ground disturbance for pipelines and utilities, approximately 7,500 square feet for the MLV connection, and approximately 3,197 square feet of depressurization line for a total of approximately 38,167 square feet of off-site ground disturbance. All off-site ground disturbance summarized in Table 45 would be conducted within and surrounded by non-urbanized and industrial land and would not impact urban roadways or otherwise impede commuter traffic.

**Table 45. Off-Site Ground Disturbance: County Line - Natural Gas**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
Pipeline Corridor 1 (to the Northeast)	19,973
Utility Lines	7,497
<i>Subtotal Off-Site Ground Disturbance – Pipelines and Utilities</i>	<i>27,470</i>
<b>Mainline Valve Connections</b>	
Mainline Valve Connection 1	3,750
Mainline Valve Connection 2	3,750
<i>Subtotal Off-Site Ground Disturbance – Mainline Valve Connections</i>	<i>7,500</i>



**Table 45. Off-Site Ground Disturbance: County Line - Natural Gas**

Construction Element	Square Feet
<b>Depressurization Line</b>	
Depressurization Line	3,197
<i>Subtotal Off-Site Ground Disturbance – Depressurization Line</i>	<i>3,197</i>
<b>Electrical Pole Footings</b>	
Electrical Pole Footings	0
<i>Subtotal Off-Site Ground Disturbance – Electrical Pole Footings</i>	<i>0</i>
<b>Total Off-Site Ground Disturbance for All Construction Elements<sup>a</sup></b>	<b>38,167</b>

**Note:**

<sup>a</sup> Totals may not sum precisely due to rounding.

This alternative received a score of 4 points because of the minimal amount of off-site ground disturbance required.

## 5.5.2 Hybrid Option

### 5.5.2.1 Operational Considerations

#### 5.5.2.1.1 Aesthetics and Visual Resources

With the exception of approximately 15 new electrical poles, there would be no difference between construction of the Hybrid Option and the Natural Gas Option. New poles are likely to be visible from SR-150, which, based on the presence of existing poles along the roadway, would not result in substantial view obstruction or alteration of existing visual character. As with the Natural Gas Option, construction and operation of the Hybrid Option is likely to be visible from SR-150 and required construction activities including vegetation removal and grading would alter the general open space and agricultural character of the surrounding landscape. Therefore, this alternative received a score of 0 points.

#### 5.5.2.1.2 Air Quality

This option would include the installation of two new 1,900 HP natural gas compressors and three new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, the Hybrid Option is assumed to operate 24 hours a day, 7 days a week, which is a conservative assumption. The Hybrid Option has fewer internal combustion engines and thus fewer direct emissions than the Natural Gas Option. The Hybrid Option would replace three of the internal combustion engines with three electric compressors of equivalent horsepower. Even though an additional electric compressor is required for the County Line Site, the NO<sub>x</sub> emissions would remain the same for the Hybrid Option when compared to the other sites, since two natural gas compressors would be required for all Hybrid Options.



Operation of the Hybrid Option was calculated to result in 5.6 tons/year of NO<sub>x</sub> emissions. As such, the Hybrid Option would fall within the  $\geq 4$  tons/year but  $< 8$  tons/year category, which would score from 4 to 6. Because 5.6 tons/year is in the middle of the NO<sub>x</sub> emissions range, the Hybrid Option received a score of 5 points.

#### 5.5.2.1.3 CalEnviroScreen

OEHHA CalEnviroScreen 4.0 Maps indicate that the County Line Site is in Census Tract 6111001206, which has a population of approximately 778. As described in Section 5.2.1.1.3, this tract has a total pollution burden score of 79%, which means that this census tract has more pollution burden than 79% of all census tracts within California (OEHHA 2022b). Therefore, based on the ranking score range of 1 to 3 for sites with a 61% to 90% pollution burden, the County Line Site received a score of 2 points because a pollution burden of 79% is within the 71% to 80% scoring range.

#### 5.5.2.1.4 Greenhouse Gases

This option would include the installation of two new 1,900 HP natural gas compressors and three new 1,900 HP electric compressors installed in a new compressor building. The Hybrid Option would also require 5 megawatts in electric service capacity. As detailed in the AQ/GHG Analysis in Attachment 1, the Hybrid Option is assumed to operate 24 hours per day, 7 days per week, which is a conservative assumption. = As detailed in the AQ/GHG Analysis in Attachment 1, GHG impacts are rated according to the metric tons of CO<sub>2</sub> equivalent that are directly produced from equipment and indirectly produced as a result of activities related to operations but not immediately on site (e.g., as a result of electricity generated elsewhere that is used on site). The total direct GHG emissions would be 13,918 MT CO<sub>2</sub>e/year and indirect GHG emissions would be 8,250 MT CO<sub>2</sub>e/year from operational activities at for the County Line Site.

The shift from natural gas to a Hybrid Option reduces the localized emissions of criteria pollutants and direct GHG emissions, but the increased power demand from the electric compressors would increase indirect GHG emissions depending on how the power that is used is generated. The estimated emissions for the hybrid technology were calculated to be 22,168 MT CO<sub>2</sub>e/year, which would fall within the  $\geq 10,000$  MT CO<sub>2</sub>e/year but  $< 25,000$  MT CO<sub>2</sub>e/year category and therefore would score from 4 to 6. Because 22,168 MT CO<sub>2</sub>e/year is near the top of the emission range, the Hybrid Option received a score of 4 points.

#### 5.5.2.1.5 Land Use Designation

The County Line Site Hybrid Option would require 15 new electrical poles as well as overhead electrical line to accommodate the anticipated electrical demand. The electrical interconnect would have an underlying land use designation of Open Space (County of Ventura 2020) and zoning of AE-40 (County of Ventura 2008) and CA-40-sdf (County of Ventura 2012). However, the location and underlying land use(s) of the electrical interconnect are not primary considerations for the land use criteria as described in Section 3.1 and as such, do not significantly influence the score for this site.

While the Hybrid Option's compressor station site is not directly adjacent to any sensitive receptors, all the site's operational components are located within parcels with County zoning that does not support the types of industrial uses required by the project. Additionally, the primary compressor station site is within an area governed by the SOAR initiative. While no current crop production is occurring within the footprint of the compressor station, the site

has historically been used as an orchard. The nearest industrially designated land use to the County Line Site is 0.83 miles to the southeast (APN 060010030). Using the scoring criteria for a site that is within a Non-Industrial/manufacturing zone and is not adjacent to sensitive receptors, the County Line – Hybrid Option received a score of 6 points.

#### 5.5.2.1.6 Noise

The nearest non-industrial land use to the County Line Site is a residential area located approximately 0.24 miles to the northeast of the site. Based on the assessment provided in Attachment 5, the prediction model enabled an estimate of aggregate operational facility noise at the property boundaries or at the nearest boundary of non-industrial land use (defined per Section 3.2.7) of less than 50 dBA. Therefore, this alternative received a score of 6 points.

#### 5.5.2.1.7 Wildfire

In addition to the presence of a very high FHSZ, due to the exposed nature of the electrical interconnect, consisting of 15 poles and associated overhead electrical lines running through a Tier 2 HFTD, the electrical interconnect could represent an increased fire risk to the surrounding community due to potentially downed power lines (see maps in Attachment 7). Due to this increased risk, the County Line – Hybrid Option received a score of 2 points.

### 5.5.2.2 On-Site Construction Considerations

#### 5.5.2.2.1 Air Quality

As detailed in the AQ/GHG Analysis in Attachment 1, on-site construction emissions of NO<sub>x</sub> and PM<sub>10</sub> from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. The total PM<sub>10</sub> exhaust emissions from on-site construction of the County Line Site are shown in Table 46.

**Table 46. On-Site Construction Emissions: County Line - Hybrid**

Activity	Total NO <sub>x</sub> Emissions (lb)	Total PM <sub>10</sub> Emissions (lb)
Grading – flat	8,218	2,193
Grading – elevated	41,021	5,339
Compressor station	10,578	2,022
Substation	1,311	74.3
<b>Total<sup>a</sup></b>	<b>61,128</b>	<b>9,629</b>

**Notes:** NO<sub>x</sub> = oxides of nitrogen; lb = pounds; PM<sub>10</sub> = coarse particulate matter.

<sup>a</sup> Totals may not sum precisely due to rounding.

The County Line Site is hilly and would require grading and excavation to be suitable for use. The County Line Site currently has no industrial development. The Hybrid Option would also require additional construction activity for a substation. NO<sub>x</sub> emissions would be in the <80,000 pounds and ≥40,000 pounds range and PM<sub>10</sub> emissions would be in the <10,000 pounds and ≥6,000 pounds range. Therefore, this alternative received a score of 2 points.

#### 5.5.2.2.2 Cultural Resources

There are no differences in the results for on-site construction considerations for the Hybrid Option and the Natural Gas Option. Therefore, this alternative received a score of 8 points.

#### 5.5.2.2.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2e</sub>) resulting from on-site activities such as site preparation, grading, and construction within the footprint of the compressor station were calculated. The total GHG emissions from on-site construction of the County Line Alternative are shown in Table 47.

**Table 47. On-Site GHG Construction Emissions: County Line - Hybrid**

Activity	Total CO <sub>2e</sub> Emissions (MT)
Grading – flat	992
Grading – elevated	6,502
Compressor station	1,560
Substation	294
<b>Total<sup>a</sup></b>	<b>9,348</b>

**Notes:** GHG = greenhouse gas; CO<sub>2e</sub> = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

The expected GHG emissions for on-site construction would fall just below the <10,000 MT CO<sub>2e</sub> threshold. Accordingly, this alternative received a score of 4 points.

#### 5.5.2.2.4 Natural Resources

The Hybrid Option would not alter any conditions related to on-site natural resources. As such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species or sensitive habitats on site but it may directly or indirectly impact on-site and adjacent wetlands; therefore, it received a score of 6 points.

#### 5.5.2.2.5 Noise

Predicted on-site construction activity noise exposure level at the nearest non-industrial land use (defined per Section 3.2.7), the apparent occupied farmhouse east of Rincon Road, which would be between 250 and 500 feet from the construction activity, would be less than 75 dBA for this alternative; therefore, the alternative received a score of 7 points.

#### 5.5.2.2.6 Slope, Topography, and Grading

In addition to the analysis above, the Hybrid Option would include an electrical interconnect, requiring approximately 30 CY of additional grading. This additional grading does not impact the ranking due to the fact the electrical interconnect over-excavation is a relatively negligible amount, and the grading for the rest of the site is substantial (600,000 CY). As such, the County Line Site received a score of 3 points under the Hybrid Option.

#### 5.5.2.2.7 Traffic

There would be a negligible difference between construction of the Hybrid Option and the Natural Gas Option related to heavy truck traffic for on-site construction activity. Therefore, this alternative received a score of 2 points.

### 5.5.2.3 Off-Site Construction Considerations

#### 5.5.2.3.1 Air Quality

Scoring for air quality impacts from off-site construction was based on the total distance of linear construction of the proposed pipeline system, power line, and access road construction. The Hybrid Option at the County Line Site would require construction of approximately 5,650 linear feet of a pipeline system to connect to an existing main pipeline and approximately 2,499 linear feet of access road improvements. In addition, approximately 1,405 linear feet of electrical interconnect is required to accommodate the increased power requirements for the electric compressors. The linear construction totals approximately 9,554 feet, which is at the top of the minimal range. Therefore, this alternative received a score of 4 points.

#### 5.5.2.3.2 Cultural Resources

There are no differences in the results for off-site construction considerations for the Hybrid Option and the Natural Gas Option. Therefore, this alternative received a score of 6 points.

#### 5.5.2.3.3 Greenhouse Gases

As detailed in the AQ/GHG Analysis in Attachment 1, the GHG emissions (expressed in MT CO<sub>2</sub>e) resulting from off-site activities such as construction of power lines, pipelines, and roads outside the footprint of the compressor station were calculated. The total GHG emissions from off-site construction of the County Line Alternative are shown in Table 48.

**Table 48. Off-Site GHG Construction Emissions: County Line - Hybrid**

Activity	Total CO <sub>2</sub> e Emissions (MT)
Power line	45
Pipeline – street	0
Pipeline – open space	84
Road construction	87
<b>Total<sup>a</sup></b>	<b>216</b>

**Notes:** GHG = greenhouse gas; CO<sub>2</sub>e = carbon dioxide equivalent; MT = metric tons.

<sup>a</sup> Totals may not sum precisely due to rounding.

GHG emissions from off-site construction would be well below the <500 MT CO<sub>2</sub>e threshold. Therefore, this alternative received a score of 9 points.

#### 5.5.2.3.4 Natural Resources

The proposed electrical interconnect is within orchards. The proposed pipeline corridors, associated tie-ins, and access road improvements are within orchards, and one linear wetland feature (mapped as freshwater forested/shrub wetland) is crossed. However, based upon aerial imagery, this feature appears to have been removed by the creation of the orchard. The 15 sensitive plant and animal species and habitats with previously recorded occurrences within 3 miles have a low potential to occur or are not expected to occur on the site. As such, this alternative is not expected to directly or indirectly impact sensitive plant or animal species, sensitive habitats, or wetlands in off-site areas, and received a score of 8 points due to the low potential for the wetland feature.

#### 5.5.2.3.5 Noise

Predicted off-site construction activity noise exposure level, associated with potential pipeline and access road locations east of Rincon Road and apparently in the vicinity of the Rincon Del Mar Ranch property, at the nearest non-industrial land use (defined per Section 3.2.7), which would be between 0 and 50 feet from the construction activity, would be approximately 90 dBA for this alternative; therefore, the alternative received a score of 0 points.

#### 5.5.2.3.6 Traffic

Construction of the Hybrid Option would be the same as the Natural Gas Option, with the exception of the extension of electrical utilities. However, no roadway construction on existing roads for electrical utilities would be required. Therefore, this alternative also receives a score of 7 points.

#### 5.5.2.3.7 Utilities/Service Systems

The County Line – Hybrid Option would require approximately 27,470 square feet of off-site ground disturbance for pipelines and utilities, approximately 7,500 square feet for the MLV connection, approximately 3,197 square feet of depressurization line, and 200 square feet of footings for the electrical poles for a total of approximately 38,377 square feet of off-site ground disturbance. All off-site ground disturbance summarized in Table 49 would be conducted within and surrounded by non-urbanized and industrial land.

**Table 49. Off-Site Ground Disturbance: County Line – Hybrid**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
Pipeline Corridor 1 (to the Northeast)	19,973
Utility Lines	7,497
<i>Subtotal Off-Site Ground Disturbance – Pipelines and Utilities</i>	<i>27,470</i>
<b>Mainline Valve Connections</b>	
Mainline Valve Connection 1	3,750
Mainline Valve Connection 2	3,750
<i>Subtotal Off-Site Ground Disturbance – Mainline Valve Connections</i>	<i>7,500</i>

**Table 49. Off-Site Ground Disturbance: County Line - Hybrid**

Construction Element	Square Feet
<b>Pipelines and Utilities</b>	
<b>Depressurization Line</b>	
Depressurization Line	3,197
<i>Subtotal Off-Site Ground Disturbance – Depressurization Line</i>	<i>3,197</i>
<b>Electrical Pole Footings</b>	
Electrical Pole Footings	210
<i>Subtotal Off-Site Ground Disturbance – Electrical Pole Footings</i>	<i>210</i>
<b>Total Off-Site Ground Disturbance for All Construction Elements<sup>a</sup></b>	<b>38,377</b>

**Note:**

<sup>a</sup> Totals may not sum precisely due to rounding.

The additional disturbance for the electrical poles would not substantively alter the amount of off-site ground disturbance required and this alternative received a score of 4 points.

## 5.6 Ranking of Alternatives

Upon completion of the rubric scoring, the final tallies for each of the alternative sites and technology options were compared. The final scoring range for the alternatives is shown in Table 50.

**Table 50. Alternative Ranking Based on the Environmental Scoring Rubric**

Alternative Sites	Technology Options	Operational Considerations Ranking (×10)	On-Site Construction Considerations Ranking	Off-Site Construction for Utilities Considerations	Total Score
Option 4: Devil's Canyon Road Site	B. Hybrid	350	51	35	<b>437</b>
Option 1: Existing Site	B. Hybrid	320	48	61	<b>429</b>
Option 3: Ventura Steel Site	B. Hybrid	350	56	13	<b>419</b>
Option 4: Devil's Canyon Road Site	A. Natural Gas	300	51	37	<b>389</b>
Option 1: Existing Site (Planned Project)	A. Natural Gas	260	48	61	<b>369</b>
Option 3: Ventura Steel Site	A. Natural Gas	290	56	13	<b>359</b>
Option 2: Avocado Site	B. Hybrid	280	32	32	<b>344</b>

**Table 50. Alternative Ranking Based on the Environmental Scoring Rubric**

Alternative Sites	Technology Options	Operational Considerations Ranking (×10)	On-Site Construction Considerations Ranking	Off-Site Construction for Utilities Considerations	Total Score
Option 5: County Line Site	B. Hybrid	250	32	38	320
Option 2: Avocado Site	A. Natural Gas	230	32	35	297
Option 5: County Line Site	A. Natural Gas	170	32	39	241

As previously discussed in Chapter 4, Environmental Scoring and Ranking, the scores in the “Operational Considerations” category were multiplied by a factor of 10. The scores were weighted because operational considerations would have long-term implications for the environment over the life of the modernization project and thus should be considered as more consequential, whereas short-term construction activities are temporary. The factor of 10 was determined to be appropriate by considering the duration of construction impacts in the context of the life of the project. The duration of site construction activities would vary according to site-specific considerations described in Section 2, Alternative Options, and the average length of construction activity for all 10 development scenarios would be 3.8 years. The anticipated useful lifespan of the modernization project is estimated to be 40 years. As such, increasing the numeric scoring for the “Operational Considerations” category by a factor of 10 was determined to adequately capture the environmental consequences of short-term construction vs. long-term operational impacts.

As shown in Table 50, the alternative with the greatest point total is the Devil’s Canyon Road – Hybrid Option, with a score of 437. This is followed in ranking by the Existing Site – Hybrid Option and the Ventura Steel – Hybrid Option. These three sites and technologies scored within 18 points of each other. Overall, the Hybrid Option at each site scored higher than the Natural Gas Option at that same site.

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SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE 2**  
**Project Location - Avocado Site**  
Ventura Compressor Station Modernization Project



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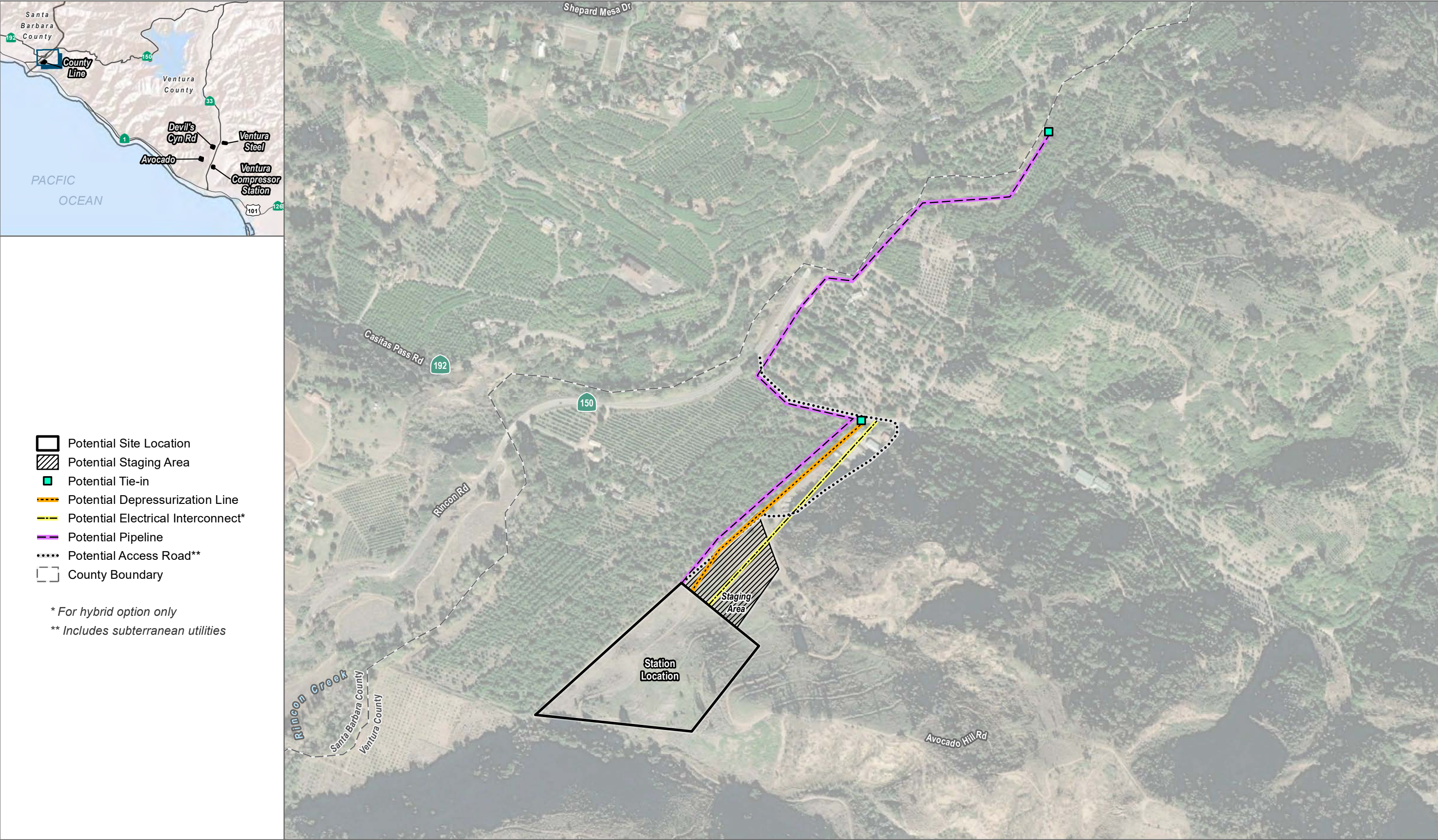






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SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE 5**  
Project Location - County Line Site  
Ventura Compressor Station Modernization Project



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# **Attachment 1**

## Air Quality and Greenhouse Gas Emissions Analysis



March 16, 2022

Dudek  
38 North Marengo Avenue  
Pasadena, CA 91101

**Subject: Ventura Compressor Station Alternatives Analysis Methodology Writeup**

Dear Dudek:

Due to changes to the operating environment of Southern California Gas Company's (SoCalGas's) natural gas transmission system, SoCalGas has proposed to modernize the Ventura Compressor Station (VCS), by replacing three existing natural gas compressors with four new natural gas compressors within a new compressor building and other associated improvements (planned project).

In response to letters from the California Public Utilities Commission (CPUC), SoCalGas is evaluating four alternative site locations in addition to the existing VCS site for the project. For each of the four alternative site locations, two equipment configurations were reviewed, one with all four or five compressor engines fueled with only natural gas (NG), as well as a hybrid option of two or three NG compressors and two electric driven compressors (EDCs). Yorke Engineering, LLC (Yorke) was retained by Dudek to assist in the preparation of an environmental evaluation for SoCalGas as part of this study of potential alternative site locations and equipment configurations. Yorke's analysis evaluated air quality and greenhouse gas (GHG) impacts from construction (on-site and off-site) as well as operational impacts of each equipment configuration.

## **SITE DESCRIPTIONS**

Five sites were evaluated including the proposed project located at the existing VCS site, and four alternative site locations. These are briefly described below.

### ***Option 1: VCS Existing Site***

The existing VCS location is flat and will require a minimal amount of grading. No new pipelines or electrical interconnection will be required, and no road improvements will be necessary. The Hybrid option will require a new substation.

### ***Option 2: Avocado Site***

The Avocado site is a hillside location on private land. It will require a large amount of elevated grading as well as some flat grading. Development of this site will require widening, regrading, and paving of an existing access road. New pipelines through open space land use areas will be required to connect to existing main lines. The Hybrid option (2B) will require a new electrical interconnect and a substation.

### ***Option 3: Ventura Steel***

The Ventura Steel option is located on an industrial site within the County of Ventura. This site is flat and will require some flat grading. New pipelines will be required to tie in to three existing main lines. A pipeline system will pass under a major roadway (Ventura Avenue), impacting non-industrial land use areas for most of its length and requiring closure of one side of the road at a

time. The other new pipelines will largely impact open space land use areas. The Ventura Steel site has also been estimated to require 3,600 additional linear feet of roads to access the new pipeline route. The Hybrid option (3B) will require aboveground electrical utility extensions and a substation.

#### ***Option 4: Devil's Canyon Road***

The Devil's Canyon Road option is located on a previously developed, largely flat site, and will require some flat grading. An existing access road will require some upgrades to accommodate the project. New pipelines are required to connect to existing main lines. Pipeline work will also include road reconstruction along the pipeline path to stabilize the pipeline location. The Hybrid option (4B) will require a new electrical interconnect and a substation.

#### ***Option 5: County Line***

The County Line site is located within a vacant parcel of land designated and zoned for agricultural use, within the County of Ventura on the border of Santa Barbara County. The site is hilly and will require a large amount of elevated grading as well as some flat grading. New pipelines and a depressurization line will be required to connect to existing main lines. Access road improvements will also be required. To overcome a greater pressure differential due to the location being farther north in the SoCalGas distribution system than the other four sites, an additional NG compressor is required at this location, i.e., five NG compressors rather than four for the NG-Only options and two NG compressors along with three EDCs rather than two of each for the Hybrid options at the other four sites. The Hybrid option (5B) will require a new electrical interconnect and a substation.

For each alternative site, expected areas and distances were identified based on the construction assumptions provided, estimates based on previous project data, and analysis of the GIS data. These values were used to scale the emission factors and estimate the emissions associated with each activity at each site.

## **CONSTRUCTION EMISSIONS**

For each alternative site Yorke generated activity-based emission factors to evaluate construction of project components given various site conditions. The activities used are construction actions that the alternatives hold in common for a project to construct a natural gas compressor station such as has been proposed at the existing VCS. To standardize across variations, common phases of a construction project were grouped into activity categories.

### **Activity Categories**

Rankings of sites within the rubric are based on construction activities expected at each site:

- Grading – Flat: grading on a relatively flat surface, without any major elevation changes needed;
- Grading – Elevated: grading where large amounts of earthworks may be involved, including excavation of hillsides, and typically involves more equipment than Grading – Flat;
- Powerline: linear construction for new or upgraded electrical transmission lines; includes trenching and power pole erection as well as pulling and reconductoring of lines;

- Pipeline – Street: linear construction for new gas pipeline under existing roadway to connect into existing main lines, and includes equipment used for trenching, backfilling, and paving;
- Pipeline – Open Space: linear construction for new gas pipeline in undeveloped land to connect into existing main lines, and includes trenching and backfill;
- Compressor Station: construction of the footprint of the new facility and structures housing the new compressor station equipment; and
- Substation: construction of a new substation at the compressor facility.

### **Representative Data**

Representative construction equipment and schedule data from other recent, similar pipeline and compressor station modernization projects were extracted for input into the California Emissions Estimator Model® (CalEEMod) to estimate construction emissions. Equipment inventories were developed based on representative project phases and consolidated to correlate to the activity categories above.

### **Emission Factors**

To generate emission factors for the various construction activities, the CalEEMod version 2020.4.0 was used. CalEEMod is the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and GHG emissions associated with construction and operation of projects. The model quantifies direct emissions from construction and vehicle use, as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model, published by the California Air Resources Board (CARB), include the Pavley standards and Low Carbon Fuel Standards. The emissions model also identifies project design features, regulatory measures, and selectable mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from the selected measures. CalEEMod was developed by the California Air Pollution Control Officers Association (CAPCOA) in collaboration with California air districts. Default land use data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) were provided by the various California air districts such as the Ventura County Air Pollution Control District (VCAPCD) to account for local requirements and conditions.

Each representative equipment inventory was entered into CalEEMod, along with an average duration in days and a unit measurement appropriate to the construction activity involved. For example, per acre was used for grading, and per mile was used for pipeline construction. The CalEEMod simulations were run to determine the amount of pollutants and GHGs that would be emitted for construction during each activity. For air quality, the focus of the on-site construction analysis is on oxides of nitrogen (NO<sub>x</sub>) and respirable particulate matter (PM<sub>10</sub>) because construction activities generally cause substantial emissions of these pollutants and Ventura County is non-attainment for the California Ambient Air Quality Standards for ozone (and NO<sub>x</sub> is an ozone precursor) and PM<sub>10</sub>. The GHG emissions were obtained from CalEEMod in the form of metric tons (MT) of carbon dioxide equivalents (CO<sub>2</sub>e) for the total construction activity. After the selected scenarios were run, the emissions were normalized to produce the emission factors that can be applied to scale for each location based on the types and amount of that activity

required. Emission factors were identified as associated with either an on-site or an off-site construction activity.

#### ***On-Site Construction Activity-Based Emission Factors***

On-site construction emissions include site preparation, grading, and construction within the footprint of the future compressor station. Activity-based emission factors used for this evaluation are Grading – Flat, Grading – Elevated, Compressor Station, and Substation (where applicable). Emission factors for these activities are shown in Table 1. These factors represent the maximum emissions per unit of measure to provide a conservative estimate.

**Table 1: On-Site Construction Activity-Based Emission Factors**

Construction Activity	NO <sub>x</sub> (pound [lb]/acre)	PM <sub>10</sub> (lb/acre)	CO <sub>2</sub> e (MT/acre)
Grading – Flat	1,855	495	224
Grading – Elevated	5,186	675	822
Compressor Station	2,678	512	395
Substation	2,081	118	466

#### ***Off-Site Construction Activity-Based Emissions Factors***

Off-site construction emissions include those from equipment used for pipeline, powerline, and road work. Activity-based emission factors used for this evaluation are Pipeline-Street, Pipeline-Open Space, and Powerline. Since linear component construction is spread over miles, the air quality ranking is based on total length of the components and only GHG emissions were calculated for off-site construction. GHG emission factors for these activities are shown in Table 2. These factors represent the maximum emissions per unit of measure to provide a conservative estimate.

**Table 2: Off-Site Construction Activity-Based Emission Factors**

Construction Activity	CO <sub>2</sub> e (MT/mile)
Powerline	166
Pipeline – Street	186
Pipeline – Open Space	78

#### **Construction Air Quality and GHG Results**

For each site alternatives analysis, the site options have been assigned a number and a letter (A or B) for use in the rubric to correspond to the two equipment configuration options, Option A designated the NG-Only option and Option B designated the Hybrid option. Results of the emissions analysis for on-site and off-site construction activities are presented for each alternative by equipment configuration option.

#### ***On-Site Construction Emissions***

Estimated acreages for the Compressor Station and Substation activities are based on the acreages from the example projects used for developing equipment inventories for input into CalEEMod. Acreages for grading are based on the “new disturbance” areas from the construction assumptions, as well as analysis of the GIS data to determine the amount of

flat versus elevated grading. Elevated area is assumed as any area that has a greater than 20 percent slope. The scaling values for the NG-Only options are shown in Table 3 and the Hybrid options in Table 4.

**Table 3: On-Site Construction Scaling Values (Acres) – NG-Only Option**

Activity	Units	Option 1A: Existing Site – NG	Option 2A: Avocado Site – NG	Option 3A: Ventura Steel – NG	Option 4A: Devil's Canyon Road - NG	Option 5A: County Line – NG
Grading – Flat	Acres	0.47	0.62	0.47	0.47	4.43
Grading – Elevated	Acres	0	14.44	0	0	7.91
Compressor Station	Acres	3.95	3.95	3.95	3.95	3.95
Substation	Acres	0	0	0	0	0

**Table 4: On-Site Construction Scaling Values (Acres) – Hybrid Option**

Activity	Units	Option 1B: Existing Site – Hybrid	Option 2B: Avocado Site – Hybrid	Option 3B: Ventura Steel – Hybrid	Option 4B: Devil's Canyon Road – Hybrid	Option 5B: County Line – Hybrid
Grading – Flat	Acres	0.47	0.62	0.47	0.47	4.43
Grading – Elevated	Acres	0	14.44	0	0	7.91
Compressor Station	Acres	3.95	3.95	3.95	3.95	3.95
Substation	Acres	0.63	0.63	0.63	0.63	0.63

Estimated emissions from on-site construction are calculated by multiplying the emission factor by the corresponding area for that activity. The results are shown in Table 5 for the NG-Only options and in Table 6 for the Hybrid options.

**Table 5: On-Site Construction Emissions – NG-Only Options**

Pollutant	Units	Option 1A: Existing Site – NG	Option 2A: Avocado Site – NG	Option 3A: Ventura Steel – NG	Option 4A: Devil's Canyon Road – NG	Option 5A: County Line – NG
NO <sub>x</sub>	Pounds	11,450	86,614	11,450	11,450	59,817
PM <sub>10</sub>	Pounds	2,255	12,076	2,255	2,255	9,555
CO <sub>2e</sub>	MT	1,666	13,569	1,666	1,666	9,055



**Table 6: On-Site Construction Emissions – Hybrid Options**

Pollutant	Units	Option 1B: Existing Site – Hybrid	Option 2B: Avocado Site – Hybrid	Option 3B: Ventura Steel – Hybrid	Option 4B: Devil's Canyon Road – Hybrid	Option 5B: County Line – Hybrid
NO <sub>x</sub>	Pounds	12,761	87,925	12,761	12,761	61,128
PM <sub>10</sub>	Pounds	2,329	12,151	2,329	2,329	9,629
CO <sub>2</sub> e	MT	1,959	13,862	1,959	1,959	9,348

***Ranking for On-Site Construction***

In the ranking rubric, air quality for the on-site construction activities is rated according to the amount of off-road construction equipment on site and duration of activity.

- For NO<sub>x</sub> emissions, the ranking levels are: 0, greater than 80,000 pounds (40 tons); 1 to 3, less than 80,000 pounds and greater than 40,000 pounds; 4 to 6, less than 40,000 pounds and greater than 8,000 pounds; 7 to 9, less than 8,000 pounds (4 tons).
- For PM<sub>10</sub> emissions, the ranking levels are: 0, greater than 10,000 pounds; 1 to 3, less than 10,000 and greater than 6,000 pounds; 4 to 6, less than 6,000 and greater than 2,000 pounds; 7 to 9, less than 2,000 pounds.

The GHG impact is rated according to the metric tons of CO<sub>2</sub>e that are directly produced from construction equipment on-site and indirectly produced, i.e., resulting from activities related to construction but not immediately on site.

- The ranking ranges for construction are: 0, greater than or equal to 20,000 MT CO<sub>2</sub>e; 1 to 3, greater than or equal to 10,000 MT CO<sub>2</sub>e but less than 20,000 MT CO<sub>2</sub>e; 4 to 6, greater than or equal to 5,000 MT CO<sub>2</sub>e but less than 10,000 MT CO<sub>2</sub>e; 7 to 9, less than 5,000 MT CO<sub>2</sub>e.

***Option 1A: Existing NG-Only***

The existing site is flat, with a minimal amount of new disturbance area requiring grading. As a result, the NO<sub>x</sub> and PM<sub>10</sub> emissions are in the low end of the 4 to 6 ranking range. The expected GHG emissions are under 2,000 MT.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 6
- GHG: 8

***Option 1B: Existing Hybrid***

The existing site is flat, with a minimal amount of new disturbance area requiring grading. A new on-site substation is not needed for the Hybrid option. As a result, both NO<sub>x</sub> and PM<sub>10</sub> emissions are also within the 4 to 6 ranking range for air quality. The expected GHG emissions are under 2,000 MT, within the lowest range of less than 5,000 MT.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 6
- GHG: 8

*Option 2A: Avocado NG-Only*

The Avocado site is very hilly (over 14 acres with a slope greater than 20%) and will require a large amount of grading and excavation; the existing site has no industrial development. As a result, both the NO<sub>x</sub> and PM<sub>10</sub> emissions are in the highest range for air quality. The increased amount of off-road equipment usage increases the GHG emissions above 10,000 MT, into the lower ranking range.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 0
- GHG: 2

*Option 2B: Avocado Hybrid*

The Avocado site is very hilly (over 14 acres with a slope greater than 20%) and will require a large amount of grading and excavation; the existing site has no industrial development. The Hybrid option will also require additional on-site construction activity for a substation. As a result, both the NO<sub>x</sub> and PM<sub>10</sub> emissions are somewhat higher than Option 2A so are also in the highest range for air quality. The increased amount of off-road equipment usage increases the GHG emissions above 10,000 MT, into the 4 to 6 range.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 0
- GHG: 2

*Option 3A: Ventura Steel NG-Only*

The Ventura Steel site is flat, with a minimal amount of new disturbance area requiring grading. As a result, the NO<sub>x</sub> and PM<sub>10</sub> emissions are in the low end of the 4 to 6 ranking range. The expected GHG emissions are under 2,000 MT, within the range of less than 5,000 MT.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 6
- GHG: 8

*Option 3B: Ventura Steel Hybrid*

The Ventura Steel site is flat, with a minimal amount of new disturbance area requiring grading. The hybrid site also requires construction of a substation, increasing the NO<sub>x</sub> and PM<sub>10</sub> emissions by less than 10% from Option 3A. As a result, both NO<sub>x</sub> and PM<sub>10</sub> emissions are within the 4 to 6 ranking range for air quality. The expected GHG emissions are under 2,000 MT, within the range of less than 5,000 MT.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 6
- GHG: 8

*Option 4A: Devil's Canyon NG-Only*

The Devil's Canyon site has minimal elevated areas, with a minimal amount of new disturbance area requiring grading. As a result, the NO<sub>x</sub> and PM<sub>10</sub> emissions are in the low end of the ranking range. The expected GHG emissions are under 2,000 MT, within the range of less than 5,000 MT.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 6
- GHG: 8

*Option 4B: Devil's Canyon Hybrid*

The Devil's Canyon site has minimal elevated areas, with a minimal amount of new disturbance area requiring grading. The hybrid site also requires construction of a substation, increasing the NO<sub>x</sub> and PM<sub>10</sub> emissions by less than 10% over Option 4A. As a result, both NO<sub>x</sub> and PM<sub>10</sub> emissions are within the 4 to 6 ranking range for air quality. The expected GHG emissions are under 2,000 MT, within the range of less than 5,000 MT.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 6
- GHG: 8

*Option 5A: County Line NG-Only*

The County Line site is hilly (over 7.5 acres with a slope greater than 20%) and will require a large amount of grading and excavation; the existing site has no industrial development. As a result, the NO<sub>x</sub> and PM<sub>10</sub> emissions are in the 1 to 3 ranking range for air quality. The increased amount of off-road equipment usage increases the GHG emissions over the relatively flat options (1, 3, and 4), but the emissions are slightly under 10,000 MT, in the 4 to 6 range.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 2
- GHG: 4

*Option 5B: County Line Hybrid*

The County Line site is hilly (over 7.5 acres with a slope greater than 20%) and will require a large amount of grading and excavation; the existing site has no industrial development. The Hybrid option will also require additional construction activity for a substation. As a result, the NO<sub>x</sub> and PM<sub>10</sub> emissions are in the 1 to 3 ranking range for air quality. The increased amount of off-road equipment usage increases the GHG emissions over Option 5A, but the emissions are also slightly under 10,000 MT.

Ranking:

- Air quality (NO<sub>x</sub>/PM<sub>10</sub>): 2
- GHG: 4

***Off-Site Construction Emissions***

Estimated distances for linear, off-site construction are provided in Table 7. These values are based on the construction assumptions provided, as well as analysis of the GIS data and land use data.

**Table 7: Length of New Linear Construction Associated with Each Site and Configuration Option**

Site	New Linear Components	Length (feet)	
		NG-Only (Option A)	Hybrid (Option B)
1. Existing	None	0	0
2. Avocado	Access Road	12,315	12,315
	Electrical Interconnect	0	4,359
	Pipeline System	982	982
	<b>Total (feet)</b>	<b>13,297</b>	<b>17,656</b>
	Total (miles)	2.52	3.34
3. Ventura Steel	Access Road	3,600	3,600
	Electrical Interconnect	0	122
	Pipeline System	26,786*	26,786*
	<b>Total (feet)</b>	<b>30,386*</b>	<b>30,508*</b>
	Total (miles)	5.75	5.78
4. Devil's Canyon	Access Road	1,892	1,892
	Electrical Interconnect	0	4,507
	Pipeline System	5,135	5,135
	<b>Total (feet)</b>	<b>7,027</b>	<b>11,534</b>
	Total (miles)	1.33	2.18
5. County Line	Access Road	2,499	2,499
	Electrical Interconnect	0	1,405
	Pipeline System	5,650	5,650
	<b>Total (feet)</b>	<b>8,149</b>	<b>9,554</b>
	Total (miles)	1.54	1.81

\* Distance totals reflect that the pipeline length for Ventura Steel is doubled for the 1.61 miles along Ventura Avenue because trenching on both sides of the street is required.

The scaling values for the NG options are shown in Table 7 and for the Hybrid options in Table 8.

**Table 8: Off-Site Construction Scaling Values – NG-Only Options**

Activity	Units	Option 1A: Existing Site – NG	Option 2A: Avocado Site – NG	Option 3A: Ventura Steel – NG	Option 4A: Devil's Canyon Road – NG	Option 5A: County Line – NG
Powerline	Miles	0	0	0	0	0
Pipeline – Street	Miles	0	0	3.22	0.97	0
Pipeline – Open Space	Miles	0	0.19	1.85	0	1.07
Road Construction	Miles	0	2.33	0.68	0.36	0.47

**Table 9: Off-Site Construction Scaling Values – Hybrid Options**

Activity	Units	Option 1B: Existing Site – Hybrid	Option 2B: Avocado Site – Hybrid	Option 3B: Ventura Steel – Hybrid	Option 4B: Devil's Canyon Road – Hybrid	Option 5B: County Line – Hybrid
Powerline	Miles	0	0.83	0.02	0.85	0.27
Pipeline – Street	Miles	0	0	3.22	0.97	0
Pipeline – Open Space	Miles	0	0.19	1.85	0	1.07
Road Construction	Miles	0	2.33	0.68	0.36	0.47

Estimated GHG emissions from linear, off-site construction are calculated by multiplying the emission factor by the corresponding length for each component, with the GHG emissions adjusted to reflect the complexity of the activity. Pipeline-Street emission factors are used to estimate emissions from road construction. The results are shown in Table 10 for the NG-Only options and in Table 11 for the Hybrid options.

**Table 10: Off-Site Construction Emissions – NG-Only Options**

Pollutant	Units	Option 1A: Existing Site – NG	Option 2A: Avocado Site – NG	Option 3A: Ventura Steel – NG	Option 4A: Devil's Canyon Road – NG	Option 5A: County Line – NG
CO <sub>2</sub> e	MT	0	448	870	248	171

**Table 11: Off-Site Construction Emissions – Hybrid Options**

Pollutant	Units	Option 1B: Existing Site – Hybrid	Option 2B: Avocado Site – Hybrid	Option 3B: Ventura Steel – Hybrid	Option 4B: Devil’s Canyon Road – Hybrid	Option 5B: County Line – Hybrid
CO <sub>2</sub> e	MT	0	585	874	389	216

***Ranking for Off-Site Construction***

In the ranking rubric, scoring for air quality impact from off-site construction is based on the total length of the linear construction associated with each site. Ranking levels were set to best differentiate the potential impacts for each site.

- Based on linear feet of off-site components, the ranking levels are: 0, greater than 15,000 feet; 1 to 3, greater than 10,000 and less than 15,000 feet; 4 to 6, greater than 500 feet and less than 5,000 feet; and 7 to 9, less than 500 feet.

The GHG impact is rated according to the metric tons of CO<sub>2</sub>e that are directly produced from the types of construction equipment expected for the linear components and indirectly produced, i.e., resulting from activities related to construction but directly from the equipment used.

- The ranking ranges for off-site construction are: 0, greater than or equal to 2,000 MT CO<sub>2</sub>e; 1 to 3, greater than or equal to 1,000 MT CO<sub>2</sub>e but less than 2,000 MT CO<sub>2</sub>e; 4 to 6, greater than or equal to 500 MT CO<sub>2</sub>e but less than 1,000 MT CO<sub>2</sub>e; 7 to 9, less than 500 MT CO<sub>2</sub>e.

***Option 1A: Existing NG-Only***

The existing site for the NG-only option will not require any new off-site linear construction, so it is given the highest score of 9. Since it will require no off-site linear construction, the GHG contribution is zero, and it is given the highest score of 9.

Ranking:

- Air quality: 9
- GHG: 9

***Option 1B: Existing Hybrid***

The existing site for the Hybrid option will not require any new off-site linear construction, so it is given the highest score of 9. Since it will require no off-site linear construction, the GHG contribution is zero, and it is given the highest score of 9.

Ranking:

- Air quality: 9
- GHG: 9



*Option 2A: Avocado NG-Only*

The Avocado site will require construction of two pipelines to connect to the existing main lines. It will also require grading, widening, and paving of an existing road to accommodate plant traffic to the new site. All this linear construction is adjacent to open space land and is estimated to be a total of 13,297 feet, which is in the 1 to 3 ranking range.

GHG emissions from off-site construction are close to the less than 500 MT threshold so it is given a score of 7.

Ranking:

- Air quality: 2
- GHG: 7

*Option 2B: Avocado Hybrid*

The Avocado site for the Hybrid option will require construction of two pipelines to connect to the existing main lines. It will also require grading, widening, and paving of an existing road to accommodate plant traffic to the new site. In addition, it will require an electrical interconnect to accommodate the increased demand from the EDCs. All linear construction is adjacent to open space land and totals an estimated 17,656 feet, which is in the highest range.

GHG emissions from off-site construction are in the range just above 500 MT, so it is given a score of 6.

Ranking:

- Air quality: 0
- GHG: 6

*Option 3A: Ventura Steel NG-Only*

For the NG-Only option, the Ventura Steel site will require extensive pipeline work to connect to existing main lines. Two pipelines will be located under Ventura Avenue to connect to the main pipelines at the existing Ventura Compressor Station location. The 1.61-mile length of the two pipelines along Ventura Avenue have been doubled since trenching along both sides of this street will be required. Additional pipelines will be constructed southeastward adjacent to open space and residential areas. New access roads will be needed to reach the pipeline routes. In all, an estimated 30,386 feet of linear components will be constructed, placing this option far above the highest level value.

GHG emissions from off-site construction are in the range between 500 and 1,000 MT.

Ranking:

- Air quality: 0
- GHG: 4

*Option 3B: Ventura Steel Hybrid*

For the Hybrid option, the Ventura Steel site will require extensive pipeline work to connect to existing main lines. Two pipelines will be located under Ventura Avenue to connect to the main pipelines at the existing Ventura Compressor Station location. The 1.61-mile length of the two pipelines along Ventura Avenue have been doubled since trenching along both sides of this street will be required. Additional pipelines will be constructed southeastward adjacent to open space and residential areas. New access roads will be needed to reach the pipeline routes. The Hybrid option will also require a new powerline due to increased power demand. In all, an estimated 30,508 feet of linear components will be constructed, placing this option far above the highest level value.

GHG emissions from off-site construction are slightly higher for the Hybrid option than the NG-Only option, but still within the 4 to 6 range.

Ranking:

- Air quality: 0
- GHG: 4

*Option 4A: Devil's Canyon NG-Only*

For the NG-Only option, Devil's Canyon will require a new pipeline beneath an upgraded roadway, as well as additional access road work to the northeast. All linear construction is through open space and is estimated to be a total of 7,027 feet, which is in the middle of the ranking range.

GHG emissions from off-site construction are in the range below 500 MT.

Ranking:

- Air quality: 5
- GHG: 8

*Option 4B: Devil's Canyon Hybrid*

For the Hybrid option, Devil's Canyon will require a new pipeline beneath an upgraded roadway, as well as additional access road work to the northeast. The Hybrid option will require almost a mile of new electrical interconnect and a substation. All this linear construction is through open space, and totals an estimated 11,534 feet, which raises this site's Hybrid option to the 4 to 6 ranking range.

GHG emissions from off-site construction are in the lowest range but slightly higher than the NG-Only option.

Ranking:

- Air quality: 3
- GHG: 7

*Option 5A: County Line NG-Only*

For the NG-Only option, County Line will require a new pipeline to connect to an existing main line, as well as a depressurization line. Access road improvements are also required. All this linear construction is through open space, and totals an estimated 8,149 feet, which is in the middle of the ranking range.

GHG emissions from off-site construction are well below the less than 500 MT threshold.

Ranking:

- Air quality: 5
- GHG: 9

*Option 5B: County Line Hybrid*

For the Hybrid option, County Line will require a new pipeline to connect to an existing main line, as well as a depressurization line. Access road improvements are also required. In addition, 1,405 feet of electrical interconnect and a new substation is required to accommodate the increased power requirements for the EDCs. All this linear construction is through open space, and totals an estimated 9,554 feet, which is near the top of the ranking range.

GHG emissions from off-site construction are well below the less than 500 MT threshold.

Ranking:

- Air quality: 4
- GHG: 9

## **OPERATIONAL EMISSIONS**

As proposed, the operational emissions will be the same as proposed for the existing VCS site with four engine-driven NG compressors for four of the sites and only vary for the County Line site (Options 5A and 5B), which requires an additional compressor over the others due to its location. There will also be variation in emissions associated with the compressor drivers in the NG-only option as compared to the Hybrid option since the Hybrid option has fewer NG compressors and thus fewer direct emissions than the NG-Only option.

The Hybrid option replaces two of the NG compressors with two EDCs of equivalent horsepower (and also includes an additional NG compressor replacement with an EDC in the case of Option 5), essentially cutting the expected direct emissions in half. However, the Hybrid option will require electricity to operate the EDCs, and indirect GHG may be emitted associated with additional electrical generation, whereas the NG-only option has negligible indirect GHG emissions.

### **Representative Data**

For operational emissions, calculations for the new proposed engine-driven NG compressors were taken from the Authority to Construct (ATC) application that was submitted to the VCAPCD for the VCS Modernization Project at the existing site, which is based on potential to emit (PTE). Specifically, each of the four (or five) engine compressors were assumed to operate up to 24 hours

per day, 7 days per week and associated PTE emissions were calculated. For the Hybrid option, it was assumed that each of the two (or three) natural gas engine compressors and each of the two EDCs would operate up to 24 hours per day, 7 days per week, for the direct criteria and GHG emissions calculations, and for the indirect GHG emission calculations. Operational emissions for the Hybrid option were based on contributions from the reduced number of NG compressors, plus additional GHG emissions associated with the indirect electricity needed to operate the EDCs. Operational emissions for both equipment configurations were assumed to be roughly the same for Options 1-4, so was not a differentiator of those sites for this analysis; Option 5 requires an additional NG compressor for a total of five units, resulting in higher emissions. PM<sub>10</sub> from this equipment are expected to be low during operation since either NG or electricity will be used for fuel, and only NO<sub>x</sub> emissions are ranked.

### Emission Factors and Calculations

As noted above, operational emissions for the proposed Waukesha 1,900 brake horsepower engines that drive the NG compressors were based on the ATC application submitted to the VCAPCD for modernization of the existing VCS site. These emissions calculations relied on the engine manufacturer's data as well as standard natural gas fired combustion for the proposed engines and accounted for VCAPCD best available control technology (BACT) requirements.

Operational NO<sub>x</sub> emissions for the Hybrid option are based on two NG-fired engines. It is assumed that the Hybrid option will operate all compressors (both natural gas and electric) 24 hours a day, seven days a week.

For this analysis, the Western Electricity Coordinating Council (WECC) California and Mexico subregion (CAMX) emission factor was used to estimate indirect GHG emissions for electricity use for the EDCs. This factor is an average of the regional power mix, accounting for renewable energy generation as well as fossil-fueled generation to determine an average emission factor for pounds of CO<sub>2</sub>e per megawatt-hour produced. It is assumed that the Hybrid option will operate all compressors (both natural gas and electric) 24 hours a day, seven days a week (8,760 hours/year).

### Results

The shift from the NG-Only option to a Hybrid option reduces the localized emissions of criteria pollutants and direct GHG emissions, but increased power demand from the electric compressors will increase indirect GHG emissions depending on how the power that is used is generated.

Estimated operational NO<sub>x</sub> emissions are presented in Table 12. The ranking ranges for operational NO<sub>x</sub> emissions are: 0, greater than or equal to 12 tons/yr (0); 1 to 3, greater than or equal to 8 tons/yr but less than 12 tons/yr (1-3); 4 to 6, greater than or equal to 4 tons/yr but less 8 tons/yr (4-6); and 7 to 9, less than 4 tons/yr (7-9).

**Table 12: Operational NO<sub>x</sub> Emissions**

	Options 1A-4A NG-Only	Options 1B-4B Hybrid	Option 5A NG-Only	Option 5B Hybrid
NO <sub>x</sub> (tons/yr/engine)	2.8	2.8	2.8	2.8
Number of engines	4	2	5	2
Total NO <sub>x</sub> (tons/yr)	11	5.6	14	5.6

The GHG impact is rated according to the MT/year of CO<sub>2</sub>e that are directly produced from equipment and indirectly produced, indirectly produced, e.g., as a result of electricity generated elsewhere that is used on site. The results of the GHG calculations are presented in Table 13. The ranking ranges for GHG emissions are: 0, greater than or equal to 50,000 MT/yr CO<sub>2</sub>e; 1 to 3, greater than or equal to 25,000 MT/yr CO<sub>2</sub>e but less than 50,000 MT/yr CO<sub>2</sub>e; 4 to 6, greater than or equal to 10,000 MT/yr CO<sub>2</sub>e but less than 25,000 MT/yr CO<sub>2</sub>e; and 7 to 9, less than 10,000 MT/yr CO<sub>2</sub>e.

**Table 13: Operational Greenhouse Gas Emissions**

	Options 1A-4A NG-Only	Options 1B-4B Hybrid	Option 5A NG-Only	Option 5B Hybrid
Direct GHG (MT CO <sub>2</sub> e/yr/engine)	6,959	6,959	6,959	6,959
Indirect GHG (MT CO <sub>2</sub> e/yr/EDC)	2,750	2,750	2,750	2,750
Number of engines	4	2	5	2
Number of EDCs	0	2	0	3
Total MT CO <sub>2</sub> e/yr	27,836	19,418	34,795	22,168

***Ranking for Operations Emissions***

***Option 1A-4A: NG-Only***

Options 1 through 4 have the same ranking for Option A.

- Air Quality: 1
- GHG: 3

For air quality, the estimated emissions of NO<sub>x</sub> for the NG-Only option fall in the 8 to 12 tons/yr category. Since 11 tons/yr is closer to the upper end of the emission range, Option A was scored a 1.

For GHG, the estimated emissions for the NG-Only option fall in the 25,000 to 50,000 MT/yr category. Since 27,836 MT/yr is closer to the lower end of the range, Option A was scored a 3.

***Option 1B-4B: Hybrid***

Options 1 through 4 have the same ranking for Option B.

- Air Quality: 5
- GHG: 5

For air quality, the estimated emissions of NO<sub>x</sub> for the Hybrid option fall in the 4 to 8 tons/yr category. The estimated emissions of 5.5 tons/yr are in the middle of the range, so Option B was scored a 5.

For GHG, the estimated emissions for the Hybrid option fall in the 10,000 to 25,000 MT/yr category. Since 19,418 MT/yr is closer to the middle of this emissions range, Option B was scored a 5.

*Option 5A: NG-Only*

- Air Quality: 0
- GHG: 2

For air quality, the estimated emissions of NO<sub>x</sub> for the NG-Only option at County Line are in the greater than 12 tons/yr category due to the additional engine.

For GHG, the estimated emissions for the NG-Only option still fall in the 25,000 to 50,000 MT/yr category even with an additional engine, but closer to the middle of the range, so it is scored a 2.

*Option 5B: Hybrid*

- Air Quality: 5
- GHG: 5

For air quality, the estimated emissions of NO<sub>x</sub> for the Hybrid option fall in the 4 to 8 tons/yr category. The estimated emissions of 5.5 tons/yr are in the middle of the range, so Option 5B was scored a 5.

For GHG, the estimated emissions for the Hybrid option fall in the 10,000 to 25,000 MT/yr category, but closer to the high end of the range with the additional EDC, so Option B was scored a 4.

## SUMMARY AND CONCLUSION

Using objective activity-based emission factors and expected operational data, along with construction mobile source emissions estimates using CalEEMod and basic assumptions, Yorke quantitatively evaluated the various alternative site locations and equipment configurations for the air quality and GHG impact areas. These rankings are summarized in Table 14. Based on Yorke's calculations and rankings for air quality and GHG emissions for compressor station operation, on-site construction, and off-site construction support, the highest scoring option was Option 1B, the existing VCS site with the Hybrid option, which resulted in a combined score of 42. The next highest score was for the originally proposed all natural-gas option at the existing VCS site (Option 1A), with a score of 36. The highest-ranking alternative site option was Devil's Canyon Road with Hybrid option (4B), with a score of 34.

Should you have any questions or concerns, please contact Yorke Engineering at (949) 248-8490.

Sincerely,

Yorke Engineering, LLC

Enclosures:

1. Attachment 1 – Supplemental Data

**Table 14: Rubric Ranking Summary**

Topic Areas	Option 1: Ventura – Existing Site North Olive Street		Option 2: Avocado Site		Option 3: Ventura Steel		Option 4: Devil's Canyon Road		Option 5: County Line	
	NG-Only (A)	Hybrid (B)	NG-Only (A)	Hybrid (B)	NG-Only (A)	Hybrid (B)	NG-Only (A)	Hybrid (B)	NG-Only (A)	Hybrid (B)
<b>Environmental Considerations: Operational</b>	<b>4</b>	<b>10</b>	<b>4</b>	<b>10</b>	<b>4</b>	<b>10</b>	<b>4</b>	<b>10</b>	<b>2</b>	<b>9</b>
Air Quality	1	5	1	5	1	5	1	5	0	5
GHGs (Direct and Indirect)	3	5	3	5	3	5	3	5	2	4
<b>Environmental Considerations: On-Site Construction</b>	<b>14</b>	<b>14</b>	<b>2</b>	<b>2</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>6</b>	<b>6</b>
Air Quality	6	6	0	0	6	6	6	6	2	2
GHGs (Direct and Indirect)	8	8	2	2	8	8	8	8	4	4
<b>Environmental Considerations: Off-Site Construction for New Utilities</b>	<b>18</b>	<b>18</b>	<b>9</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>13</b>	<b>10</b>	<b>14</b>	<b>13</b>
Air Quality	9	9	2	0	0	0	5	3	5	4
GHGs (Direct and Indirect)	9	9	7	6	4	4	8	7	9	9
<b>Total Air Quality and GHG Score</b>	<b>36</b>	<b>42</b>	<b>15</b>	<b>18</b>	<b>22</b>	<b>28</b>	<b>31</b>	<b>34</b>	<b>22</b>	<b>28</b>



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## ATTACHMENT 1 – SUPPLEMENTAL DATA

### CalEEMod Emission Factors

#### Maximum Emissions per mile or per acre by Construction Activity

Construction Activity	Emission Factor Units	NOX	PM10 Total	CO2e (MT)*
Powerline	lb/mile	1308	102	166
Grading - Flat	lb/acre	1855	495	224
Grading - Elevated	lb/acre	5186	675	822
Compressor Station	lb/acre	2678	512	395
Pipeline - Street	lb/mile	1815	94	186
Pipeline - Open Space	lb/mile	725	85	78
Substation	lb/acre	2081	118	466

Source: CalEEMod version 2020.4.0

#### Notes:

Lbs/day are computed from total emissions and number of working days (weekdays) for each phase.

\*CO2e is in Metric Tons per mile or Metric Tons per acre

### Ventura Compressor Station Alternative Sites - Scaling Values

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
Powerline	Miles	0	0	0	0.83	0	0.02	0	0.85	0	0.27
Pipeline - Street	Miles	0	0	0	0	3.22	3.22	0.97	0.97	0	0
Pipeline - Open Space	Miles	0	0	0.19	0.19	1.85	1.85	0	0	1.07	1.07
Grading - Flat	Acres	0.47	0.47	0.62	0.62	0.47	0.47	0.47	0.47	4.43	4.43
Grading - Elevated/Hill	Acres	0	0	14.44	14.44	0	0	0	0	7.91	7.91
Compressor Station	Acres	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95
Substation	Acres	0	0.63	0	0.63	0	0.63	0	0.63	0	0.63
Road Construction	Miles	0	0	2.33	2.33	0.68	0.68	0.36	0.36	0.47	0.47

#### Note:

Grading - Flat and Grading - Elevated values from "New disturbance" data from SoCalGas and GIS analysis of slopes

Compressor Station footprint based on Moreno data for building construction plus paving area

Powerline - data from Dudek or estimated 100 feet of line per "new pole" as indicated on data from SoCalGas

Ventura Steel - "Pipeline - Street" length (1.78 miles) is doubled for Ventura Ave due to work on one side at a time

**Ventura Compressor Station Alternative Sites - Total On-Site Construction Estimated Emissions**

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	11,450	12,761	86,614	87,925	11,450	12,761	11,450	12,761	59,817	61,128
<b>PM10 Total</b>	Pounds	2,255	2,329	12,076	12,150	2,255	2,329	2,255	2,329	9,555	9,629
<b>CO2e</b>	Metric Tons	1,666	1,959	13,569	13,862	1,666	1,959	1,666	1,959	9,055	9,348

From On-Site tab

**Ventura Compressor Station Alternative Sites - Total Off-Site Construction Estimated Emissions**

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	0	0	4,368	5,448	8,425	8,455	2,416	3,532	1,635	1,983
<b>PM10 Total</b>	Pounds	0	0	235	319	524	527	125	212	135	163
<b>CO2e</b>	Metric Tons	0	0	448	585	870	874	248	389	171	216

From off-site tab

### CalEEMod Emission Factors

#### Maximum Emissions per mile or per acre by Construction Activity

Construction Activity	Emission Factor Units	NOX	PM10 Total	CO2e (MT)*
Powerline	lb/mile	1308	102	166
Grading - Flat	lb/acre	1855	495	224
Grading - Elevated	lb/acre	5186	675	822
Compressor Station	lb/acre	2678	512	395
Pipeline - Street	lb/mile	1815	94	186
Pipeline - Open Space	lb/mile	725	85	78
Substation	lb/mile	2081	118	466

Source: CalEEMod version 2020.4.0

#### Notes:

Lbs/day are computed from total emissions and number of working days (weekdays) for each phase.

\*CO2e is in Metric Tons per mile or Metric Tons per acre

### Ventura Compressor Station Alternative Sites - Scaling Values

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
Powerline	Miles	0.00	0.00	0.00	0.83	0.00	0.02	0.00	0.85	0.00	0.27
Pipeline - Street	Miles	0.00	0.00	0.00	0.00	3.22	3.22	0.97	0.97	0.00	0.00
Pipeline - Open Space	Miles	0.00	0.00	0.19	0.19	1.85	1.85	0.00	0.00	1.07	1.07
Grading - Flat	Acres	0.47	0.47	0.62	0.62	0.47	0.47	0.47	0.47	4.43	4.43
Grading - Elevated/Hill	Acres	0.00	0.00	14.44	14.44	0.00	0.00	0.00	0.00	7.91	7.91
Compressor Station	Acres	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95
Substation	Acres	0.00	0.63	0.00	0.63	0.00	0.63	0.00	0.63	0.00	0.63
Road Construction	Miles	0.00	0.00	2.33	2.33	0.68	0.68	0.36	0.36	0.47	0.47

Source: SoCalGas and Dudek

### Ventura Compressor Station Alternative Sites - Grading - Flat Emissions

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	872	872	1150	1150	872	872	872	872	8218	8218
<b>PM10 Total</b>	Pounds	233	233	307	307	233	233	233	233	2193	2193
<b>CO2e</b>	Metric Tons	105	105	139	139	105	105	105	105	992	992

Note: Scaling Value \* Emission Factor = emissions

### Ventura Compressor Station Alternative Sites - Grading - Elevated Emissions

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	0.0	0.0	74885.8	74885.8	0.0	0.0	0.0	0.0	41021.3	41021.3
<b>PM10 Total</b>	Pounds	0.0	0.0	9747.0	9747.0	0.0	0.0	0.0	0.0	5339.3	5339.3
<b>CO2e</b>	Metric Tons	0.0	0.0	11869.7	11869.7	0.0	0.0	0.0	0.0	6502.0	6502.0

### Ventura Compressor Station Alternative Sites - Compressor Station Construction Emissions

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	10578.1	10578.1	10578.1	10578.1	10578.1	10578.1	10578.1	10578.1	10578.1	10578.1
<b>PM10 Total</b>	Pounds	2022.4	2022.4	2022.4	2022.4	2022.4	2022.4	2022.4	2022.4	2022.4	2022.4
<b>CO2e</b>	Metric Tons	1560.3	1560.3	1560.3	1560.3	1560.3	1560.3	1560.3	1560.3	1560.3	1560.3

**Ventura Compressor Station Alternative Sites - Substation Construction Emissions**

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	0	1311	0	1311	0	1311	0	1311	0	1311
<b>PM10 Total</b>	Pounds	0	74	0	74	0	74	0	74	0	74
<b>CO2e</b>	Metric Tons	0	294	0	294	0	294	0	294	0	294

**Ventura Compressor Station Alternative Sites - On-Site Construction Emissions**

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	11450	12761	86614	87925	11450	12761	11450	12761	59817	61128
<b>PM10 Total</b>	Pounds	2255	2329	12076	12150	2255	2329	2255	2329	9555	9629
<b>CO2e</b>	Metric Tons	1666	1959	13569	13862	1666	1959	1666	1959	9055	9348

Note: On-site emissions = Grading-Flat + Grading-Elevated + Compressor Station

### CalEEMod Emission Factors

#### Maximum Emissions per mile or per acre by Construction Activity

Construction Activity	Emission Factor Units	NOX	PM10 Total	CO2e (MT)*
Powerline	lb/mile	1308	102	166
Grading - Flat	lb/acre	1855	495	224
Grading - Elevated	lb/acre	5186	675	822
Compressor Station	lb/acre	2678	512	395
Pipeline - Street	lb/mile	1815	94	186
Pipeline - Open Space	lb/mile	725	85	78
Substation	lb/mile	2081	118	466

Source: CalEEMod version 2020.4.0

#### Notes:

Lbs/day are computed from total emissions and number of working days (weekdays) for each phase.

\*CO2e is in Metric Tons per mile or Metric Tons per acre

### Ventura Compressor Station Alternative Sites - Scaling Values

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
Powerline	Miles	0.00	0.00	0.00	0.83	0.00	0.02	0.00	0.85	0.00	0.27
Pipeline - Street	Miles	0.00	0.00	0.00	0.00	3.22	3.22	0.97	0.97	0.00	0.00
Pipeline - Open Space	Miles	0.00	0.00	0.19	0.19	1.85	1.85	0.00	0.00	1.07	1.07
Grading - Flat	Acres	0.47	0.47	0.62	0.62	0.47	0.47	0.47	0.47	4.43	4.43
Grading - Elevated/Hill	Acres	0.00	0.00	14.44	14.44	0.00	0.00	0.00	0.00	7.91	7.91
Compressor Station	Acres	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95
Substation	Acres	0.00	0.63	0.00	0.63	0.00	0.63	0.00	0.63	0.00	0.63
Road Construction	Miles	0.00	0.00	2.33	2.33	0.68	0.68	0.36	0.36	0.47	0.47

Source: SoCalGas and Dudek



**Ventura Compressor Station Alternative Sites - Powerline Emissions**

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	0	0	0	1080	0	30	0	1117	0	348
<b>Exhaust PM10</b>	Pounds	0	0	0	84	0	2	0	87	0	27
<b>CO2e</b>	Metric Tons	0	0	0	137	0	4	0	142	0	44

Note: Scaling Value \* Emission Factor = emissions

**Ventura Compressor Station Alternative Sites - Pipeline - Street Emissions**

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	0.0	0.0	0.0	0.0	5844.1	5844.1	1765.2	1765.2	0.0	0.0
<b>Exhaust PM10</b>	Pounds	0.0	0.0	0.0	0.0	302.7	302.7	91.4	91.4	0.0	0.0
<b>CO2e</b>	Metric Tons	0.0	0.0	0.0	0.0	598.9	598.9	180.9	180.9	0.0	0.0

**Ventura Compressor Station Alternative Sites - Pipeline-Open Space Emissions**

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	0.0	0.0	134.8	134.8	1343.6	1343.6	0.0	0.0	775.8	775.8
<b>Exhaust PM10</b>	Pounds	0.0	0.0	15.8	15.8	157.5	157.5	0.0	0.0	91.0	91.0
<b>CO2e</b>	Metric Tons	0.0	0.0	14.5	14.5	144.6	144.6	0.0	0.0	83.5	83.5

### Ventura Compressor Station Alternative Sites - Road Construction Emissions

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	0.0	0.0	4233.3	4233.3	1237.5	1237.5	650.4	650.4	859.0	859.0
<b>Exhaust PM10</b>	Pounds	0.0	0.0	219.2	219.2	64.1	64.1	33.7	33.7	44.5	44.5
<b>CO2e</b>	Metric Tons	0.0	0.0	433.8	433.8	126.8	126.8	66.7	66.7	88.0	88.0

\*Road construction uses Pipeline-street activity emission factor for calculations

### Ventura Compressor Station Alternative Sites - Off-Site Construction Emissions

Activity	Units	Option 1A: Existing Site - Natural Gas	Option 1B: Existing Site - Hybrid	Option 2A: Avocado Site - Natural Gas	Option 2B: Avocado Site - Hybrid	Option 3A: Ventura Steel - Natural Gas	Option 3B: Ventura Steel - Hybrid	Option 4A: Devil's Canyon Road - Natural Gas	Option 4B: Devil's Canyon Road - Hybrid	Option 5A: County Line - Natural Gas	Option 5B: County Line - Hybrid
<b>NOx</b>	Pounds	0.0	0.0	4368.1	5448.0	8425.2	8455.4	2415.5	3532.0	1634.8	1982.8
<b>Exhaust PM10</b>	Pounds	0.0	0.0	235.1	319.3	524.3	526.6	125.1	212.2	135.4	162.6
<b>CO2e</b>	Metric Tons	0.0	0.0	448.3	585.4	870.3	874.1	247.5	389.2	171.5	215.7

Note: Off-site emissions = Powerline + Pipeline-Street + Pipeline-Open Space + Road Construction

\*Pipeline-street activity emission factor for calculations

**Ventura Compressor Station - GHG Emissions**

	<b>Options 1-4 All-NG</b>	<b>Options 1-4 Hybrid</b>	<b>Option 5 All-NG</b>	<b>Option 5 Hybrid</b>
<b>Hours of operation using NG</b>	8,760	8,760	8,760	8,760
<b>Hours of operation using Electric</b>	0	8,760	0	8,760
<b>Direct GHG (MT CO<sub>2</sub>e/yr/engine)</b>	6,959	6,959	6,959	6,959
<b>Indirect GHG (MT CO<sub>2</sub>e/yr/EDC)</b>	2,750	2,750	2,750	2,750
<b>Number of Engines</b>	4	2	5	2
<b>Number of EDCs</b>	0	2	0	3
<b>Total MT CO<sub>2</sub>e/yr</b>	27,836	19,418	34,795	22,168

Indirect GHG - emissions from electricity produced off-site to power compressors

**Ventura Compressor Station - NO<sub>x</sub> Emissions**

	<b>Options 1-4 All-NG</b>	<b>Options 1-4 Hybrid</b>	<b>Option 5 All-NG</b>	<b>Option 5 Hybrid</b>
<b>Hours of operation using NG</b>	8,760	8,760	8,760	8,760
<b>Hours of operation using Electric</b>	0	8,760	0	8,760
<b>NO<sub>x</sub> (ton/yr/engine)</b>	2.8	2.8	2.8	2.8
<b>Number of Engines</b>	4	2	5	2
<b>Total Nox (ton/yr)</b>	11	5.6	14	5.6

Four Waukesha Compressors - Criteria & GHG Emissions - PTE (8,760 hrs/yr)

Source	Engine Rating (BHP)*	HHV Heat Rate (BTU/BHP-hr)	Heat Input (mmBTU/hr)	Default HHV (BTU/cf)	Hourly Process Rate (cf/hr)	Annual Hours (PTE)	Annual Process Rate (mmcf/yr)	Process Description	Annual Capacity Factor**
Waukesha #1	1,900	7,880	14.97	1,050	14,257	8,760	124.89	4SRB w/NSCR	100.0%
Waukesha #2	0	7,880	0.00	1,050	0	0	0.00	4SRB w/NSCR	
Waukesha #3	0	7,880	0.00	1,050	0	0	0.00	4SRB w/NSCR	
Waukesha #4	0	7,880	0.00	1,050	0	0	0.00	4SRB w/NSCR	
Totals	1,900	—	14.97	—	14,257	—	124.89	—	—

\* Per HRA: 7,879 BTU/bhp-hr (HHV) and 1,900 BHP at 100% load. Client indicates engine rating is 1,680 BHP

\*\* Variable that limits annual fuel consumption (via permit condition) to reduce offsets needed (Rule 26.6.D.2)

Pollutant	BACT EF (lb/mmcf)	Waukesha Compressor 1		Waukesha Compressor 2		Waukesha Compressor 3		Waukesha Compressor 4	
		Annual Emissions (tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tons/yr)	Hourly Emissions (lb/hr)
ROC	44.1	2.75	0.63	0.00	0.00	0.00	0.00	0.00	0.00
NO <sub>x</sub>	44.1	2.75	0.63	0.00	0.00	0.00	0.00	0.00	0.00
PM <sub>10</sub>	10.0	0.62	0.14	0.00	0.00	0.00	0.00	0.00	0.00
SO <sub>x</sub>	0.6	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00
CO	176.3	11.01	2.51	0.00	0.00	0.00	0.00	0.00	0.00
CO <sub>2</sub> e (MT/yr)	122,850	6,959	—	0	—	0	—	0	—

Pollutant	BACT EF (g/BHP-hr)	BACT EF (lb/mmcf)	BACT Conc. (ppmv @15% O <sub>2</sub> ) [gr/dscf PM <sub>10</sub> ]	New Annual PTE (tons/yr)	New Hourly PTE (lb/hr)	BACT Reference
ROC	0.15	44.1	32.8	2.75	0.63	BAAQMD AIP (96.3.2)
NO <sub>x</sub>	0.15	44.1	11.4	2.75	0.63	BAAQMD AIP (96.3.2)
PM <sub>10</sub>	0.034	10.0	0.0022	0.62	0.14	AP-42 Table 3.2-3 4SRB
SO <sub>x</sub>	0.002	0.6	0.10	0.04	0.01	AP-42 Table 3.2-3 4SRB
CO	0.6	176.3	74.9	11.01	2.51	BAAQMD AIP (96.3.2)
CO <sub>2</sub> e (MT/yr)	418.0	122,850	—	6,959	—	Climate Registry; IPCC AR5

**CAMX WECC California 2018****1,900 BHP electric compressors****Projected Actuals per compressor**

1,900 BHP  
87.5% capacity factor  
1,663 BHP  
1.341 BHP/kW  
95% motor efficiency (power factor)  
94% variable speed drive efficiency (variable frequency)  
1,388 kW  
8,760 hrs/yr  
12,161 MWh/yr  
498.45 CO<sub>2</sub>e lbs/MWh (IPCC AR2, CARB Reporting GWPs)  
2204.6 lbs/MT

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**2,750 MT CO<sub>2</sub>e/yr****Potential to Emit per compressor**

1,900 BHP  
87.5% capacity factor  
1,663 BHP  
1.341 BHP/kW  
95% motor efficiency (power factor)  
94% variable speed drive efficiency (variable frequency)  
1,388 kW  
8,760 hrs/yr  
12,161 MWh/yr  
498.45 CO<sub>2</sub>e lbs/MWh (IPCC AR2, CARB Reporting GWPs)  
2204.6 lbs/MT

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**2,750 MT CO<sub>2</sub>e/yr**

## VCS Alternative Sites - Site Elevations

		Flat	Elevated
<b>Avocado</b>	<b>15.06ac total</b>		
0 - 10 percent slopes	0.08	0.62	14.44
10 - 20 percent slopes	0.54		
20 - 30 percent slopes	1.7		
30 - 40 percent slopes	6.52		
40 - 50 percent slopes	3.75		
50 - 60 percent slopes	2.13		
60 - 70 percent slopes	0.34		
<b>County Line</b>	<b>12.33ac total</b>		
0 - 10 percent slopes	1.48	4.43	7.91
10 - 20 percent slopes	2.95		
20 - 30 percent slopes	3.39		
30 - 40 percent slopes	2.35		
40 - 50 percent slopes	1.8		
50 - 60 percent slopes	0.3		
60 - 70 percent slopes	0.07		
<b>Devil's Cyn Rd</b>	<b>12.88ac total</b>		
0 - 10 percent slopes	11.98	12.69	0.19
10 - 20 percent slopes	0.71		
20 - 30 percent slopes	0.19		
<b>Ventura Compressor Station</b>	<b>8.42ac total</b>		
0 - 10 percent slopes	8.42	8.42	
<b>Ventura Steel</b>	<b>10.00ac total</b>		
0 - 10 percent slopes	8.97	9.95	0.05
10 - 20 percent slopes	0.98		
20 - 30 percent slopes	0.05		
30 - 40 percent slopes	0		
40 - 50 percent slopes	0		

Elevated = any grade >20% slope

Source: Dudek

VCS Alternative Sites - Non-Industrial Linear Construction	
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<b>Avocado</b>	<b>18,680.06ft</b>
Access Road	12,517.64ft
Electrical Interconnect	4,408.65ft
Pipeline	1,753.77ft
<b>County Line</b>	<b>11,211.11ft</b>
Access Road	2,498.95ft
Electrical Interconnect	1,410.46ft
Pipeline	7,301.70ft
<b>Devil's Cyn Rd</b>	<b>11,884.80ft</b>
Access Road	1,964.14ft
Electrical Interconnect	4,538.70ft
Pipeline	5,381.96ft
<b>Ventura Steel</b>	<b>14,617.24ft</b>
Depressurization Line	23.44ft
Pipeline	14,593.80ft

Source: Dudek



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## **ATTACHMENT 2 – CalEEMod DATA**

SCG-VCS Project - Phase 9 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SCG-VCS Project - Phase 9

Ventura County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Honor Rancho

Off-road Equipment - Honor Rancho

Grading - Honor Rancho

Trips and VMT - Honor Rancho

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	60.00
tblGrading	AcresOfGrading	240.00	1.00
tblGrading	MaterialExported	0.00	59,701.00
tblOffRoadEquipment	HorsePower	78.00	45.00

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblOffRoadEquipment	HorsePower	212.00	605.00
tblOffRoadEquipment	HorsePower	85.00	385.00
tblOffRoadEquipment	HorsePower	16.00	450.00
tblOffRoadEquipment	HorsePower	158.00	728.00
tblOffRoadEquipment	HorsePower	84.00	67.00
tblOffRoadEquipment	HorsePower	187.00	139.00
tblOffRoadEquipment	HorsePower	84.00	2.00
tblOffRoadEquipment	HorsePower	203.00	97.00
tblOffRoadEquipment	HorsePower	367.00	407.00
tblOffRoadEquipment	HorsePower	65.00	73.50
tblOffRoadEquipment	HorsePower	402.00	475.00
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.48	0.48
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	0.00	62.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	58.00	405.00

**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					
2023	0.3040	2.5931	2.4179	8.7300e-003	0.2442	0.0933	0.3374	0.0655	0.0869	0.1524	0.0000	808.2259	808.2259	0.1391	0.0357	822.3393
Maximum	0.3040	2.5931	2.4179	8.7300e-003	0.2442	0.0933	0.3374	0.0655	0.0869	0.1524	0.0000	808.2259	808.2259	0.1391	0.0357	822.3393

**Mitigated Construction**

## SCG-VCS Project - Phase 9 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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					
2023	0.3040	2.5931	2.4179	8.7300e-003	0.2442	0.0933	0.3374	0.0655	0.0869	0.1524	0.0000	808.2253	808.2253	0.1391	0.0357	822.3388
Maximum	0.3040	2.5931	2.4179	8.7300e-003	0.2442	0.0933	0.3374	0.0655	0.0869	0.1524	0.0000	808.2253	808.2253	0.1391	0.0357	822.3388

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	2.5236	2.5236
2	4-2-2023	7-1-2023	0.3764	0.3764
		Highest	2.5236	2.5236

## 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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1444	112.1444	6.3200e-003	1.5400e-003	112.7607
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2166</b>	<b>387.3759</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4208</b>

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1444	112.1444	6.3200e-003	1.5400e-003	112.7607
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2166</b>	<b>387.3759</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4208</b>

	ROG	NOx	CO	SO2	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**

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	9	Grading	1/19/2023	4/12/2023	5	60	Grading

**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 1****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
9	Air Compressors	1	8.00	45	0.48
9	Crawler Tractors	2	8.00	605	0.43
9	Crushing/Proc. Equipment	1	8.00	385	0.78
9	Dumpers/Tenders	6	8.00	450	0.38
9	Excavators	1	8.00	728	0.38
9	Generator Sets	1	8.00	67	0.74
9	Graders	2	8.00	139	0.41
9	Pumps	2	8.00	2	0.74
9	Rubber Tired Loaders	3	8.00	97	0.36
9	Scrapers	2	8.00	407	0.48
9	Skid Steer Loaders	1	8.00	73.5	0.37
9	Off-Highway Trucks	1	8.00	475	0.38

**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
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## SCG-VCS Project - Phase 9 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

9	23	405.00	62.00	5,903.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
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## 3.1 Mitigation Measures Construction

## 3.2 9 - 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					
Fugitive Dust					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2454	2.1072	1.7923	5.2100e-003		0.0893	0.0893		0.0831	0.0831	0.0000	467.8871	467.8871	0.1230	0.0000	470.9624
<b>Total</b>	<b>0.2454</b>	<b>2.1072</b>	<b>1.7923</b>	<b>5.2100e-003</b>	<b>5.3000e-004</b>	<b>0.0893</b>	<b>0.0898</b>	<b>6.0000e-005</b>	<b>0.0831</b>	<b>0.0831</b>	<b>0.0000</b>	<b>467.8871</b>	<b>467.8871</b>	<b>0.1230</b>	<b>0.0000</b>	<b>470.9624</b>

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	5.8000e-003	0.3691	0.1014	1.6600e-003	0.0507	2.6100e-003	0.0533	0.0139	2.5000e-003	0.0164	0.0000	167.6511	167.6511	0.0114	0.0267	175.8941
Vendor	1.8700e-003	0.0775	0.0262	3.7000e-004	0.0134	4.5000e-004	0.0139	3.8700e-003	4.3000e-004	4.3000e-003	0.0000	36.5072	36.5072	1.5000e-003	5.4600e-003	38.1729
Worker	0.0509	0.0393	0.4981	1.4900e-003	0.1795	9.4000e-004	0.1805	0.0477	8.7000e-004	0.0485	0.0000	136.1805	136.1805	3.2200e-003	3.5200e-003	137.3100

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Total	0.0586	0.4859	0.6256	3.5200e-003	0.2436	4.0000e-003	0.2476	0.0655	3.8000e-003	0.0692	0.0000	340.3388	340.3388	0.0161	0.0357	351.3770
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**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					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2454	2.1072	1.7923	5.2100e-003		0.0893	0.0893		0.0831	0.0831	0.0000	467.8865	467.8865	0.1230	0.0000	470.9618
<b>Total</b>	<b>0.2454</b>	<b>2.1072</b>	<b>1.7923</b>	<b>5.2100e-003</b>	<b>5.3000e-004</b>	<b>0.0893</b>	<b>0.0898</b>	<b>6.0000e-005</b>	<b>0.0831</b>	<b>0.0831</b>	<b>0.0000</b>	<b>467.8865</b>	<b>467.8865</b>	<b>0.1230</b>	<b>0.0000</b>	<b>470.9618</b>

**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	5.8000e-003	0.3691	0.1014	1.6600e-003	0.0507	2.6100e-003	0.0533	0.0139	2.5000e-003	0.0164	0.0000	167.6511	167.6511	0.0114	0.0267	175.8941
Vendor	1.8700e-003	0.0775	0.0262	3.7000e-004	0.0134	4.5000e-004	0.0139	3.8700e-003	4.3000e-004	4.3000e-003	0.0000	36.5072	36.5072	1.5000e-003	5.4600e-003	38.1729
Worker	0.0509	0.0393	0.4981	1.4900e-003	0.1795	9.4000e-004	0.1805	0.0477	8.7000e-004	0.0485	0.0000	136.1805	136.1805	3.2200e-003	3.5200e-003	137.3100

## SCG-VCS Project - Phase 9 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	0.0586	0.4859	0.6256	3.5200e-003	0.2436	4.0000e-003	0.2476	0.0655	3.8000e-003	0.0692	0.0000	340.3388	340.3388	0.0161	0.0357	351.3770
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## 4.0 Operational Detail - Mobile

## 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	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Unmitigated	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	171.19	279.66	221.72	749,142	749,142
Total	171.19	279.66	221.72	749,142	749,142

## 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

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

General Heavy Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
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**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0069

**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	63.8872	63.8872	5.3900e-003	6.5000e-004	64.2168
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	63.8872	63.8872	5.3900e-003	6.5000e-004	64.2168
NaturalGas Mitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2572	48.2572	9.2000e-004	8.8000e-004	48.5440
NaturalGas Unmitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2572	48.2572	9.2000e-004	8.8000e-004	48.5440

**5.2 Energy by Land Use - NaturalGas  
Unmitigated**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	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 Heavy Industry	904306	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2572	48.2572	9.2000e-004	8.8000e-004	48.5440
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2572</b>	<b>48.2572</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5440</b>

**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 Heavy Industry	904306	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2572	48.2572	9.2000e-004	8.8000e-004	48.5440
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2572</b>	<b>48.2572</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5440</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
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## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Land Use	kWh/yr	MT/yr			
General Heavy Industry	360241	63.8872	5.3900e-003	6.5000e-004	64.2168
<b>Total</b>		<b>63.8872</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2168</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360241	63.8872	5.3900e-003	6.5000e-004	64.2168
<b>Total</b>		<b>63.8872</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2168</b>

**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
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## SCG-VCS Project - Phase 9 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category											MT/yr					
tons/yr																
Mitigated	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Unmitigated	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004

## 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											MT/yr					
tons/yr																
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

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											MT/yr					
tons/yr																



## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4571	0.3302	7.9900e-003	37.0926
Unmitigated	26.4571	0.3302	7.9900e-003	37.0926

**7.2 Water by Land Use****Unmitigated**

Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
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SCG-VCS Project - Phase 9 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use Mgal		MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
Total		26.4571	0.3302	7.9900e-003	37.0926

Mitigated

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use Mgal		MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
Total		26.4571	0.3302	7.9900e-003	37.0926

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
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## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****9.0 Operational Offroad**

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

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**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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SCG-VCS Project - Phase 10 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SCG-VCS Project - Phase 10

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	264.00	1000sqft	6.06	264,001.06	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - defaults

Land Use - North-South

Construction Phase - North-South

Off-road Equipment - North-South

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	132001	0
tblAreaCoating	Area_Nonresidential_Interior	396002	0
tblConstructionPhase	NumDays	230.00	19.00
tblLandUse	LandUseSquareFeet	264,000.00	264,001.06
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00

## SCG-VCS Project - Phase 10 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblOffRoadEquipment	HorsePower	84.00	49.00
tblOffRoadEquipment	HorsePower	221.00	205.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	130.00	125.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	14.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblProjectCharacteristics	TotalLotAcreage	0	0.63
tblProjectCharacteristics	UrbanizationLevel		Rural

## SCG-VCS Project - Phase 10 - Ventura County, Annual

### EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 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					
2023	0.1168	0.9073	1.1254	2.1400e-003	5.5200e-003	0.0417	0.0472	2.1900e-003	0.0399	0.0421	0.0000	184.4682	184.4682	0.0300	2.0300e-003	185.8236
Maximum	0.1168	0.9073	1.1254	2.1400e-003	5.5200e-003	0.0417	0.0472	2.1900e-003	0.0399	0.0421	0.0000	184.4682	184.4682	0.0300	2.0300e-003	185.8236

### 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					
2023	0.1168	0.9073	1.1254	2.1400e-003	5.5200e-003	0.0417	0.0472	2.1900e-003	0.0399	0.0421	0.0000	184.4680	184.4680	0.0300	2.0300e-003	185.8234
Maximum	0.1168	0.9073	1.1254	2.1400e-003	5.5200e-003	0.0417	0.0472	2.1900e-003	0.0399	0.0421	0.0000	184.4680	184.4680	0.0300	2.0300e-003	185.8234

[illegible]



### EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 2.2 Overall Operational

### Unmitigated Operational

### Mitigated Operational

[illegible]

## SCG-VCS Project - Phase 10 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	10	Building Construction	2/20/2023	3/17/2023	5	19	Roadwork

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
10	Air Compressors	8	4.00	78	0.48
10	Air Compressors	2	6.00	78	0.48
10	Air Compressors	2	4.00	78	0.48
10	Bore/Drill Rigs	1	4.00	205	0.50
10	Concrete/Industrial Saws	2	4.00	81	0.73
10	Cranes	2	5.00	226	0.29
10	Cranes	4	5.00	226	0.29
10	Excavators	1	5.00	162	0.38
10	Forklifts	2	4.00	89	0.20
10	Generator Sets	6	2.00	49	0.74
10	Generator Sets	3	6.00	84	0.74

## SCG-VCS Project - Phase 10 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

10	Other Construction Equipment	2	4.00	171	0.42
10	Other Construction Equipment	3	4.00	171	0.42
10	Other Construction Equipment	2	4.00	171	0.42
10	Other Construction Equipment	1	4.00	171	0.42
10	Other Construction Equipment	1	4.00	171	0.42
10	Pavers	1	4.00	125	0.42
10	Pumps	1	5.00	84	0.74
10	Pumps	1	6.00	84	0.74
10	Pumps	2	4.00	84	0.74
10	Rollers	2	5.00	80	0.38
10	Tractors/Loaders/Backhoes	5	6.00	97	0.37
10	Tractors/Loaders/Backhoes	6	4.00	97	0.37
10	Welders	14	5.00	46	0.45

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
10		232.00	46.00	2.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction****3.2 10 - 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					

## SCG-VCS Project - Phase 10 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Off-Road	0.1066	0.8805	1.0238	1.7600e-003		0.0414	0.0414		0.0397	0.0397	0.0000	149.3766	149.3766	0.0290	0.0000	150.1014
<b>Total</b>	<b>0.1066</b>	<b>0.8805</b>	<b>1.0238</b>	<b>1.7600e-003</b>		<b>0.0414</b>	<b>0.0414</b>		<b>0.0397</b>	<b>0.0397</b>	<b>0.0000</b>	<b>149.3766</b>	<b>149.3766</b>	<b>0.0290</b>	<b>0.0000</b>	<b>150.1014</b>

**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	1.3000e-004	4.0000e-005	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0598	0.0598	0.0000	1.0000e-005	0.0627
Vendor	4.6000e-004	0.0192	6.4800e-003	9.0000e-005	9.7000e-004	1.1000e-004	1.0800e-003	3.8000e-004	1.1000e-004	4.9000e-004	0.0000	9.0287	9.0287	3.7000e-004	1.3500e-003	9.4406
Worker	9.7200e-003	7.5100e-003	0.0951	2.8000e-004	4.5500e-003	1.8000e-004	4.7300e-003	1.8100e-003	1.7000e-004	1.9700e-003	0.0000	26.0032	26.0032	6.1000e-004	6.7000e-004	26.2189
<b>Total</b>	<b>0.0102</b>	<b>0.0268</b>	<b>0.1016</b>	<b>3.7000e-004</b>	<b>5.5200e-003</b>	<b>2.9000e-004</b>	<b>5.8200e-003</b>	<b>2.1900e-003</b>	<b>2.8000e-004</b>	<b>2.4600e-003</b>	<b>0.0000</b>	<b>35.0917</b>	<b>35.0917</b>	<b>9.8000e-004</b>	<b>2.0300e-003</b>	<b>35.7222</b>

**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	0.1066	0.8805	1.0238	1.7600e-003		0.0414	0.0414		0.0397	0.0397	0.0000	149.3764	149.3764	0.0290	0.0000	150.1012

## SCG-VCS Project - Phase 10 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	0.1066	0.8805	1.0238	1.7600e-003		0.0414	0.0414		0.0397	0.0397	0.0000	149.3764	149.3764	0.0290	0.0000	150.1012
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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	1.3000e-004	4.0000e-005	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0598	0.0598	0.0000	1.0000e-005	0.0627
Vendor	4.6000e-004	0.0192	6.4800e-003	9.0000e-005	9.7000e-004	1.1000e-004	1.0800e-003	3.8000e-004	1.1000e-004	4.9000e-004	0.0000	9.0287	9.0287	3.7000e-004	1.3500e-003	9.4406
Worker	9.7200e-003	7.5100e-003	0.0951	2.8000e-004	4.5500e-003	1.8000e-004	4.7300e-003	1.8100e-003	1.7000e-004	1.9700e-003	0.0000	26.0032	26.0032	6.1000e-004	6.7000e-004	26.2189
Total	0.0102	0.0268	0.1016	3.7000e-004	5.5200e-003	2.9000e-004	5.8200e-003	2.1900e-003	2.8000e-004	2.4600e-003	0.0000	35.0917	35.0917	9.8000e-004	2.0300e-003	35.7222

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile****4.2 Trip Summary Information**

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

**4.3 Trip Type Information**



## SCG-VCS Project - Phase 10 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 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	1.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.0311</b>					<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

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	1.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.0311</b>					<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 7.0 Water Detail



## SCG-VCS Project - Phase 10 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****7.1 Mitigation Measures Water****8.0 Waste Detail**

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**8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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

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**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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SCG-VCS Project - Phase 11 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SCG-VCS Project - Phase 11

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	43.56	1000sqft	1.00	43,560.17	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - defaults

Land Use - San Manuel

Construction Phase - San Manuel

Off-road Equipment - San Manuel

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	21780	0
tblAreaCoating	Area_Nonresidential_Interior	65340	0
tblConstructionPhase	NumDays	100.00	80.00
tblLandUse	LandUseSquareFeet	43,560.00	43,560.17
tblOffRoadEquipment	HorsePower	231.00	500.00
tblOffRoadEquipment	HorsePower	231.00	300.00

## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblOffRoadEquipment	HorsePower	63.00	350.00
tblOffRoadEquipment	HorsePower	158.00	300.00
tblOffRoadEquipment	HorsePower	84.00	350.00
tblOffRoadEquipment	HorsePower	100.00	125.00
tblOffRoadEquipment	UsageHours	4.00	10.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblProjectCharacteristics	TotalLotAcreage	0	0.63
tblProjectCharacteristics	UrbanizationLevel		Rural

**2.0 Emissions Summary****2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1570	1.0407	1.4341	4.9800e-003	0.0249	0.0342	0.0591	9.8800e-003	0.0321	0.0420	0.0000	462.1769	462.1769	0.0701	5.7800e-003	465.6514
Maximum	0.1570	1.0407	1.4341	4.9800e-003	0.0249	0.0342	0.0591	9.8800e-003	0.0321	0.0420	0.0000	462.1769	462.1769	0.0701	5.7800e-003	465.6514

**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
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## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	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**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	11	Building Construction	5/25/2023	9/13/2023	5	80	Building Construction

**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
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## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

11	Generator Sets	1	10.00	350	0.74
11	Cranes	1	10.00	500	0.29
11	Aerial Lifts	2	8.00	350	0.31
11	Cranes	1	8.00	300	0.29
11	Rough Terrain Forklifts	1	8.00	125	0.40
11	Excavators	1	8.00	300	0.38

**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
11		296.00	20.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction****3.2 11 - 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	0.1066	0.9690	0.9375	3.3700e-003		0.0330	0.0330		0.0311	0.0311	0.0000	313.7689	313.7689	0.0663	0.0000	315.4263
<b>Total</b>	<b>0.1066</b>	<b>0.9690</b>	<b>0.9375</b>	<b>3.3700e-003</b>		<b>0.0330</b>	<b>0.0330</b>		<b>0.0311</b>	<b>0.0311</b>	<b>0.0000</b>	<b>313.7689</b>	<b>313.7689</b>	<b>0.0663</b>	<b>0.0000</b>	<b>315.4263</b>

**Unmitigated Construction Off-Site**

## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive 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	8.1000e-004	0.0333	0.0113	1.6000e-004	1.6800e-003	1.9000e-004	1.8700e-003	6.6000e-004	1.9000e-004	8.5000e-004	0.0000	15.7020	15.7020	6.5000e-004	2.3500e-003	16.4184
Worker	0.0496	0.0383	0.4854	1.4500e-003	0.0233	9.2000e-004	0.0242	9.2200e-003	8.4000e-004	0.0101	0.0000	132.7060	132.7060	3.1300e-003	3.4300e-003	133.8066
<b>Total</b>	<b>0.0504</b>	<b>0.0716</b>	<b>0.4966</b>	<b>1.6100e-003</b>	<b>0.0249</b>	<b>1.1100e-003</b>	<b>0.0260</b>	<b>9.8800e-003</b>	<b>1.0300e-003</b>	<b>0.0109</b>	<b>0.0000</b>	<b>148.4080</b>	<b>148.4080</b>	<b>3.7800e-003</b>	<b>5.7800e-003</b>	<b>150.2251</b>

**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	0.1066	0.9690	0.9375	3.3700e-003		0.0330	0.0330		0.0311	0.0311	0.0000	313.7686	313.7686	0.0663	0.0000	315.4260
<b>Total</b>	<b>0.1066</b>	<b>0.9690</b>	<b>0.9375</b>	<b>3.3700e-003</b>		<b>0.0330</b>	<b>0.0330</b>		<b>0.0311</b>	<b>0.0311</b>	<b>0.0000</b>	<b>313.7686</b>	<b>313.7686</b>	<b>0.0663</b>	<b>0.0000</b>	<b>315.4260</b>

**Mitigated Construction Off-Site**



## SCG-VCS Project - Phase 11 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	8.1000e-004	0.0333	0.0113	1.6000e-004	1.6800e-003	1.9000e-004	1.8700e-003	6.6000e-004	1.9000e-004	8.5000e-004	0.0000	15.7020	15.7020	6.5000e-004	2.3500e-003	16.4184
Worker	0.0496	0.0383	0.4854	1.4500e-003	0.0233	9.2000e-004	0.0242	9.2200e-003	8.4000e-004	0.0101	0.0000	132.7060	132.7060	3.1300e-003	3.4300e-003	133.8066
<b>Total</b>	<b>0.0504</b>	<b>0.0716</b>	<b>0.4966</b>	<b>1.6100e-003</b>	<b>0.0249</b>	<b>1.1100e-003</b>	<b>0.0260</b>	<b>9.8800e-003</b>	<b>1.0300e-003</b>	<b>0.0109</b>	<b>0.0000</b>	<b>148.4080</b>	<b>148.4080</b>	<b>3.7800e-003</b>	<b>5.7800e-003</b>	<b>150.2251</b>

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

## 4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

## 4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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## 5.0 Energy Detail

SCG-VCS Project - Phase 11 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

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

## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.1701</b>					<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.1701</b>					<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**7.0 Water Detail****7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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

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**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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SCG-VCS Project - Phase 1 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SCG-VCS Project - Phase 1  
Ventura County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	22.37	1000sqft	0.51	22,370.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - used 1 mile
- Construction Phase - Used Moreno project
- Off-road Equipment - Moreno project
- Off-road Equipment - Moreno project
- Grading - used 1 mile
- Trips and VMT - Moreno project
- Architectural Coating -
- Area Coating -
- Vehicle Trips -

## SCG-VCS Project - Phase 1 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	6.00
tblOffRoadEquipment	HorsePower	97.00	200.00
tblOffRoadEquipment	HorsePower	221.00	200.00
tblOffRoadEquipment	HorsePower	231.00	300.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	0.00	30.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	30.00	40.00

**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					
2023	0.0426	0.4054	0.4612	1.1700e-003	0.0141	0.0168	0.0309	3.8400e-003	0.0156	0.0194	0.0000	103.8506	103.8506	0.0261	1.7400e-003	105.0223
Maximum	0.0426	0.4054	0.4612	1.1700e-003	0.0141	0.0168	0.0309	3.8400e-003	0.0156	0.0194	0.0000	103.8506	103.8506	0.0261	1.7400e-003	105.0223

## SCG-VCS Project - Phase 1 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**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					
2023	0.0426	0.4054	0.4612	1.1700e-003	0.0141	0.0168	0.0309	3.8400e-003	0.0156	0.0194	0.0000	103.8505	103.8505	0.0261	1.7400e-003	105.0222
Maximum	0.0426	0.4054	0.4612	1.1700e-003	0.0141	0.0168	0.0309	3.8400e-003	0.0156	0.0194	0.0000	103.8505	103.8505	0.0261	1.7400e-003	105.0222

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	0.4485	0.4485
		Highest	0.4485	0.4485

**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					



## SCG-VCS Project - Phase 1 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Area	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Energy	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	57.5911	57.5911	3.2400e-003	7.9000e-004	57.9077
Mobile	0.0622	0.0819	0.6326	1.3500e-003	0.1478	1.0600e-003	0.1489	0.0395	9.9000e-004	0.0405	0.0000	124.5953	124.5953	7.9000e-003	5.6600e-003	126.4787
Waste						0.0000	0.0000		0.0000	0.0000	5.6310	0.0000	5.6310	0.3328	0.0000	13.9505
Water						0.0000	0.0000		0.0000	0.0000	1.6412	11.9457	13.5869	0.1696	4.1000e-003	19.0487
<b>Total</b>	<b>0.1624</b>	<b>0.1046</b>	<b>0.6519</b>	<b>1.4900e-003</b>	<b>0.1478</b>	<b>2.7900e-003</b>	<b>0.1506</b>	<b>0.0395</b>	<b>2.7200e-003</b>	<b>0.0422</b>	<b>7.2721</b>	<b>194.1325</b>	<b>201.4047</b>	<b>0.5135</b>	<b>0.0106</b>	<b>217.3860</b>

**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	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Energy	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	57.5911	57.5911	3.2400e-003	7.9000e-004	57.9077
Mobile	0.0622	0.0819	0.6326	1.3500e-003	0.1478	1.0600e-003	0.1489	0.0395	9.9000e-004	0.0405	0.0000	124.5953	124.5953	7.9000e-003	5.6600e-003	126.4787
Waste						0.0000	0.0000		0.0000	0.0000	5.6310	0.0000	5.6310	0.3328	0.0000	13.9505
Water						0.0000	0.0000		0.0000	0.0000	1.6412	11.9457	13.5869	0.1696	4.1000e-003	19.0487
<b>Total</b>	<b>0.1624</b>	<b>0.1046</b>	<b>0.6519</b>	<b>1.4900e-003</b>	<b>0.1478</b>	<b>2.7900e-003</b>	<b>0.1506</b>	<b>0.0395</b>	<b>2.7200e-003</b>	<b>0.0422</b>	<b>7.2721</b>	<b>194.1325</b>	<b>201.4047</b>	<b>0.5135</b>	<b>0.0106</b>	<b>217.3860</b>

## SCG-VCS Project - Phase 1 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	1	Site Preparation	1/2/2023	2/19/2023	5	6	SCE Trenching and Poles

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
1	Tractors/Loaders/Backhoes	1	7.00	200	0.37
1	Skid Steer Loaders	1	7.00	65	0.37
1	Cranes	2	7.00	300	0.29
1	Rollers	2	7.00	80	0.38
1	Concrete/Industrial Saws	1	7.00	81	0.73
1	Excavators	1	7.00	158	0.38
1	Paving Equipment	1	7.00	132	0.36
1	Rollers	1	7.00	80	0.38
1	Bore/Drill Rigs	2	7.00	200	0.50

## SCG-VCS Project - Phase 1 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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
1	12	40.00	30.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

## 3.1 Mitigation Measures Construction

## 3.2 1 - 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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.3813	0.4251	9.8000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	85.7003	85.7003	0.0255	0.0000	86.3368
<b>Total</b>	<b>0.0391</b>	<b>0.3813</b>	<b>0.4251</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>0.0166</b>	<b>0.0166</b>	<b>0.0000</b>	<b>0.0154</b>	<b>0.0154</b>	<b>0.0000</b>	<b>85.7003</b>	<b>85.7003</b>	<b>0.0255</b>	<b>0.0000</b>	<b>86.3368</b>

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
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## SCG-VCS Project - Phase 1 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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	5.3000e-004	0.0219	7.3900e-003	1.0000e-004	3.7900e-003	1.3000e-004	3.9100e-003	1.0900e-003	1.2000e-004	1.2100e-003	0.0000	10.3045	10.3045	4.2000e-004	1.5400e-003	10.7746
Worker	2.9300e-003	2.2700e-003	0.0287	9.0000e-005	0.0103	5.0000e-005	0.0104	2.7500e-003	5.0000e-005	2.8000e-003	0.0000	7.8458	7.8458	1.9000e-004	2.0000e-004	7.9109
<b>Total</b>	<b>3.4600e-003</b>	<b>0.0241</b>	<b>0.0361</b>	<b>1.9000e-004</b>	<b>0.0141</b>	<b>1.8000e-004</b>	<b>0.0143</b>	<b>3.8400e-003</b>	<b>1.7000e-004</b>	<b>4.0100e-003</b>	<b>0.0000</b>	<b>18.1502</b>	<b>18.1502</b>	<b>6.1000e-004</b>	<b>1.7400e-003</b>	<b>18.6855</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.3813	0.4251	9.8000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	85.7002	85.7002	0.0255	0.0000	86.3367
<b>Total</b>	<b>0.0391</b>	<b>0.3813</b>	<b>0.4251</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>0.0166</b>	<b>0.0166</b>	<b>0.0000</b>	<b>0.0154</b>	<b>0.0154</b>	<b>0.0000</b>	<b>85.7002</b>	<b>85.7002</b>	<b>0.0255</b>	<b>0.0000</b>	<b>86.3367</b>

**Mitigated Construction Off-Site**

## SCG-VCS Project - Phase 1 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	5.3000e-004	0.0219	7.3900e-003	1.0000e-004	3.7900e-003	1.3000e-004	3.9100e-003	1.0900e-003	1.2000e-004	1.2100e-003	0.0000	10.3045	10.3045	4.2000e-004	1.5400e-003	10.7746
Worker	2.9300e-003	2.2700e-003	0.0287	9.0000e-005	0.0103	5.0000e-005	0.0104	2.7500e-003	5.0000e-005	2.8000e-003	0.0000	7.8458	7.8458	1.9000e-004	2.0000e-004	7.9109
<b>Total</b>	<b>3.4600e-003</b>	<b>0.0241</b>	<b>0.0361</b>	<b>1.9000e-004</b>	<b>0.0141</b>	<b>1.8000e-004</b>	<b>0.0143</b>	<b>3.8400e-003</b>	<b>1.7000e-004</b>	<b>4.0100e-003</b>	<b>0.0000</b>	<b>18.1502</b>	<b>18.1502</b>	<b>6.1000e-004</b>	<b>1.7400e-003</b>	<b>18.6855</b>

## 4.0 Operational Detail - Mobile

## 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	0.0622	0.0819	0.6326	1.3500e-003	0.1478	1.0600e-003	0.1489	0.0395	9.9000e-004	0.0405	0.0000	124.5953	124.5953	7.9000e-003	5.6600e-003	126.4787
Unmitigated	0.0622	0.0819	0.6326	1.3500e-003	0.1478	1.0600e-003	0.1489	0.0395	9.9000e-004	0.0405	0.0000	124.5953	124.5953	7.9000e-003	5.6600e-003	126.4787

## SCG-VCS Project - Phase 1 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	110.96	44.52	111.85	392,496	392,496
Total	110.96	44.52	111.85	392,496	392,496

## 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	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0069

## 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	32.8089	32.8089	2.7700e-003	3.4000e-004	32.9782

## SCG-VCS Project - Phase 1 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	32.8089	32.8089	2.7700e-003	3.4000e-004	32.9782
NaturalGas Mitigated	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.7822	24.7822	4.7000e-004	4.5000e-004	24.9295
NaturalGas Unmitigated	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.7822	24.7822	4.7000e-004	4.5000e-004	24.9295

**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	464401	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.7822	24.7822	4.7000e-004	4.5000e-004	24.9295
<b>Total</b>		<b>2.5000e-003</b>	<b>0.0228</b>	<b>0.0191</b>	<b>1.4000e-004</b>		<b>1.7300e-003</b>	<b>1.7300e-003</b>		<b>1.7300e-003</b>	<b>1.7300e-003</b>	<b>0.0000</b>	<b>24.7822</b>	<b>24.7822</b>	<b>4.7000e-004</b>	<b>4.5000e-004</b>	<b>24.9295</b>

**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	464401	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.7822	24.7822	4.7000e-004	4.5000e-004	24.9295

SCG-VCS Project - Phase 1 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total		2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.7822	24.7822	4.7000e-004	4.5000e-004	24.9295
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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	185000	32.8089	2.7700e-003	3.4000e-004	32.9782
Total		32.8089	2.7700e-003	3.4000e-004	32.9782

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	185000	32.8089	2.7700e-003	3.4000e-004	32.9782
Total		32.8089	2.7700e-003	3.4000e-004	32.9782



## SCG-VCS Project - Phase 1 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 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	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Unmitigated	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004

## 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	0.0104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004

SCG-VCS Project - Phase 1 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
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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	0.0104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Total	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
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SCG-VCS Project - Phase 1 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	MT/yr			
Mitigated	13.5869	0.1696	4.1000e-003	19.0487
Unmitigated	13.5869	0.1696	4.1000e-003	19.0487

7.2 Water by Land Use

Unmitigated

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	5.17306 / 0	13.5869	0.1696	4.1000e-003	19.0487
Total		13.5869	0.1696	4.1000e-003	19.0487

Mitigated

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	5.17306 / 0	13.5869	0.1696	4.1000e-003	19.0487

SCG-VCS Project - Phase 1 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	13.5869	0.1696	4.1000e-003	19.0487
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8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.6310	0.3328	0.0000	13.9505
Unmitigated	5.6310	0.3328	0.0000	13.9505

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	27.74	5.6310	0.3328	0.0000	13.9505

## SCG-VCS Project - Phase 1 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

<b>Total</b>		<b>5.6310</b>	<b>0.3328</b>	<b>0.0000</b>	<b>13.9505</b>
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**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	27.74	5.6310	0.3328	0.0000	13.9505
<b>Total</b>		<b>5.6310</b>	<b>0.3328</b>	<b>0.0000</b>	<b>13.9505</b>

**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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SCG-VCS Project - Phase 1 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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## SCG-VCS Project - Phase 2 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## SCG-VCS Project - Phase 2

## Ventura County, Annual

**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	22.37	1000sqft	0.51	22,370.00	0

**1.2 Other Project Characteristics**

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - used 1 mile

Construction Phase - Used Moreno project

Off-road Equipment - Moreno project

Off-road Equipment - Moreno project

Grading - used 1 mile

Trips and VMT - North-South project

Architectural Coating -

Area Coating -

Vehicle Trips -

Fleet Mix -

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	6.00
tblOffRoadEquipment	HorsePower	231.00	300.00
tblOffRoadEquipment	HorsePower	88.00	350.00
tblOffRoadEquipment	HorsePower	88.00	75.00
tblOffRoadEquipment	HorsePower	88.00	75.00
tblOffRoadEquipment	HorsePower	88.00	75.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	4.00	32.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	9.00	53.00

**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					
2023	0.0276	0.2488	0.2780	6.8000e-004	0.0127	0.0107	0.0233	3.4300e-003	0.0100	0.0135	0.0000	60.2600	60.2600	0.0116	1.3700e-003	60.9571
Maximum	0.0276	0.2488	0.2780	6.8000e-004	0.0127	0.0107	0.0233	3.4300e-003	0.0100	0.0135	0.0000	60.2600	60.2600	0.0116	1.3700e-003	60.9571



## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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					
2023	0.0276	0.2488	0.2780	6.8000e-004	0.0127	0.0107	0.0233	3.4300e-003	0.0100	0.0135	0.0000	60.2600	60.2600	0.0116	1.3700e-003	60.9571
Maximum	0.0276	0.2488	0.2780	6.8000e-004	0.0127	0.0107	0.0233	3.4300e-003	0.0100	0.0135	0.0000	60.2600	60.2600	0.0116	1.3700e-003	60.9571

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	0.2769	0.2769
		Highest	0.2769	0.2769

**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	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004

### EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Energy	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	57.5911	57.5911	3.2400e-003	7.9000e-004	57.9077
Mobile	0.0622	0.0819	0.6326	1.3500e-003	0.1478	1.0600e-003	0.1489	0.0395	9.9000e-004	0.0405	0.0000	124.5953	124.5953	7.9000e-003	5.6600e-003	126.4787
Waste						0.0000	0.0000		0.0000	0.0000	5.6310	0.0000	5.6310	0.3328	0.0000	13.9505
Water						0.0000	0.0000		0.0000	0.0000	1.6412	11.9457	13.5869	0.1696	4.1000e-003	19.0487
Total	0.1624	0.1046	0.6519	1.4900e-003	0.1478	2.7900e-003	0.1506	0.0395	2.7200e-003	0.0422	7.2721	194.1325	201.4047	0.5135	0.0106	217.3860

### 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											MT/yr					
Area	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Energy	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	57.5911	57.5911	3.2400e-003	7.9000e-004	57.9077
Mobile	0.0622	0.0819	0.6326	1.3500e-003	0.1478	1.0600e-003	0.1489	0.0395	9.9000e-004	0.0405	0.0000	124.5953	124.5953	7.9000e-003	5.6600e-003	126.4787
Waste						0.0000	0.0000		0.0000	0.0000	5.6310	0.0000	5.6310	0.3328	0.0000	13.9505
Water						0.0000	0.0000		0.0000	0.0000	1.6412	11.9457	13.5869	0.1696	4.1000e-003	19.0487
Total	0.1624	0.1046	0.6519	1.4900e-003	0.1478	2.7900e-003	0.1506	0.0395	2.7200e-003	0.0422	7.2721	194.1325	201.4047	0.5135	0.0106	217.3860

[illegible]

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.0 Construction Detail****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	2	Building Construction	2/20/2023	3/26/2023	5	6	SCE Pulling and Reconductoring

**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
2	Other General Industrial Equipment	1	7.00	350	0.34
2	Cranes	2	7.00	300	0.29
2	Generator Sets	2	7.00	84	0.74
2	Other General Industrial Equipment	1	7.00	75	0.34
2	Other General Industrial Equipment	1	7.00	75	0.34
2	Other General Industrial Equipment	2	7.00	75	0.34

**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
2	9	53.00	32.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

## SCG-VCS Project - Phase 2 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 3.2 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	0.0244	0.2300	0.2452	5.2000e-004		0.0105	0.0105		9.9000e-003	9.9000e-003	0.0000	44.9835	44.9835	0.0111	0.0000	45.2609
<b>Total</b>	<b>0.0244</b>	<b>0.2300</b>	<b>0.2452</b>	<b>5.2000e-004</b>		<b>0.0105</b>	<b>0.0105</b>		<b>9.9000e-003</b>	<b>9.9000e-003</b>	<b>0.0000</b>	<b>44.9835</b>	<b>44.9835</b>	<b>0.0111</b>	<b>0.0000</b>	<b>45.2609</b>

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-004	0.0167	5.6300e-003	8.0000e-005	2.8800e-003	1.0000e-004	2.9800e-003	8.3000e-004	9.0000e-005	9.3000e-004	0.0000	7.8510	7.8510	3.2000e-004	1.1700e-003	8.2092
Worker	2.7800e-003	2.1400e-003	0.0272	8.0000e-005	9.7900e-003	5.0000e-005	9.8400e-003	2.6000e-003	5.0000e-005	2.6500e-003	0.0000	7.4255	7.4255	1.8000e-004	1.9000e-004	7.4871
<b>Total</b>	<b>3.1800e-003</b>	<b>0.0188</b>	<b>0.0328</b>	<b>1.6000e-004</b>	<b>0.0127</b>	<b>1.5000e-004</b>	<b>0.0128</b>	<b>3.4300e-003</b>	<b>1.4000e-004</b>	<b>3.5800e-003</b>	<b>0.0000</b>	<b>15.2765</b>	<b>15.2765</b>	<b>5.0000e-004</b>	<b>1.3600e-003</b>	<b>15.6963</b>

Mitigated Construction On-Site

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive 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	0.0244	0.2300	0.2452	5.2000e-004		0.0105	0.0105		9.9000e-003	9.9000e-003	0.0000	44.9835	44.9835	0.0111	0.0000	45.2608
<b>Total</b>	<b>0.0244</b>	<b>0.2300</b>	<b>0.2452</b>	<b>5.2000e-004</b>		<b>0.0105</b>	<b>0.0105</b>		<b>9.9000e-003</b>	<b>9.9000e-003</b>	<b>0.0000</b>	<b>44.9835</b>	<b>44.9835</b>	<b>0.0111</b>	<b>0.0000</b>	<b>45.2608</b>

**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-004	0.0167	5.6300e-003	8.0000e-005	2.8800e-003	1.0000e-004	2.9800e-003	8.3000e-004	9.0000e-005	9.3000e-004	0.0000	7.8510	7.8510	3.2000e-004	1.1700e-003	8.2092
Worker	2.7800e-003	2.1400e-003	0.0272	8.0000e-005	9.7900e-003	5.0000e-005	9.8400e-003	2.6000e-003	5.0000e-005	2.6500e-003	0.0000	7.4255	7.4255	1.8000e-004	1.9000e-004	7.4871
<b>Total</b>	<b>3.1800e-003</b>	<b>0.0188</b>	<b>0.0328</b>	<b>1.6000e-004</b>	<b>0.0127</b>	<b>1.5000e-004</b>	<b>0.0128</b>	<b>3.4300e-003</b>	<b>1.4000e-004</b>	<b>3.5800e-003</b>	<b>0.0000</b>	<b>15.2765</b>	<b>15.2765</b>	<b>5.0000e-004</b>	<b>1.3600e-003</b>	<b>15.6963</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive 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	0.0622	0.0819	0.6326	1.3500e-003	0.1478	1.0600e-003	0.1489	0.0395	9.9000e-004	0.0405	0.0000	124.5953	124.5953	7.9000e-003	5.6600e-003	126.4787
Unmitigated	0.0622	0.0819	0.6326	1.3500e-003	0.1478	1.0600e-003	0.1489	0.0395	9.9000e-004	0.0405	0.0000	124.5953	124.5953	7.9000e-003	5.6600e-003	126.4787

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	110.96	44.52	111.85	392,496	392,496
Total	110.96	44.52	111.85	392,496	392,496

**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	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0063

**5.0 Energy Detail**

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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	32.8089	32.8089	2.7700e-003	3.4000e-004	32.9782
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	32.8089	32.8089	2.7700e-003	3.4000e-004	32.9782
NaturalGas Mitigated	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.7822	24.7822	4.7000e-004	4.5000e-004	24.9295
NaturalGas Unmitigated	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.7822	24.7822	4.7000e-004	4.5000e-004	24.9295

**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	464401	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.7822	24.7822	4.7000e-004	4.5000e-004	24.9295
<b>Total</b>		<b>2.5000e-003</b>	<b>0.0228</b>	<b>0.0191</b>	<b>1.4000e-004</b>		<b>1.7300e-003</b>	<b>1.7300e-003</b>		<b>1.7300e-003</b>	<b>1.7300e-003</b>	<b>0.0000</b>	<b>24.7822</b>	<b>24.7822</b>	<b>4.7000e-004</b>	<b>4.5000e-004</b>	<b>24.9295</b>

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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	464401	2.5000e-003	0.0228	0.0191	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.7822	24.7822	4.7000e-004	4.5000e-004	24.9295
<b>Total</b>		<b>2.5000e-003</b>	<b>0.0228</b>	<b>0.0191</b>	<b>1.4000e-004</b>		<b>1.7300e-003</b>	<b>1.7300e-003</b>		<b>1.7300e-003</b>	<b>1.7300e-003</b>	<b>0.0000</b>	<b>24.7822</b>	<b>24.7822</b>	<b>4.7000e-004</b>	<b>4.5000e-004</b>	<b>24.9295</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	185000	32.8089	2.7700e-003	3.4000e-004	32.9782
<b>Total</b>		<b>32.8089</b>	<b>2.7700e-003</b>	<b>3.4000e-004</b>	<b>32.9782</b>

**Mitigated**



## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	185000	32.8089	2.7700e-003	3.4000e-004	32.9782
<b>Total</b>		<b>32.8089</b>	<b>2.7700e-003</b>	<b>3.4000e-004</b>	<b>32.9782</b>

**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	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Unmitigated	0.0978	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004

**6.2 Area by SubCategory****Unmitigated**

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	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	0.0104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
<b>Total</b>	<b>0.0978</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.3000e-004</b>

**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	0.0104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
<b>Total</b>	<b>0.0978</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.3000e-004</b>

**7.0 Water Detail**

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	13.5869	0.1696	4.1000e-003	19.0487
Unmitigated	13.5869	0.1696	4.1000e-003	19.0487

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	5.17306 / 0	13.5869	0.1696	4.1000e-003	19.0487
<b>Total</b>		<b>13.5869</b>	<b>0.1696</b>	<b>4.1000e-003</b>	<b>19.0487</b>

**Mitigated**

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use Mgal		MT/yr			
General Light Industry	5.17306 / 0	13.5869	0.1696	4.1000e-003	19.0487
<b>Total</b>		<b>13.5869</b>	<b>0.1696</b>	<b>4.1000e-003</b>	<b>19.0487</b>

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

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.6310	0.3328	0.0000	13.9505
Unmitigated	5.6310	0.3328	0.0000	13.9505

**8.2 Waste by Land Use****Unmitigated**

## SCG-VCS Project - Phase 2 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	27.74	5.6310	0.3328	0.0000	13.9505
<b>Total</b>		<b>5.6310</b>	<b>0.3328</b>	<b>0.0000</b>	<b>13.9505</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	27.74	5.6310	0.3328	0.0000	13.9505
<b>Total</b>		<b>5.6310</b>	<b>0.3328</b>	<b>0.0000</b>	<b>13.9505</b>

**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**

SCG-VCS Project - Phase 2 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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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## SCG-VCS Project - All Phases - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## SCG-VCS Project - Phase 3

## Ventura County, Annual

**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	43.56	1000sqft	1.00	43,560.17	0

**1.2 Other Project Characteristics**

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - used 1 acre

Construction Phase - Used Moreno project

Off-road Equipment - Moreno project

Grading - used 1 acres

Off-road Equipment - Moreno project

Trips and VMT - Moreno project

Architectural Coating -

Area Coating -

Vehicle Trips -

Fleet Mix -

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	45.00
tblGrading	AcresOfGrading	45.00	1.00
tblLandUse	LandUseSquareFeet	43,560.20	43,560.17
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	28.00	36.00

**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					
2023	0.0603	0.5581	0.4833	1.1500e-003	0.1499	0.0230	0.1729	0.0783	0.0216	0.0999	0.0000	100.8516	100.8516	0.0220	1.0300e-003	101.7084
Maximum	0.0603	0.5581	0.4833	1.1500e-003	0.1499	0.0230	0.1729	0.0783	0.0216	0.0999	0.0000	100.8516	100.8516	0.0220	1.0300e-003	101.7084

**Mitigated Construction**



## SCG-VCS Project - All Phases - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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					
2023	0.0603	0.5581	0.4833	1.1500e-003	0.1499	0.0230	0.1729	0.0783	0.0216	0.0999	0.0000	100.8515	100.8515	0.0220	1.0300e-003	101.7083
Maximum	0.0603	0.5581	0.4833	1.1500e-003	0.1499	0.0230	0.1729	0.0783	0.0216	0.0999	0.0000	100.8515	100.8515	0.0220	1.0300e-003	101.7083

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	0.0589	0.0589
2	4-2-2023	7-1-2023	0.5588	0.5588
		Highest	0.5588	0.5588

## 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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1448	112.1448	6.3200e-003	1.5400e-003	112.7612
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8111	237.8111	0.0151	0.0108	241.4059

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2180</b>	<b>387.3773</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4222</b>

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1448	112.1448	6.3200e-003	1.5400e-003	112.7612
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8111	237.8111	0.0151	0.0108	241.4059
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2180</b>	<b>387.3773</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4222</b>

	ROG	NOx	CO	SO2	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**

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	3	Site Preparation	3/27/2023	5/28/2023	5	45	Site Preparation

**Acres of Grading (Site Preparation Phase): 1****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
3	Air Compressors	1	8.00	78	0.48
3	Dumpers/Tenders	3	8.00	16	0.38
3	Excavators	1	8.00	158	0.38
3	Forklifts	1	8.00	89	0.20
3	Generator Sets	1	8.00	84	0.74
3	Graders	1	8.00	187	0.41
3	Rough Terrain Forklifts	1	8.00	100	0.40
3	Rubber Tired Dozers	1	8.00	247	0.40
3	Rubber Tired Loaders	1	8.00	203	0.36

**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
3	11	36.00	12.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.2 3 - 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					
Fugitive Dust					0.1360	0.0000	0.1360	0.0745	0.0000	0.0745	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0566	0.5443	0.4463	1.0000e-003		0.0229	0.0229		0.0215	0.0215	0.0000	86.4735	86.4735	0.0216	0.0000	87.0132
<b>Total</b>	<b>0.0566</b>	<b>0.5443</b>	<b>0.4463</b>	<b>1.0000e-003</b>	<b>0.1360</b>	<b>0.0229</b>	<b>0.1589</b>	<b>0.0745</b>	<b>0.0215</b>	<b>0.0961</b>	<b>0.0000</b>	<b>86.4735</b>	<b>86.4735</b>	<b>0.0216</b>	<b>0.0000</b>	<b>87.0132</b>

**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	2.7000e-004	0.0112	3.8000e-003	5.0000e-005	1.9500e-003	7.0000e-005	2.0100e-003	5.6000e-004	6.0000e-005	6.2000e-004	0.0000	5.2994	5.2994	2.2000e-004	7.9000e-004	5.5412
Worker	3.3900e-003	2.6200e-003	0.0332	1.0000e-004	0.0120	6.0000e-005	0.0120	3.1800e-003	6.0000e-005	3.2400e-003	0.0000	9.0787	9.0787	2.1000e-004	2.3000e-004	9.1540
<b>Total</b>	<b>3.6600e-003</b>	<b>0.0139</b>	<b>0.0370</b>	<b>1.5000e-004</b>	<b>0.0139</b>	<b>1.3000e-004</b>	<b>0.0140</b>	<b>3.7400e-003</b>	<b>1.2000e-004</b>	<b>3.8600e-003</b>	<b>0.0000</b>	<b>14.3781</b>	<b>14.3781</b>	<b>4.3000e-004</b>	<b>1.0200e-003</b>	<b>14.6952</b>

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1360	0.0000	0.1360	0.0745	0.0000	0.0745	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0566	0.5443	0.4463	1.0000e-003		0.0229	0.0229		0.0215	0.0215	0.0000	86.4734	86.4734	0.0216	0.0000	87.0131
<b>Total</b>	<b>0.0566</b>	<b>0.5443</b>	<b>0.4463</b>	<b>1.0000e-003</b>	<b>0.1360</b>	<b>0.0229</b>	<b>0.1589</b>	<b>0.0745</b>	<b>0.0215</b>	<b>0.0961</b>	<b>0.0000</b>	<b>86.4734</b>	<b>86.4734</b>	<b>0.0216</b>	<b>0.0000</b>	<b>87.0131</b>

**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	2.7000e-004	0.0112	3.8000e-003	5.0000e-005	1.9500e-003	7.0000e-005	2.0100e-003	5.6000e-004	6.0000e-005	6.2000e-004	0.0000	5.2994	5.2994	2.2000e-004	7.9000e-004	5.5412
Worker	3.3900e-003	2.6200e-003	0.0332	1.0000e-004	0.0120	6.0000e-005	0.0120	3.1800e-003	6.0000e-005	3.2400e-003	0.0000	9.0787	9.0787	2.1000e-004	2.3000e-004	9.1540
<b>Total</b>	<b>3.6600e-003</b>	<b>0.0139</b>	<b>0.0370</b>	<b>1.5000e-004</b>	<b>0.0139</b>	<b>1.3000e-004</b>	<b>0.0140</b>	<b>3.7400e-003</b>	<b>1.2000e-004</b>	<b>3.8600e-003</b>	<b>0.0000</b>	<b>14.3781</b>	<b>14.3781</b>	<b>4.3000e-004</b>	<b>1.0200e-003</b>	<b>14.6952</b>

## SCG-VCS Project - All Phases - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 4.0 Operational Detail - Mobile

## 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	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8111	237.8111	0.0151	0.0108	241.4059
Unmitigated	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8111	237.8111	0.0151	0.0108	241.4059

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	171.19	279.66	221.72	749,145	749,145
Total	171.19	279.66	221.72	749,145	749,145

## 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 Heavy 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 Heavy Industry	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0069

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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	63.8874	63.8874	5.3900e-003	6.5000e-004	64.2170
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	63.8874	63.8874	5.3900e-003	6.5000e-004	64.2170
NaturalGas Mitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
NaturalGas Unmitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442

**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 Heavy Industry	904309	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442

## SCG-VCS Project - All Phases - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total		4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
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**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 Heavy Industry	904309	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2574</b>	<b>48.2574</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5442</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360243	63.8874	5.3900e-003	6.5000e-004	64.2170
<b>Total</b>		<b>63.8874</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2170</b>



## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360243	63.8874	5.3900e-003	6.5000e-004	64.2170
<b>Total</b>		<b>63.8874</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2170</b>

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Unmitigated	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004

**6.2 Area by SubCategory**

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

**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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****7.0 Water Detail****7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4571	0.3302	7.9900e-003	37.0926
Unmitigated	26.4571	0.3302	7.9900e-003	37.0926

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>		<b>26.4571</b>	<b>0.3302</b>	<b>7.9900e-003</b>	<b>37.0926</b>

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Mitigated**

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>		<b>26.4571</b>	<b>0.3302</b>	<b>7.9900e-003</b>	<b>37.0926</b>

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

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

**8.2 Waste by Land Use****Unmitigated**

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**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**

## SCG-VCS Project - All Phases - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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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## SCG-VCS Project - Phase 4 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## SCG-VCS Project - Phase 4

## Ventura County, Annual

**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	43.56	1000sqft	1.00	43,560.17	0

**1.2 Other Project Characteristics**

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - used 1 acre

Construction Phase - Used Moreno project

Off-road Equipment - Moreno project

Grading - used 1 acres

Off-road Equipment - Moreno project

Trips and VMT - Moreno project

Architectural Coating -

Area Coating -

Vehicle Trips -

Fleet Mix -

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	45.00
tblLandUse	LandUseSquareFeet	43,560.00	43,560.17
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	28.00	173.00

**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					
2023	0.0534	0.3695	0.5536	1.3700e-003	0.0595	0.0152	0.0746	0.0158	0.0143	0.0301	0.0000	121.2118	121.2118	0.0202	1.9200e-003	122.2885
Maximum	0.0534	0.3695	0.5536	1.3700e-003	0.0595	0.0152	0.0746	0.0158	0.0143	0.0301	0.0000	121.2118	121.2118	0.0202	1.9200e-003	122.2885

**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
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## SCG-VCS Project - Phase 4 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Year	tons/yr										MT/yr					
2023	0.0534	0.3695	0.5536	1.3700e-003	0.0595	0.0152	0.0746	0.0158	0.0143	0.0301	0.0000	121.2118	121.2118	0.0202	1.9200e-003	122.2884
Maximum	0.0534	0.3695	0.5536	1.3700e-003	0.0595	0.0152	0.0746	0.0158	0.0143	0.0301	0.0000	121.2118	121.2118	0.0202	1.9200e-003	122.2884

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	4-2-2023	7-1-2023	0.2271	0.2271
3	7-2-2023	9-30-2023	0.1937	0.1937
		Highest	0.2271	0.2271

## 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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1448	112.1448	6.3200e-003	1.5400e-003	112.7612
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Total	0.3139	0.2006	1.2450	2.8500e-003	0.2821	5.3900e-003	0.2875	0.0753	5.2500e-003	0.0806	14.1593	373.2170	387.3764	0.9995	0.0203	418.4213
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**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1448	112.1448	6.3200e-003	1.5400e-003	112.7612
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
Total	0.3139	0.2006	1.2450	2.8500e-003	0.2821	5.3900e-003	0.2875	0.0753	5.2500e-003	0.0806	14.1593	373.2170	387.3764	0.9995	0.0203	418.4213

	ROG	NOx	CO	SO2	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**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
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## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

1	4	Grading	5/29/2023	7/30/2023	5	45	Grading
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**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
4	Bore/Drill Rigs	1	8.00	221	0.50
4	Cranes	1	8.00	231	0.29
4	Forklifts	1	8.00	89	0.20
4	Generator Sets	1	8.00	84	0.74
4	Rough Terrain Forklifts	1	8.00	100	0.40
4	Skid Steer Loaders	1	8.00	65	0.37
4	Cement and Mortar Mixers	4	8.00	9	0.56
4	Other Material Handling Equipment	1	8.00	168	0.40

**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
4	11	173.00	12.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction****3.2 4 - 2023****Unmitigated Construction On-Site**

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0369	0.3457	0.3903	8.4000e-004		0.0148	0.0148		0.0140	0.0140	0.0000	72.2842	72.2842	0.0189	0.0000	72.7572
<b>Total</b>	<b>0.0369</b>	<b>0.3457</b>	<b>0.3903</b>	<b>8.4000e-004</b>	<b>0.0000</b>	<b>0.0148</b>	<b>0.0148</b>	<b>0.0000</b>	<b>0.0140</b>	<b>0.0140</b>	<b>0.0000</b>	<b>72.2842</b>	<b>72.2842</b>	<b>0.0189</b>	<b>0.0000</b>	<b>72.7572</b>

**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	2.7000e-004	0.0112	3.8000e-003	5.0000e-005	1.9500e-003	7.0000e-005	2.0100e-003	5.6000e-004	6.0000e-005	6.2000e-004	0.0000	5.2994	5.2994	2.2000e-004	7.9000e-004	5.5412
Worker	0.0163	0.0126	0.1596	4.8000e-004	0.0575	3.0000e-004	0.0578	0.0153	2.8000e-004	0.0156	0.0000	43.6282	43.6282	1.0300e-003	1.1300e-003	43.9901
<b>Total</b>	<b>0.0166</b>	<b>0.0238</b>	<b>0.1634</b>	<b>5.3000e-004</b>	<b>0.0595</b>	<b>3.7000e-004</b>	<b>0.0598</b>	<b>0.0158</b>	<b>3.4000e-004</b>	<b>0.0162</b>	<b>0.0000</b>	<b>48.9276</b>	<b>48.9276</b>	<b>1.2500e-003</b>	<b>1.9200e-003</b>	<b>49.5313</b>

**Mitigated Construction On-Site**

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0369	0.3457	0.3903	8.4000e-004		0.0148	0.0148		0.0140	0.0140	0.0000	72.2841	72.2841	0.0189	0.0000	72.7571
<b>Total</b>	<b>0.0369</b>	<b>0.3457</b>	<b>0.3903</b>	<b>8.4000e-004</b>	<b>0.0000</b>	<b>0.0148</b>	<b>0.0148</b>	<b>0.0000</b>	<b>0.0140</b>	<b>0.0140</b>	<b>0.0000</b>	<b>72.2841</b>	<b>72.2841</b>	<b>0.0189</b>	<b>0.0000</b>	<b>72.7571</b>

**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	2.7000e-004	0.0112	3.8000e-003	5.0000e-005	1.9500e-003	7.0000e-005	2.0100e-003	5.6000e-004	6.0000e-005	6.2000e-004	0.0000	5.2994	5.2994	2.2000e-004	7.9000e-004	5.5412
Worker	0.0163	0.0126	0.1596	4.8000e-004	0.0575	3.0000e-004	0.0578	0.0153	2.8000e-004	0.0156	0.0000	43.6282	43.6282	1.0300e-003	1.1300e-003	43.9901
<b>Total</b>	<b>0.0166</b>	<b>0.0238</b>	<b>0.1634</b>	<b>5.3000e-004</b>	<b>0.0595</b>	<b>3.7000e-004</b>	<b>0.0598</b>	<b>0.0158</b>	<b>3.4000e-004</b>	<b>0.0162</b>	<b>0.0000</b>	<b>48.9276</b>	<b>48.9276</b>	<b>1.2500e-003</b>	<b>1.9200e-003</b>	<b>49.5313</b>

**4.0 Operational Detail - Mobile**

## SCG-VCS Project - Phase 4 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 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	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Unmitigated	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	171.19	279.66	221.72	749,142	749,142
Total	171.19	279.66	221.72	749,142	749,142

## 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 Heavy 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 Heavy Industry	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0069

## 5.0 Energy Detail

## SCG-VCS Project - Phase 4 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	63.8874	63.8874	5.3900e-003	6.5000e-004	64.2170
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	63.8874	63.8874	5.3900e-003	6.5000e-004	64.2170
NaturalGas Mitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
NaturalGas Unmitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442

## 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 Heavy Industry	904309	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2574</b>	<b>48.2574</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5442</b>

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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 Heavy Industry	904309	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2574</b>	<b>48.2574</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5442</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360243	63.8874	5.3900e-003	6.5000e-004	64.2170
<b>Total</b>		<b>63.8874</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2170</b>

**Mitigated**



## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360243	63.8874	5.3900e-003	6.5000e-004	64.2170
<b>Total</b>		<b>63.8874</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2170</b>

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Unmitigated	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004

**6.2 Area by SubCategory****Unmitigated**

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

**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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

**7.0 Water Detail**

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4571	0.3302	7.9900e-003	37.0926
Unmitigated	26.4571	0.3302	7.9900e-003	37.0926

**7.2 Water by Land Use****Unmitigated**

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
Total		26.4571	0.3302	7.9900e-003	37.0926

**Mitigated**

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use Mgal		MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>		<b>26.4571</b>	<b>0.3302</b>	<b>7.9900e-003</b>	<b>37.0926</b>

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

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

**8.2 Waste by Land Use****Unmitigated**

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**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**

## SCG-VCS Project - Phase 4 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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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## SCG-VCS Project - Phase 6 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## SCG-VCS Project - Phase 5

## Ventura County, Annual

## 1.0 Project Characteristics

## 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	43.56	1000sqft	1.00	43,560.17	0

## 1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

## 1.3 User Entered Comments &amp; Non-Default Data

Project Characteristics -

Land Use - used 1 acre

Construction Phase - Used Moreno project

Off-road Equipment - Moreno project

Grading - used 1 acres

Off-road Equipment - Moreno project

Trips and VMT - Moreno project

Architectural Coating -

Area Coating -

Vehicle Trips -

Fleet Mix -

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	45.00
tblLandUse	LandUseSquareFeet	43,560.00	43,560.17
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	7.00	20.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	18.00	296.00

**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					
2023	0.1320	0.8666	1.1431	2.6300e-003	0.1016	0.0334	0.1350	0.0271	0.0319	0.0590	0.0000	228.0059	228.0059	0.0360	3.2500e-003	229.8758
Maximum	0.1320	0.8666	1.1431	2.6300e-003	0.1016	0.0334	0.1350	0.0271	0.0319	0.0590	0.0000	228.0059	228.0059	0.0360	3.2500e-003	229.8758

**Mitigated Construction**



## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	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					
2023	0.1320	0.8666	1.1431	2.6300e-003	0.1016	0.0334	0.1350	0.0271	0.0319	0.0590	0.0000	228.0058	228.0058	0.0360	3.2500e-003	229.8756
Maximum	0.1320	0.8666	1.1431	2.6300e-003	0.1016	0.0334	0.1350	0.0271	0.0319	0.0590	0.0000	228.0058	228.0058	0.0360	3.2500e-003	229.8756

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1448	112.1448	6.3200e-003	1.5400e-003	112.7612
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2170</b>	<b>387.3764</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4213</b>

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1448	112.1448	6.3200e-003	1.5400e-003	112.7612
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2170</b>	<b>387.3764</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4213</b>

	ROG	NOx	CO	SO2	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**

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	6	Building Construction	10/2/2023	12/3/2023	5	45	Building Construction

**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
6	Aerial Lifts	4	8.00	63	0.31
6	Air Compressors	1	8.00	78	0.48
6	Cranes	3	8.00	231	0.29
6	Forklifts	1	8.00	89	0.20
6	Generator Sets	1	8.00	84	0.74
6	Rough Terrain Forklifts	2	8.00	100	0.40
6	Welders	8	8.00	46	0.45
6	Off-Highway Trucks	1	8.00	402	0.38

**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
6	21	296.00	20.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

## SCG-VCS Project - Phase 6 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 3.2 6 - 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	0.1037	0.8263	0.8637	1.7300e-003		0.0328	0.0328		0.0314	0.0314	0.0000	144.5265	144.5265	0.0339	0.0000	145.3742
<b>Total</b>	<b>0.1037</b>	<b>0.8263</b>	<b>0.8637</b>	<b>1.7300e-003</b>		<b>0.0328</b>	<b>0.0328</b>		<b>0.0314</b>	<b>0.0314</b>	<b>0.0000</b>	<b>144.5265</b>	<b>144.5265</b>	<b>0.0339</b>	<b>0.0000</b>	<b>145.3742</b>

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	4.5000e-004	0.0187	6.3400e-003	9.0000e-005	3.2400e-003	1.1000e-004	3.3500e-003	9.4000e-004	1.0000e-004	1.0400e-003	0.0000	8.8324	8.8324	3.6000e-004	1.3200e-003	9.2354
Worker	0.0279	0.0216	0.2730	8.1000e-004	0.0984	5.2000e-004	0.0989	0.0261	4.7000e-004	0.0266	0.0000	74.6471	74.6471	1.7600e-003	1.9300e-003	75.2662
<b>Total</b>	<b>0.0284</b>	<b>0.0403</b>	<b>0.2794</b>	<b>9.0000e-004</b>	<b>0.1016</b>	<b>6.3000e-004</b>	<b>0.1023</b>	<b>0.0271</b>	<b>5.7000e-004</b>	<b>0.0276</b>	<b>0.0000</b>	<b>83.4795</b>	<b>83.4795</b>	<b>2.1200e-003</b>	<b>3.2500e-003</b>	<b>84.5016</b>

Mitigated Construction On-Site

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive 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	0.1037	0.8263	0.8637	1.7300e-003		0.0328	0.0328		0.0314	0.0314	0.0000	144.5263	144.5263	0.0339	0.0000	145.3740
<b>Total</b>	<b>0.1037</b>	<b>0.8263</b>	<b>0.8637</b>	<b>1.7300e-003</b>		<b>0.0328</b>	<b>0.0328</b>		<b>0.0314</b>	<b>0.0314</b>	<b>0.0000</b>	<b>144.5263</b>	<b>144.5263</b>	<b>0.0339</b>	<b>0.0000</b>	<b>145.3740</b>

**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	4.5000e-004	0.0187	6.3400e-003	9.0000e-005	3.2400e-003	1.1000e-004	3.3500e-003	9.4000e-004	1.0000e-004	1.0400e-003	0.0000	8.8324	8.8324	3.6000e-004	1.3200e-003	9.2354
Worker	0.0279	0.0216	0.2730	8.1000e-004	0.0984	5.2000e-004	0.0989	0.0261	4.7000e-004	0.0266	0.0000	74.6471	74.6471	1.7600e-003	1.9300e-003	75.2662
<b>Total</b>	<b>0.0284</b>	<b>0.0403</b>	<b>0.2794</b>	<b>9.0000e-004</b>	<b>0.1016</b>	<b>6.3000e-004</b>	<b>0.1023</b>	<b>0.0271</b>	<b>5.7000e-004</b>	<b>0.0276</b>	<b>0.0000</b>	<b>83.4795</b>	<b>83.4795</b>	<b>2.1200e-003</b>	<b>3.2500e-003</b>	<b>84.5016</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive 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	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Unmitigated	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	171.19	279.66	221.72	749,142	749,142
Total	171.19	279.66	221.72	749,142	749,142

**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 Heavy 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 Heavy Industry	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0063

**5.0 Energy Detail**

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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	63.8874	63.8874	5.3900e-003	6.5000e-004	64.2170
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	63.8874	63.8874	5.3900e-003	6.5000e-004	64.2170
Natural Gas Mitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
Natural Gas Unmitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442

**5.2 Energy by Land Use - Natural Gas****Unmitigated**

	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 Heavy Industry	904309	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2574</b>	<b>48.2574</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5442</b>

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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 Heavy Industry	904309	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2574</b>	<b>48.2574</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5442</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360243	63.8874	5.3900e-003	6.5000e-004	64.2170
<b>Total</b>		<b>63.8874</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2170</b>

**Mitigated**



## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360243	63.8874	5.3900e-003	6.5000e-004	64.2170
<b>Total</b>		<b>63.8874</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2170</b>

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Unmitigated	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004

**6.2 Area by SubCategory****Unmitigated**

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

**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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

**7.0 Water Detail**

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4571	0.3302	7.9900e-003	37.0926
Unmitigated	26.4571	0.3302	7.9900e-003	37.0926

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>		<b>26.4571</b>	<b>0.3302</b>	<b>7.9900e-003</b>	<b>37.0926</b>

**Mitigated**

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use Mgal		MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>		<b>26.4571</b>	<b>0.3302</b>	<b>7.9900e-003</b>	<b>37.0926</b>

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

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

**8.2 Waste by Land Use****Unmitigated**

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**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**

## SCG-VCS Project - Phase 6 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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## SCG-VCS Project - Phase 7 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## SCG-VCS Project - Phase 6

## Ventura County, Annual

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	43.56	1000sqft	1.00	43,560.17	0

### 1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - used 1 acre

Construction Phase - Used Moreno project

Off-road Equipment - Moreno project

Grading - used 1 acres

Off-road Equipment - Moreno project

Trips and VMT - Moreno project

Architectural Coating -

Area Coating -

Vehicle Trips -

Fleet Mix -

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	45.00
tblLandUse	LandUseSquareFeet	43,560.00	43,560.17
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	0.00	16.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	25.00	296.00

**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					
2023	0.0736	0.4726	0.7485	1.8400e-003	0.1010	0.0202	0.1212	0.0269	0.0191	0.0460	0.0000	164.1224	164.1224	0.0212	2.9900e-003	165.5418
Maximum	0.0736	0.4726	0.7485	1.8400e-003	0.1010	0.0202	0.1212	0.0269	0.0191	0.0460	0.0000	164.1224	164.1224	0.0212	2.9900e-003	165.5418

**Mitigated Construction**



## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	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					
2023	0.0736	0.4726	0.7485	1.8400e-003	0.1010	0.0202	0.1212	0.0269	0.0191	0.0460	0.0000	164.1223	164.1223	0.0212	2.9900e-003	165.5417
Maximum	0.0736	0.4726	0.7485	1.8400e-003	0.1010	0.0202	0.1212	0.0269	0.0191	0.0460	0.0000	164.1223	164.1223	0.0212	2.9900e-003	165.5417

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1448	112.1448	6.3200e-003	1.5400e-003	112.7612
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2170</b>	<b>387.3764</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4213</b>

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1448	112.1448	6.3200e-003	1.5400e-003	112.7612
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2170</b>	<b>387.3764</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4213</b>

	ROG	NOx	CO	SO2	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**

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	7	Paving	10/2/2023	12/3/2023	5	45	Paving

**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
7	Excavators	1	8.00	158	0.38
7	Generator Sets	1	8.00	84	0.74
7	Graders	1	8.00	187	0.41
7	Paving Equipment	1	8.00	132	0.36
7	Pumps	1	8.00	84	0.74
7	Rollers	1	8.00	80	0.38
7	Surfacing Equipment	1	8.00	263	0.30
7	Sweepers/Scrubbers	1	8.00	64	0.46
7	Cement and Mortar Mixers	2	8.00	9	0.56

**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
7	10	296.00	16.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.2 7 - 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	0.0453	0.4360	0.4704	9.5000e-004		0.0196	0.0196		0.0186	0.0186	0.0000	82.4094	82.4094	0.0191	0.0000	82.8872
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0453</b>	<b>0.4360</b>	<b>0.4704</b>	<b>9.5000e-004</b>		<b>0.0196</b>	<b>0.0196</b>		<b>0.0186</b>	<b>0.0186</b>	<b>0.0000</b>	<b>82.4094</b>	<b>82.4094</b>	<b>0.0191</b>	<b>0.0000</b>	<b>82.8872</b>

**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	3.6000e-004	0.0150	5.0700e-003	7.0000e-005	2.6000e-003	9.0000e-005	2.6800e-003	7.5000e-004	8.0000e-005	8.3000e-004	0.0000	7.0659	7.0659	2.9000e-004	1.0600e-003	7.3883
Worker	0.0279	0.0216	0.2730	8.1000e-004	0.0984	5.2000e-004	0.0989	0.0261	4.7000e-004	0.0266	0.0000	74.6471	74.6471	1.7600e-003	1.9300e-003	75.2662
<b>Total</b>	<b>0.0283</b>	<b>0.0366</b>	<b>0.2781</b>	<b>8.8000e-004</b>	<b>0.1010</b>	<b>6.1000e-004</b>	<b>0.1016</b>	<b>0.0269</b>	<b>5.5000e-004</b>	<b>0.0274</b>	<b>0.0000</b>	<b>81.7130</b>	<b>81.7130</b>	<b>2.0500e-003</b>	<b>2.9900e-003</b>	<b>82.6545</b>

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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	0.0453	0.4360	0.4704	9.5000e-004		0.0196	0.0196		0.0186	0.0186	0.0000	82.4093	82.4093	0.0191	0.0000	82.8871
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0453</b>	<b>0.4360</b>	<b>0.4704</b>	<b>9.5000e-004</b>		<b>0.0196</b>	<b>0.0196</b>		<b>0.0186</b>	<b>0.0186</b>	<b>0.0000</b>	<b>82.4093</b>	<b>82.4093</b>	<b>0.0191</b>	<b>0.0000</b>	<b>82.8871</b>

**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	3.6000e-004	0.0150	5.0700e-003	7.0000e-005	2.6000e-003	9.0000e-005	2.6800e-003	7.5000e-004	8.0000e-005	8.3000e-004	0.0000	7.0659	7.0659	2.9000e-004	1.0600e-003	7.3883
Worker	0.0279	0.0216	0.2730	8.1000e-004	0.0984	5.2000e-004	0.0989	0.0261	4.7000e-004	0.0266	0.0000	74.6471	74.6471	1.7600e-003	1.9300e-003	75.2662
<b>Total</b>	<b>0.0283</b>	<b>0.0366</b>	<b>0.2781</b>	<b>8.8000e-004</b>	<b>0.1010</b>	<b>6.1000e-004</b>	<b>0.1016</b>	<b>0.0269</b>	<b>5.5000e-004</b>	<b>0.0274</b>	<b>0.0000</b>	<b>81.7130</b>	<b>81.7130</b>	<b>2.0500e-003</b>	<b>2.9900e-003</b>	<b>82.6545</b>

## SCG-VCS Project - Phase 7 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 4.0 Operational Detail - Mobile

## 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	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Unmitigated	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	171.19	279.66	221.72	749,142	749,142
Total	171.19	279.66	221.72	749,142	749,142

## 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 Heavy 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 Heavy Industry	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0069

## SCG-VCS Project - Phase 7 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 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	63.8874	63.8874	5.3900e-003	6.5000e-004	64.2170
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	63.8874	63.8874	5.3900e-003	6.5000e-004	64.2170
NaturalGas Mitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
NaturalGas Unmitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442

## 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 Heavy Industry	904309	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442

## SCG-VCS Project - Phase 7 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total		4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
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**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 Heavy Industry	904309	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2574	48.2574	9.2000e-004	8.8000e-004	48.5442
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2574</b>	<b>48.2574</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5442</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360243	63.8874	5.3900e-003	6.5000e-004	64.2170
<b>Total</b>		<b>63.8874</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2170</b>



## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360243	63.8874	5.3900e-003	6.5000e-004	64.2170
<b>Total</b>		<b>63.8874</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2170</b>

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Unmitigated	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004

**6.2 Area by SubCategory**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

**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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****7.0 Water Detail****7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4571	0.3302	7.9900e-003	37.0926
Unmitigated	26.4571	0.3302	7.9900e-003	37.0926

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>		<b>26.4571</b>	<b>0.3302</b>	<b>7.9900e-003</b>	<b>37.0926</b>

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Mitigated**

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>		<b>26.4571</b>	<b>0.3302</b>	<b>7.9900e-003</b>	<b>37.0926</b>

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

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

**8.2 Waste by Land Use****Unmitigated**

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**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**

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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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SCG-VCS Project - Phase 7 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SCG-VCS Project - Phase 7

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	264.00	1000sqft	6.06	264,001.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - used 1 mile
- Construction Phase - Used North-South project
- Off-road Equipment - North-South project
- Grading - used 1 mile
- Off-road Equipment - North-South project
- Trips and VMT - North-South project
- Architectural Coating -
- Area Coating -
- Vehicle Trips -
- Fleet Mix -

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	7.00
tblGrading	AcresOfGrading	3.50	6.06
tblGrading	MaterialExported	0.00	3,911.11
tblGrading	MaterialImported	0.00	1,955.56
tblLandUse	LandUseSquareFeet	264,000.00	264,001.00
tblOffRoadEquipment	HorsePower	187.00	46.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	580.00	3.00
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	0.00	7.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	10.00	195.00

**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					
2023	6.7400e-003	0.0255	0.0602	1.3000e-004	0.0135	1.5000e-003	0.0150	3.0800e-003	1.3800e-003	4.4600e-003	0.0000	11.6101	11.6101	1.3000e-003	2.8000e-004	11.7272
Maximum	6.7400e-003	0.0255	0.0602	1.3000e-004	0.0135	1.5000e-003	0.0150	3.0800e-003	1.3800e-003	4.4600e-003	0.0000	11.6101	11.6101	1.3000e-003	2.8000e-004	11.7272



## SCG-VCS Project - Phase 7 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	6.7400e-003	0.0255	0.0602	1.3000e-004	0.0135	1.5000e-003	0.0150	3.0800e-003	1.3800e-003	4.4600e-003	0.0000	11.6101	11.6101	1.3000e-003	2.8000e-004	11.7272
Maximum	6.7400e-003	0.0255	0.0602	1.3000e-004	0.0135	1.5000e-003	0.0150	3.0800e-003	1.3800e-003	4.4600e-003	0.0000	11.6101	11.6101	1.3000e-003	2.8000e-004	11.7272

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	0.0300	0.0300
		Highest	0.0300	0.0300

## 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	1.1536	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003

### EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

### Mitigated Operational

[illegible]

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.0 Construction Detail****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	7	Site Preparation	1/2/2023	1/10/2023	5	7	Site Preparation to install pipeline

**Acres of Grading (Site Preparation Phase): 6.06****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
7	Graders	1	8.00	46	0.41
7	Tractors/Loaders/Backhoes	3	8.00	97	0.37

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
7	4	195.00	7.00	3.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction****3.2 7 - 2023****Unmitigated Construction On-Site**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive 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					3.2100e-003	0.0000	3.2100e-003	3.5000e-004	0.0000	3.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8600e-003	0.0221	0.0318	4.0000e-005		1.4400e-003	1.4400e-003		1.3200e-003	1.3200e-003	0.0000	3.3944	3.3944	1.1000e-003	0.0000	3.4219
<b>Total</b>	<b>3.8600e-003</b>	<b>0.0221</b>	<b>0.0318</b>	<b>4.0000e-005</b>	<b>3.2100e-003</b>	<b>1.4400e-003</b>	<b>4.6500e-003</b>	<b>3.5000e-004</b>	<b>1.3200e-003</b>	<b>1.6700e-003</b>	<b>0.0000</b>	<b>3.3944</b>	<b>3.3944</b>	<b>1.1000e-003</b>	<b>0.0000</b>	<b>3.4219</b>

**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	1.9000e-004	5.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0852	0.0852	1.0000e-005	1.0000e-005	0.0894
Vendor	2.0000e-005	1.0200e-003	3.4000e-004	0.0000	1.8000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.4809	0.4809	2.0000e-005	7.0000e-005	0.5028
Worker	2.8600e-003	2.2100e-003	0.0280	8.0000e-005	0.0101	5.0000e-005	0.0101	2.6800e-003	5.0000e-005	2.7300e-003	0.0000	7.6497	7.6497	1.8000e-004	2.0000e-004	7.7131
<b>Total</b>	<b>2.8800e-003</b>	<b>3.4200e-003</b>	<b>0.0284</b>	<b>8.0000e-005</b>	<b>0.0103</b>	<b>6.0000e-005</b>	<b>0.0104</b>	<b>2.7400e-003</b>	<b>6.0000e-005</b>	<b>2.8000e-003</b>	<b>0.0000</b>	<b>8.2157</b>	<b>8.2157</b>	<b>2.1000e-004</b>	<b>2.8000e-004</b>	<b>8.3053</b>

**Mitigated Construction On-Site**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive 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					3.2100e-003	0.0000	3.2100e-003	3.5000e-004	0.0000	3.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8600e-003	0.0221	0.0318	4.0000e-005		1.4400e-003	1.4400e-003		1.3200e-003	1.3200e-003	0.0000	3.3944	3.3944	1.1000e-003	0.0000	3.4219
<b>Total</b>	<b>3.8600e-003</b>	<b>0.0221</b>	<b>0.0318</b>	<b>4.0000e-005</b>	<b>3.2100e-003</b>	<b>1.4400e-003</b>	<b>4.6500e-003</b>	<b>3.5000e-004</b>	<b>1.3200e-003</b>	<b>1.6700e-003</b>	<b>0.0000</b>	<b>3.3944</b>	<b>3.3944</b>	<b>1.1000e-003</b>	<b>0.0000</b>	<b>3.4219</b>

**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	1.9000e-004	5.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0852	0.0852	1.0000e-005	1.0000e-005	0.0894
Vendor	2.0000e-005	1.0200e-003	3.4000e-004	0.0000	1.8000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.4809	0.4809	2.0000e-005	7.0000e-005	0.5028
Worker	2.8600e-003	2.2100e-003	0.0280	8.0000e-005	0.0101	5.0000e-005	0.0101	2.6800e-003	5.0000e-005	2.7300e-003	0.0000	7.6497	7.6497	1.8000e-004	2.0000e-004	7.7131
<b>Total</b>	<b>2.8800e-003</b>	<b>3.4200e-003</b>	<b>0.0284</b>	<b>8.0000e-005</b>	<b>0.0103</b>	<b>6.0000e-005</b>	<b>0.0104</b>	<b>2.7400e-003</b>	<b>6.0000e-005</b>	<b>2.8000e-003</b>	<b>0.0000</b>	<b>8.2157</b>	<b>8.2157</b>	<b>2.1000e-004</b>	<b>2.8000e-004</b>	<b>8.3053</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## SCG-VCS Project - Phase 7 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	0.7190	0.9470	7.3174	0.0156	1.7099	0.0122	1.7221	0.4565	0.0114	0.4679	0.0000	1,441.2736	1,441.2736	0.0914	0.0654	1,463.0603
Unmitigated	0.7190	0.9470	7.3174	0.0156	1.7099	0.0122	1.7221	0.4565	0.0114	0.4679	0.0000	1,441.2736	1,441.2736	0.0914	0.0654	1,463.0603

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	1,037.52	1,694.88	1343.76	4,540,257	4,540,257
Total	1,037.52	1,694.88	1,343.76	4,540,257	4,540,257

## 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 Heavy 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 Heavy Industry	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0063

## 5.0 Energy Detail

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 Historical Energy Use: N

## SCG-VCS Project - Phase 7 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 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	387.1965	387.1965	0.0327	3.9600e-003	389.1939
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	387.1965	387.1965	0.0327	3.9600e-003	389.1939
NaturalGas Mitigated	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.4689	292.4689	5.6100e-003	5.3600e-003	294.2069
NaturalGas Unmitigated	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.4689	292.4689	5.6100e-003	5.3600e-003	294.2069

## 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 Heavy Industry	5.48066e+006	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.4689	292.4689	5.6100e-003	5.3600e-003	294.2069
<b>Total</b>		<b>0.0296</b>	<b>0.2687</b>	<b>0.2257</b>	<b>1.6100e-003</b>		<b>0.0204</b>	<b>0.0204</b>		<b>0.0204</b>	<b>0.0204</b>	<b>0.0000</b>	<b>292.4689</b>	<b>292.4689</b>	<b>5.6100e-003</b>	<b>5.3600e-003</b>	<b>294.2069</b>

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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 Heavy Industry	5.48066e+006	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.4689	292.4689	5.6100e-003	5.3600e-003	294.2069
<b>Total</b>		<b>0.0296</b>	<b>0.2687</b>	<b>0.2257</b>	<b>1.6100e-003</b>		<b>0.0204</b>	<b>0.0204</b>		<b>0.0204</b>	<b>0.0204</b>	<b>0.0000</b>	<b>292.4689</b>	<b>292.4689</b>	<b>5.6100e-003</b>	<b>5.3600e-003</b>	<b>294.2069</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	2.18329e+006	387.1965	0.0327	3.9600e-003	389.1939
<b>Total</b>		<b>387.1965</b>	<b>0.0327</b>	<b>3.9600e-003</b>	<b>389.1939</b>

**Mitigated**



## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	2.18329e+006	387.1965	0.0327	3.9600e-003	389.1939
<b>Total</b>		<b>387.1965</b>	<b>0.0327</b>	<b>3.9600e-003</b>	<b>389.1939</b>

**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	1.1536	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003
Unmitigated	1.1536	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003

**6.2 Area by SubCategory****Unmitigated**

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	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	0.1224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003
<b>Total</b>	<b>1.1536</b>	<b>2.0000e-005</b>	<b>2.4200e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.7200e-003</b>	<b>4.7200e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.0300e-003</b>

**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	0.1224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003
<b>Total</b>	<b>1.1536</b>	<b>2.0000e-005</b>	<b>2.4200e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.7200e-003</b>	<b>4.7200e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.0300e-003</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	160.3460	2.0012	0.0484	224.8038
Unmitigated	160.3460	2.0012	0.0484	224.8038

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	61.05 / 0	160.3460	2.0012	0.0484	224.8038
<b>Total</b>		<b>160.3460</b>	<b>2.0012</b>	<b>0.0484</b>	<b>224.8038</b>

**Mitigated**

## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	61.05 / 0	160.3460	2.0012	0.0484	224.8038
<b>Total</b>		<b>160.3460</b>	<b>2.0012</b>	<b>0.0484</b>	<b>224.8038</b>

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

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	66.4511	3.9272	0.0000	164.6298
Unmitigated	66.4511	3.9272	0.0000	164.6298

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
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## SCG-VCS Project - Phase 7 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Land Use	tons	MT/yr			
General Heavy Industry	327.36	66.4511	3.9272	0.0000	164.6298
<b>Total</b>		<b>66.4511</b>	<b>3.9272</b>	<b>0.0000</b>	<b>164.6298</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	327.36	66.4511	3.9272	0.0000	164.6298
<b>Total</b>		<b>66.4511</b>	<b>3.9272</b>	<b>0.0000</b>	<b>164.6298</b>

**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**

SCG-VCS Project - Phase 7 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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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SCG-VCS Project - Phase 8 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SCG-VCS Project - Phase 8

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	264.00	1000sqft	6.06	264,001.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - used 1 mile
- Construction Phase - Used North-South project
- Off-road Equipment - North-South project
- Grading - used 1 mile
- Off-road Equipment - North-South project
- Trips and VMT - North-South project
- Architectural Coating -
- Area Coating -
- Vehicle Trips -
- Fleet Mix -

## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	7.00
tblLandUse	LandUseSquareFeet	264,000.00	264,001.00
tblOffRoadEquipment	HorsePower	231.00	46.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	97.00	80.00
tblOffRoadEquipment	HorsePower	221.00	205.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	158.00	89.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	LoadFactor	0.29	0.45
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	14.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	43.00	42.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	111.00	195.00

**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					
2023	0.0450	0.3372	0.4307	7.6000e-004	0.0111	0.0163	0.0275	2.9800e-003	0.0153	0.0183	0.0000	65.4123	65.4123	0.0148	6.3000e-004	65.9703
Maximum	0.0450	0.3372	0.4307	7.6000e-004	0.0111	0.0163	0.0275	2.9800e-003	0.0153	0.0183	0.0000	65.4123	65.4123	0.0148	6.3000e-004	65.9703

**Mitigated Construction**

## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	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					
2023	0.0450	0.3372	0.4307	7.6000e-004	0.0111	0.0163	0.0275	2.9800e-003	0.0153	0.0183	0.0000	65.4123	65.4123	0.0148	6.3000e-004	65.9702
Maximum	0.0450	0.3372	0.4307	7.6000e-004	0.0111	0.0163	0.0275	2.9800e-003	0.0153	0.0183	0.0000	65.4123	65.4123	0.0148	6.3000e-004	65.9702

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	0.3513	0.3513
		Highest	0.3513	0.3513

**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	1.1536	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003
Energy	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	679.6654	679.6654	0.0383	9.3200e-003	683.4009
Mobile	0.7190	0.9470	7.3174	0.0156	1.7099	0.0122	1.7221	0.4565	0.0114	0.4679	0.0000	1,441.2736	1,441.2736	0.0914	0.0654	1,463.0603
Waste						0.0000	0.0000		0.0000	0.0000	66.4511	0.0000	66.4511	3.9272	0.0000	164.6298

## SCG-VCS Project - Phase 8 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water						0.0000	0.0000		0.0000	0.0000	19.3684	140.9777	160.3460	2.0012	0.0484	224.8038
<b>Total</b>	<b>1.9022</b>	<b>1.2157</b>	<b>7.5455</b>	<b>0.0172</b>	<b>1.7099</b>	<b>0.0327</b>	<b>1.7425</b>	<b>0.4565</b>	<b>0.0319</b>	<b>0.4883</b>	<b>85.8195</b>	<b>2,261.9213</b>	<b>2,347.7408</b>	<b>6.0581</b>	<b>0.1232</b>	<b>2,535.8998</b>

**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	1.1536	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003
Energy	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	679.6654	679.6654	0.0383	9.3200e-003	683.4009
Mobile	0.7190	0.9470	7.3174	0.0156	1.7099	0.0122	1.7221	0.4565	0.0114	0.4679	0.0000	1,441.2736	1,441.2736	0.0914	0.0654	1,463.0603
Waste						0.0000	0.0000		0.0000	0.0000	66.4511	0.0000	66.4511	3.9272	0.0000	164.6298
Water						0.0000	0.0000		0.0000	0.0000	19.3684	140.9777	160.3460	2.0012	0.0484	224.8038
<b>Total</b>	<b>1.9022</b>	<b>1.2157</b>	<b>7.5455</b>	<b>0.0172</b>	<b>1.7099</b>	<b>0.0327</b>	<b>1.7425</b>	<b>0.4565</b>	<b>0.0319</b>	<b>0.4883</b>	<b>85.8195</b>	<b>2,261.9213</b>	<b>2,347.7408</b>	<b>6.0581</b>	<b>0.1232</b>	<b>2,535.8998</b>

	ROG	NOx	CO	SO2	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**

## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	8	Building Construction	2/20/2023	2/28/2023	5	7	Pipeline Installation

**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
8	Cranes	1	8.00	46	0.45
8	Other Construction Equipment	1	6.00	171	0.42
8	Forklifts	1	6.00	89	0.20
8	Other Construction Equipment	2	8.00	171	0.42
8	Other Construction Equipment	4	6.00	171	0.42
8	Other Construction Equipment	2	8.00	171	0.42
8	Other Construction Equipment	1	6.00	171	0.42
8	Other Construction Equipment	2	6.00	171	0.42
8	Other Construction Equipment	4	6.00	171	0.42
8	Excavators	4	8.00	162	0.38
8	Excavators	1	6.00	89	0.38
8	Other Construction Equipment	1	6.00	171	0.42
8	Tractors/Loaders/Backhoes	3	6.00	80	0.37
8	Cranes	3	4.00	226	0.29
8	Air Compressors	5	4.00	78	0.48
8	Welders	14	8.00	46	0.45
8	Bore/Drill Rigs	1	8.00	205	0.50
8	Air Compressors	2	6.00	78	0.48



## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Vendor	1.5000e-004	6.1200e-003	2.0700e-003	3.0000e-005	1.0600e-003	4.0000e-005	1.1000e-003	3.1000e-004	3.0000e-005	3.4000e-004	0.0000	2.8853	2.8853	1.2000e-004	4.3000e-004	3.0169
Worker	2.8600e-003	2.2100e-003	0.0280	8.0000e-005	0.0101	5.0000e-005	0.0101	2.6800e-003	5.0000e-005	2.7300e-003	0.0000	7.6497	7.6497	1.8000e-004	2.0000e-004	7.7131
<b>Total</b>	<b>3.0100e-003</b>	<b>8.3300e-003</b>	<b>0.0301</b>	<b>1.1000e-004</b>	<b>0.0111</b>	<b>9.0000e-005</b>	<b>0.0112</b>	<b>2.9900e-003</b>	<b>8.0000e-005</b>	<b>3.0700e-003</b>	<b>0.0000</b>	<b>10.5349</b>	<b>10.5349</b>	<b>3.0000e-004</b>	<b>6.3000e-004</b>	<b>10.7300</b>

**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	0.0420	0.3289	0.4007	6.5000e-004		0.0162	0.0162		0.0152	0.0152	0.0000	54.8774	54.8774	0.0145	0.0000	55.2403
<b>Total</b>	<b>0.0420</b>	<b>0.3289</b>	<b>0.4007</b>	<b>6.5000e-004</b>		<b>0.0162</b>	<b>0.0162</b>		<b>0.0152</b>	<b>0.0152</b>	<b>0.0000</b>	<b>54.8774</b>	<b>54.8774</b>	<b>0.0145</b>	<b>0.0000</b>	<b>55.2403</b>

**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	1.5000e-004	6.1200e-003	2.0700e-003	3.0000e-005	1.0600e-003	4.0000e-005	1.1000e-003	3.1000e-004	3.0000e-005	3.4000e-004	0.0000	2.8853	2.8853	1.2000e-004	4.3000e-004	3.0169

## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Worker	2.8600e-003	2.2100e-003	0.0280	8.0000e-005	0.0101	5.0000e-005	0.0101	2.6800e-003	5.0000e-005	2.7300e-003	0.0000	7.6497	7.6497	1.8000e-004	2.0000e-004	7.7131
Total	3.0100e-003	8.3300e-003	0.0301	1.1000e-004	0.0111	9.0000e-005	0.0112	2.9900e-003	8.0000e-005	3.0700e-003	0.0000	10.5349	10.5349	3.0000e-004	6.3000e-004	10.7300

**4.0 Operational Detail - Mobile****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	0.7190	0.9470	7.3174	0.0156	1.7099	0.0122	1.7221	0.4565	0.0114	0.4679	0.0000	1,441.2736	1,441.2736	0.0914	0.0654	1,463.0603
Unmitigated	0.7190	0.9470	7.3174	0.0156	1.7099	0.0122	1.7221	0.4565	0.0114	0.4679	0.0000	1,441.2736	1,441.2736	0.0914	0.0654	1,463.0603

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	1,037.52	1,694.88	1343.76	4,540,257	4,540,257
Total	1,037.52	1,694.88	1,343.76	4,540,257	4,540,257

**4.3 Trip Type Information**

	Miles	Trip %	Trip Purpose %
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## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy 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 Heavy Industry	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0069

**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	387.1965	387.1965	0.0327	3.9600e-003	389.1939
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	387.1965	387.1965	0.0327	3.9600e-003	389.1939
NaturalGas Mitigated	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.4689	292.4689	5.6100e-003	5.3600e-003	294.2069
NaturalGas Unmitigated	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.4689	292.4689	5.6100e-003	5.3600e-003	294.2069

**5.2 Energy by Land Use - NaturalGas****Unmitigated**



## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	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 Heavy Industry	5.48066e+006	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.4689	292.4689	5.6100e-003	5.3600e-003	294.2069
<b>Total</b>		<b>0.0296</b>	<b>0.2687</b>	<b>0.2257</b>	<b>1.6100e-003</b>		<b>0.0204</b>	<b>0.0204</b>		<b>0.0204</b>	<b>0.0204</b>	<b>0.0000</b>	<b>292.4689</b>	<b>292.4689</b>	<b>5.6100e-003</b>	<b>5.3600e-003</b>	<b>294.2069</b>

**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 Heavy Industry	5.48066e+006	0.0296	0.2687	0.2257	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.4689	292.4689	5.6100e-003	5.3600e-003	294.2069
<b>Total</b>		<b>0.0296</b>	<b>0.2687</b>	<b>0.2257</b>	<b>1.6100e-003</b>		<b>0.0204</b>	<b>0.0204</b>		<b>0.0204</b>	<b>0.0204</b>	<b>0.0000</b>	<b>292.4689</b>	<b>292.4689</b>	<b>5.6100e-003</b>	<b>5.3600e-003</b>	<b>294.2069</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
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## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Land Use	kWh/yr	MT/yr			
General Heavy Industry	2.18329e+006	387.1965	0.0327	3.9600e-003	389.1939
<b>Total</b>		<b>387.1965</b>	<b>0.0327</b>	<b>3.9600e-003</b>	<b>389.1939</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	2.18329e+006	387.1965	0.0327	3.9600e-003	389.1939
<b>Total</b>		<b>387.1965</b>	<b>0.0327</b>	<b>3.9600e-003</b>	<b>389.1939</b>

**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
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## SCG-VCS Project - Phase 8 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category											MT/yr					
tons/yr																
Mitigated	1.1536	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003
Unmitigated	1.1536	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003

## 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											MT/yr					
tons/yr																
Architectural Coating	0.1224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003
<b>Total</b>	<b>1.1536</b>	<b>2.0000e-005</b>	<b>2.4200e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.7200e-003</b>	<b>4.7200e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.0300e-003</b>

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											MT/yr					
tons/yr																

## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Architectural Coating	0.1224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.4200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	1.0000e-005	0.0000	5.0300e-003
<b>Total</b>	<b>1.1536</b>	<b>2.0000e-005</b>	<b>2.4200e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.7200e-003</b>	<b>4.7200e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.0300e-003</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	160.3460	2.0012	0.0484	224.8038
Unmitigated	160.3460	2.0012	0.0484	224.8038

**7.2 Water by Land Use****Unmitigated**

Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
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SCG-VCS Project - Phase 8 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	Mgal	MT/yr			
General Heavy Industry	61.05 / 0	160.3460	2.0012	0.0484	224.8038
Total		160.3460	2.0012	0.0484	224.8038

Mitigated

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	61.05 / 0	160.3460	2.0012	0.0484	224.8038
Total		160.3460	2.0012	0.0484	224.8038

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
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## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	MT/yr			
Mitigated	66.4511	3.9272	0.0000	164.6298
Unmitigated	66.4511	3.9272	0.0000	164.6298

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	327.36	66.4511	3.9272	0.0000	164.6298
<b>Total</b>		<b>66.4511</b>	<b>3.9272</b>	<b>0.0000</b>	<b>164.6298</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	327.36	66.4511	3.9272	0.0000	164.6298
<b>Total</b>		<b>66.4511</b>	<b>3.9272</b>	<b>0.0000</b>	<b>164.6298</b>

## SCG-VCS Project - Phase 8 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****9.0 Operational Offroad**

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

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**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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SCG-VCS Project - Phase 9 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SCG-VCS Project - Phase 9

Ventura County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Honor Rancho

Off-road Equipment - Honor Rancho

Grading - Honor Rancho

Trips and VMT - Honor Rancho

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	60.00
tblGrading	AcresOfGrading	240.00	1.00
tblGrading	MaterialExported	0.00	59,701.00
tblOffRoadEquipment	HorsePower	78.00	45.00



## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblOffRoadEquipment	HorsePower	212.00	605.00
tblOffRoadEquipment	HorsePower	85.00	385.00
tblOffRoadEquipment	HorsePower	16.00	450.00
tblOffRoadEquipment	HorsePower	158.00	728.00
tblOffRoadEquipment	HorsePower	84.00	67.00
tblOffRoadEquipment	HorsePower	187.00	139.00
tblOffRoadEquipment	HorsePower	84.00	2.00
tblOffRoadEquipment	HorsePower	203.00	97.00
tblOffRoadEquipment	HorsePower	367.00	407.00
tblOffRoadEquipment	HorsePower	65.00	73.50
tblOffRoadEquipment	HorsePower	402.00	475.00
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.48	0.48
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	6.60	7.90
tblTripsAndVMT	VendorTripNumber	0.00	62.00
tblTripsAndVMT	WorkerTripLength	16.80	19.80
tblTripsAndVMT	WorkerTripNumber	58.00	405.00

**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					
2023	0.3040	2.5931	2.4179	8.7300e-003	0.2442	0.0933	0.3374	0.0655	0.0869	0.1524	0.0000	808.2259	808.2259	0.1391	0.0357	822.3393
Maximum	0.3040	2.5931	2.4179	8.7300e-003	0.2442	0.0933	0.3374	0.0655	0.0869	0.1524	0.0000	808.2259	808.2259	0.1391	0.0357	822.3393

**Mitigated Construction**

## SCG-VCS Project - Phase 9 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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					
2023	0.3040	2.5931	2.4179	8.7300e-003	0.2442	0.0933	0.3374	0.0655	0.0869	0.1524	0.0000	808.2253	808.2253	0.1391	0.0357	822.3388
Maximum	0.3040	2.5931	2.4179	8.7300e-003	0.2442	0.0933	0.3374	0.0655	0.0869	0.1524	0.0000	808.2253	808.2253	0.1391	0.0357	822.3388

	ROG	NOx	CO	SO2	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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	2.5236	2.5236
2	4-2-2023	7-1-2023	0.3764	0.3764
		Highest	2.5236	2.5236

## 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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1444	112.1444	6.3200e-003	1.5400e-003	112.7607
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2166</b>	<b>387.3759</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4208</b>

**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	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Energy	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	112.1444	112.1444	6.3200e-003	1.5400e-003	112.7607
Mobile	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	23.2613	26.4571	0.3302	7.9900e-003	37.0926
<b>Total</b>	<b>0.3139</b>	<b>0.2006</b>	<b>1.2450</b>	<b>2.8500e-003</b>	<b>0.2821</b>	<b>5.3900e-003</b>	<b>0.2875</b>	<b>0.0753</b>	<b>5.2500e-003</b>	<b>0.0806</b>	<b>14.1593</b>	<b>373.2166</b>	<b>387.3759</b>	<b>0.9995</b>	<b>0.0203</b>	<b>418.4208</b>

	ROG	NOx	CO	SO2	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**

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	9	Grading	1/19/2023	4/12/2023	5	60	Grading

**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 1****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
9	Air Compressors	1	8.00	45	0.48
9	Crawler Tractors	2	8.00	605	0.43
9	Crushing/Proc. Equipment	1	8.00	385	0.78
9	Dumpers/Tenders	6	8.00	450	0.38
9	Excavators	1	8.00	728	0.38
9	Generator Sets	1	8.00	67	0.74
9	Graders	2	8.00	139	0.41
9	Pumps	2	8.00	2	0.74
9	Rubber Tired Loaders	3	8.00	97	0.36
9	Scrapers	2	8.00	407	0.48
9	Skid Steer Loaders	1	8.00	73.5	0.37
9	Off-Highway Trucks	1	8.00	475	0.38

**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
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## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

9	23	405.00	62.00	5,903.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
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**3.1 Mitigation Measures Construction****3.2 9 - 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					
Fugitive Dust					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2454	2.1072	1.7923	5.2100e-003		0.0893	0.0893		0.0831	0.0831	0.0000	467.8871	467.8871	0.1230	0.0000	470.9624
<b>Total</b>	<b>0.2454</b>	<b>2.1072</b>	<b>1.7923</b>	<b>5.2100e-003</b>	<b>5.3000e-004</b>	<b>0.0893</b>	<b>0.0898</b>	<b>6.0000e-005</b>	<b>0.0831</b>	<b>0.0831</b>	<b>0.0000</b>	<b>467.8871</b>	<b>467.8871</b>	<b>0.1230</b>	<b>0.0000</b>	<b>470.9624</b>

**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	5.8000e-003	0.3691	0.1014	1.6600e-003	0.0507	2.6100e-003	0.0533	0.0139	2.5000e-003	0.0164	0.0000	167.6511	167.6511	0.0114	0.0267	175.8941
Vendor	1.8700e-003	0.0775	0.0262	3.7000e-004	0.0134	4.5000e-004	0.0139	3.8700e-003	4.3000e-004	4.3000e-003	0.0000	36.5072	36.5072	1.5000e-003	5.4600e-003	38.1729
Worker	0.0509	0.0393	0.4981	1.4900e-003	0.1795	9.4000e-004	0.1805	0.0477	8.7000e-004	0.0485	0.0000	136.1805	136.1805	3.2200e-003	3.5200e-003	137.3100

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Total	0.0586	0.4859	0.6256	3.5200e-003	0.2436	4.0000e-003	0.2476	0.0655	3.8000e-003	0.0692	0.0000	340.3388	340.3388	0.0161	0.0357	351.3770
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**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					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2454	2.1072	1.7923	5.2100e-003		0.0893	0.0893		0.0831	0.0831	0.0000	467.8865	467.8865	0.1230	0.0000	470.9618
<b>Total</b>	<b>0.2454</b>	<b>2.1072</b>	<b>1.7923</b>	<b>5.2100e-003</b>	<b>5.3000e-004</b>	<b>0.0893</b>	<b>0.0898</b>	<b>6.0000e-005</b>	<b>0.0831</b>	<b>0.0831</b>	<b>0.0000</b>	<b>467.8865</b>	<b>467.8865</b>	<b>0.1230</b>	<b>0.0000</b>	<b>470.9618</b>

**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	5.8000e-003	0.3691	0.1014	1.6600e-003	0.0507	2.6100e-003	0.0533	0.0139	2.5000e-003	0.0164	0.0000	167.6511	167.6511	0.0114	0.0267	175.8941
Vendor	1.8700e-003	0.0775	0.0262	3.7000e-004	0.0134	4.5000e-004	0.0139	3.8700e-003	4.3000e-004	4.3000e-003	0.0000	36.5072	36.5072	1.5000e-003	5.4600e-003	38.1729
Worker	0.0509	0.0393	0.4981	1.4900e-003	0.1795	9.4000e-004	0.1805	0.0477	8.7000e-004	0.0485	0.0000	136.1805	136.1805	3.2200e-003	3.5200e-003	137.3100

## SCG-VCS Project - Phase 9 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	0.0586	0.4859	0.6256	3.5200e-003	0.2436	4.0000e-003	0.2476	0.0655	3.8000e-003	0.0692	0.0000	340.3388	340.3388	0.0161	0.0357	351.3770
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## 4.0 Operational Detail - Mobile

## 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	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050
Unmitigated	0.1186	0.1563	1.2074	2.5800e-003	0.2821	2.0200e-003	0.2842	0.0753	1.8800e-003	0.0772	0.0000	237.8101	237.8101	0.0151	0.0108	241.4050

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	171.19	279.66	221.72	749,142	749,142
Total	171.19	279.66	221.72	749,142	749,142

## 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



## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

General Heavy Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
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**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.548670	0.058343	0.171689	0.130773	0.027316	0.007545	0.011806	0.006161	0.000681	0.000392	0.029028	0.000637	0.0069

**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	63.8872	63.8872	5.3900e-003	6.5000e-004	64.2168
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	63.8872	63.8872	5.3900e-003	6.5000e-004	64.2168
NaturalGas Mitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2572	48.2572	9.2000e-004	8.8000e-004	48.5440
NaturalGas Unmitigated	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2572	48.2572	9.2000e-004	8.8000e-004	48.5440

**5.2 Energy by Land Use - NaturalGas  
Unmitigated**

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	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 Heavy Industry	904306	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2572	48.2572	9.2000e-004	8.8000e-004	48.5440
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2572</b>	<b>48.2572</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5440</b>

**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 Heavy Industry	904306	4.8800e-003	0.0443	0.0372	2.7000e-004		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	48.2572	48.2572	9.2000e-004	8.8000e-004	48.5440
<b>Total</b>		<b>4.8800e-003</b>	<b>0.0443</b>	<b>0.0372</b>	<b>2.7000e-004</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>		<b>3.3700e-003</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>48.2572</b>	<b>48.2572</b>	<b>9.2000e-004</b>	<b>8.8000e-004</b>	<b>48.5440</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
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## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Land Use	kWh/yr	MT/yr			
General Heavy Industry	360241	63.8872	5.3900e-003	6.5000e-004	64.2168
<b>Total</b>		<b>63.8872</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2168</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	360241	63.8872	5.3900e-003	6.5000e-004	64.2168
<b>Total</b>		<b>63.8872</b>	<b>5.3900e-003</b>	<b>6.5000e-004</b>	<b>64.2168</b>

**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
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## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Category											MT/yr					
tons/yr																
Mitigated	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
Unmitigated	0.1904	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004

**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											MT/yr					
tons/yr																
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

**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											MT/yr					
tons/yr																

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.3000e-004
<b>Total</b>	<b>0.1904</b>	<b>0.0000</b>	<b>4.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.3000e-004</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4571	0.3302	7.9900e-003	37.0926
Unmitigated	26.4571	0.3302	7.9900e-003	37.0926

**7.2 Water by Land Use****Unmitigated**

Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
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SCG-VCS Project - Phase 9 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use Mgal		MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
Total		26.4571	0.3302	7.9900e-003	37.0926

Mitigated

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use Mgal		MT/yr			
General Heavy Industry	10.0733 / 0	26.4571	0.3302	7.9900e-003	37.0926
Total		26.4571	0.3302	7.9900e-003	37.0926

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
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## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	54.01	10.9635	0.6479	0.0000	27.1617
<b>Total</b>		<b>10.9635</b>	<b>0.6479</b>	<b>0.0000</b>	<b>27.1617</b>

## SCG-VCS Project - Phase 9 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****9.0 Operational Offroad**

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

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**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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SCG-VCS Project - Phase 10 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SCG-VCS Project - Phase 10

Ventura County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	264.00	1000sqft	6.06	264,001.06	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - defaults

Land Use - North-South

Construction Phase - North-South

Off-road Equipment - North-South

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	132001	0
tblAreaCoating	Area_Nonresidential_Interior	396002	0
tblConstructionPhase	NumDays	230.00	19.00
tblLandUse	LandUseSquareFeet	264,000.00	264,001.06
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00

## SCG-VCS Project - Phase 10 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblOffRoadEquipment	HorsePower	84.00	49.00
tblOffRoadEquipment	HorsePower	221.00	205.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	172.00	171.00
tblOffRoadEquipment	HorsePower	130.00	125.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	14.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblProjectCharacteristics	TotalLotAcreage	0	0.63
tblProjectCharacteristics	UrbanizationLevel		Rural

## SCG-VCS Project - Phase 10 - Ventura County, Annual

### EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 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					
2023	0.1168	0.9073	1.1254	2.1400e-003	5.5200e-003	0.0417	0.0472	2.1900e-003	0.0399	0.0421	0.0000	184.4682	184.4682	0.0300	2.0300e-003	185.8236
Maximum	0.1168	0.9073	1.1254	2.1400e-003	5.5200e-003	0.0417	0.0472	2.1900e-003	0.0399	0.0421	0.0000	184.4682	184.4682	0.0300	2.0300e-003	185.8236

### 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					
2023	0.1168	0.9073	1.1254	2.1400e-003	5.5200e-003	0.0417	0.0472	2.1900e-003	0.0399	0.0421	0.0000	184.4680	184.4680	0.0300	2.0300e-003	185.8234
Maximum	0.1168	0.9073	1.1254	2.1400e-003	5.5200e-003	0.0417	0.0472	2.1900e-003	0.0399	0.0421	0.0000	184.4680	184.4680	0.0300	2.0300e-003	185.8234

[illegible]

[illegible]

## SCG-VCS Project - Phase 10 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	10	Building Construction	2/20/2023	3/17/2023	5	19	Roadwork

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
10	Air Compressors	8	4.00	78	0.48
10	Air Compressors	2	6.00	78	0.48
10	Air Compressors	2	4.00	78	0.48
10	Bore/Drill Rigs	1	4.00	205	0.50
10	Concrete/Industrial Saws	2	4.00	81	0.73
10	Cranes	2	5.00	226	0.29
10	Cranes	4	5.00	226	0.29
10	Excavators	1	5.00	162	0.38
10	Forklifts	2	4.00	89	0.20
10	Generator Sets	6	2.00	49	0.74
10	Generator Sets	3	6.00	84	0.74

## SCG-VCS Project - Phase 10 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

10	Other Construction Equipment	2	4.00	171	0.42
10	Other Construction Equipment	3	4.00	171	0.42
10	Other Construction Equipment	2	4.00	171	0.42
10	Other Construction Equipment	1	4.00	171	0.42
10	Other Construction Equipment	1	4.00	171	0.42
10	Pavers	1	4.00	125	0.42
10	Pumps	1	5.00	84	0.74
10	Pumps	1	6.00	84	0.74
10	Pumps	2	4.00	84	0.74
10	Rollers	2	5.00	80	0.38
10	Tractors/Loaders/Backhoes	5	6.00	97	0.37
10	Tractors/Loaders/Backhoes	6	4.00	97	0.37
10	Welders	14	5.00	46	0.45

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
10		232.00	46.00	2.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction****3.2 10 - 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					

## SCG-VCS Project - Phase 10 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Off-Road	0.1066	0.8805	1.0238	1.7600e-003		0.0414	0.0414		0.0397	0.0397	0.0000	149.3766	149.3766	0.0290	0.0000	150.1014
<b>Total</b>	<b>0.1066</b>	<b>0.8805</b>	<b>1.0238</b>	<b>1.7600e-003</b>		<b>0.0414</b>	<b>0.0414</b>		<b>0.0397</b>	<b>0.0397</b>	<b>0.0000</b>	<b>149.3766</b>	<b>149.3766</b>	<b>0.0290</b>	<b>0.0000</b>	<b>150.1014</b>

**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	1.3000e-004	4.0000e-005	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0598	0.0598	0.0000	1.0000e-005	0.0627
Vendor	4.6000e-004	0.0192	6.4800e-003	9.0000e-005	9.7000e-004	1.1000e-004	1.0800e-003	3.8000e-004	1.1000e-004	4.9000e-004	0.0000	9.0287	9.0287	3.7000e-004	1.3500e-003	9.4406
Worker	9.7200e-003	7.5100e-003	0.0951	2.8000e-004	4.5500e-003	1.8000e-004	4.7300e-003	1.8100e-003	1.7000e-004	1.9700e-003	0.0000	26.0032	26.0032	6.1000e-004	6.7000e-004	26.2189
<b>Total</b>	<b>0.0102</b>	<b>0.0268</b>	<b>0.1016</b>	<b>3.7000e-004</b>	<b>5.5200e-003</b>	<b>2.9000e-004</b>	<b>5.8200e-003</b>	<b>2.1900e-003</b>	<b>2.8000e-004</b>	<b>2.4600e-003</b>	<b>0.0000</b>	<b>35.0917</b>	<b>35.0917</b>	<b>9.8000e-004</b>	<b>2.0300e-003</b>	<b>35.7222</b>

**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	0.1066	0.8805	1.0238	1.7600e-003		0.0414	0.0414		0.0397	0.0397	0.0000	149.3764	149.3764	0.0290	0.0000	150.1012

## SCG-VCS Project - Phase 10 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	0.1066	0.8805	1.0238	1.7600e-003		0.0414	0.0414		0.0397	0.0397	0.0000	149.3764	149.3764	0.0290	0.0000	150.1012
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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	1.3000e-004	4.0000e-005	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0598	0.0598	0.0000	1.0000e-005	0.0627
Vendor	4.6000e-004	0.0192	6.4800e-003	9.0000e-005	9.7000e-004	1.1000e-004	1.0800e-003	3.8000e-004	1.1000e-004	4.9000e-004	0.0000	9.0287	9.0287	3.7000e-004	1.3500e-003	9.4406
Worker	9.7200e-003	7.5100e-003	0.0951	2.8000e-004	4.5500e-003	1.8000e-004	4.7300e-003	1.8100e-003	1.7000e-004	1.9700e-003	0.0000	26.0032	26.0032	6.1000e-004	6.7000e-004	26.2189
Total	0.0102	0.0268	0.1016	3.7000e-004	5.5200e-003	2.9000e-004	5.8200e-003	2.1900e-003	2.8000e-004	2.4600e-003	0.0000	35.0917	35.0917	9.8000e-004	2.0300e-003	35.7222

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile****4.2 Trip Summary Information**

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

**4.3 Trip Type Information**





## SCG-VCS Project - Phase 10 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 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	1.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.0311</b>					<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

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	1.0311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.0311</b>					<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 7.0 Water Detail

## SCG-VCS Project - Phase 10 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****7.1 Mitigation Measures Water****8.0 Waste Detail**

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**8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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

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**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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SCG-VCS Project - Phase 11 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SCG-VCS Project - Phase 11

Ventura County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	43.56	1000sqft	1.00	43,560.17	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - defaults

Land Use - San Manuel

Construction Phase - San Manuel

Off-road Equipment - San Manuel

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	21780	0
tblAreaCoating	Area_Nonresidential_Interior	65340	0
tblConstructionPhase	NumDays	100.00	80.00
tblLandUse	LandUseSquareFeet	43,560.00	43,560.17
tblOffRoadEquipment	HorsePower	231.00	500.00
tblOffRoadEquipment	HorsePower	231.00	300.00

## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblOffRoadEquipment	HorsePower	63.00	350.00
tblOffRoadEquipment	HorsePower	158.00	300.00
tblOffRoadEquipment	HorsePower	84.00	350.00
tblOffRoadEquipment	HorsePower	100.00	125.00
tblOffRoadEquipment	UsageHours	4.00	10.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblProjectCharacteristics	TotalLotAcreage	0	0.63
tblProjectCharacteristics	UrbanizationLevel		Rural

**2.0 Emissions Summary****2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1570	1.0407	1.4341	4.9800e-003	0.0249	0.0342	0.0591	9.8800e-003	0.0321	0.0420	0.0000	462.1769	462.1769	0.0701	5.7800e-003	465.6514
Maximum	0.1570	1.0407	1.4341	4.9800e-003	0.0249	0.0342	0.0591	9.8800e-003	0.0321	0.0420	0.0000	462.1769	462.1769	0.0701	5.7800e-003	465.6514

**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
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[illegible]

## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	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**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	11	Building Construction	5/25/2023	9/13/2023	5	80	Building Construction

**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
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## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

11	Generator Sets	1	10.00	350	0.74
11	Cranes	1	10.00	500	0.29
11	Aerial Lifts	2	8.00	350	0.31
11	Cranes	1	8.00	300	0.29
11	Rough Terrain Forklifts	1	8.00	125	0.40
11	Excavators	1	8.00	300	0.38

**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
11		296.00	20.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction****3.2 11 - 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	0.1066	0.9690	0.9375	3.3700e-003		0.0330	0.0330		0.0311	0.0311	0.0000	313.7689	313.7689	0.0663	0.0000	315.4263
<b>Total</b>	<b>0.1066</b>	<b>0.9690</b>	<b>0.9375</b>	<b>3.3700e-003</b>		<b>0.0330</b>	<b>0.0330</b>		<b>0.0311</b>	<b>0.0311</b>	<b>0.0000</b>	<b>313.7689</b>	<b>313.7689</b>	<b>0.0663</b>	<b>0.0000</b>	<b>315.4263</b>

**Unmitigated Construction Off-Site**



## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive 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	8.1000e-004	0.0333	0.0113	1.6000e-004	1.6800e-003	1.9000e-004	1.8700e-003	6.6000e-004	1.9000e-004	8.5000e-004	0.0000	15.7020	15.7020	6.5000e-004	2.3500e-003	16.4184
Worker	0.0496	0.0383	0.4854	1.4500e-003	0.0233	9.2000e-004	0.0242	9.2200e-003	8.4000e-004	0.0101	0.0000	132.7060	132.7060	3.1300e-003	3.4300e-003	133.8066
<b>Total</b>	<b>0.0504</b>	<b>0.0716</b>	<b>0.4966</b>	<b>1.6100e-003</b>	<b>0.0249</b>	<b>1.1100e-003</b>	<b>0.0260</b>	<b>9.8800e-003</b>	<b>1.0300e-003</b>	<b>0.0109</b>	<b>0.0000</b>	<b>148.4080</b>	<b>148.4080</b>	<b>3.7800e-003</b>	<b>5.7800e-003</b>	<b>150.2251</b>

**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	0.1066	0.9690	0.9375	3.3700e-003		0.0330	0.0330		0.0311	0.0311	0.0000	313.7686	313.7686	0.0663	0.0000	315.4260
<b>Total</b>	<b>0.1066</b>	<b>0.9690</b>	<b>0.9375</b>	<b>3.3700e-003</b>		<b>0.0330</b>	<b>0.0330</b>		<b>0.0311</b>	<b>0.0311</b>	<b>0.0000</b>	<b>313.7686</b>	<b>313.7686</b>	<b>0.0663</b>	<b>0.0000</b>	<b>315.4260</b>

**Mitigated Construction Off-Site**

## SCG-VCS Project - Phase 11 - Ventura County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	8.1000e-004	0.0333	0.0113	1.6000e-004	1.6800e-003	1.9000e-004	1.8700e-003	6.6000e-004	1.9000e-004	8.5000e-004	0.0000	15.7020	15.7020	6.5000e-004	2.3500e-003	16.4184
Worker	0.0496	0.0383	0.4854	1.4500e-003	0.0233	9.2000e-004	0.0242	9.2200e-003	8.4000e-004	0.0101	0.0000	132.7060	132.7060	3.1300e-003	3.4300e-003	133.8066
<b>Total</b>	<b>0.0504</b>	<b>0.0716</b>	<b>0.4966</b>	<b>1.6100e-003</b>	<b>0.0249</b>	<b>1.1100e-003</b>	<b>0.0260</b>	<b>9.8800e-003</b>	<b>1.0300e-003</b>	<b>0.0109</b>	<b>0.0000</b>	<b>148.4080</b>	<b>148.4080</b>	<b>3.7800e-003</b>	<b>5.7800e-003</b>	<b>150.2251</b>

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

## 4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

## 4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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## 5.0 Energy Detail

SCG-VCS Project - Phase 11 - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

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

## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.1701</b>					<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.1701</b>					<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**7.0 Water Detail****7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

## SCG-VCS Project - Phase 11 - Ventura County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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

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**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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## **Attachment 2**

### Cultural Resources Analysis













Recorded Cultural Resources within the Records Search Areas

Primary Number	Trinomial (CA-VEN-)	Resource Age/ Type	Description	Recorded By & Year Recorded	Ventura Compressor Site			Avocado Site			Ventura Steel Site			Devil's Canyon Site			County Line Site		
					Intersects Off-Site	Intersects On-Site	Within Radius Only	Intersects Off-Site	Intersects On-Site	Within Radius Only	Intersects Off-Site	Intersects On-Site	Within Radius Only	Intersects Off-Site	Intersects On-Site	Within Radius Only	Intersects Off-Site	Intersects On-Site	Within Radius Only
P-56-120027	-	Prehistoric Site	AP15;	1997 (Rachal)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-120028	-	Prehistoric Site	AP15;	1997 (Rachal)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150032		Historic Building	HP15;	1997 (Rachal)	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
P-56-150062	-	Historic Building	HP02;	1980 (R. Greenwood)	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-	-	-	-
P-56-150063	-	Historic Building	HP16;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150064	-	Historic Building	HP06;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150065	-	Historic Building	HP02;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150066	-	Historic Building	HP06;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150067	-	Historic Building	HP02;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150068	-	Historic Building	HP06;	2000 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150069	-	Historic Building	HP02;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150070	-	Historic Building	HP06;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150071	-	Historic Building	HP02;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150072	-	Historic Building	HP06;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150073	-	Historic Building	HP06;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150074	-	Historic Building	HP06;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150075	-	Historic Building	HP02;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150076	-	Historic Building	HP06;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150077	-	Historic Building	HP06;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150078	-	Historic Building	HP02;	1980 (R. Greenwood)	No	No	Yes	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150079	-	Historic Building	HP08;	1980 (R. Greenwood)	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-	-	-	-
P-56-150080	-	Historic Building	HP02;	1980 (R. Greenwood)	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
P-56-150081	-	Historic Building	HP08;	1980 (R. Greenwood)	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-	-	-	-



[illegible]







Cultural Resources Studies within the Records Search Area

CHRIS Catalog Number	Report Title	Date	Report Author(s)	Intersects Ventura Compressor Site			Intersects Avocado Site			Intersects Ventura Steel Site			Intersects Devil's Canyon Site			Intersects County Line Site		
				Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only
VN-00411	Archaeological Investigations of a Section of Mission San Buenaventura's Aqueduct Located Between Lewis and Vince Streets Within the City of San Buenaventura, Ventura County, California	1982	Lopez, Robert	No	No	Yes	-	-	-	No	No	Yes	No	No	Yes	-	-	-
VN-00426	Cultural Resources Survey: Energetics' Proposed Oil Pipeline Route, Rincon Del Mar Ranch, Ventura County, California.	1983	MacFarlane, Heather	-	-	-	-	-	-	-	-	-	-	-	-	Yes	Yes	No
VN-00428	Ventura County Beach Erosion Study Significant Environmental Features and Concerns	1978	Martz, Patricia	-	-	-	No	No	Yes	-	-	-	-	-	-	No	No	Yes
VN-00442	Archaeological Assessment of the Hubbard Property, Ventura, California	1984	Pence, Robert L.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-00444	A Cultural Resources Evaluation for Ap No. 63-130-12 and 35-230-15-7 in Manuel Canyon, Ventura California	1984	Wilcoxon, Larry R.	-	-	-	-	-	-	No	No	Yes	No	No	Yes	-	-	-
VN-00450	Archaeological Monitoring Report Great Pacific Iron Works - Patagonia Warehouse	1982	Wlodarski, Robert J.	-	-	-	No	No	Yes	-	-	-	-	-		-	-	-
VN-00495	Archaeological Investigation of a Portion of CA-VEN-168, Ventura, California	1986	Foster, John M. and Roberta S. Greenwood	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
VN-00497	Archaeological Investigation: USA Petrochem Company, Ventura County	1986	Romani, Gwendolyn R.	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
VN-00516	Cultural Resource Investigation: Proposed Facility of Ojai Rubbish Company, Ventura County	1987	Brown, Roderick S.	-	-	-	-	-	-	No	No	Yes	No	No	Yes	-	-	-
VN-00519	Cultural Resources Survey and Impact Assessment for Four Potential Borrow Sites Near the Ventura River, Ventura County, California	1987	Singer, Clay A.	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	No	-	-	-
VN-00526	Mitigation of Impacts on a Portion of CA-VEN-168 Ventura, California	1987	Romani, Gwendolyn R., J. M. Foster, and R. S. Greenwood	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
VN-00546	An Archaeological Reconnaissance Report for a 21.03 Acre Parcel of Land [tentative Tract No. 43751], Located Near Ventura Avenue and Canada Larga Road, Ventura County, California	1987	Wlodarski, Robert J.	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
VN-00572	Phase 1 Cultural Resources Survey Fiber Optic Cable Project, Burbank to Santa Barbara, California for Us Sprint Communications Company	1988	Dames and Moore	-	-	-	No	No	Yes	-	-	-	-	-	-	No	No	Yes
VN-00618	An Archaeological Reconnaissance of the Area Involved in Cup 4340, Concrete Express Batch Plant, Ventura County	1986	Lopez, Robert	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
VN-00636	An Archaeological Reconnaissance of the Area Involved in a Proposed Oil Well Drill site on Rincon Del Mar Ranch Ventura County, California	1981	Lopez, Robert	-	-	-	-	-	-	-	-	-	-	-	-	Yes	No	No
VN-00667	An Archaeological Reconnaissance of the 5.083 Acres Involved Tract-4525, Ventura County, California	1988	Lopez, Robert	-	-	-	-	-	-	No	No	Yes	No	No	Yes	-	-	-
VN-00683	Cultural Resources Investigation of the Mill School Site in Ventura County	1988	Foster, John M., Roberta S. Greenwood, and Judy Triem	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
VN-00688	Preliminary Cultural Resources Survey and Impact Assessment for a Portion of the Taylor Ranch, in Ventura County, California	1987	Singer, Clay A. and John E. Atwood	No	No	Yes	Yes	Yes	No	No	No	Yes	No	No	Yes	-	-	-
VN-00689	An Archaeological Reconnaissance Report for a 16.7 Acre Parcel [tpm #4299], Crooked Palm Road and Manuel Canyon, Ventura County, California	1988	Wlodarski, Robert J.	-	-	-	-	-	-	No	No	Yes	No	No	Yes	-	-	-
VN-00690	Ventura County Fair and Seaside Park, Cultural Resources, Phase I	1988	Greenwood, Roberta S. and John M. Foster	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-00693	Cultural Resources Evaluation, Garden Estates, Ventura, California	1988	Foster, John M.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-00757	Examination of a Small Portion of the Mission San Buenaventura Aqueduct	1989	Greenwood, Roberta S. and John M. Foster	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-	-	-	-
VN-00790	Phase One Archaeological Survey of Southern Pacific Milling Company Plant and Quarries Along the Lower Ventura River, Ventura Quadrangle, California	1989	Maxwell, Thomas J.	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-	-	-	-



Cultural Resources Studies within the Records Search Area

CHRIS Catalog Number	Report Title	Date	Report Author(s)	Intersects Ventura Compressor Site			Intersects Avocado Site			Intersects Ventura Steel Site			Intersects Devil's Canyon Site			Intersects County Line Site		
				Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only
VN-01631	Draft Environmental Impact Report Downtown Redevelopment Project City of San Buenaventura	1978	Anonymous	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-	-	-	-
VN-01632	Results of Archaeological Monitoring for Sewer Pipeline in Promenade Park	1995	Maki, Mary K.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01633	Final Archaeological Field and Recommendations Report for the Holy Cross School Project San Buenaventura Mission	1996	Costello, Julia and Padon, Beth	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01634	An Archaeological Reconnaissance of the 4.87 Acres Involved in Planned Development Permit No. 1613, Ventura County California	1996	Lopez, Robert	-	-	-	-	-	-	Yes	No	No	No	No	Yes	-	-	-
VN-01636	Fish Remains, Primarily Otoliths, From a Ventura, California, Chumash Village Site (VEN-3)	1966	Fitch, John E.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01637	San Buenaventura Mission Water System	1974	Browne, Robert O.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01638	The Clocktower Square Project Mission Plaza Northwest Corner of Figueroa and Santa Clara Streets Ventura, California	1982	Browne, Robert O. and Kirk, Myrle, A.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01688	American Commercial Bank at Palm and Main Streets in the City of San Buenaventura	1982	Lopez, Robert	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01689	A Phase I Cultural Resources Study for 120 East Santa Clara Street, City of San Buenaventura, California	1998	Wlodarski, Robert J.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01691	An Archaeological Field Survey and Report of the Area Under Consideration for the Proposed Expansion of the Oak View Wastewater Treatment Plant	1977	Aiello, Paul V.	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
VN-01700	Archaeological Field Tests Mission Plaza Program Part III: Reuse Parcel 3	1975	Greenwood, Roberta S.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01701	An Archaeological Reconnaissance of the 30,000 Square Foot Lot at the Southeastern Corner of Poli and North Oak Streets Within the City of San Buenaventura, Ventura County California (am-4221/cdp-382/pa-33/arb-2685/pc 8/98-mm)	1998	Lopez, Robert	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01719	Cultural Resource Investigation: Santa Clara and Garden Streets, Ventura	1998	Schmidt, James J.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01720	A Phase 1 Cultural Resources Study 4584 North Ventura Avenue (APN 063-131-0404) County of Ventura, California	1998	Wlodarski, Robert J.	-	-	-	-	-	-	No	No	Yes	No	No	Yes	-	-	-
VN-01731	Historic Property Survey Report Rincon Creek Bridge Replacement and Realignment	1990	Anonymous	-	-	-	-	-	-	-	-	-	-	-	-	No	No	Yes
VN-01732	Archival Study/historic Overview: Downtown San Buenaventura Redevelopment Study Area	1980	Wlodarski, Robert J. and Hatheway, Roger G.	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-	-	-	-
VN-01734	Historic Resources Evaluation Casa De Anza Building, 606-12 Ventura Avenue, Ventura	1996	Unknown	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-
VN-01735	Cultural Resource Assessments: Neighborhood Commercial Shopping Center, Peking Street Relocation, Highway 33 Realignment, and Demolition of Police Station	1984	Greenwood, Roberta S. and John M. Foster	No	No	Yes	No	No	Yes	No	-	Yes	-	-	-	-	-	-
VN-01752	Phase I Archaeological Survey for the Property Ar 3658 N. Ventura Avenue	1990	MacFarlane, Heather	-	-	-	-	-	-	Yes	Yes	No	No	No	Yes	-	-	-
VN-01755	The Ortega Adobe, West Main Street	1984	Greenwood, Roberta S. and John M. Foster	No	No	Yes	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01775	Probability Study for Blocks 114 and 116, Downtown Ventura	1999	Schmidt, James and June Schmidt	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01821	University of California Los Angeles Institute of Archaeology the Archaeological Record of CA-VEN-168	1999	Arnold, Jeanne E.	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
VN-01822	Extended Phase I Archaeological Investigation Southwest Corner of Santa Clara and Garden Streets, Ventura, California	1999	Schmidt, James and June Schmidt	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01828	Phase I Archaeological Survey and Impact Assessment of 2,910 Linear Meters (9,700 Feet) for the Rincon Point Sanitation Project Santa Barbara and Ventura County, California	1999	Maki, Mary K.	-	-	-	-	-	-	-	-	-	-	-	-	No	No	Yes
VN-01847	Simpson Street Improvements/ Project No. 94369	2000	Maki, Mary K.	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-	-	-	-
VN-01848	Westside Gateway Improvements: Ventura Avenue and Park Row Project No. 94642	2000	Maki, Mary K.	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-	-	-	-
VN-01849	Underground Utility District 15/ Project No. 66094	2000	Maki, Mary K.	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-
VN-01850	Phase I Archaeological Survey of Approximately 2,800 Linear Feet Ramona Storm Drain Phase 5 Project City of San Buenaventura, Ventura County, California	2000	Maki, Mary K.	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-
VN-01851	Negative Phase I Archaeological Survey & Impact Assessment of Approximately 440 Linear Feet for the Westside Street Improvements Project Ventura Avenue	2000	Maki, Mary K.	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-

Cultural Resources Studies within the Records Search Area

CHRIS Catalog Number	Report Title	Date	Report Author(s)	Intersects Ventura Compressor Site			Intersects Avocado Site			Intersects Ventura Steel Site			Intersects Devil's Canyon Site			Intersects County Line Site		
				Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only	Off- Site	On- Site	Within Radius Only
VN-01908	Cultural Resource Assessment for At&t Fixed Wireless Services Facility No. Vc_043_a, Ventura Co.	2001	Duke, Curt	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-
VN-01909	Cultural Resource Assessment Cingular Wireless Facility No. Vy 057-02, Ventura Co.	2001	Duke, Curt	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-01910	Bridge Widening and Rail Installation on State Route 33, Ventura Co.	2000	Sriro, Adam	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-
VN-01911	San Buenaventura Mission Archaeological Excavations: Anno Domini Mcmxcvii	2000	Stickel, Gary E.	-	-	-	No	No	Yes	-	-	-	-	-		-	-	-
VN-02107	Photographic and Graphic Documentation of Mission San Buenaventura's Lavanderia (exposed Section Under the Peirano/Wilson Studion Building).	1997	Stickel, Gary E.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-02177	Cultural Resource Assessment Cingular Wireless Facility No. La 974-03 Ventura County, California	2001	Duke, Curt	-	-	-	-	-	-	No	No	Yes	-	-	-	-	-	-
VN-02179	Phase I Archaeological Assessment of 4454 Ventura Avenue Ventura County, Ca	2001	Romani, John F. and Toren, A. George	-	-	-	-	-	-	No	No	Yes	No	No	Yes	-	-	-
VN-02199	Phase I Archaeological Survey of Approximately 16 Acres for the Surfers Point Managed Shoreline Retreat Project City of San Buenaventura, Ventura County, California	2001	Maki, Mary K.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-02200	Records Search Results for Sprint Pcs Facility Vr54xc425a (the Underwater Technical Services Site), Located at 2055 N. Ventura Ave., Ventura in Ventura County, California	2001	Bonner, Wayne H.	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-
VN-02202	Negative Archaeological Survey Report of Approximately 1,800 Linear Feet, Stanley Ave. Widening Project, City of San Buenaventura, Ventura County, California	2002	Maki, Mary	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-
VN-02298	Archaeological Survey Report for the Southern California Edison Company Replacement of 18 Deteriorated Poles on the Santa Barbara-san Marcos-vegas 66kv, Storke 16kv, Fox 4kv, Braemer 4kv, Dorrance 4kv, Carpoil 16kv, Seacliff 16kv, and Copy 16kv Circuits,	2006	Jordan, Stacey C. and Cooley, Theodore G.	-	-	-	-	-	-	-	-	-	-	-	-	No	No	Yes
VN-02299	Archaeological Testing Report for the Rincon Point Restroom Replacement Project at Carpinteria State Beach	2004	Mealey, Marla M.	-	-	-	-	-	-	-	-	-	-	-	-	No	No	Yes
VN-02410	Cultural Resources Study for the Replacement of Thirteen Deteriorated Southern California Edison Utility Poles: Santa Clara-Ojai-Santa Barbara 66kv and Santa Clara-Ojai 66kv Circuits (gwo/jo: 4605-0081/2400), Santa Clara-casitas-tayshell 66kv Circuits	2006	McLean, Roderic	-	-	-	-	-	-	No	No	Yes	No	No	Yes	-	-	-
VN-02410	Cultural Resources Study for the Replacement of Thirteen Deteriorated Southern California Edison Utility Poles: Santa Clara-Ojai-santa Barbara 66kv and Santa Clara-ojai 66kv Circuits (gwo/jo: 4605-0081/2400), Santa Clara-casitas-tayshell 66kv Circuits	2006	McLean, Roderic	-	-	-	-	-	-	-	-	-	No	No	Yes	-	-	-
VN-02504	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project State of California: Volumes I and II	2006	Arrington, Cindy and Nancy Sikes	-	-	-	No	No	Yes	-	-	-	-	-	-	No	No	Yes
VN-02527	Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate Vn-0140-01 (McDonald's), 11444 North Ventura Avenue, Ventura, Ventura County, California	2006	Bonner, Wayne H.	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	-	-	-
VN-02528	Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate Vn-0017-01 (Ventura County Fair), 10 North Harbor, Ventura, Ventura County, California	2006	Bonner, Wayne H.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-02531	Phase I Cultural Resource Investigation, Proposed Development at the Northwest Corner of Main and Palm Streets, Ventura	2005	Greenwood, Roberta S. and Dana N. Slawson	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-02532	Archaeological Inventory 253 and 257 Cedar Street, Ventura	2005	Foster, John M.	No	No	Yes	No	No	Yes	No	No	Yes	-	-		-	-	-
VN-02534	Phase I Archaeological Survey of Approximately 3,300 Linear Feet for the Underground Utility District 15 Addition, City of San Buenaventura, Ventura County, California	2002	Maki, Mary K.	No	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes	-	-	-
VN-02536	Negative Archaeological Survey Report of 1500 Square Feet for the Thompson Boulevard Condominium Project, City of San Buenaventura, Ventura County, California	2004	Maki, Mary K.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-02537	An Extended Phase I Archaeological Program, Cedar Street Patio Housing, Ventura	2004	Foster, John M.	No	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes	-	-	-
VN-02538	A Cultural Resources Investigation and Architectural Evaluation of Properties Within the Proposed Artist's Live-work Affordable Housing Project Area in the City of Ventura, Ventura County, California	2005	McKenna, Jeanette A.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-02539	Archaeological Evaluation, Ventura County Museum of History and Art	2004	Foster, John M.	-	-	-	No	No	Yes	-	-	-	-	-	-	-	-	-
VN-02541	An Archaeological Reconnaissance of the 27.264 Acres at 2686 North Ventura Avenue, San Buenaventura, Ventura County, California	2003	Lopez, Robert	No	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes	-	-	-







DATA RELATED TO METHODOLOGY COMPONENT - ARCHIVAL RESEARCH, HISTORIC MAPS AND AERIAL PHOTOGRAPHS

VENTURA COMPRESSOR SITE

Historical Aerials Review

Year	Description
Site Location	
1947	The 1947 aerial shows the proposed Site Location cleared of vegetation with a series of long rectangular structures along the north and west edges. There are four smaller square structures along the eastern edge.
1967	The 1967 aerial only depicts the northern-most rectangular structures previously mentioned, the remainder of the area appears to be paved and is void of structures and vegetation.
1978	The 1978 aerial is of poor quality and there are no discernable changes since the 1967 aerial was taken.
1980	The 1980 aerial shows the southern half of the proposed Site location in use as a parking lot, as well as two additional structures near the northern boundary.
1994	The 1994 aerial only depicts two structures near the northern boundary, the remainder of the proposed Site Location is void of structures.
2005 -2018	No significant changes to the proposed Site Location.
Staging Area	
1947	The 1947 aerial shows the northern half of the proposed Staging Area as partially developed with circular structures. The southern half of the proposed Staging Area appears to be undeveloped and void of vegetation.
1967	The 1967 aerial shows the surface area of the southern half of the proposed Staging Area as disturbed. There is possibly a small square structure within the southeast corner of the proposed Staging Area.
1978	The 1978 aerial is of poor quality however the southern half of the proposed Staging Area appears partially developed.
1980	The 1980 aerial shows the circular structures as no longer present. There are four structures present within the proposed Staging Area, three small square structures along the northeast corner and one along the southeastern edge.
1984	The 1984 aerial shows the surface area of the proposed Staging area as covered, possibly paved. None of the structures present within the previous aerials are present. There are rows going east to west across the proposed Staging Area, however, due to the quality of the image, it cannot be discerned what the rows are.
1994	The 1994 aerial shows the proposed Staging Area in use as a storage yard.
2005-2018	No significant changes to the proposed Staging Area.

Topographic Maps Review

Year	Description
Site Location	
1904	The topographic map depicts the proposed Site Location as undeveloped and void of structures.
1910-1946	No significant changes to the proposed Site Location.
1952	The topographic map depicts a series of seven structures along the eastern edge and three larger rectangular structures along the northern edge of the proposed Site Location. The area is labeled as “Chrisman.”
1955	No significant changes to the proposed Site Location.
1961	The topographic map only shows a series of three structures along the eastern edge, and an orchard present in the southern half of the proposed Site Location.
1964	No significant changes to the proposed Site Location.
1966	The topographic map resembles the maps from 1952 through 1955, with no discernable changes.
1968-1972	No significant changes to the proposed Site Location.
2012	The topographic map only depicts structures of community or social significance (i.e.: schools and churches). No structures are within the proposed Site Location.
2015-2018	No significant changes to the proposed Site Location.
Staging Area	
1904	Proposed Staging Area is depicted as undeveloped, with a rail line to the west.
1910-1946	No significant changes to the proposed Staging Area.
1952	The topographic map depicts a cluster of six circular structures in the northern portion of the proposed Staging Area and the southern half as undeveloped.
1955	No significant changes to the proposed Staging Area.
1961 & 1964	The topographic map shows the proposed Staging Area as an orchard with a rail line to the west.
1966	The 1966 topographic map resembles the 1955 map, and depicts no significant changes to the proposed Staging Area.
1968 & 1972	No significant changes to the proposed Staging Area.
2012-2018	The topographic map only depicts structures of community or social significance (i.e.: schools and churches). No structures are depicted within the proposed Staging Area.

AVOCADO SITE

Historical Aerials Review

Year	Description
Site Location	
1947	The 1947 aerial shows the proposed Site Location as covered in vegetation.
1967-1978	Due to the quality of the aerial photographs, there are no discernable changes to the proposed Site Location
1980-2018	No significant changes to the proposed Site Location
Staging Area	
1947	The 1947 aerial shows the proposed Staging Area as undeveloped. There are tree lines along the southern and western borders. There is a road south of the proposed Staging Area.
1967	The 1967 aerial shows the road south of the proposed Staging Area as expanded and connecting to the Highway. The proposed Staging Area is undeveloped The southern end of the proposed Staging Area was been cleared of most small and large vegetation.
1978	The 1978 aerial is of poor quality and there are no discernable changes since the 1967 aerial was taken.
1980	The 1980 aerial shows the tree lines as having been removed and only a single tree within the southwest corner remains. The southern end of the proposed Staging Area is cleared of all vegetation.
1984	The proposed Staging Area is being used as an agricultural field. There once again is a tree line along the western and southern borders of the proposed Staging Area.
1994	The 1949 aerial shows additional trees within the southwest corner of the proposed Staging Area. There are no other significant changes.
2005	By 2005 the trees within the southwest corner of the proposed Staging Area have been removed and the proposed Staging Area's surface appears to be graded.
2009 & 2010	The proposed Staging Area is being used for Agricultural purposes.
2012	The proposed Staging Area is being used for Agricultural purposes and the trees along the western and southern borders have been removed.
2014 & 2016	There are no significant changes to the proposed Staging Area
2018	The proposed Staging Area is being used for agricultural purposes and is covered in agricultural covers.
Potential Access Road (Taylor Ranch Road)	
1947-2018	There have been no significant changes to the Potential Access Road, Taylor Ranch Road.
Potential Pipeline	
1947-2005	The Potential Pipeline is undeveloped.
2009-2018	The area on the Potential Pipeline outside of the proposed Site location is being used for agricultural purposes

Topographic Maps Review

Year	Description
Site location	
1904-2018	No significant changes to the proposed Site Location
Staging Area	
1904-1946	The proposed Staging Area is depicted as undeveloped
1952 &1955	The proposed Staging Area is depicted as undeveloped. The road south of the proposed Staging Area is labeled as Highway 101 and as 3 lanes. There is also a road west of the proposed Staging Area.
1961 & 1964	The proposed Stating Area is depicted as undeveloped. The road west of the proposed Staging Area is not depicted on the map
1966-1972	The 1966 to 1972 topographic maps depict the same information as the 1952 and 1955 maps
2012-2018	There are no changes to the proposed Staging Area depicted.
Potential Access Road (Taylor Ranch Road)	
1904-1946	The Potential Access Road is depicted as east of its current location and runs north to south until it turns west into Canada del Diablo
1952, 1955, 1966-1972	The Potential Access Road is depicted as it currently is, but with a fork branching off into the proposed Staging Area
1964 & 1964	The Potential Access Road is depicted as east of its current location and runs north to south until it turns west into Canada del Diablo
2012 & 2018	The Potential Access Road is depicted as it is currently.
2015	The Potential Access Road is not depicted on the topographic map
Potential Pipeline	
1904-2018	The Potential Pipeline area is depicted as undeveloped



VENTURA STEEL SITE

Historical Aerials Review

Year	Description
Site Location	
1947	The 1947 aerial shows East Shell Road and Hartman Turnoff as present. There appears to be some activity within the proposed Project Location; however due to the quality of the image, it is not discernable on whether there are structures present or if the proposed Project Location is being used for storage.
1967	The 1967 aerial depicts the proposed Site Location as having one permanent structure in the southwest corner and approximately three-quarters of the proposed Project Location appears to be in use as a storage yard. Approximately one-quarter section of the eastern portion of the proposed Project Location is partially covered with small vegetation
1978-1994	No significant changes to the proposed Site Location, with the exception of the small vegetation within the approximate one-quarter section of the eastern portion of the proposed Project Location has been removed.
2005-2018	No significant changes to the proposed Site Location.
Staging Area	
1947	The 1947 aerial depicts the proposed Staging Area as void of structures and appears to have been graded.
1967	The 1967 aerial shows a series of 12 cisterns in the northeastern corner of the proposed Staging Area, as well as additional ancillary structures along the southern edge. It appears to be paved.
1978	The 1978 aerial is of poor quality and there are no discernable changes since the 1967 aerial was taken.
1980	The 1980 aerial shows only nine of the cisterns, as well as an increase in structures along the southern edge of the proposed Staging Area.
1994	The 1994 aerial does not show any cisterns, it appears the proposed Staging Area is in use as a storage yard.
2005-2018	No significant changes to the proposed Staging Area.
Potential Pipeline	
1947	The 1947 aerial depicts the western half of the proposed Potential Pipeline following North Ventura Avenue from West McFarlane Drive to Shell Road, all of which are present. The eastern half is undeveloped.
1967	The 1967 aerial depicts no significant changes to the western half of the proposed Potential Pipeline. The eastern half appears to intersect an oil facility along Shell Road East.
1978	No significant changes to the proposed Potential Pipeline.
1980	The 1980 aerial no longer depicts the oil facility along Shell Road East along the eastern half of the proposed Potential Pipeline.
1994-2018	No significant changes to the proposed Potential Pipeline.

Topographic Maps Review

Year	Description
Site Location and Staging Area	
1904-1946	The proposed Site Location and proposed Staging Area are undeveloped.
1952 & 1955	The proposed Site Location is partially developed with seven circular structures. The proposed Staging Area is developed with twelve circular structures and two rectangular structures.
1961 & 1964	The 1961 and 1964 topographic maps show five circular structures scattered between Shell Road and Hartman Turnoff, as well as circular structures south of Shell Road.
1966	The 1966 topographic map depicts the same information as the 1952 and 1955 maps.
1968 & 1972	There are no significant changes to the proposed Site Location since the 1966 topographic map was created. There are an additional three square structures within the proposed Staging Area.
2012-2018	Shell Road, Hartman Turnoff, and Ventura Avenue are depicted. There is no other development depicted within the proposed Site Location and proposed Staging Area.
Potential Pipeline	
1904-1946	Ventura Avenue has been present since at least 1904. West McFarlan Drive was not present. The Potential Pipeline route east of the City of Ventura was depicted as undeveloped.
1952-1972	West McFarlan Drive is present. The Potential Pipeline route east of the City of Ventura and south of Cañada San Joaquin is undeveloped. There are scattered oil wells east of the City of Ventura and north of Cañada San Joaquin. It is difficult to discern if any of the oil wells overlap the proposed Pipeline route.
2012-2018	The Potential Pipeline Route east of the City of Ventura is primarily undeveloped, with the exception of School Canyon Road and Fire Road.

## DEVILS CANYON ROAD SITE

### Historical Aerials

Year	Description
Site Location	
1947-2018	The proposed Site Location has been developed for industrial purposes with Devil's Canyon Road intersecting the proposed Site location. By 1978 the amount of structures within the proposed Site Location has decreased, but the area remained developed
Staging Area	
1947	The surface area of the proposed Staging Area appears disturbed. There are six small circular tanks within the northwest section of the proposed Staging Area and a road running north to southwest west of the tanks. The road connects to Ventura Avenue.
1967	Five more small circular tanks have been added directly east of the existing tanks.
1978-1980	With the exception of the removal of small vegetation, there are no significant changes to the proposed Staging Area.
1994	The tanks have been removed and the road intersecting the proposed Staging Are is no longer visible.
2005-2018	There are no significant changes to the proposed Staging Area from how it appears currently
Potential Access Road (Mill Canyon Road and Devil's Canyon Road)	
1947-2018	There are no significant changes to the Potential Access Road
Potential Pipeline	
1947-2018	There are no significant changes to the Potential Pipeline route that runs along Devil's Canyon Road, north of where Devil's Canyon Road connects to Conoco Oil Road.
1947	The section of the Potential Pipeline route that runs south where Devil's Canyon Road connects to Conoco Oil Road appears to be in a wash area from the Ventura River.
1967	There is a road going south from where Devil's Canyon Road connects to Conoco Oil Road, however it does not follow the contours of the current road. The area on either side of the road is undeveloped and mostly covered in small vegetation.
1978 & 1980	The vegetation east of the road appears to be mostly cleared.
1994-2018	There are no significant changes to the Potential Pipeline route from how it appears currently.

### Topographic Maps

Year	Description
Site Location	
1904-1946	Devil's Canyon Road is present however it is not depicted as straight as the current road. The proposed Site Location east and west of Devil's Canyon Road is undeveloped.
1952 & 1955	There are seven circular structures depicted within the proposed Site Location, west of Devil's Canyon Road.
1961 & 1964	There are six circular structures depicted within the proposed Site Location, west of Devil's Canyon Road.
1966-1972	There are seven circular structures depicted within the proposed Site Location, west of Devil's Canyon Road.
2012-2018	No development is depicted within the proposed Site Location
Staging Area	
1904-1946	Ventura Avenue, a rail line, and the Ventura River are depicted as running parallel to one another. The rail line is between the Ventura River and Ventura. There is no other development depicted within the area surrounding the proposed Staging Area.
1952 & 1955	The rail line is depicted where the current Ventura River Trail is located. There is a road along the western edge of the proposed Staging Area and there are six circular structures within the proposed Staging Area.
1961 & 1964	Ventura Avenue, a rail line, and the Ventura River are depicted however the prosed Staging Area is not decipherable.
1966-1972	The proposed Staging Area appears as it did in the 1952 and 1955 topographic maps
2012-2018	No development is depicted within the proposed Staging Area.
Potential Access Road (Mill Canyon Road and Devil's Canyon Road)	
1904-1946	There are roads where Mill Canyon Road and Devil's Canyon Road are located, however they are not depicted as straight as the current roads.
1952-2018	There are no significant changes to the Potential Access Road
Potential Pipeline	
1904-1946	There is a road depicted where Devil's Canyon Road is currently, however it runs parallel to the Ventura River and appears to connect with Taylor Ranch Road. The Road connects with a road running east to west through Canada del Diablo. The area between Devil's Canyon Road and the Ventura River is undeveloped.
1952-1972	Devil's Canyon Road and where it connects to Conoco Oil Road appears as it does currently. The area south of where Devil's Canyon Road connects to Conoco Oil Road is undeveloped and a tributary of the Ventura River runs parallel to Conoco Oil Road
2012 & 2018	The road running south of where Devil's Canyon Road connects to Conoco Oil Road is depicted and is intersected by a tributary of the Ventura River.
2015	The road running south of where Devil's Canyon Road connects to Conoco Oil Road is not depicted.

COUNTY LINE SITE

Historical Aerials Review

Year	Description
Site location and Staging Area	
1947-1994	The proposed Site Location and the proposed Staging Area are being used as an orchard.
2002	Most of the trees within the proposed Site Location have been removed, the proposed Staging Area remains as an orchard
2005	There is now a road trending northeast to southwest intersecting the proposed Site Location and proposed Staging Area. The road connects to Avocado Hill Road.
2009	The remaining trees within the proposed Site Location and most of the trees within the proposed Staging Area have been removed. The road intersecting the proposed Site Location now connects to the road boarding the western end of the proposed Staging Area and proposed Site Location
2010-2014	No significant changes to the proposed Site Location or proposed Staging Area
2016	The remaining orchard trees within the proposed Staging area have been removed
2018	The proposed Staging Area appears to be graded. There are no other significant changes.
Potential Access Road	
1947-2018	There are no significant changes to the Potential Access Road
Potential Pipeline	
1947-2018	The northern section of the Potential Pipeline follows Rincon Creek. Since 1947 Rincon Creek has had no significant changes and has been surrounded by a tree line and orchards. In 2005 there was a decrease in trees along the edge of Rincon Creek.
1947-2018	There are no significant changes to the southern section of the Potential Pipeline that does not intersect the proposed Site Location and proposed Staging Area.

Topographic Maps Review

Year	Description
Site Location and Staging Area	
1904-1946	The topographic maps depict Rincon Creek running adjacent and overlapping Rincon Road and the road connecting Rincon Road to Avocado Hill Road. The proposed Site Location and proposed Staging Area are depicted as undeveloped.
1953-2000	The topographic maps depict the proposed Site Location and proposed Staging Area as an orchard.
2012-2018	The topographic maps show the proposed Site Location and proposed Staging Area as covered in vegetation. Avocado Hill Road is not depicted on the 2015 topographic map.
Potential Access Road	
1904-2018	There are no significant changes to the Potential Access Road shown within the topographic maps
Potential Pipeline	
1904-1946	The topographic maps depict Rincon Creek running adjacent and overlapping Rincon Road and the road connecting Rincon Road to Avocado Hill Road. The remaining areas of the Potential Pipeline are undeveloped.
1953-2002	The Potential Pipeline sections that are not within existing roads are covered by orchards
2012-2015	The Potential Pipeline sections that are not within existing roads are covered by vegetation

## DATA RELATED TO METHODOLOGY COMPONENT – NATURAL LANDSCAPE SETTING

### VENTURA COMPRESSOR SITE ENVIRONMENTAL SETTING

The potential proposed Project site is located on the western edge of the City of Ventura, within Ventura County, California. The 8.42-acre parcel is currently developed and in use as the Ventura Compressor Station. It is generally flat with an average elevation of 65’ amsl. The proposed potential Project site is located approximately 350 meters east of the Ventura River, which flows generally north to south from Matilija Creek of the Santa Ynez Mountains into the Pacific Ocean. It is situated approximately 2.6 miles north of the Pacific Ocean and approximately 3.8 miles south of the Santa Ynez Mountains. Soils are comprised of Anacapa sandy loam found at 2 to 9 percent slopes. The series profile is as follows: 0 to 35 inches of sandy loam, and 35 to 60 inches of stratified coarse sandy loam to loam.

### AVOCADO SITE ENVIRONMENTAL SETTING

The 15.06-acre parcel is currently undeveloped and located near the base of the southern Santa Ynez Mountains within Ventura County, California. The proposed potential Project site is generally northeastern sloping with an elevation ranging from 720’ to 380’ amsl. It is situated approximately 2.5 miles south of the Santa Ynez Mountains and approximately 600m west of the Ventura River, which flows generally north to south from Matilija Creek of the Santa Ynez Mountains into the Pacific Ocean. The potential site is located approximately 1.5 miles north of the Pacific Ocean, and the proposed potential staging area is located less than 200 meters north of the Pacific Ocean. Soils within the potential site are comprised of a mixture of the following:

- Huerhuero very fine sandy loam, 9 to 15 percent slopes, eroded: Profile consisting of 0 to 15 inches of very fine sandy loam, 15 to 29 inches of clay, and 29 to 57 inches of stratified sandy loam to clay loam
- Malibu loam, 15 to 30 percent slopes, eroded: Profile consisting of 0 to 14 inches of loam, 14 to 23 inches of clay, and 23 to 33 inches of un-weathered bedrock
- San Benito clay loam, 30 to 50 percent slopes, eroded: Profile consisting of 0 to 25 inches of clay loam, 25 to 60 inches of clay loam, and 60 to 79 inches of bedrock
- San Benito clay loam, 50 to 75 percent slopes: Profile consisting of 0 to 25 inches of clay loam, 25 to 45 inches of clay loam, and 45 to 79 inches of bedrock

### VENTURA STEEL SITE ENVIRONMENTAL SETTING

The 10-acre parcel is located just north of the City of Ventura within Ventura County, California. The proposed potential Project site is generally flat with an average elevation of 170’ amsl. Is it located approximately 600 meters east of the Ventura River, which flows generally north to south from Matilija Creek of the Santa Ynez Mountains into the Pacific Ocean. The potential site is situated approximately 3 miles north of the Pacific Ocean and approximately 1.75 miles south of the Santa Ynez Mountains. Soils are comprised of Sorrento loam found at 2 to 9 percent slopes. The series profile is as follows: 0 to 12 inches of loam, 12 to 62 inches of silty clay loam, and 62 to 72 inches of sandy loam.

### DEVILS CANYON ROAD SITE ENVIRONMENTAL SETTING

The 12.88-acre parcel is located near the base of the southern Santa Ynez Mountains within Ventura County, California. The proposed potential Project site is currently developed as an energy facility. The site is generally flat with an average elevation of approximately 120’ amsl. It is located less than 150 meters east of the Ventura River, which flows generally north to south from Matilija Creek of the Santa Ynez Mountains into the Pacific Ocean. The potential site is situated approximately 2.3 miles north of the Pacific Ocean and approximately 1.2 miles southeast of the Santa Ynez Mountains. Soils are comprised of Sorrento loam found at 2 to 9 percent slopes. The series profile is as follows: 0 to 12 inches of loam, 12 to 62 inches of silty clay loam, and 62 to 72 inches of sandy loam.

### COUNTY LINE SITE ENVIRONMENTAL SETTING

The 12.33-acre parcel is currently undeveloped and located near the western boundary of Ventura County, California. The proposed potential Project site is generally westward sloping with an elevation ranging from 140’ to 288’ amsl. It is situated approximately 820 meters north of the Pacific Ocean and approximately 1.3 miles south of the Santa Inez Mountain Range. Soils are comprised of a mixture of the following:

- Malibu loam, 15 to 30 percent slopes, eroded: Profile consisting of 0 to 14 inches of loam, 14 to 23 inches of clay, and 23 to 33 inches of un-weathered bedrock
- Malibu loam, 30 to 50 percent slopes: Profile consisting of 0 to 14 inches of loam, 14 to 23 inches of clay, and 23 to 33 inches of unweathered bedrock
- Mocho loam, 2 to 9 percent slopes: Profile consisting of 0 to 60 inches of loam
- Sorrento loam, 2 to 9 percent slopes: Profile consisting of 0 to 12 inches of loam, 12 to 62 inches of silty clay loam, and 62 to 72 inches of sandy loam

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## **Attachment 3**

### Land Use and Zoning Maps



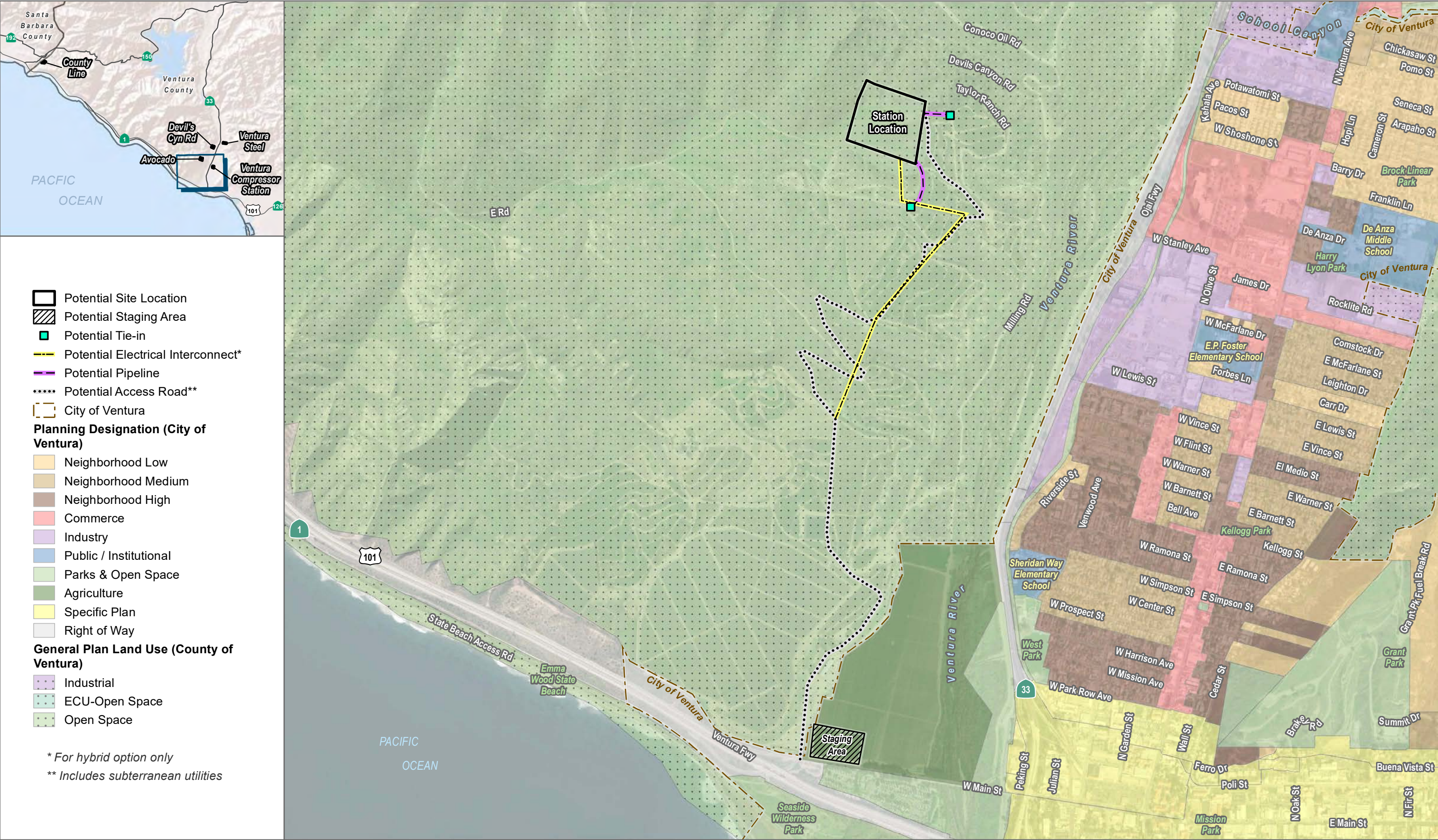












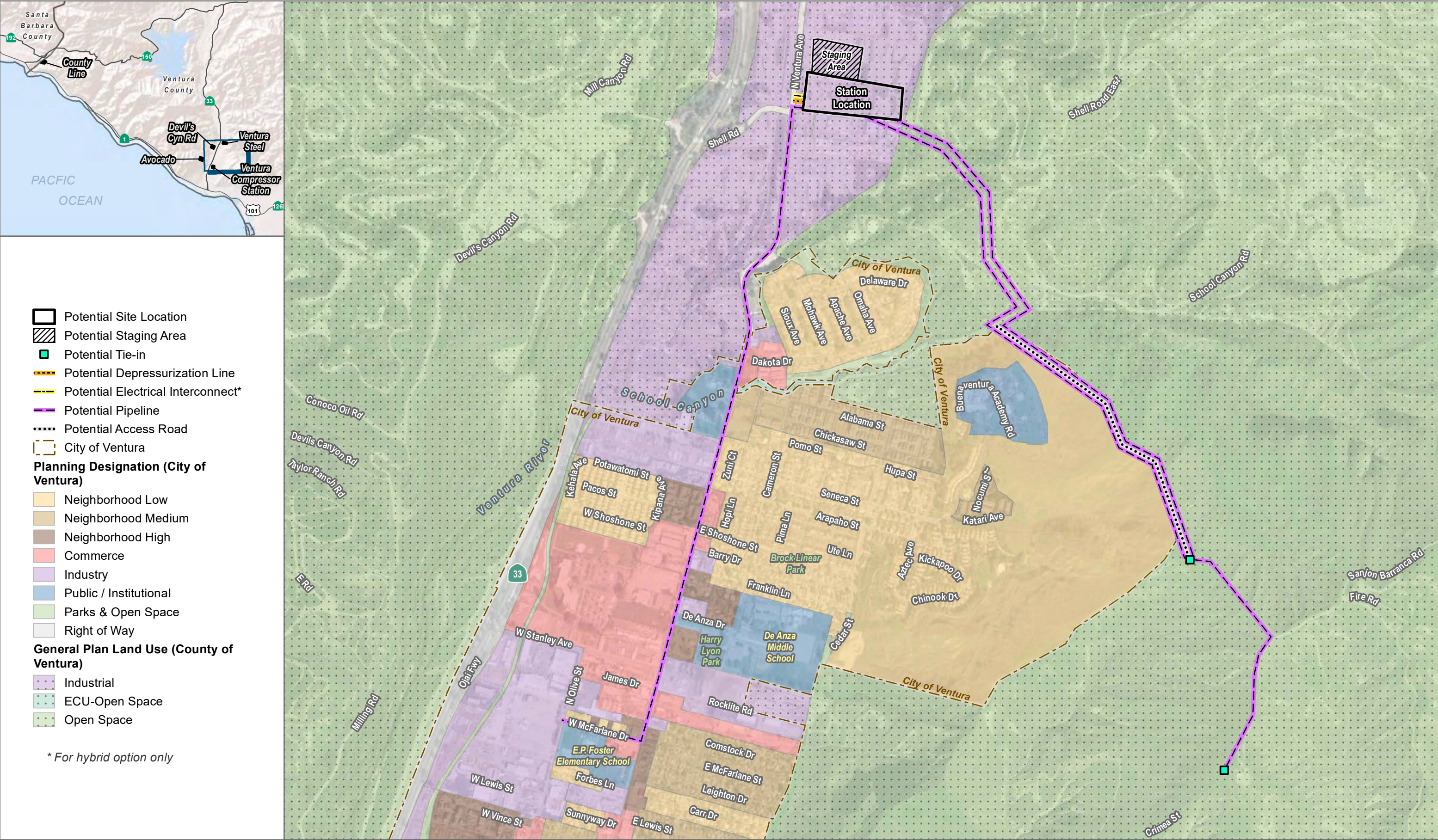
SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE LU-1B**  
**Land Use - Avocado Site**  
Ventura Compressor Station Modernization Project







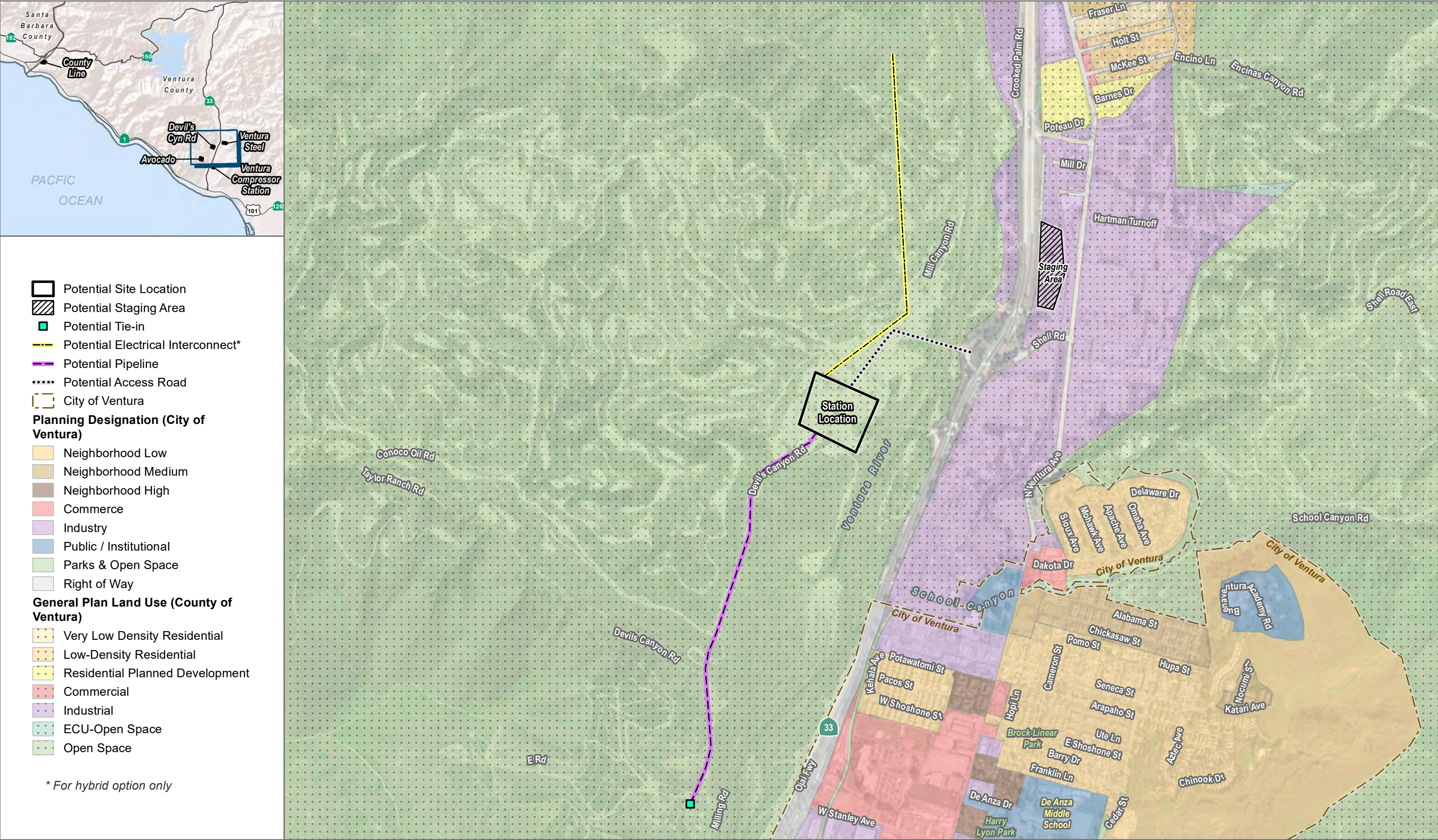


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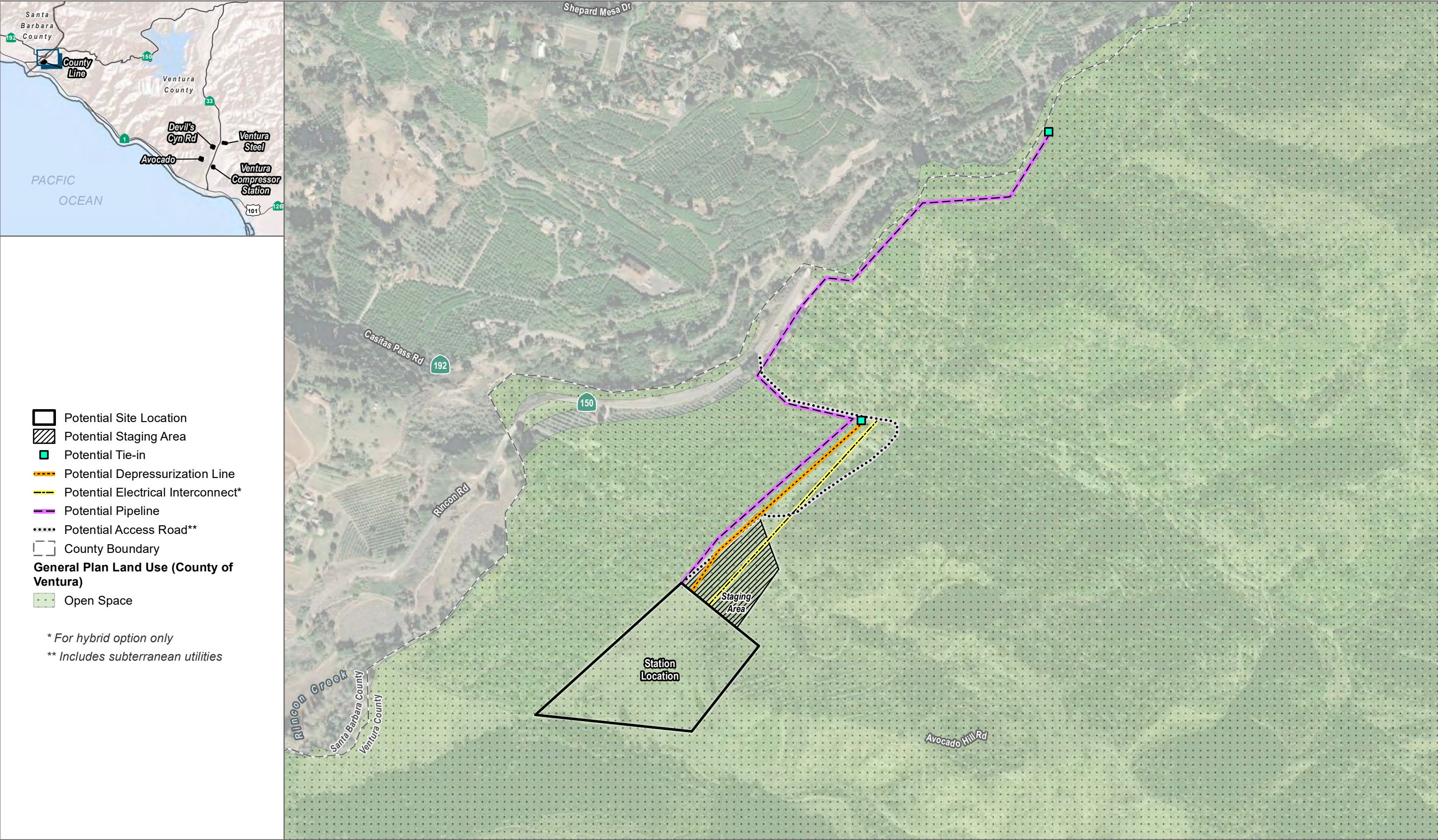
SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE LU-1D**  
Land Use - Devil's Canyon Road Site  
Ventura Compressor Station Modernization Project









SOURCE: Esri and Digital Globe, Open Street Map



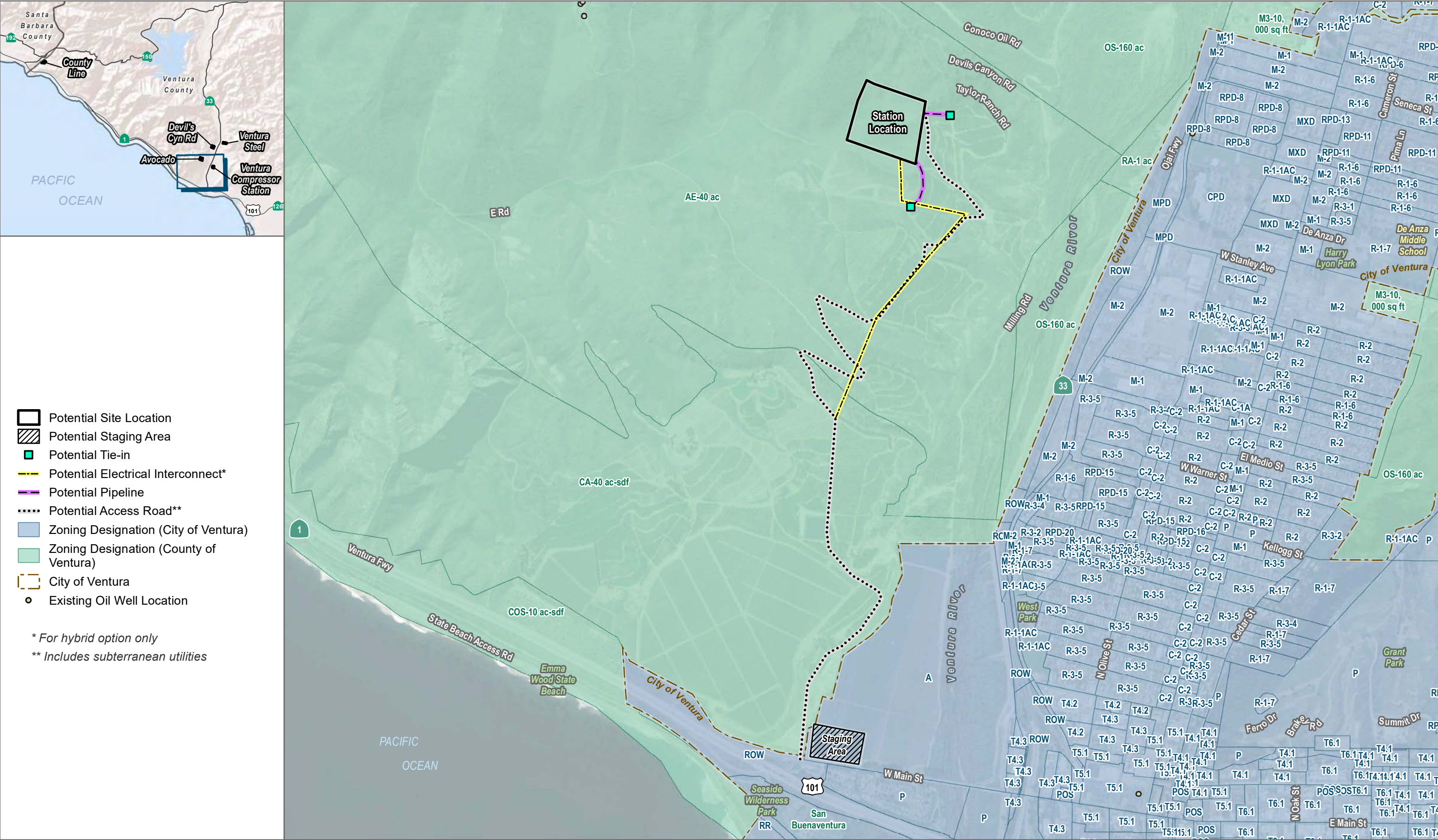








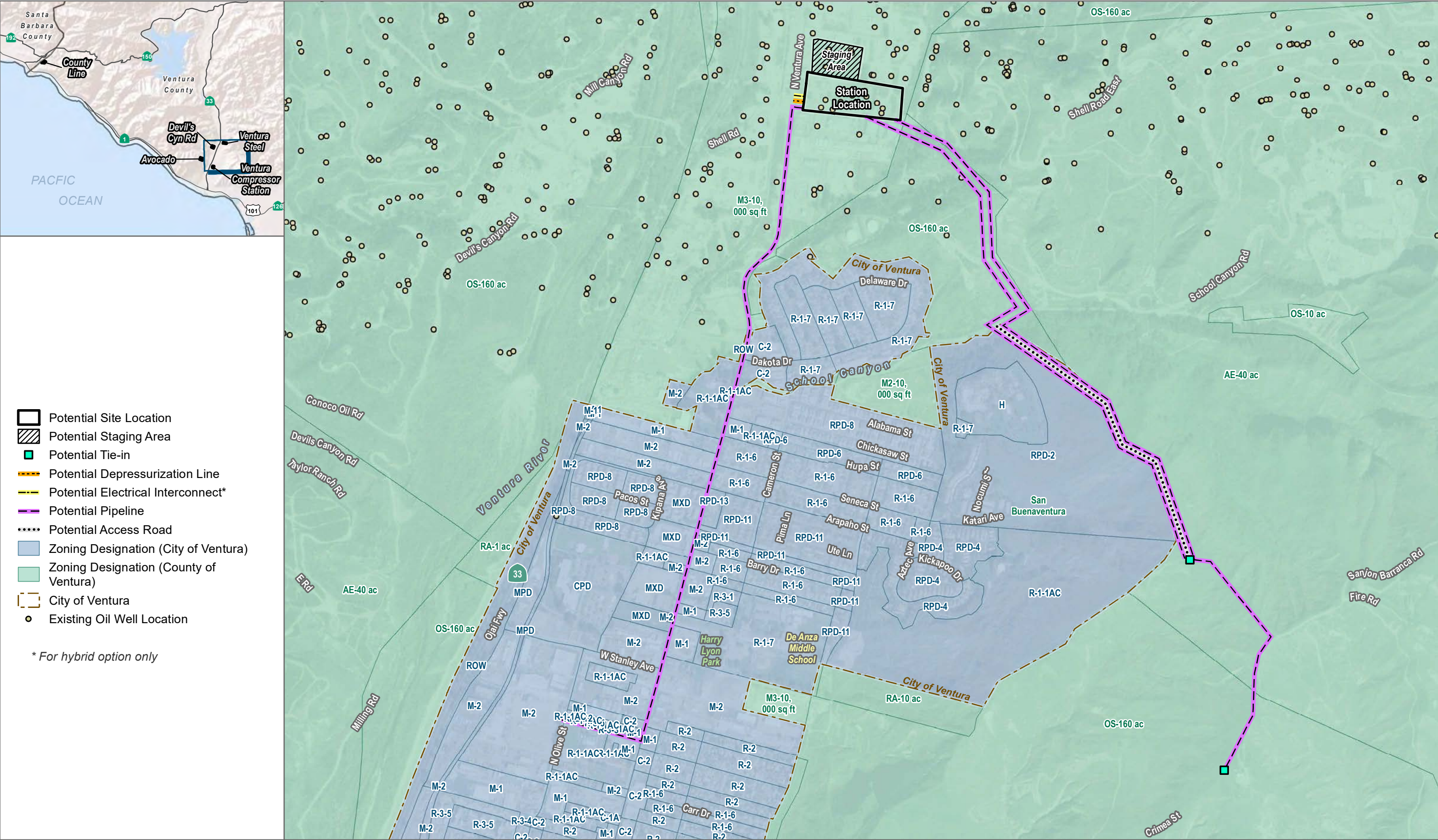




SOURCE: Esri and Digital Globe, Open Street Map







SOURCE: Esri and Digital Globe, Open Street Map

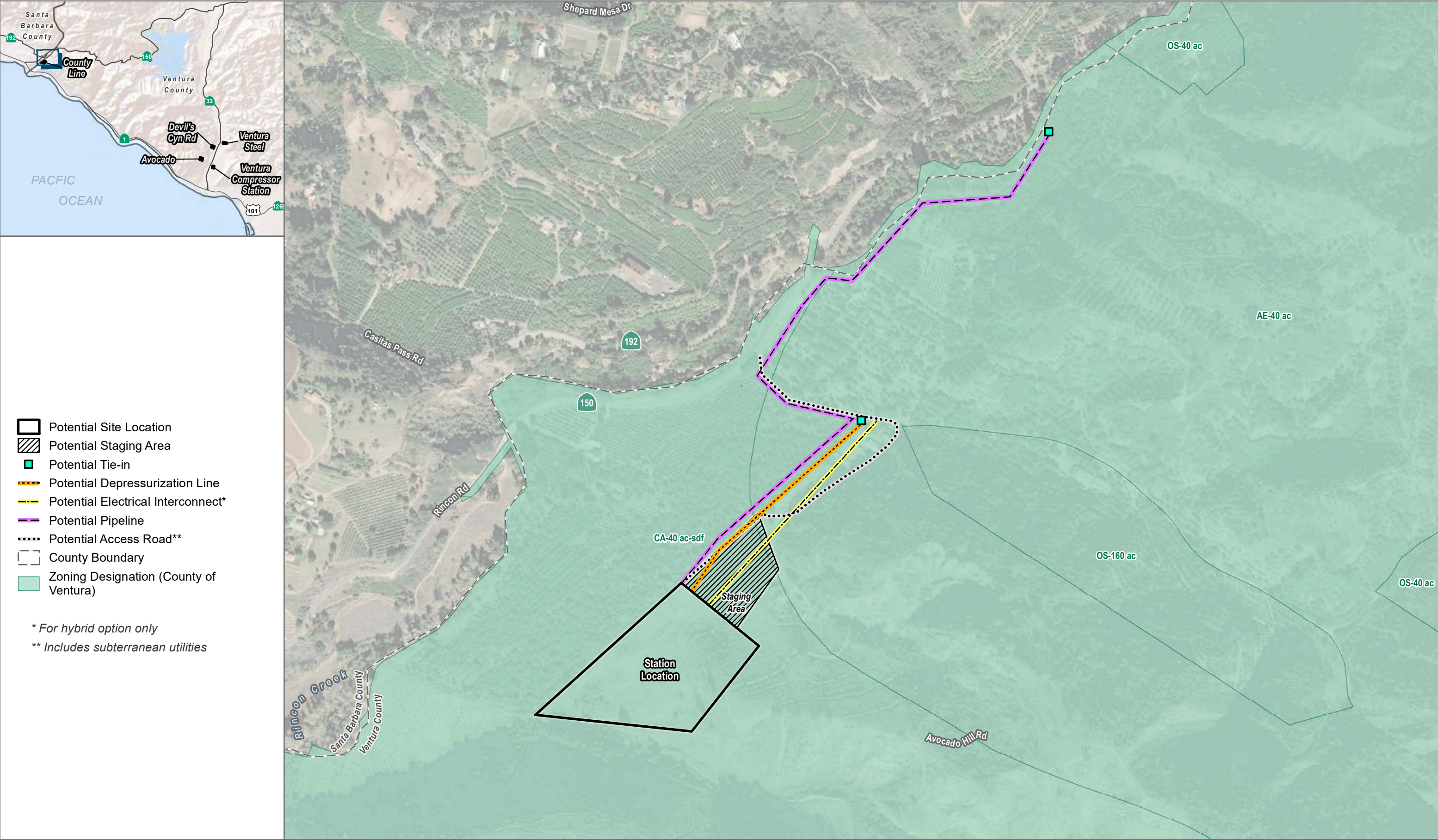












SOURCE: Esri and Digital Globe, Open Street Map



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# **Attachment 4**

## Natural Resources Analysis



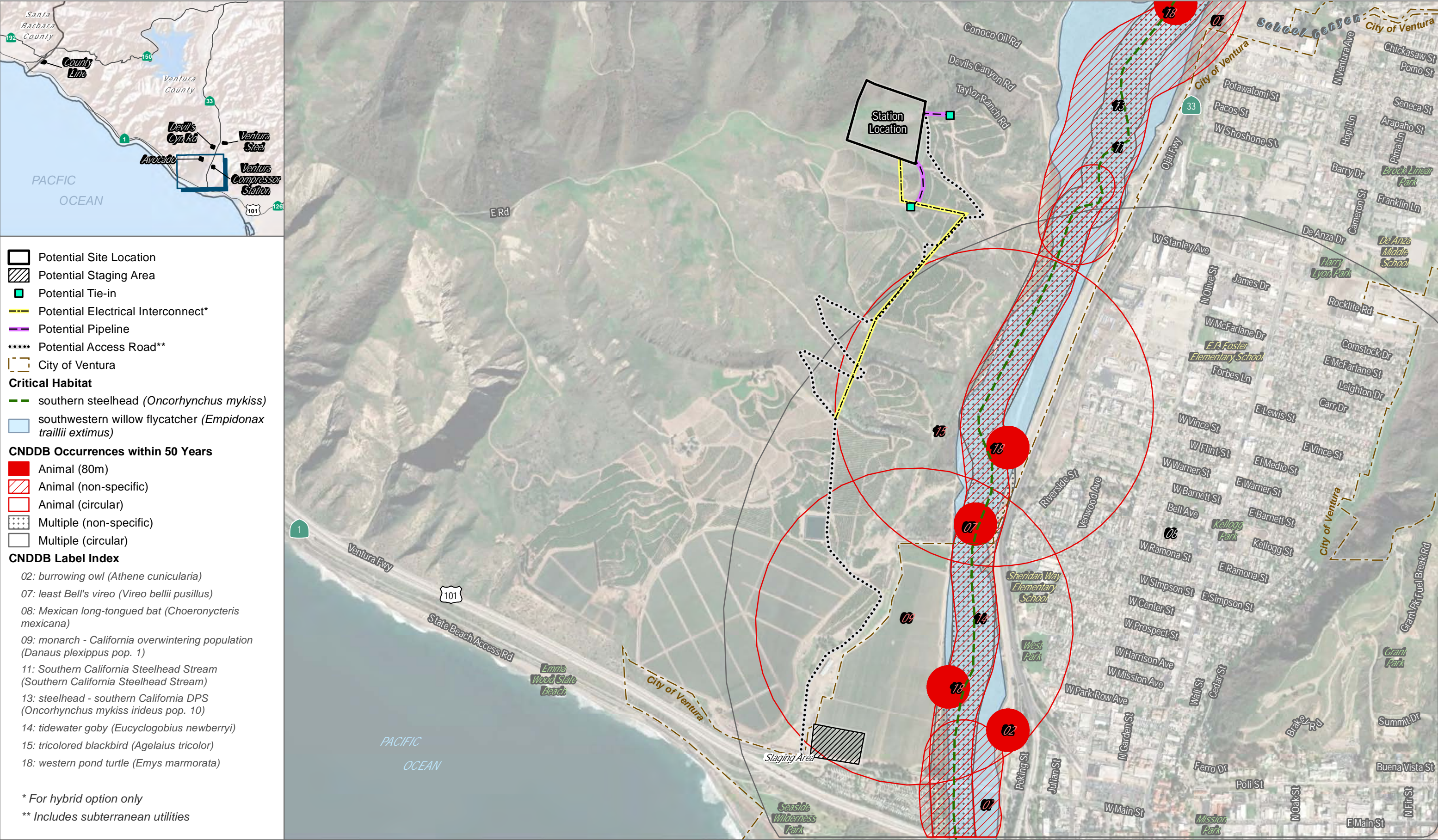












SOURCE: Esri and Digital Globe, Open Street Map

FIGURE NR-1B  
CNDDDB and Critical Habitat - Avocado Site  
Ventura Compressor Station Modernization Project













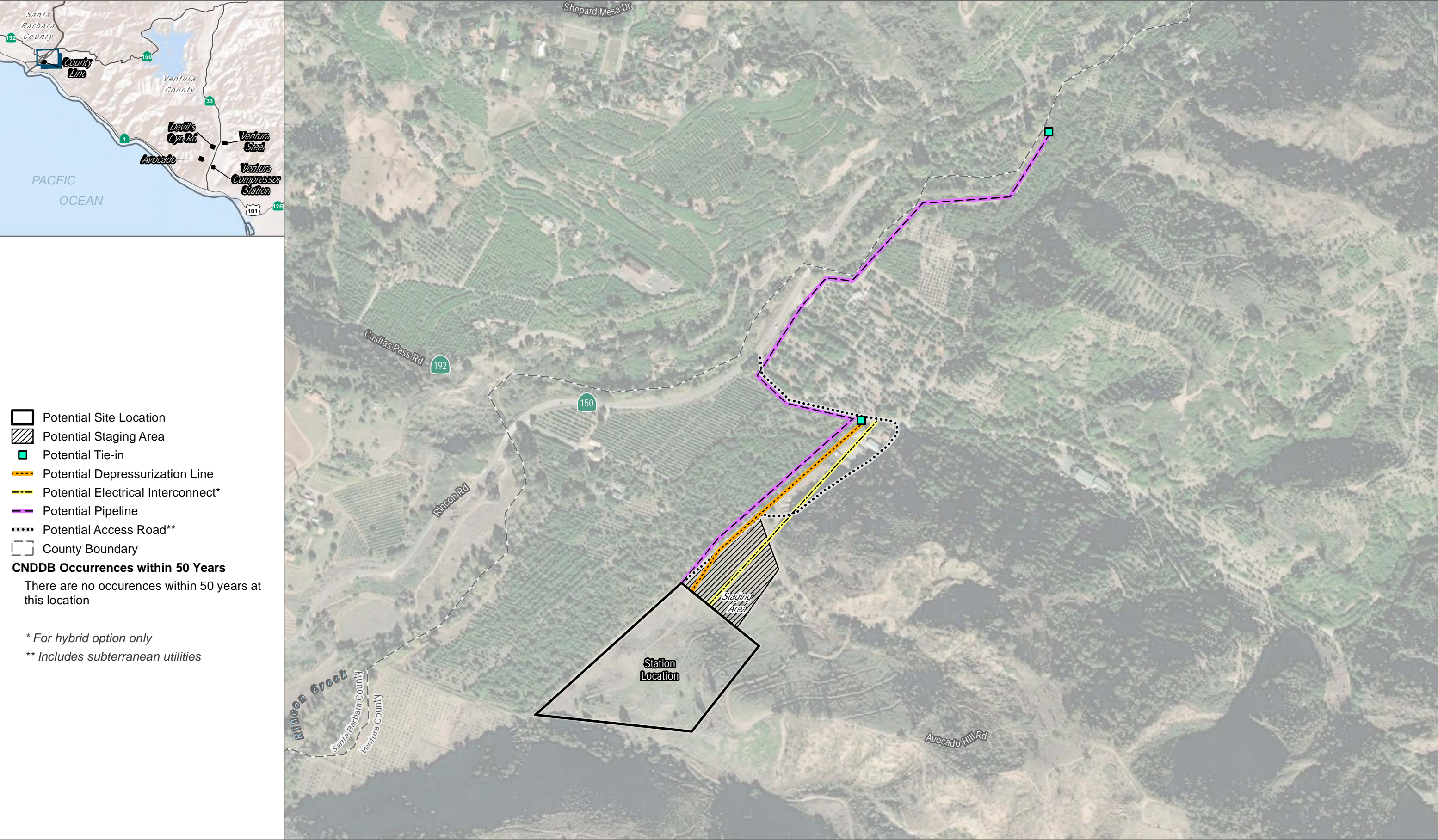












SOURCE: Esri and Digital Globe, Open Street Map













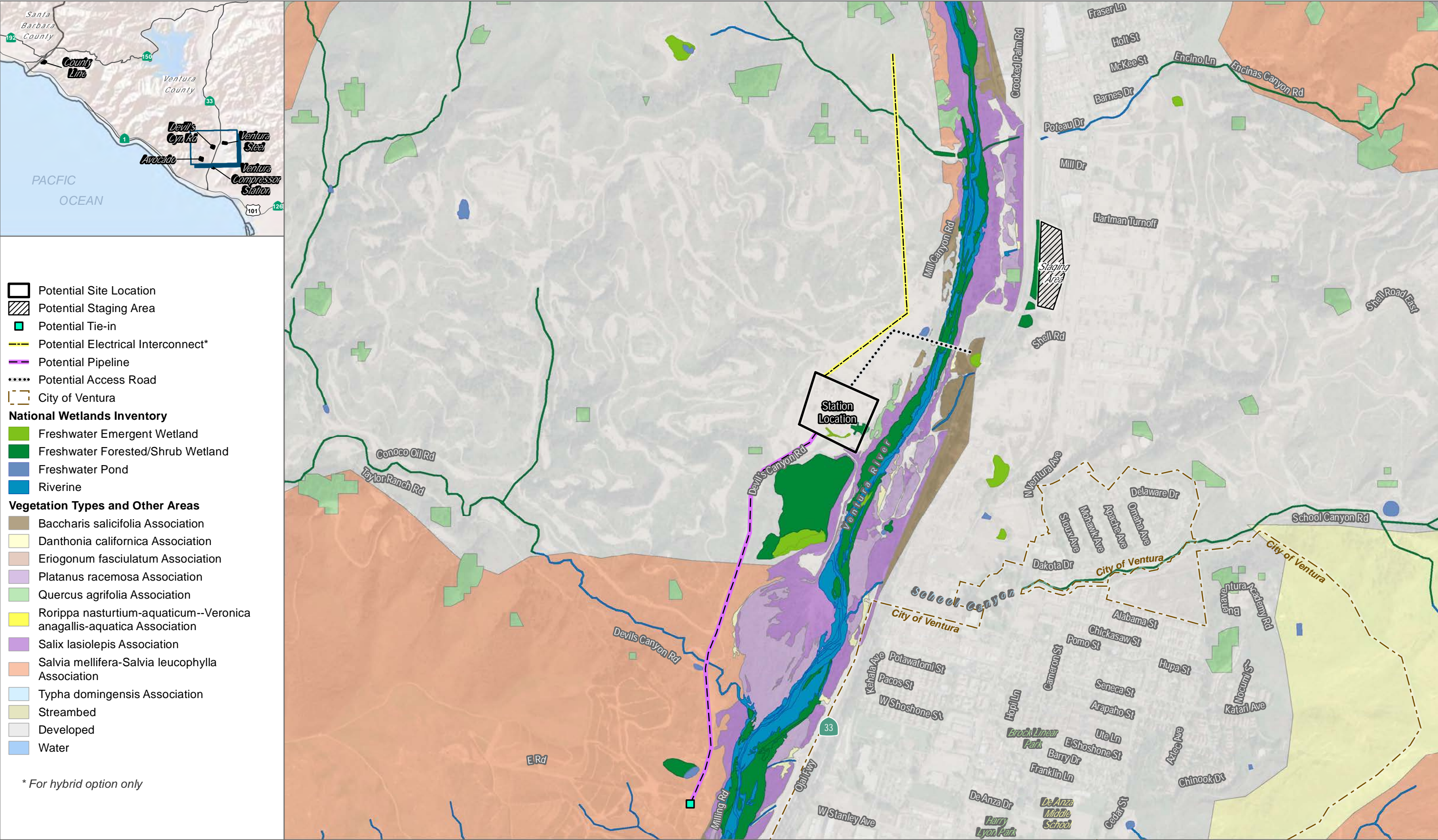










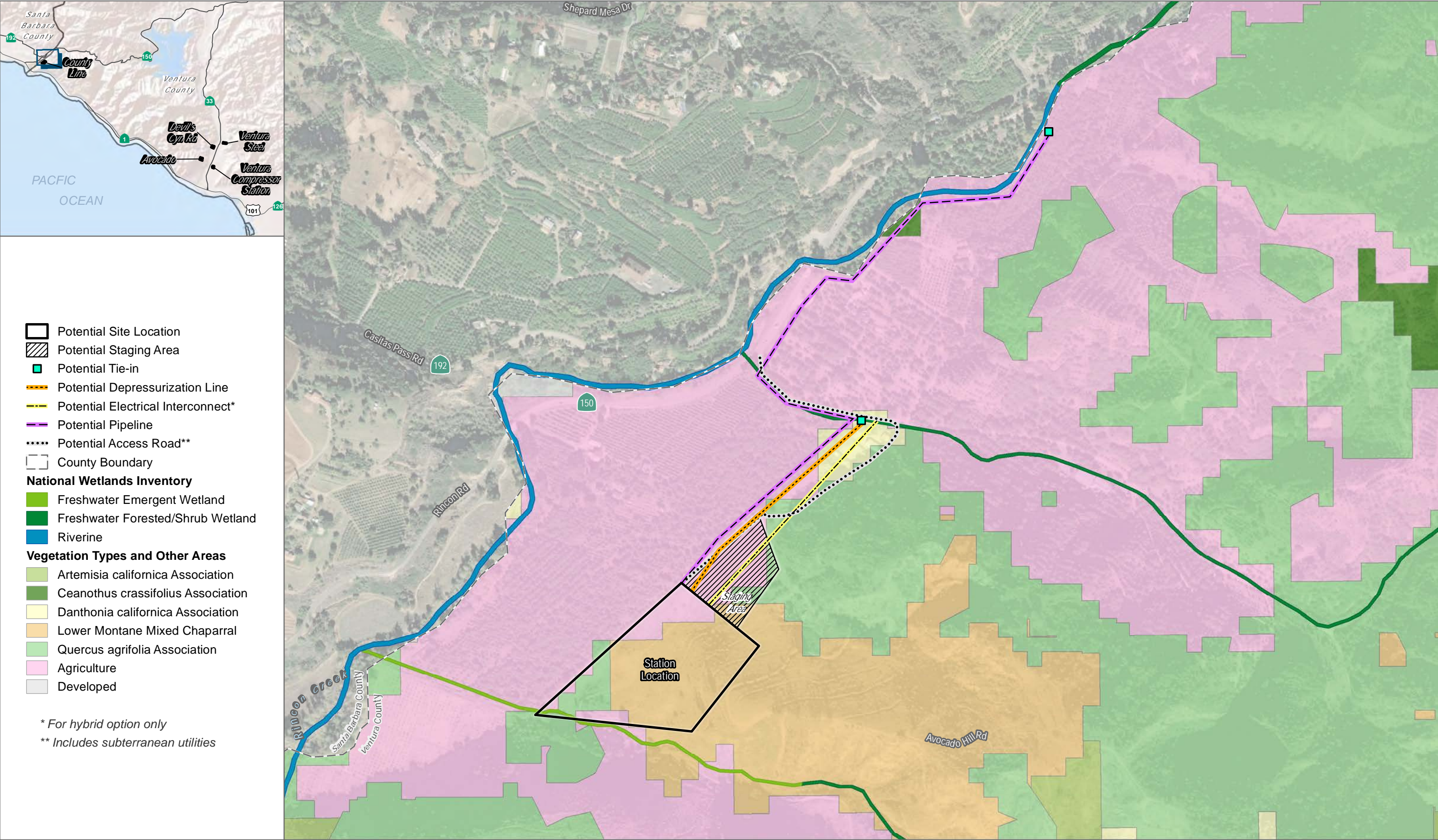


SOURCE: Esri and Digital Globe, Open Street Map

FIGURE NR-2D  
NWI (Wetlands) and Ventura County Vegetation - Devil's Canyon Road Site  
Ventura Compressor Station Modernization Project







SOURCE: Esri and Digital Globe, Open Street Map





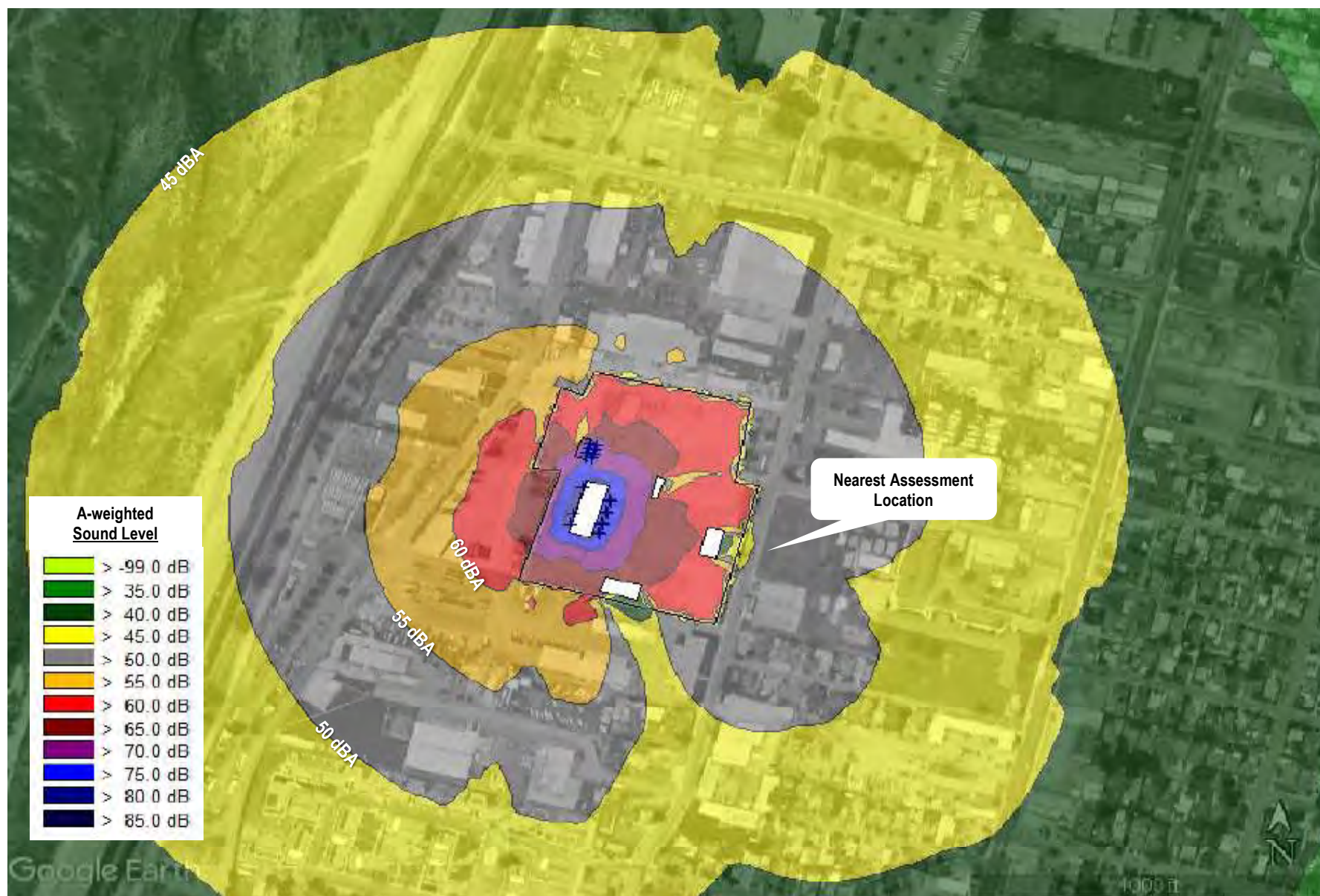


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# **Attachment 5**

## Noise Modeling Output Figures





SOURCE: Google 2021; Dudek 2022

**DUDEK**



0 154 308 Feet

**FIGURE 1**

**Existing Site - Natural Gas Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project







SOURCE: Google 2021; Dudek 2022

**DUDEK**



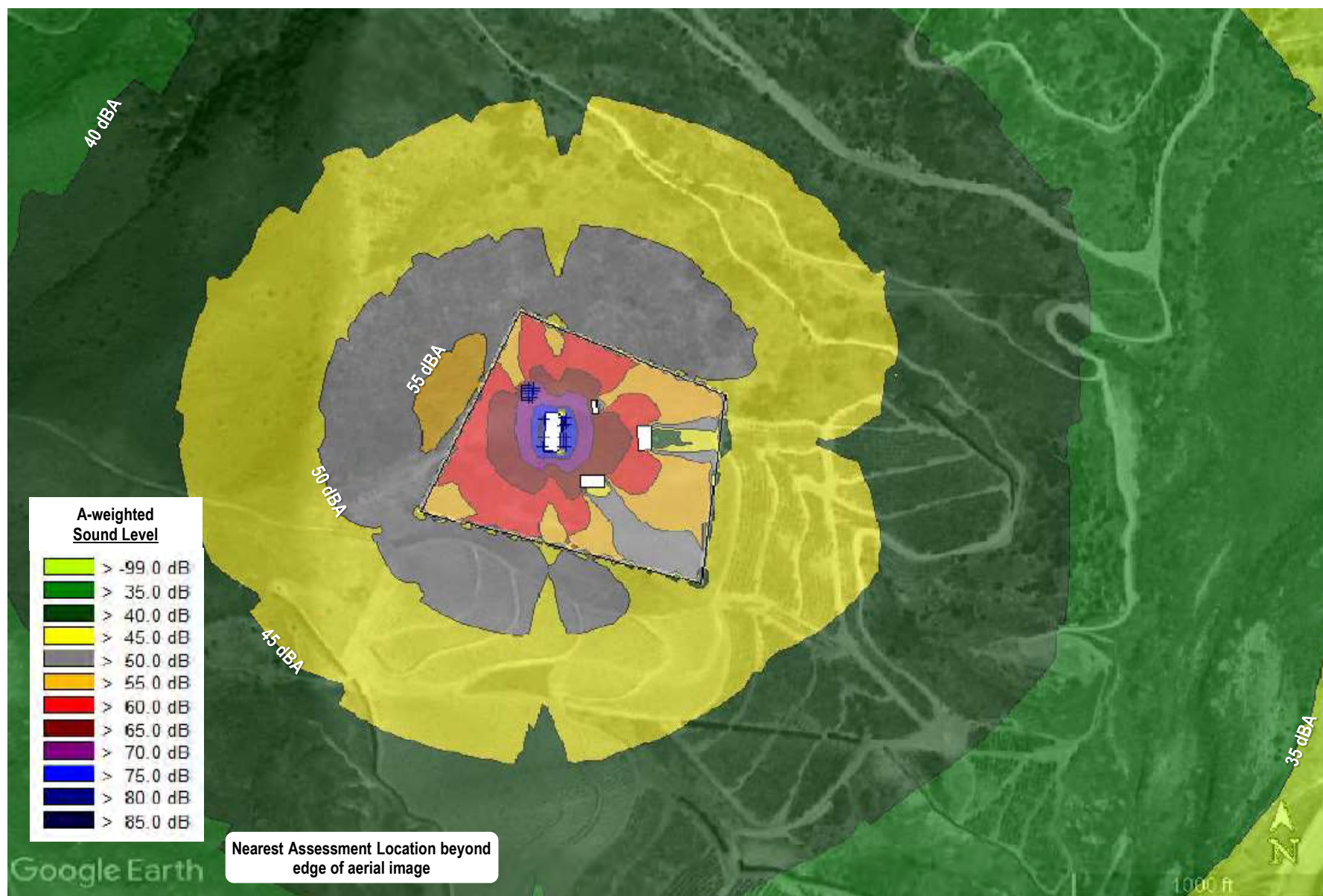
0 154 308 Feet

**FIGURE 2**

**Existing Site - Hybrid Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project





SOURCE: Google 2021; Dudek 2022

**DUDEK**



0 216.5 433 Feet

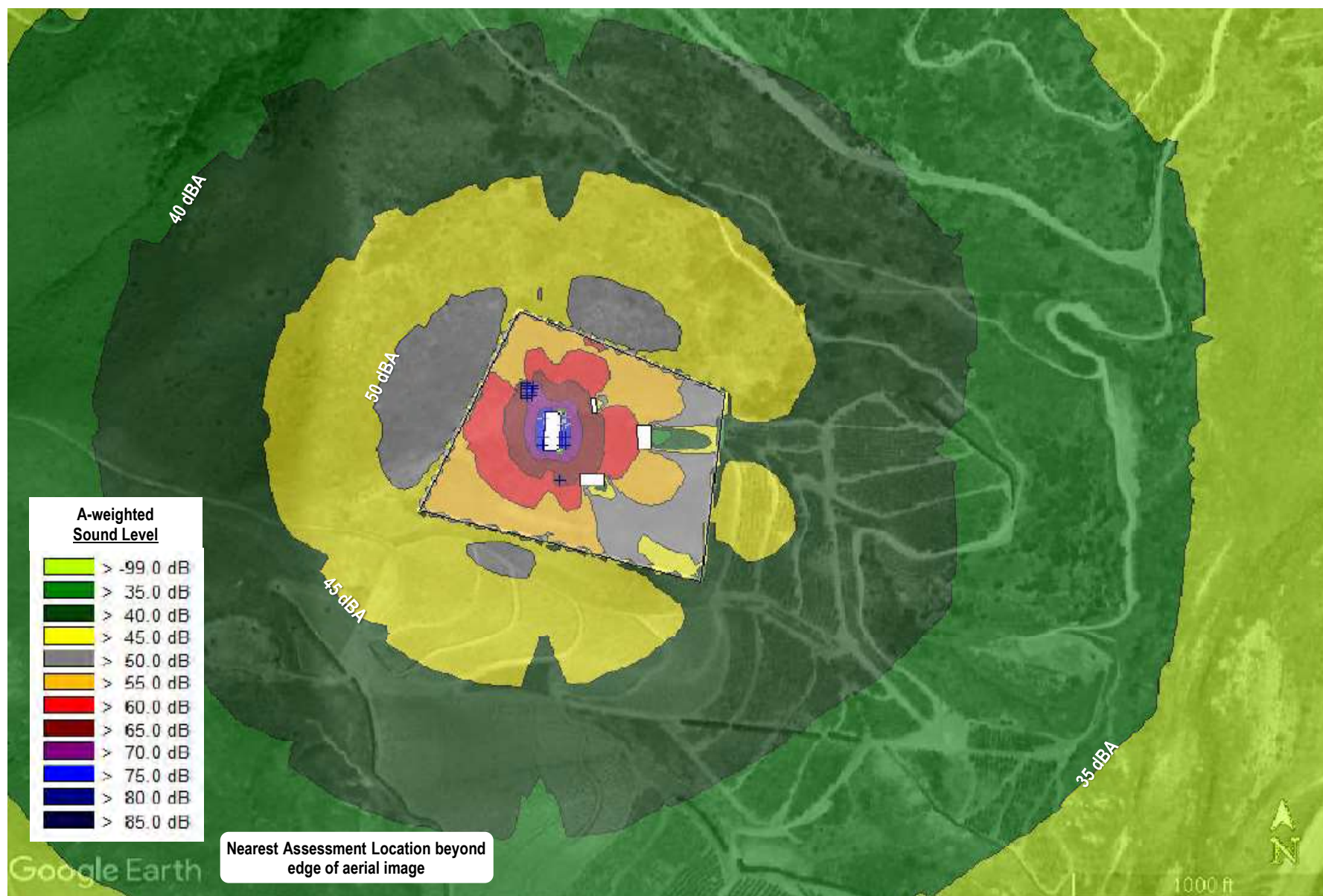
**FIGURE 3**

**Avocado Site - Natural Gas Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project







SOURCE: Google 2021; Dudek 2022

**DUDEK**



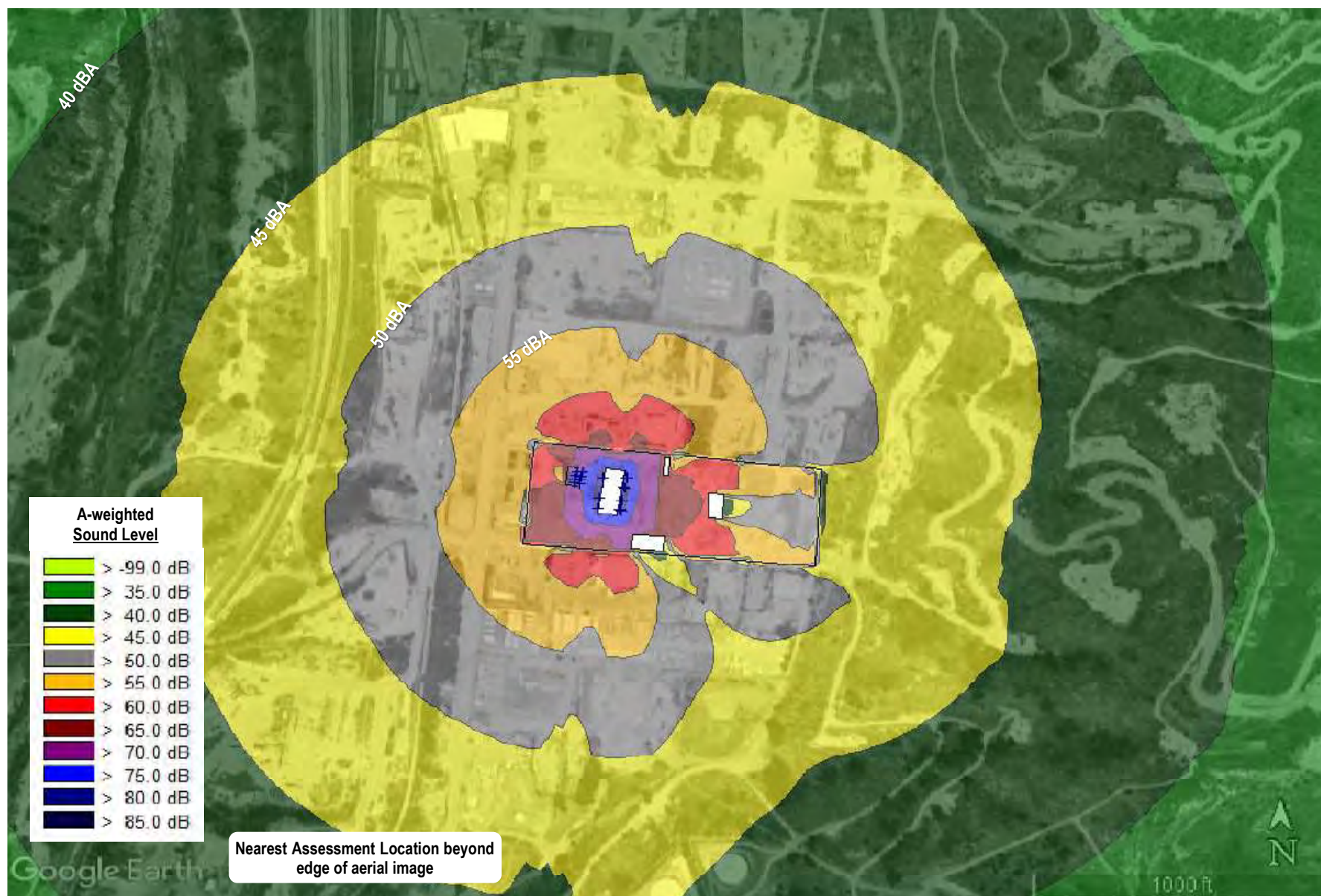
0 216.5 433 Feet

**FIGURE 4**

**Avocado Site - Hybrid Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project





SOURCE: Google 2021; Dudek 2022

**DUDEK**



0 186.5 373 Feet

**FIGURE 5**

**Ventura Steel Site - Natural Gas Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project







SOURCE: Google 2021; Dudek 2022

**DUDEK**



0 186.5 373 Feet

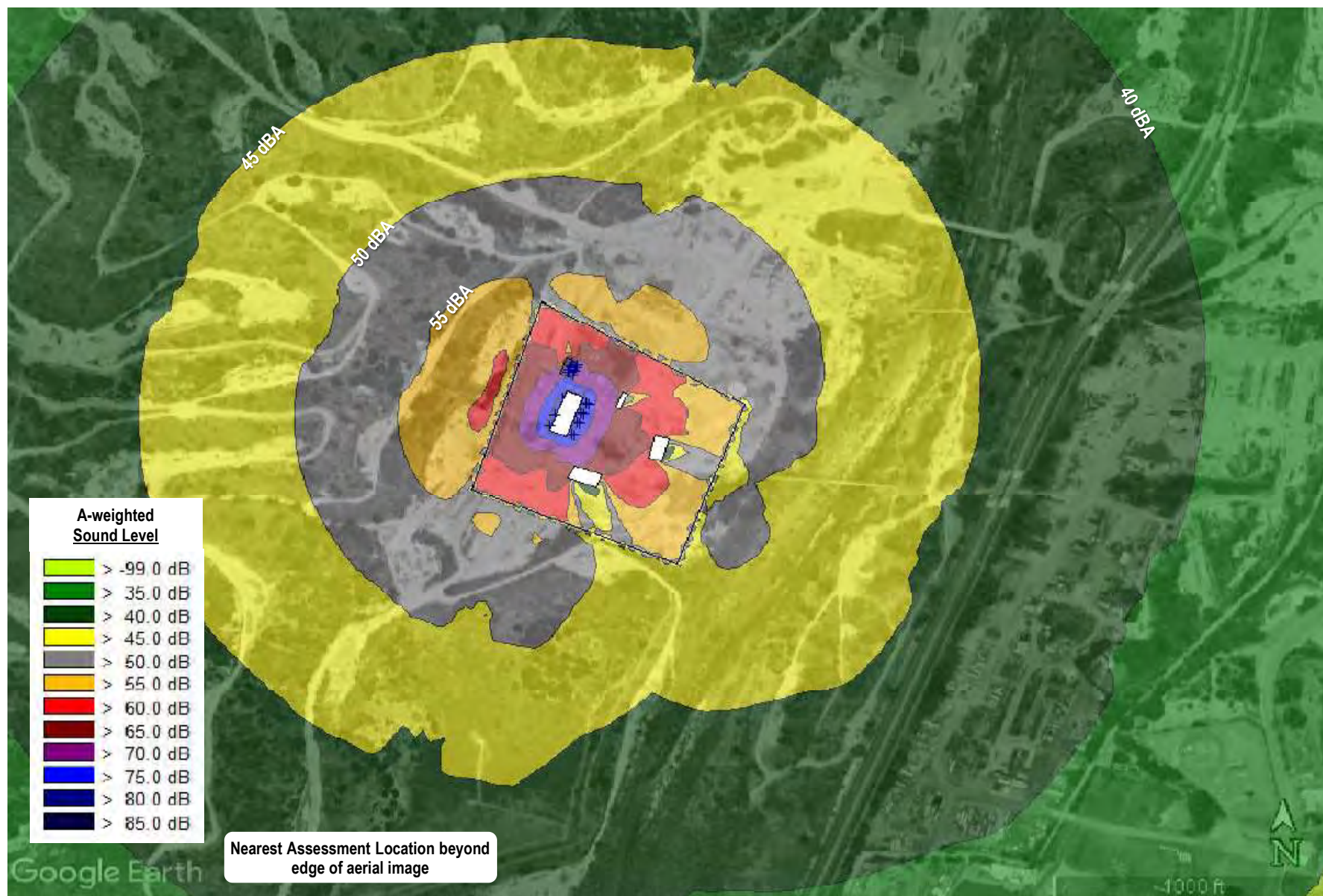
**FIGURE 6**

**Ventura Steel Site - Hybrid Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project







SOURCE: Google 2021; Dudek 2022

**DUDEK**



0 200 400 Feet

**FIGURE 7**

**Devil's Canyon Road Site - Natural Gas Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project







SOURCE: Google 2021; Dudek 2022

**DUDEK**



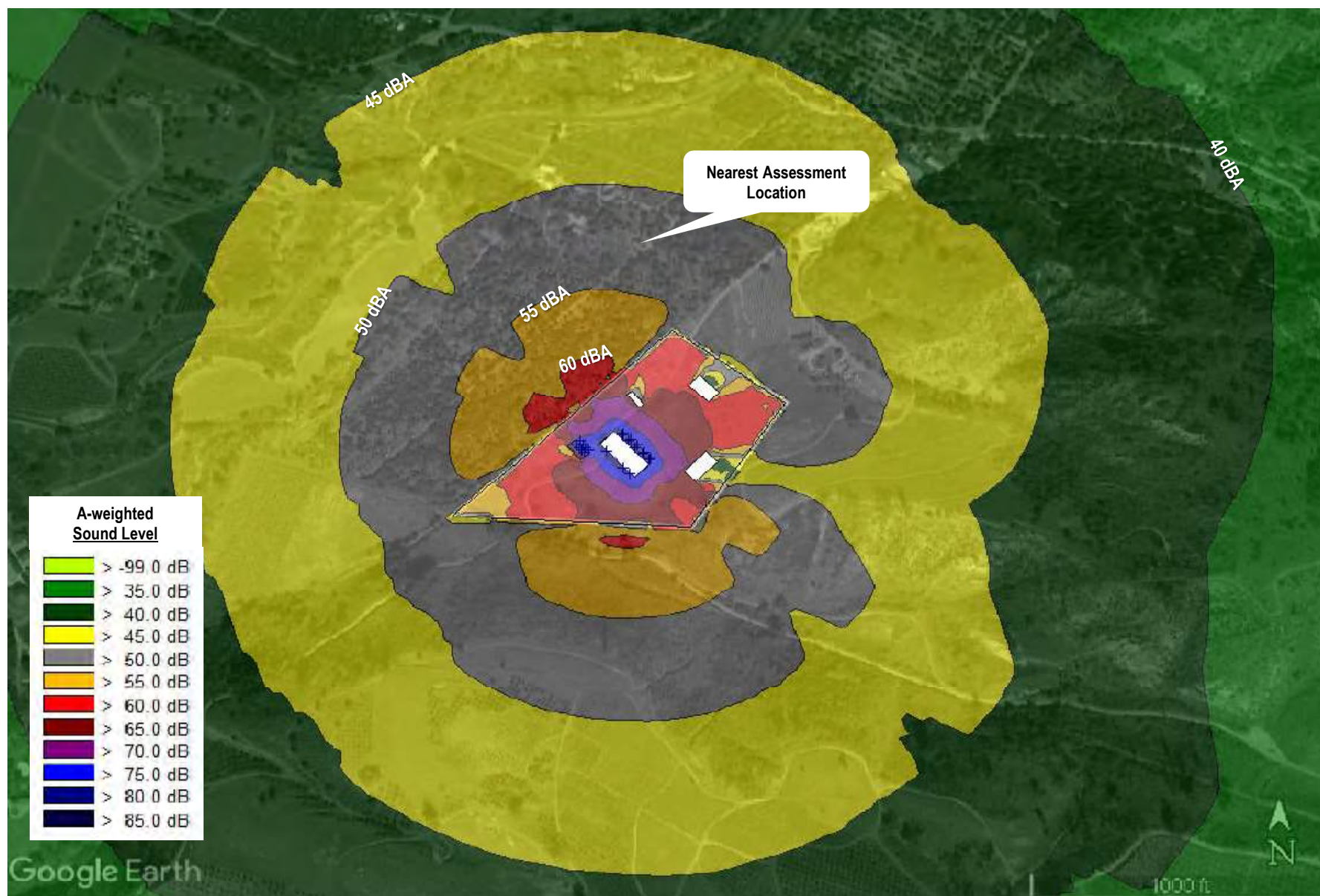
0 200 400 Feet

**FIGURE 8**

**Devil's Canyon Road Site - Hybrid Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project





SOURCE: Google 2021; Dudek 2022

**DUDEK**



0 186.5 373 Feet

**FIGURE 9**

**County Line Site - Natural Gas Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project







SOURCE: Google 2021; Dudek 2022

**DUDEK**



0 186.5 373 Feet

**FIGURE 10**

**County Line Site - Hybrid Option Predicted Operational Noise Levels**

Ventura Compressor Station Modernization Project





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# **Attachment 6**

## Topography and Slope Maps







SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE STG-1A**  
Topography and Slope - Existing Site  
Ventura Compressor Station Modernization Project









SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE STG-1B**  
Topography and Slope - Avocado Site  
Ventura Compressor Station Modernization Project









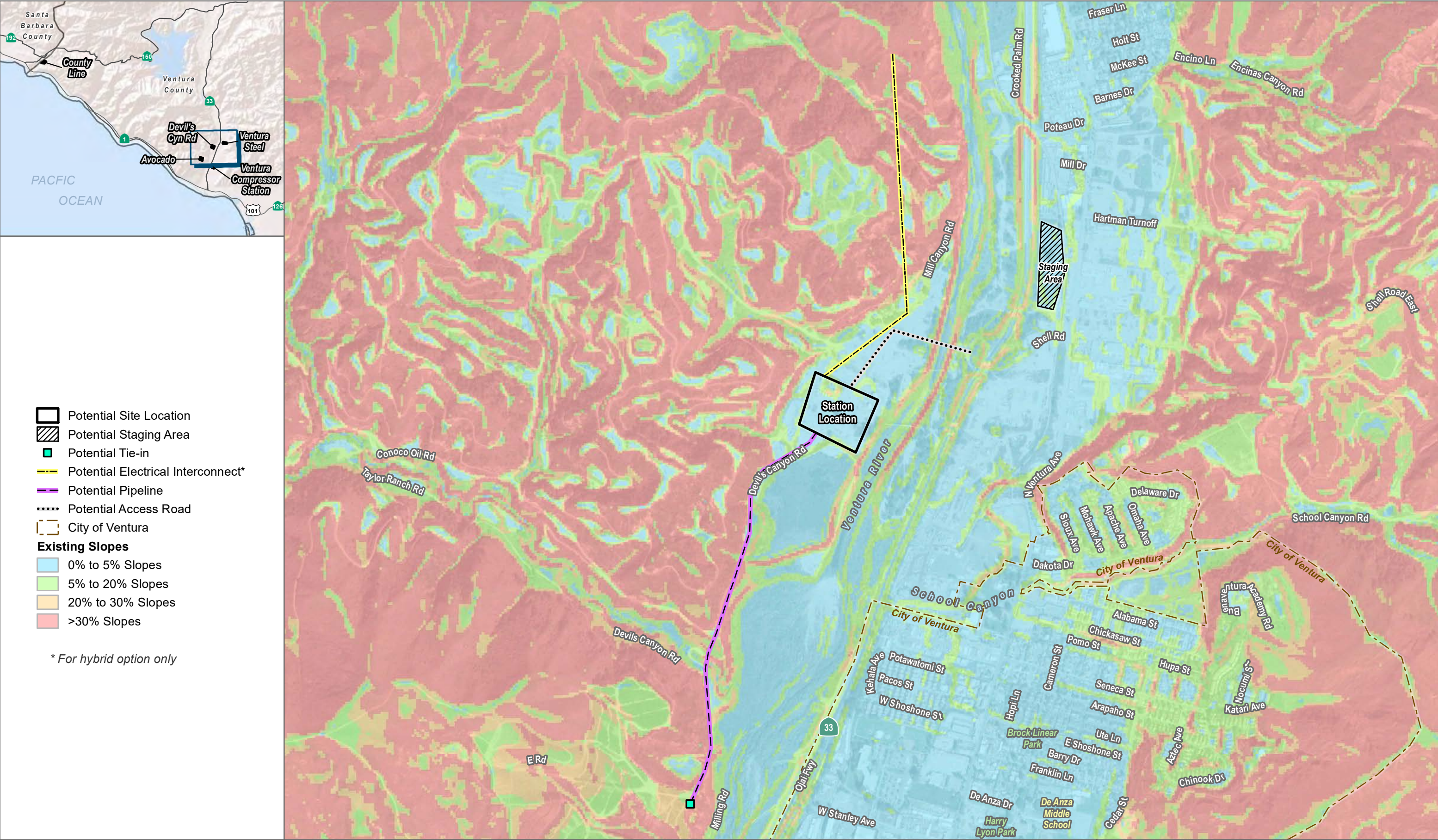
SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE STG-1C**  
Topography and Slope - Ventura Steel Site  
Ventura Compressor Station Modernization Project









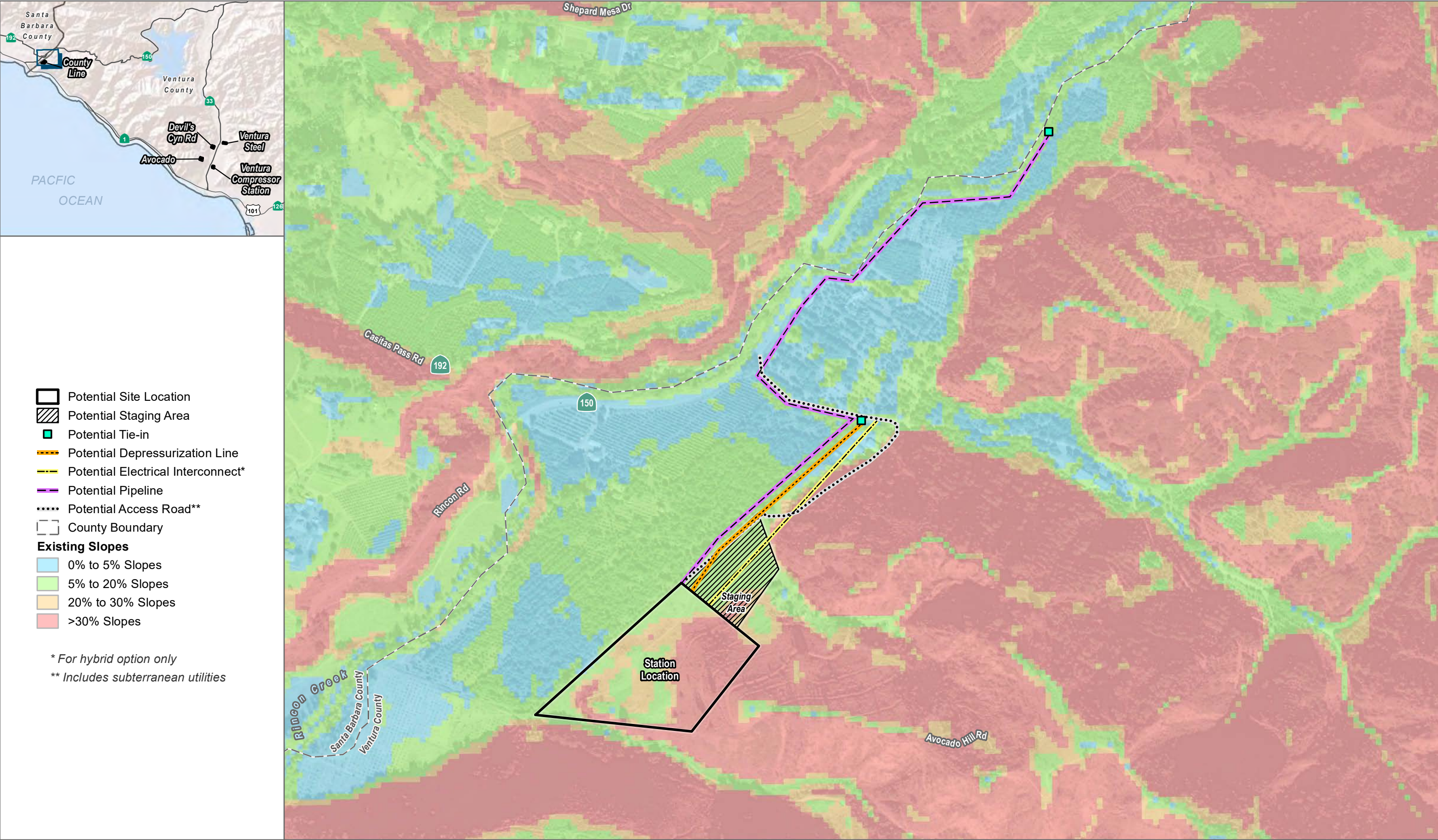
SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE STG-1D**  
Topography and Slope - Devil's Canyon Road Site  
Ventura Compressor Station Modernization Project









SOURCE: Esri and Digital Globe, Open Street Map





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# **Attachment 7**

## SRA and LRA FHSZ Maps





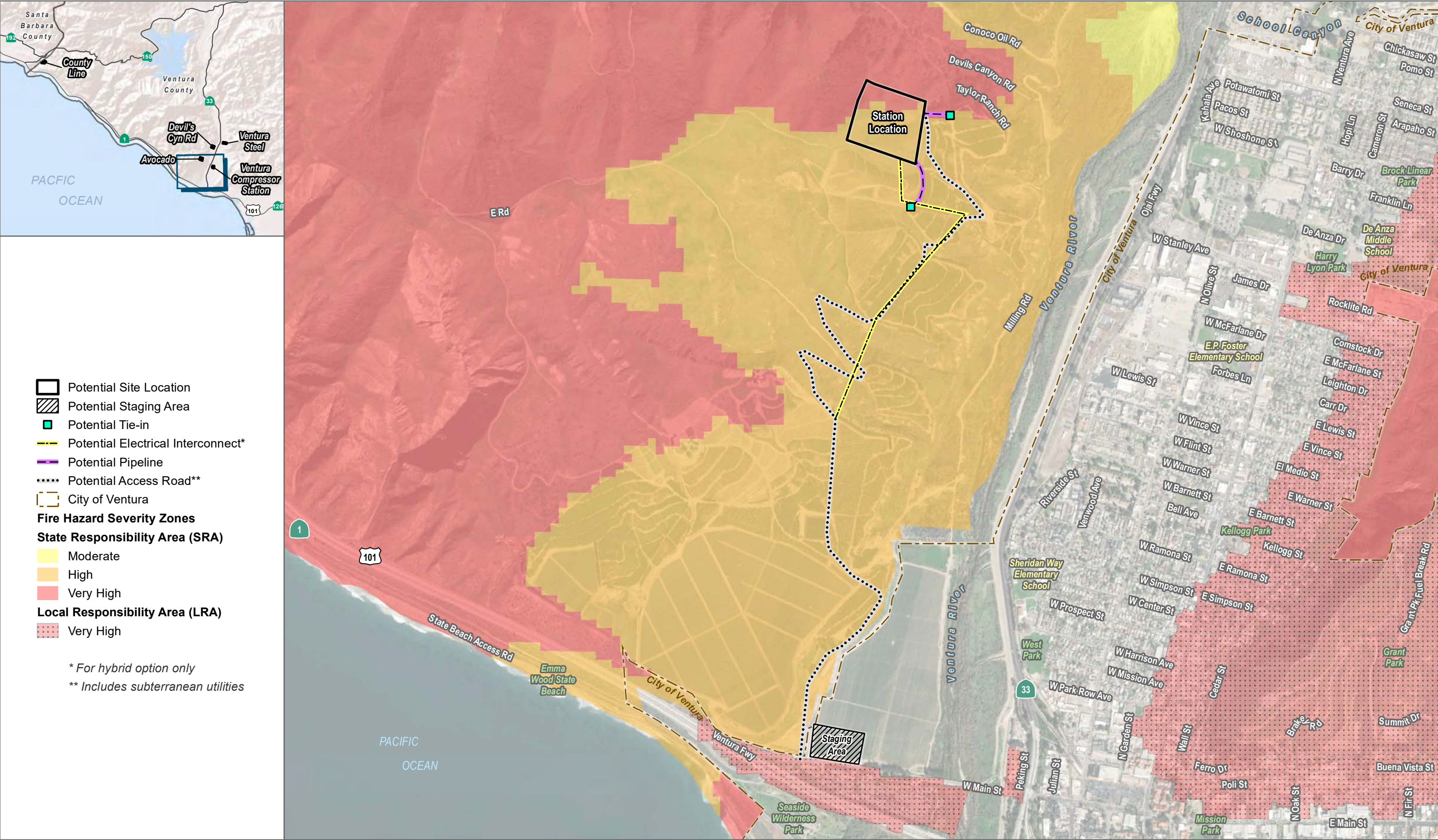












SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE WF-1B**  
**Fire Hazard Severity Zones - Avocado Site**  
Ventura Compressor Station Modernization Project





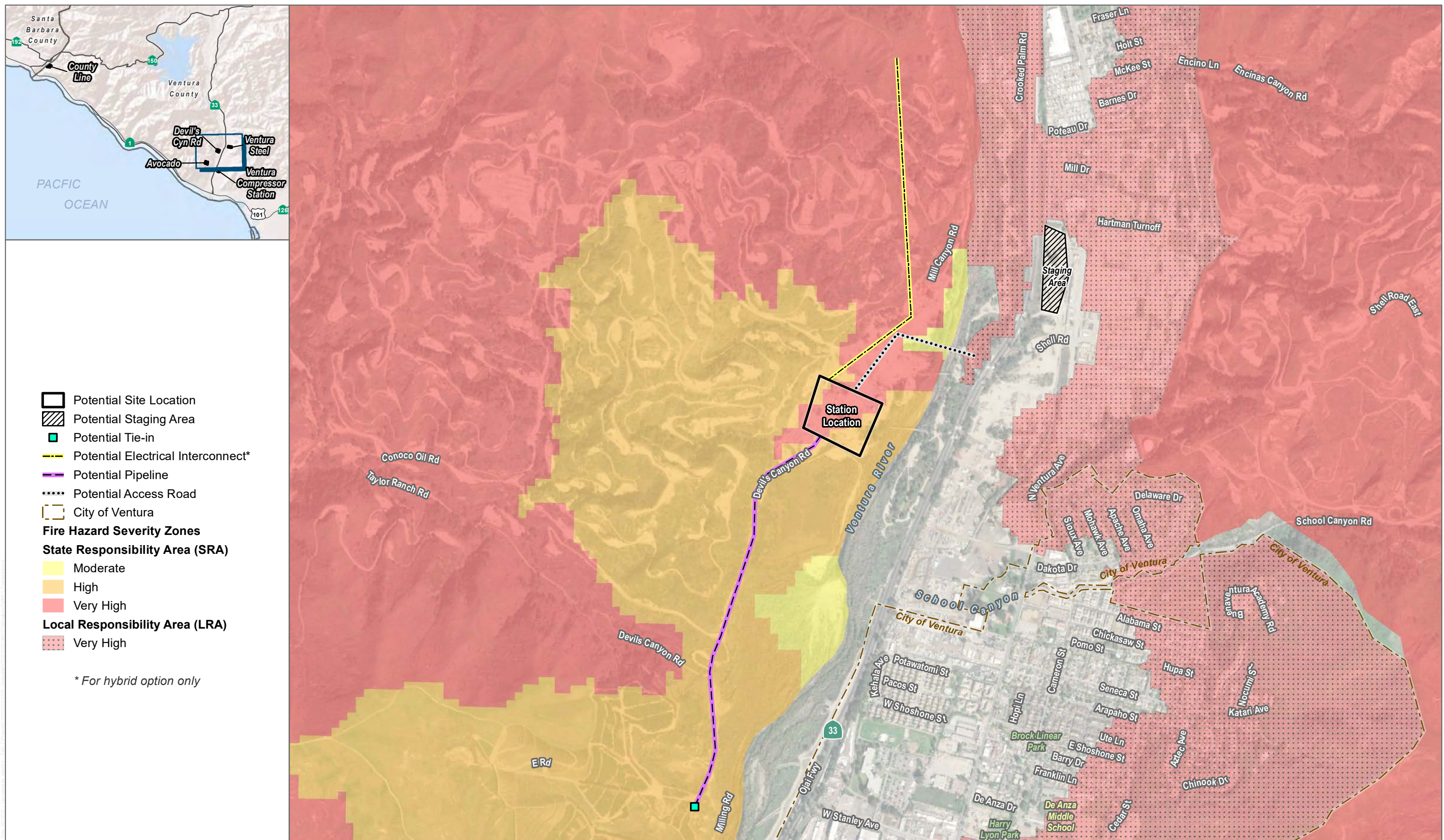








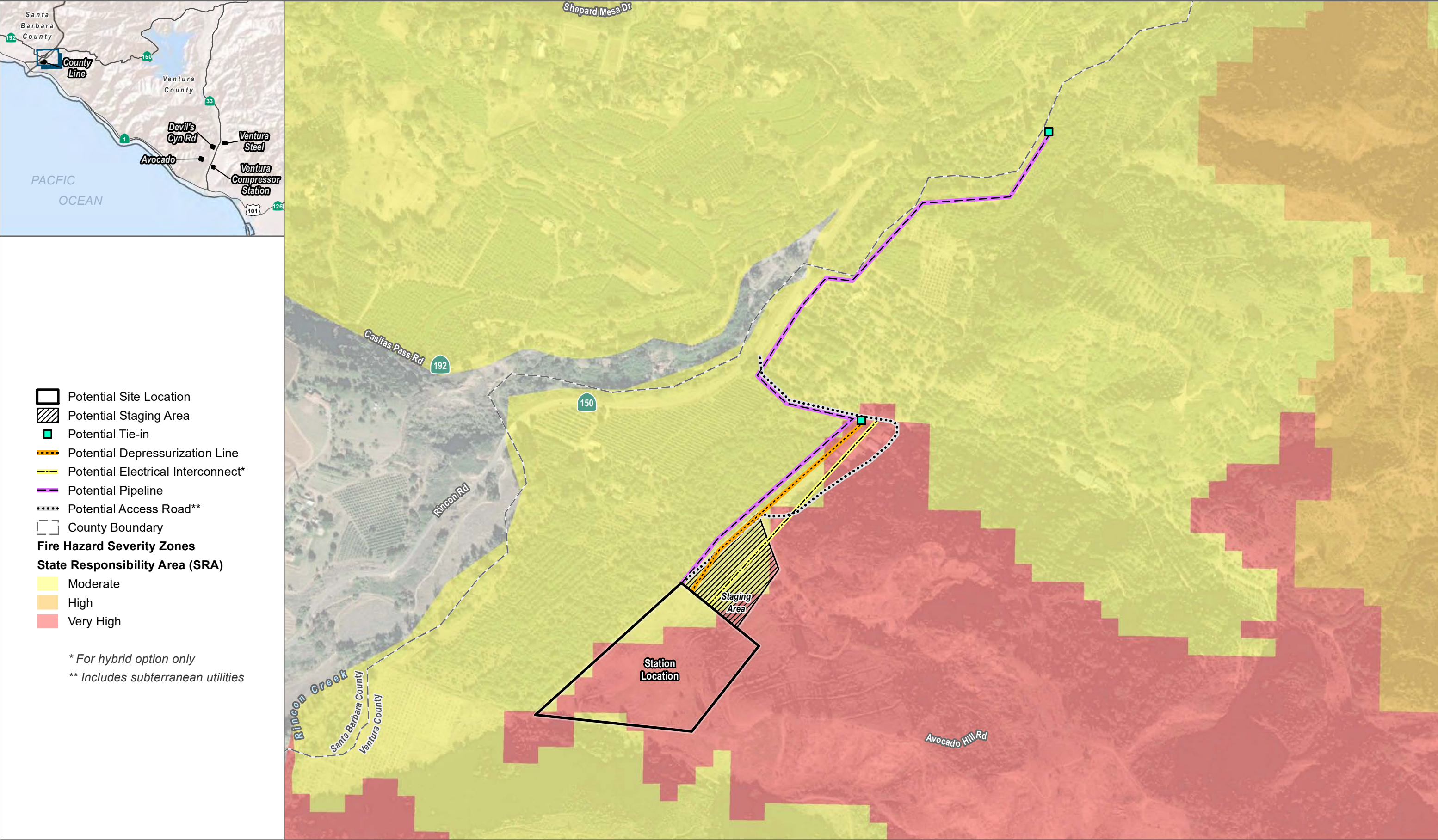




SOURCE: Esri and Digital Globe, Open Street Map







SOURCE: Esri and Digital Globe, Open Street Map

**FIGURE WF-1E**  
**Fire Hazard Severity Zones - County Line Site**  
Ventura Compressor Station Modernization Project





## **Appendix B**

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### Feasibility Study Scoring Rubric



Ventura Compressor Station Feasibility Study

Goal

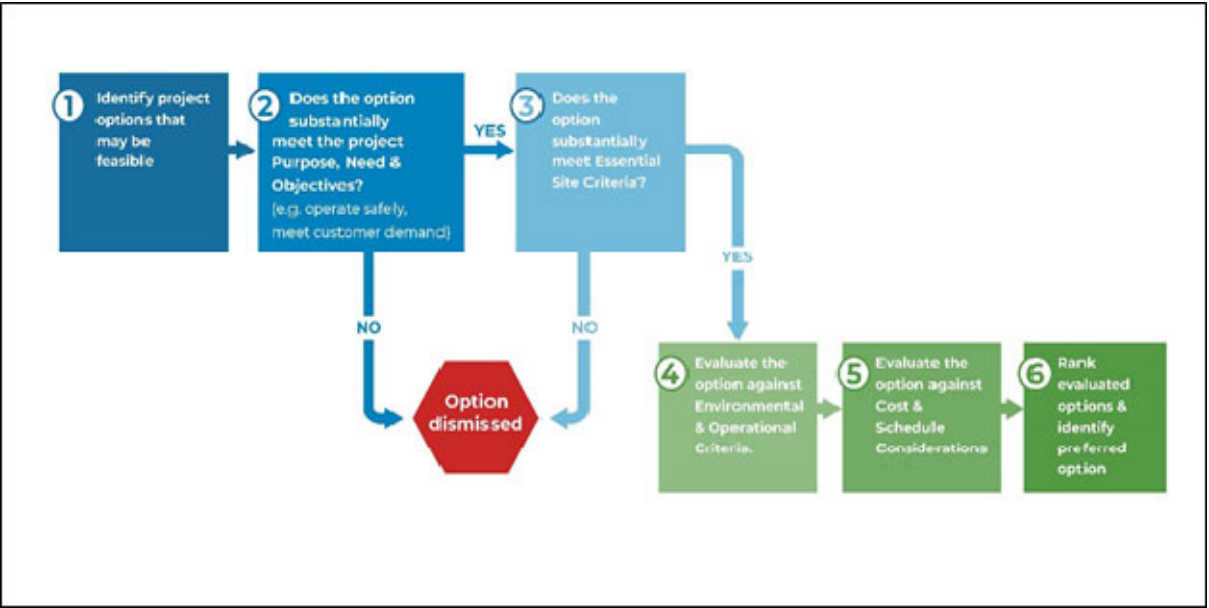
SoCalGas will evaluate a range of alternatives to a proposed project that would feasibly attain most of the basic project objective but would lessen any of the significant effects of the project.

Process

SoCalGas will evaluate whether the existing infrastructure can be modified to meet the project objects. If not, then SoCalGas will evaluate what new infrastructure is required and where it would be located to meet project objectives

Methodology

Potential Alternatives	Step 1	Identify project alternatives that may be feasible.
Initial Screening for Purpose, Need and Objectives	Step 2	Evaluate each project in accordance with whether the alternative would substantially meet the purpose, need and objectives. If the alternative does not meet purpose, need and objective, dismiss from further consideration.
Essential Site Criteria Analysis	Step 3	Perform Essential Site Criteria Analysis of alternatives consistent with established evaluation criteria. If project does not meet essential site parameters, dismiss from further consideration.
Site and Environmental Considerations	Step 4	Perform Operational, Emissions and Environmental Considerations Analysis of alternatives consistent with established evaluation criteria and assign point total to each category.
Cost and Schedule Considerations	Step 5	Perform Other Considerations Analysis of alternatives consistent with established evaluation criteria and assign point total to each category.
Rank & Identify Preferred Alternative	Step 6	Rank alternatives based on resulting point totals, with highest score being best to identify the preferred alternative.





Ventura Compressor Station Feasibility Study

STEP 1: IDENTIFY ALTERNATIVES

Alternative	Technology	Site Identified by	Land Use/Zoning	Location
No Project - Keep existing in operation	All Natural Gas	SoCalGas	Industry/ M-2	Maintain existing site configuration and operational profile keeping the 30-year old gas engine driven machines in service.
Compressor Station Removal	Nothing	Community	Industry/M-2	Request is to remove the station in its entirety.
All Electric at Any of the Sites	All Electric	SoCalGas/CPUC too?	Various	Replace existing compression with new electric compressors. Same benefits and/or issues will be experienced at any site.
Hybrid - 3 Electric and 1 Gas Engine at any site	Hybrid - 3 Elec / 1 Gas Engine	SoCalGas	Various	Replace existing compression with 3 new electric compressors and 1 gas engine. Same benefits and/or issues will be experienced at any site.
Petrochem	Natural gas	SoCalGas	Industrial/M3-10,000 sf	Industrial site located approximately 13,500 feet northwest of the existing compressor station on the west side of State Route 33 within the County of Ventura.
Petrochem - Hybrid	Hybrid - gas/electric	SoCalGas	Industrial/M3-10,000 sf	
Move Compression to Goleta Storage Field	Nat Gas/Elec or Hybrid	SoCalGas	UT – Public Utility/PU – Public Utilities	Remove the existing horsepower from Ventura and replace with new equipment at the Goleta Storage Field approximately 40 miles up the coast.
Alternative 1A: Planned Project	Natural gas	SoCalGas	Industry/ M-2	Current site - Approximately 8-acre parcel located on land designated by the Ventura General Plan as “Industry” and zoned “M-2 General Industrial,” on the west side of City of Ventura.
Alternative 1B: Current Site, Hybrid	Hybrid - gas/electric	CPUC	Industry/M-2	
Alternative 2A: Avocado Site	Natural gas	Community	Open Space/AE-40 ac	Approximately 15-acre agricultural site located approximately 3,000 feet west of the compressor station, on privately held land currently developed with an avocado orchard within the County of Ventura.
Alternative 2B: Avocado Site - Hybrid	Hybrid - gas/electric	Community	Open Space/AE-40 ac	
Alternative 3A: Ventura Steel	Natural gas	SoCalGas	Industrial/M3-10,000 sf	Approximately 15-acre industrial site located approximately 8,000 feet north of the compressor station within the County of Ventura
Alternative 3B: Ventura Steel - Hybrid	Hybrid - gas/electric	SoCalGas	Industrial/M3-10,000 sf	
Alternative 4A: Devil's Cyn Rd	Natural gas	Community	Open Space/OS-160 ac/HWC*	Approximately 15-acre oil extraction site located approximately 6,000 feet to the north of the compressor station on west side of State Route (SR) 33 within the County of Ventura.
Alternative 4B: Devil's Cyn Rd - Hybrid	Hybrid - gas/electric	Community	Open Space/OS-160 ac/HWC*	
Alternative 5A: County Line	Natural gas	SoCalGas	Open Space/AE-40 ac	Approximately 15-acre vacant parcel of land designated and zoned for agriculture located within County of Ventura at the county line between Santa Barbara/Ventura Counties approximately 12 miles northwest of the existing compressor station.
Alternative 5B: County Line - Hybrid	Hybrid - gas/electric	SoCalGas	Open Space/AE-40 ac	

STEP 2: PURPOSE, NEED AND OBJECTIVES

		Alternative 1: Ventura-Existing Site North Olive Street		Alternative 2: Avocado Site-Ventura		Alternative 3: Ventura Steel		Alternative 4: Devil's Cyn Rd		Alternative 5: County Line		All Electric at any proposed site	Hybrid Electric/ 1 Gas Engine at any site	No Project - Keep Existing in Service	Remove Existing Facility	Petrochem		Goleta Storage Field
Evaluation Criteria	Rationale for Criteria	Natural Gas (1A)	Hybrid (1B)	Natural Gas (2A)	Hybrid (2B)	Natural Gas (3A)	Hybrid (3B)	Natural Gas (4A)	Hybrid (4B)	Natural Gas (5A)	Hybrid (5B)					Natural Gas (A)	Hybrid (B)	Any Driver
Safety Consideration	Project must be able to operate safely	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	No Go	Go	Go	Go
System Operational Requirements	Project must meet basic system operational requirements (Meet minimum and maximum flow requirements throughout the range of pipeline operating pressures)	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	No Go	No Go	Go	Go	Go
System Operational Requirements	Ability to meet core customer demand w/o Goleta W/D	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	No Go	No Go	Go	Go	No Go
System Operational Requirements	Adequate capacity to inject at La Goleta Storage Field	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	No Go	No Go	Go	Go	Go
System Operational Requirements	Enhance reliability by modernizing aging infrastructure	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	No Go	No Go	No Go	No Go	Go	Go	No Go

## Ventura Compressor Station Feasibility Study

Scored by SoCalGas - PMT

### STEP 3: ESSENTIAL SITE CRITERIA

[illegible]

STEP 4: ENVIRONMENTAL - OPERATIONAL CRITERIA

Environmetal scored by Dudek, Yorke      Operational scored by Operations/PMT

Topic Areas	Ranking				Option 1: Ventura- Existing Site North Olive Street		Option 2: Avocado Site- Ventura		Option 3: Ventura Steel		Option 4: Devil's Cyn Rd		Option 5: County Line	
	0	"1-2-3"	"4-5-6"	"7-8-9"	Natural Gas (1A)	Hybrid (1B)	Natural Gas (2A)	Hybrid (2B)	Natural Gas (3A)	Hybrid (3B)	Natural Gas (4A)	Hybrid (4B)	Natural Gas (5A)	Hybrid (5B)
Environmental Considerations: Operational (10X multiplier applied to Operational only)					26	32	23	28	29	35	30	35	17	25
Air - Criteria Pollutant to Emit = 24/7/365) (Potential	NOx emission ≥ 12 tons per year	NOx emissions ≥ 8 tons per year but < 12 tons per year	NOx emission ≥4 tons per year but <8 tons per year	NOx emissions <4 tons per year	1	5	1	5	1	5	1	5	0	5
GHGs (Direct and Indirect) to Emit = 24/7/365) (Potential	GHG emissions ≥50,000 MT/yr CO2e	GHG emissions ≥25,000 MT/yr CO2e but <50,000 MT/yr CO2e	GHG emissions ≥10,000 MT/yr CO2e but <25,000 MT/yr CO2e	GHG emissions <10,000 MT/yr CO2e	3	5	3	5	3	5	3	5	2	4
Land Use Designation	Non-industrial/manufacturing zone and adjacent to sensitive receptor	Industrial/manufacturing zone located adjacent to sensitive receptor	Non-industrial/manufacturing zone not adjacent to sensitive receptor	Industrial/manufacturing zone not adjacent to sensitive receptor	1	1	6	6	9	9	6	6	6	6
Cal Enviro Screen	91% to 100% pollution burden	61% to 90% pollution burden	31% to 60% pollution burden	1% to 30% pollution burden	1	1	2	2	3	3	2	2	2	2
Wildfire	Within Very High Fire Hazard Severity Zone	Within High Fire Hazard Severity Zone	Within Moderate Fire Hazard Severity Zone	Not within a fire hazard severity zone	8	8	2	1	0	0	2	1	3	2
Aesthetics/Visual Resources	Substantially alters a defined scenic resource, as determined by adopted plans (e.g. scenic vistas, scenic highways, ridgelines)	Substantially alters the character of a site and/or its surroundings and is highly visible	Minimally alters the character of a site and/or its surroundings and is highly visible	Project is either not visible or does not alter the character of the surrounding community	8	8	0	0	6	5	8	7	0	0
Noise (Operations assuming a 80 dBA) continuous operation day to night with permanent noise attenuation	65 dBA or greater at the property line taking into account non-industrial landuses*	65 dBA to 55dBA at the property line taking into account non-industrial landuses	55 dBA to 45 dBA property line taking into account non-industrial landuses	45 dBA lower at the property line taking into account non-industrial landuses	4	4	9	9	7	8	8	9	4	6
Environmental Considerations: On-Site Construction					48	48	32	32	56	56	51	51	32	32
Slope, Topography & Grading	Average slope of property is greater than 40%; substantial overexcavation-recompaction required	Average slope of property is 30% - 40%; moderate overexcavation-recompaction required	Average slope of property is 20% - 30%; minimal overexcavation-recompaction required	Average slope of property is less than 20%; negligible/no overexcavation-recompaction required	8	8	0	0	8	8	8	8	3	3
Traffic - Construction (Site Preparation)	Heavy-truck traffic (i.e. import/export) through residential areas or roadway-constrained areas for 1 year or longer	Heavy-truck traffic (i.e. import/export) through residential areas or roadway-constrained areas for 6 months to 1 year	Heavy-truck traffic (i.e. import/export) through residential areas or roadway-constrained areas for less than 6 months	Heavy-truck traffic (i.e. import/export) NOT occurring through residential areas or roadway-constrained areas	6	6	7	7	9	9	9	9	2	2
Air Quality	NOx emissions ≥ 80,000 pounds and PM10 ≥ 10,000 pounds	NOx emissions ≥ 80,000 pounds but <40,000 pounds and PM10 emissions ≥ 10,000 pounds but <6,000 pounds	NOx emissions ≥ 40,000 pounds but <8,000 pounds and PM10 emissions ≥ 6,000 pounds but <2,000 pounds	NOx emissions < 8,000 pounds and PM10 < 2,000 pounds	6	6	0	0	6	6	6	6	2	2
GHGs (Direct and Indirect)	GHG emissions >500 MT for project duration CO2e	GHG emissions ≥250 MT CO2e but <500 MT CO2e (for project duration)	GHG emissions ≥50 MT CO2e but <250 MT CO2e (for project duration)	GHG emissions <50 MT for project duration CO2e	8	8	2	2	8	8	8	8	4	4
Cultural Resources (Records Search)	Significant Cultural Resource(s), are present and the project has the potential to impact the significance of that resource.	Significant Cultural Resource(s), are present and project impacts will be less than significant with minimization measures incorporated in the project; or, the project is in a location that is highly sensitive for potentially significant cultural resources.	Significant Cultural Resources are present, but project does not have the potential to impact the significance of that resource; or, the project is in a location that is moderately sensitive for potentially significant cultural resources.	No significant cultural resources are present based on records search results and the project is in a location that is not sensitive for potentially significant cultural resources.	8	8	6	6	7	7	7	7	8	8
Natural Resources- Site Sensitivity (Database Search)	Site contains sensitive species (plant/animal) and/or habitats or wetlands that would be directly impacted and require mitigation	Site is adjacent to sensitive species (plant/animal) and/or habitats or wetlands that would be indirectly impacted and would require mitigation	Site contains or is adjacent to species (plant/animal) and/or habitats that would be directly or indirectly impacted, but would not require mitigation	No onsite or potential to affect sensitive biological resources	9	9	8	8	9	9	4	4	6	6
Noise - (Assuming 100+ dBA at Site)	Non-industrial land uses are located within 0-50 feet from site construction (~ 90 dBA or greater)	Non-industrial land uses are located within 50-100 feet from site construction (90 dBA to 84 dBA)	Non-industrial land uses located within 100-250 feet from site construction (84 dBA to 75 dBA)	Non-industrial land uses located greater than 250 feet from site construction (~75 dBA or lower)	3	3	9	9	9	9	9	9	7	7
Environmental Considerations: Off-Site Construction for Routing Utilities					61	61	35	32	13	13	37	36	40	38
Traffic - Roadway Construction	Substantial roadway construction on existing roads (e.g. lane closures greater than 5,000 feet)	Moderate roadway construction on existing roads (e.g. lane closures 2,500 to 5,000 feet)	Minimal roadway construction on existing roads (e.g. lane closures 500 to 2,500 feet)	None or negligible roadway construction (e.g. less than 500 feet)	9	9	7	7	0	0	7	7	7	7

Topic Areas	Ranking				Option 1: Ventura- Existing Site North Olive Street		Option 2: Avocado Site- Ventura		Option 3: Ventura Steel		Option 4: Devil's Cyn Rd		Option 5: County Line	
	0	"1-2-3"	"4-5-6"	"7-8-9"	Natural Gas (1A)	Hybrid (1B)	Natural Gas (2A)	Hybrid (2B)	Natural Gas (3A)	Hybrid (3B)	Natural Gas (4A)	Hybrid (4B)	Natural Gas (5A)	Hybrid (5B)
Utilities / Service Systems	Major utility extensions required	Moderate utility extensions required	Minor utility extensions required	Existing Utilities are adequate	9	9	4	4	1	1	3	3	4	4
Noise - (Assuming 100+ dBA at Site)	Non-industrial land uses are located within 0-50 feet from site construction (~ 90 dBA or greater)	Non-industrial land uses are located within 50-100 feet from site construction (90 dBA to 84 dBA)	Non-industrial land uses located within 100-250 feet from site construction (84 dBA to 75 dBA)	Non-industrial land uses located greater than 250 feet from site construction (~75 dBA or lower)	9	9	9	9	0	0	9	9	0	0
Air Quality	Substantial linear construction adjacent to non-industrial land uses (e.g. greater than 5,000 feet)	Moderate linear construction adjacent to non-industrial land uses (e.g. 2,500 to 5,000 feet)	Minimal linear construction adjacent to non-industrial land uses (e.g. 500 to 2,500 feet)	None or negligible linear construction adjacent to non-industrial land uses (e.g. less than 500 feet)	9	9	2	0	0	0	5	3	5	4
GHGs (Direct and Indirect)	GHG emissions >500 MT for project duration CO2e	GHG emissions ≥250 MT CO2e but <500 MT CO2e (for project duration)	GHG emissions ≥50 MT CO2e but <250 MT CO2e (for project duration)	GHG emissions <50 MT for project duration CO2e	9	9	7	6	4	4	7	7	9	9
Natural Resources- Site Sensitivity (Database Search)	Site contains sensitive species (plant/animal) and/or habitats or wetlands that would be directly impacted and require mitigation	Site is adjacent to sensitive species (plant/animal) and/or habitats or wetlands that would be indirectly impacted and would require mitigation	Site contains or is adjacent to species (plant/animal) and/or habitats that would be directly impacted, but would not require mitigation	No onsite or potential to affect sensitive biological resources	8	8	0	0	0	0	0	0	8	8
Cultural Resources (Records Search)	Significant Cultural Resource(s), are present and the project has the potential to impact the significance of that resource.	Significant Cultural Resource(s), are present and project impacts will be less than significant with minimization measures incorporated in the project; or, the project is in a location that is highly sensitive for potentially significant cultural resources.	Significant Cultural Resources are present, but project does not have the potential to impact the significance of that resource; or, the project is in a location that is moderately sensitive for potentially significant cultural resources.	No significant cultural resources are present based on records search results and the project is in a location that is not sensitive for potentially significant cultural resources.	8	8	6	6	8	8	6	7	7	6
Grand Total Environmental Score					369	429	297	344	359	419	388	437	242	320
Additional Operational Considerations					39.0	34.5	23.3	18.8	35.0	30.5	28.8	24.5	31.0	26.5
Geotechnical Engineering Constraints	Substantial geotechnical constraints associated with high risk of liquefaction, faulting/seismicity and landslide	Moderate geotechnical constraints associated with high risk of liquefaction, faulting/seismicity and landslide	Minimal geotechnical constraints	No known geotechnical constraints	6	6	4	4	6	6	5	5	6	6
Emergency Access (max 20% slope and minimum 20-foot wide)	Emergency access exceeds 20% grade even with engineered design (including retaining walls)	Construct new access road to meet requirements	Modify existing access road to meet requirements	No access road construction is necessary	9	9	4	4	9	9	7	7	5	5
Complexity of Auxiliary and Control Systems (with hybrids, Station Control panel would need to talk to two unique types of unit control panels, instead of one panel and one set of commands and control philosophy)	Hybrid option that relies on SCE power for running 50% of compressors	Hybrid option that does not rely on SCE power for running 50% of compressors	Non-hybrid with back-up power from SCE (2-line feed) to run 50% of compressors	Non-hybrid option with on-site back-up power generation to run 50% of compressors	9	5	9	5	9	5	9	5	9	5
Back-up power requirements. Lowest for gas engines; highest for all electric	No operation possible without SCE power in service.	Black start capability and ability to provide less than 50% of horsepower without SCE power in service	Black start capability and ability to provide less than 100% down to 50% of horsepower without SCE power in service	Black start capability and ability to provide 100% of horsepower without SCE power in service	6	6	6	6	6	6	6	6	6	6
Proximity to lower pressure Distribution System - needed to depressurize without blowing gas to atmosphere.	Zero access to Distribution without substantial effort	Distribution access greater than 1/2 mile	Distribution access outside the facility but less than 1/2 mile away.	Distribution lines are within the facility	9	9	1	1	5	5	2	2	5	5
Option Grand Totals					408	464	320	363	394	450	417	462	273	347

\*Non-industrial land uses include, but are not limited to, residential, commercial, agricultural, and parks.

NOTES:

1. Environmental considerations were included in response to CPUC request.

2. Developed for purpose of Ventura site considerations; not transferrable to other projects.

3 Proposed project back-up generation provides power to black start and operate two gas engines to meet core demand and not inject at Goleta.

Ventura Compressor Station Alternatives Evaluation

Numbers provided by PMT, Estimating, Operations, BMcD, ROW

STEP 5: COST AND SCHEDULE

	Option 1: Ventura- Existing Site North Olive Street		Option 2: Avocado Site- Ventura		Option 3: Ventura Steel		Option 4: Devil's Cyn Rd		Option 5: County Line	
	Natural Gas (1A)	Hybrid (1B)	Natural Gas (2A)	Hybrid (2B)	Natural Gas (3A)	Hybrid (3B)	Natural Gas (4A)	Hybrid (4B)	Natural Gas (5A)	Hybrid (5B)
Project Cost (Class 5)										
Property/ROW(road/pipeline/power/temp construction easements). Acquisition Included Here Plus All Loaders.	\$2,000,000	\$2,000,000	\$18,000,000	\$19,000,000	\$82,000,000	\$82,000,000	\$47,000,000	\$47,000,000	\$6,000,000	\$6,000,000
EPC + everything else to execute the project	\$ 419,000,000	\$ 462,000,000	\$ 659,000,000	\$ 688,000,000	\$ 525,000,000	\$ 553,000,000	\$ 519,000,000	\$ 547,000,000	\$ 587,000,000	\$ 616,000,000
Project Cost Totals	\$421,000,000	\$464,000,000	\$677,000,000	\$707,000,000	\$607,000,000	\$635,000,000	\$566,000,000	\$594,000,000	\$593,000,000	\$622,000,000
Operational Cost (Annual)										
Cost for Fuel -Typical Annual Usage - Gas and Electric + Auxilliary Loads. Assumes 50/50 Usage for Hybrid	\$299,200	\$1,447,500	\$299,200	\$1,447,500	\$299,200	\$1,447,500	\$299,200	\$1,447,500	\$374,000	\$2,096,625
Annual Maintenance Costs - compressors are same regardless of drive type; lower maintenance for electric motor drive; additional personnel training if hybrid; NSCR, CEMS (1/2 FTE) and higher compressed air needs for engines.	\$600,000	\$325,000	\$600,000	\$325,000	\$600,000	\$325,000	\$600,000	\$325,000	\$700,000	\$375,000
Fuel Modification - landscape maintenance re brush fire defensible space. (\$2500/day for a landscape crew)	\$5,000	\$5,000	\$50,000	\$50,000	\$10,000	\$10,000	\$20,000	\$20,000	\$50,000	\$50,000
Operational Cost Totals	\$904,200	\$1,777,500	\$949,200	\$1,822,500	\$909,200	\$1,782,500	\$919,200	\$1,792,500	\$1,124,000	\$2,521,625



Schedule rankings by PMT, ROW, Permits(Thompson)

STEP 5: COST AND SCHEDULE

					Option 1: Ventura- Existing Site North Olive Street		Option 2: Avocado Site- Ventura		Option 3: Ventura Steel		Option 4: Devil's Cyn Rd		Option 5: County Line		
Schedule	0	1 - 3	4 - 6	7 - 9	Natural Gas (1A)	Hybrid (1B)	Natural Gas (2A)	Hybrid (2B)	Natural Gas (3A)	Hybrid (3B)	Natural Gas (4A)	Hybrid (4B)	Natural Gas (5A)	Hybrid (5B)	
Project permitting complexity (other utilities, lead time to develop plans, etc.)	Substantial permitting complexity	Moderate permitting complexity	Minimal permitting complexity	None or negligible permitting complexity	8	7	5	4	6	5	6	5	5	4	
Property/ROW Acquisition	Greater than 10 properties/ROW acquisition	5 to 9 properties/ROW acquisition	1 to 4 properties/ROW acquisition	No permanent properties/ROW acquisition, only temporary construction access	8	8	4	4	0	0	2	2	2	2	
Construction Duration (including infrastructure, site prep., etc.)	Longer than 4 years	3 - 4 years	2-3 years	Less than 2 years	8	6	0	0	5	4	6	5	0	0	
Total possible 27					Total	24	21	9	8	11	9	14	12	7	6

## Ventura Compressor Station Alternatives Evaluation

### STEP 6: PREFERRED ALTERNATIVE

Alternative	Environmental	Operational	Project Cost Class 5 Estimate 50%/+100%	Operational Cost (Yr)	Schedule Level 1
Alternative 1A: Planned Project	369	39.0	\$421,000,000	\$904,200	24
Alternative 1B: Current Site, Hybrid	429	34.5	\$464,000,000	\$1,777,500	21
Alternative 2A: Avocado Site	297	23.3	\$677,000,000	\$949,200	9
Alternative 2B: Avocado Site - Hybrid	344	18.8	\$707,000,000	\$1,822,500	8
Alternative 3A: Ventura Steel	359	35.0	\$607,000,000	\$909,200	11
Alternative 3B: Ventura Steel - Hybrid	419	30.5	\$635,000,000	\$1,782,500	9
Alternative 4A: Devil's Cyn Rd	388	28.8	\$566,000,000	\$919,200	14
Alternative 4B: Devil's Cyn Rd - Hybrid	437	24.5	\$594,000,000	\$1,792,500	12
Alternative 5A: County Line	242	31.0	\$593,000,000	\$1,124,000	7
Alternative 5B: County Line - Hybrid	320	26.5	\$622,000,000	\$2,521,625	6
Possible Points or Lowest Cost in Category	756	45.0	\$421,000,000	\$904,200	27



# **Appendix C**

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## Cost Estimates



Ventura Compressor Station Alternatives Evaluation

Numbers provided by PMT, Estimating, Operations, BMcD, ROW

STEP 5: COST AND SCHEDULE

	Option 1: Ventura- Existing Site North Olive Street		Option 2: Avocado Site- Ventura		Option 3: Ventura Steel		Option 4: Devil's Cyn Rd		Option 5: County Line	
	Natural Gas (1A)	Hybrid (1B)	Natural Gas (2A)	Hybrid (2B)	Natural Gas (3A)	Hybrid (3B)	Natural Gas (4A)	Hybrid (4B)	Natural Gas (5A)	Hybrid (5B)
Project Cost (Class 5)										
Property/ROW(road/pipeline/power/temp construction easements). Acquisition Included Here Plus All Loaders.	\$2,000,000	\$2,000,000	\$18,000,000	\$19,000,000	\$82,000,000	\$82,000,000	\$47,000,000	\$47,000,000	\$6,000,000	\$6,000,000
EPC + everything else to execute the project	\$ 419,000,000	\$ 462,000,000	\$ 659,000,000	\$ 688,000,000	\$ 525,000,000	\$ 553,000,000	\$ 519,000,000	\$ 547,000,000	\$ 587,000,000	\$ 616,000,000
Project Cost Totals	\$421,000,000	\$464,000,000	\$677,000,000	\$707,000,000	\$607,000,000	\$635,000,000	\$566,000,000	\$594,000,000	\$593,000,000	\$622,000,000
Operational Cost (Annual)										
Cost for Fuel -Typical Annual Usage - Gas and Electric + Auxilliary Loads. Assumes 50/50 Usage for Hybrid	\$299,200	\$1,447,500	\$299,200	\$1,447,500	\$299,200	\$1,447,500	\$299,200	\$1,447,500	\$374,000	\$2,096,625
Annual Maintenance Costs - compressors are same regardless of drive type; lower maintenance for electric motor drive; additional personnel training if hybrid; NSCR, CEMS (1/2 FTE) and higher compressed air needs for engines.	\$600,000	\$325,000	\$600,000	\$325,000	\$600,000	\$325,000	\$600,000	\$325,000	\$700,000	\$375,000
Fuel Modification - landscape maintenance re brush fire defensible space. (\$2500/day for a landscape crew)	\$5,000	\$5,000	\$50,000	\$50,000	\$10,000	\$10,000	\$20,000	\$20,000	\$50,000	\$50,000
Operational Cost Totals	\$904,200	\$1,777,500	\$949,200	\$1,822,500	\$909,200	\$1,782,500	\$919,200	\$1,792,500	\$1,124,000	\$2,521,625





# **Appendix D**

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## Schedules

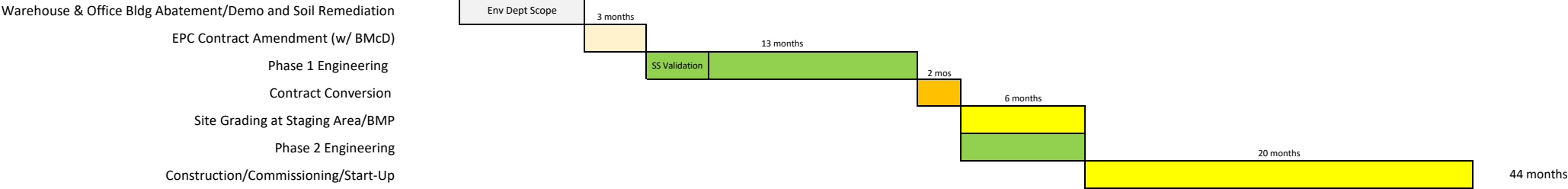


Ventura Compressor Project  
EPC Construction Schedule on Alternative Locations  
Date: 1/25/22

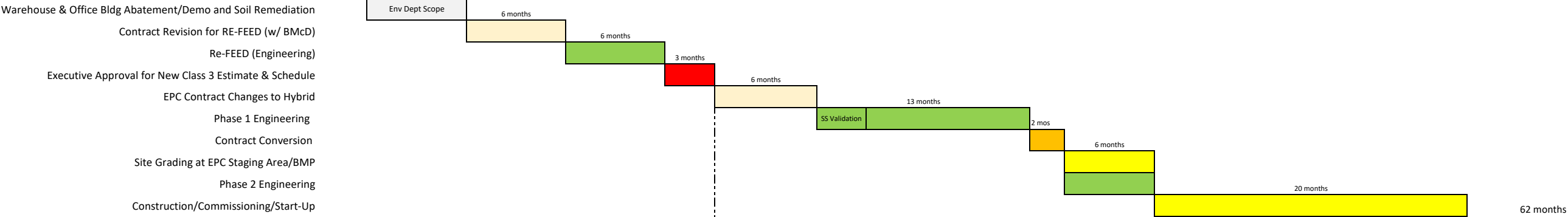


VENTURA STATION

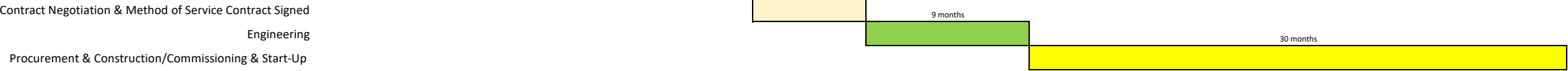
Compressor Station (4 Gas)



Compressor Station (Hybrid)



Electrical Infrastructure (SoCal Edison)



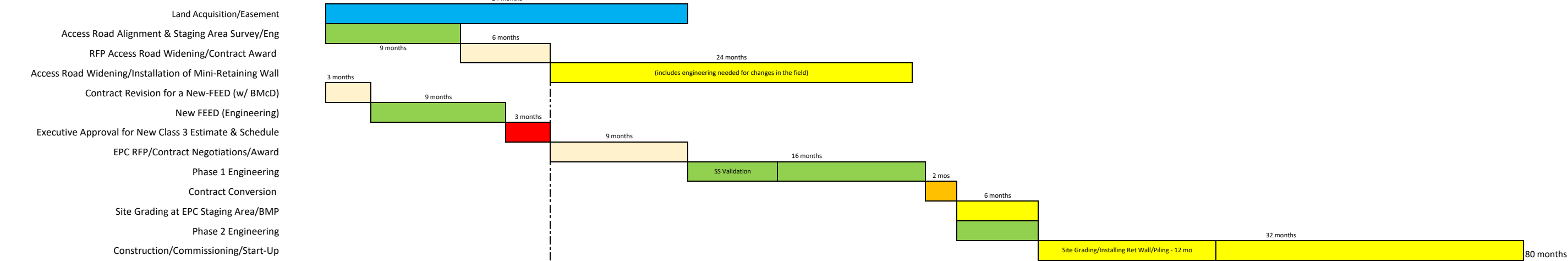
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EPC Construction Schedule on Alternative Locations  
Date: 1/25/22



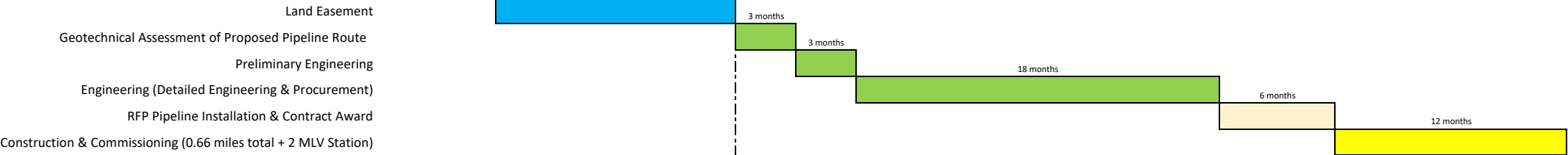
AVOCADO

Compressor Station (4 Gas & Hybrid)

Assumption: Current VCM Budget is approved to fund these activities



New Pipeline & Main Line Valve Station



Electrical Infrastructure (SoCal Edison) for Hybrid



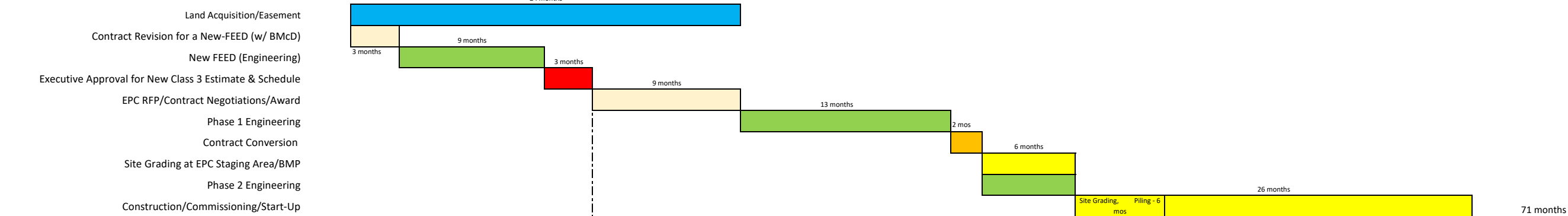
Ventura Compressor Project  
EPC Construction Schedule on Alternative Locations  
Date: 1/25/22



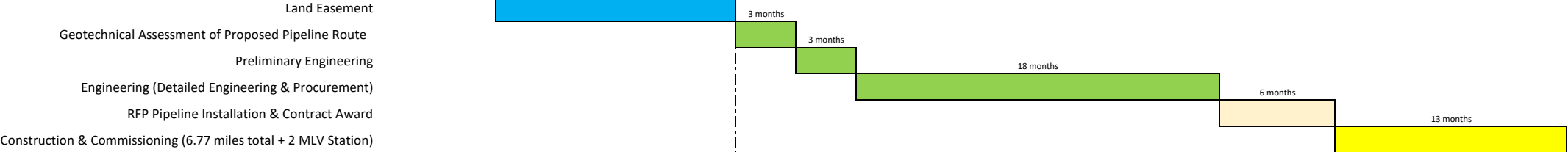
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Compressor Station (4 Gas & Hybrid)

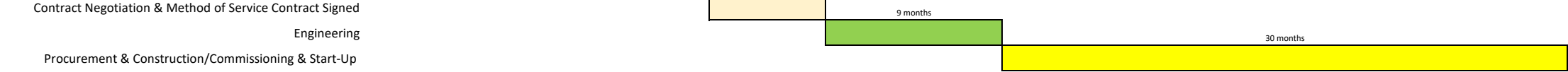
Assumption: Current VCM Budget is approved to fund these activities



New Pipeline & Main Line Valve Station



Electrical Infrastructure (SoCal Edison) for Hybrid





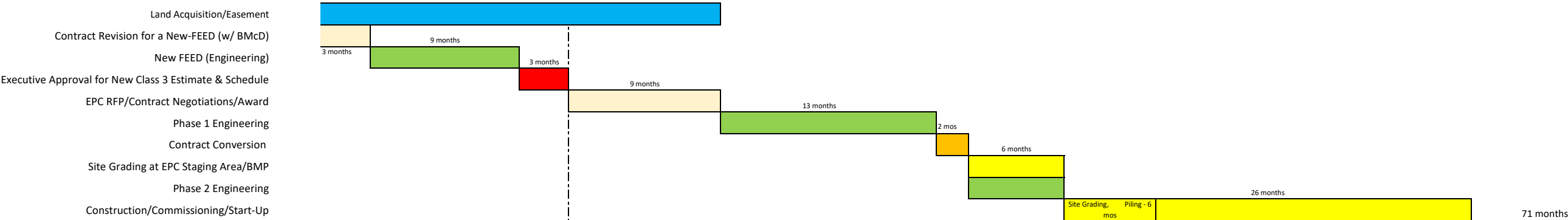
Ventura Compressor Project  
EPC Construction Schedule on Alternative Locations  
Date: 1/25/22



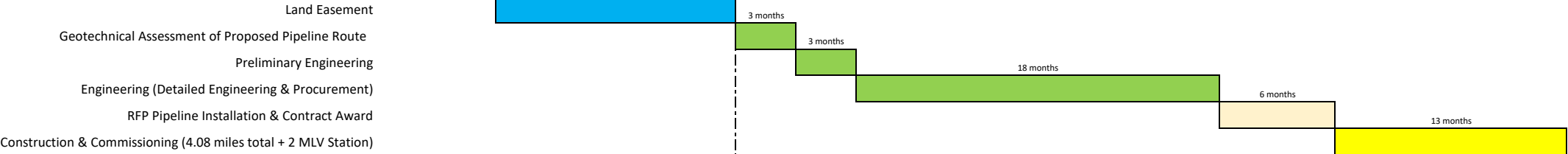
DEVIL'S CANYON

Compressor Station (4 Gas & Hybrid)

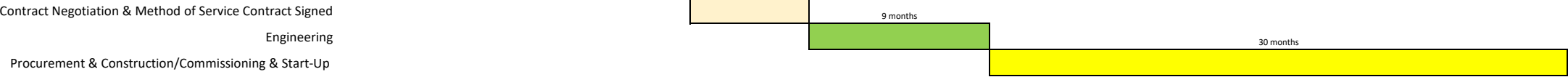
Assumption: Current VCM Budget is approved to fund these activities



New Pipeline & Main Line Valve Station



Electrical Infrastructure (SoCal Edison) for Hybrid



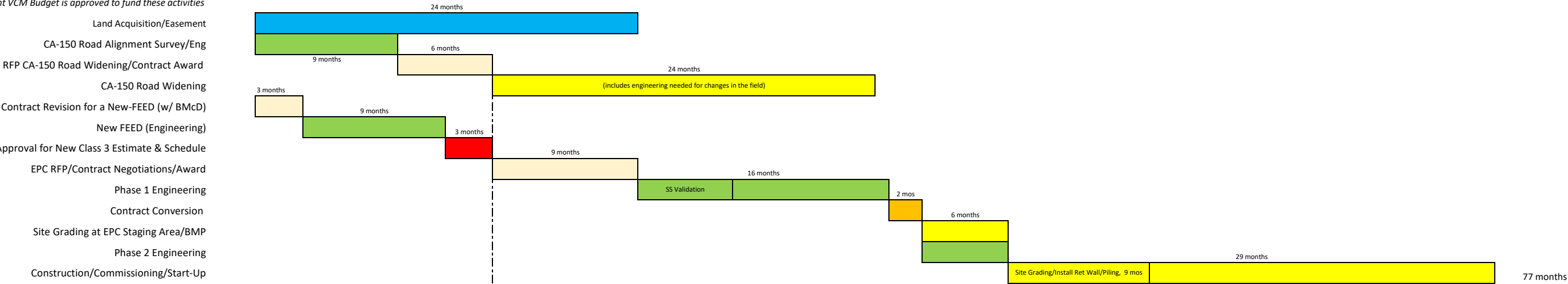
Ventura Compressor Project  
EPC Construction Schedule on Alternative Locations  
Date: 1/25/22



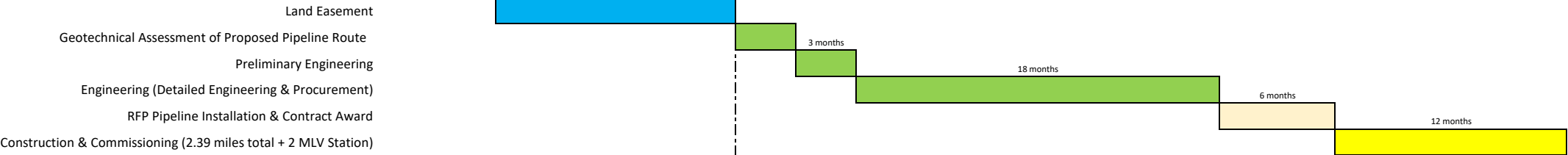
COUNTY LINE

Compressor Station (5 Gas & Hybrid)

Assumption: Current VCM Budget is approved to fund these activities



New Pipeline & Main Line Valve Station



Electrical Infrastructure (SoCal Edison) for Hybrid

