Notice of Preparation of a Environmental Impact Report (EIR) for the Termo North Aliso Field Project

California Environmental Quality Act (CEQA) Lead Agency
County of Los Angeles
Department of Regional Planning

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List of Acronyms

AAQS	Ambient Air Quality Standards
API	American Petroleum Institute
ARB	Air Resources Board
CAPCOA	California Air Pollution Control Officers Association
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CSFM	California State Fire Marshall
DOGGR	California Division of Oil, Gas and Geothermal Resources
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FTA	Fault Tree Analysis
HRA	Health Risk Assessment
Leq	Equivalent steady sound level that provides an equal amount of acoustical energy as the time-varying sound
NFPA	National Fire Protection Association
NOP	Notice of Preparation
OEHHA	Office of Environmental Health Hazard Assessment
ROC	Reactive Organic Compounds
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District

1.0 INTRODUCTION

The County of Los Angeles will be the lead agency and will prepare an Environmental Impact Report (EIR) for the project described herein. In compliance with the California Environmental Quality Act (CEQA) Guidelines Section 15082, the County of Los Angeles is sending this Notice of Preparation (NOP) to responsible agencies, trustee agencies responsible for natural resources affected by the Project, federal agencies that may be involved in permitting or approving the Project, and interested persons. Within 30 days after receiving this NOP, each agency is requested to provide the County of Los Angeles with specific details about the scope and content of the environmental information to be contained in the EIR related to that agency's area of statutory responsibility. The NOP is also being sent to interested persons to solicit input from the public as to the scope of the EIR.

CEQA Guidelines Section 15082 requires that the NOP provide a description of the Project, including the location, and a summary of the potential environmental effects. For some of the key issues, this NOP has been expanded to include brief summaries of how the potential environmental effects will be evaluated in the EIR.

The Termo Company (Termo or Applicant), an operator in the Aliso Canyon Oil Field (Oil Field), has submitted an application to the County of Los Angeles for the North Aliso Field Project (Project). The Project involves the development of up to twelve oil and gas wells in the Oil Field, located on private property in an unincorporated area of Los Angeles County. The Termo Company is proposing that the North Aliso Canyon Project be developed without hydraulic fracturing; hydraulic fracturing is not a component of this Project and is not part of the project description for the North Aliso Canyon Project.

Section 2.0 of the NOP provides a brief description of the Project, including the Project location.

Section 3.0 first discusses the environmental issue areas that may experience potentially significant impacts as a result of the proposed Project in the Oil Field. These issue areas will be examined in the EIR. For each issue area, the potentially significant environmental impacts are identified along with a summary of the approach that will be used to establish the environmental setting and assess the impacts. Section 3.0 then discusses the environmental issue areas that are not expected to experience significant impacts and that will not be analyzed further in the EIR. The preliminary alternatives to the Project are discussed in Section 4.0.

2.0 Project Description

Termo has submitted an application to the County of Los Angeles for the North Aliso Project (Project). The Project involves the development of up to twelve oil and gas wells in the Oil Field, in an unincorporated area of Los Angeles County on private property. Upon full build-out, the twelve wells would be located on three pad locations, known as Sites #1, #2, and #3. A general vicinity map for the proposed Project location is shown in Figure 2-1. The Project would also include access routes, temporary staging areas, and supporting infrastructure such as pipelines and connections to existing power lines. The Project would be developed on land leased to the Applicant under existing Oil and Gas Leases; the mineral rights for the proposed Project are also under lease to the Applicant under existing Leases.

All production of oil and gas would be transported by pipeline to the existing Aliso Canyon Tank Farm Facility (Facility), operated by the Applicant. The produced emulsion (oil and water) would be separated at the Facility, and the produced oil would be transported via truck along with existing Oil Field production. Natural gas would be transported via existing pipeline to the adjacent existing Southern California Gas Co/Sempra Energy gas custody transfer meter.

The Project is proposed in two phases. The first phase involves the drilling of a test well at Site #1 to determine whether commercial quantities of oil and/or natural gas are feasible for production. Should the test well be successful, full development of Site #1, development of Sites #2 and #3, the installation of on-site production equipment, pipelines, power-lines, and road improvements would be completed, as necessary or appropriate. If the test well is not successful, the well would be plugged and abandoned in compliance with the California Division of Oil, Gas and Geothermal Resources (DOGGR) and the drilling pad restored to its pre-Project condition.

2.1 Project Location

The Oil Field is located in the Santa Susana Mountains north of Highway 118 and west of Interstate 5. See Figure 2-1 for a Project location map. Figure 2-2 presents an aerial overview of the Project site pads. The Project site is located in Sections 20 & 28, Township 3 North, Range 16 West, Los Angeles County on land zoned A-2, Heavy Agriculture in the Los Angeles County Zoning Ordinance. The assessor parcel numbers (APNs) for the three oil well pad sites are as follows; Site #1 - APN 2821005025, APN 2821005804 and APN 2826029006, Site #2 - APN 2821005025, Site #3 - APN 2826017050 and APN 2826017051. The proposed Project sites are located in the Santa Susana Mountains Significant Ecological Area (SEA). See Section 2.2 below.

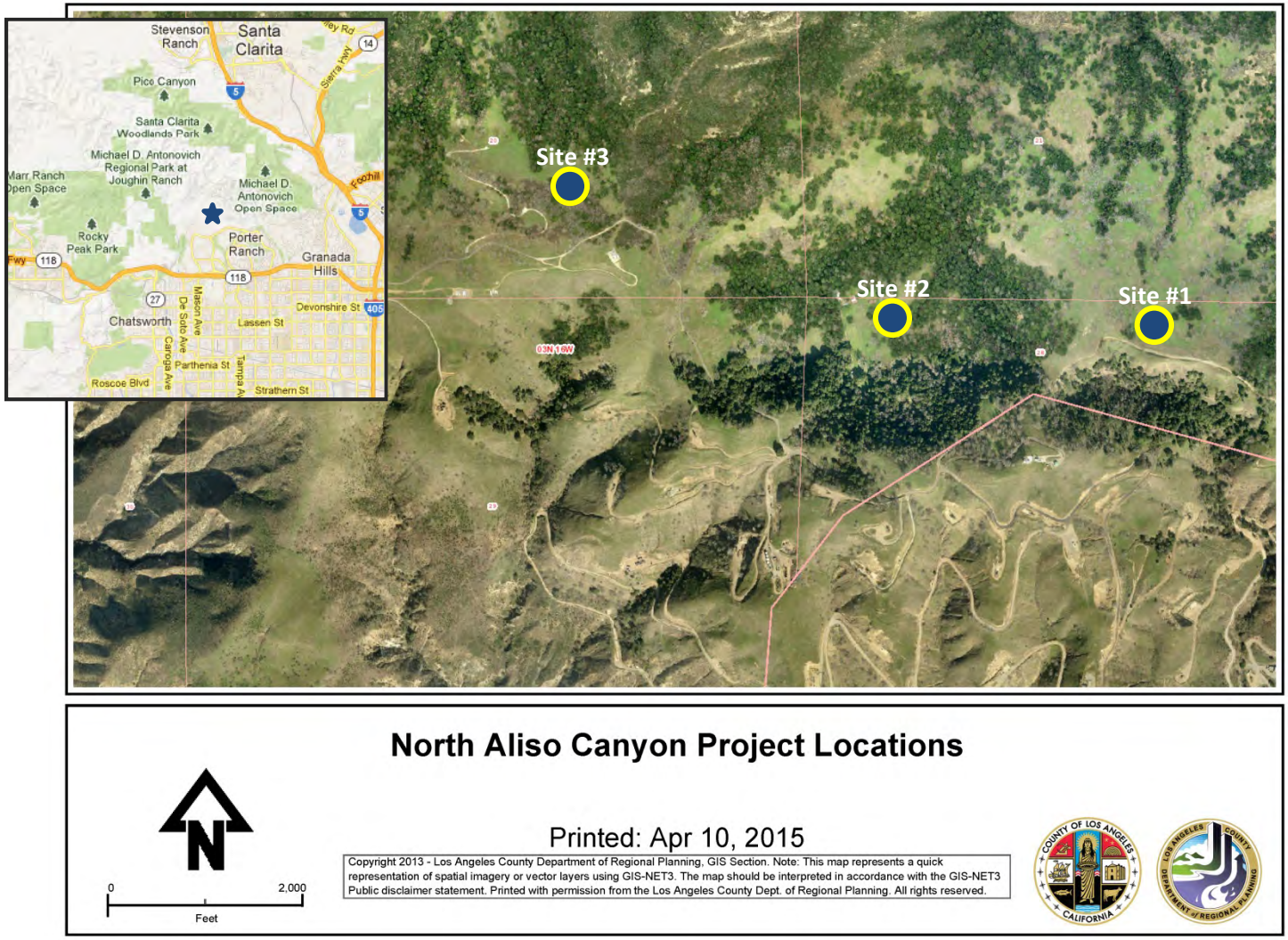
2.2 Significant Ecological Area

The Los Angeles County Department of Regional Planning (DRP) defines a Significant Ecological Area (SEA) as an area within the County identified for its biological value. These areas warrant special management because they contain biotic resources that are considered to be rare or unique; are critical to the maintenance of wildlife; represent relatively undisturbed areas of County habitat types; or serve as linkages. The DRP defines the objective of the SEA Program as the preservation of the genetic and physical diversity of Los Angeles County by designing biological resource areas capable of sustaining themselves into the future.

The three proposed Project sites are located inside the southern boundary of the Santa Susana Mountains SEA. As such, the Project is subject to review by the Significant Ecological Area Technical Advisory Committee (SEATAC). The SEATAC is an expert advisory committee that assists the County DRP in

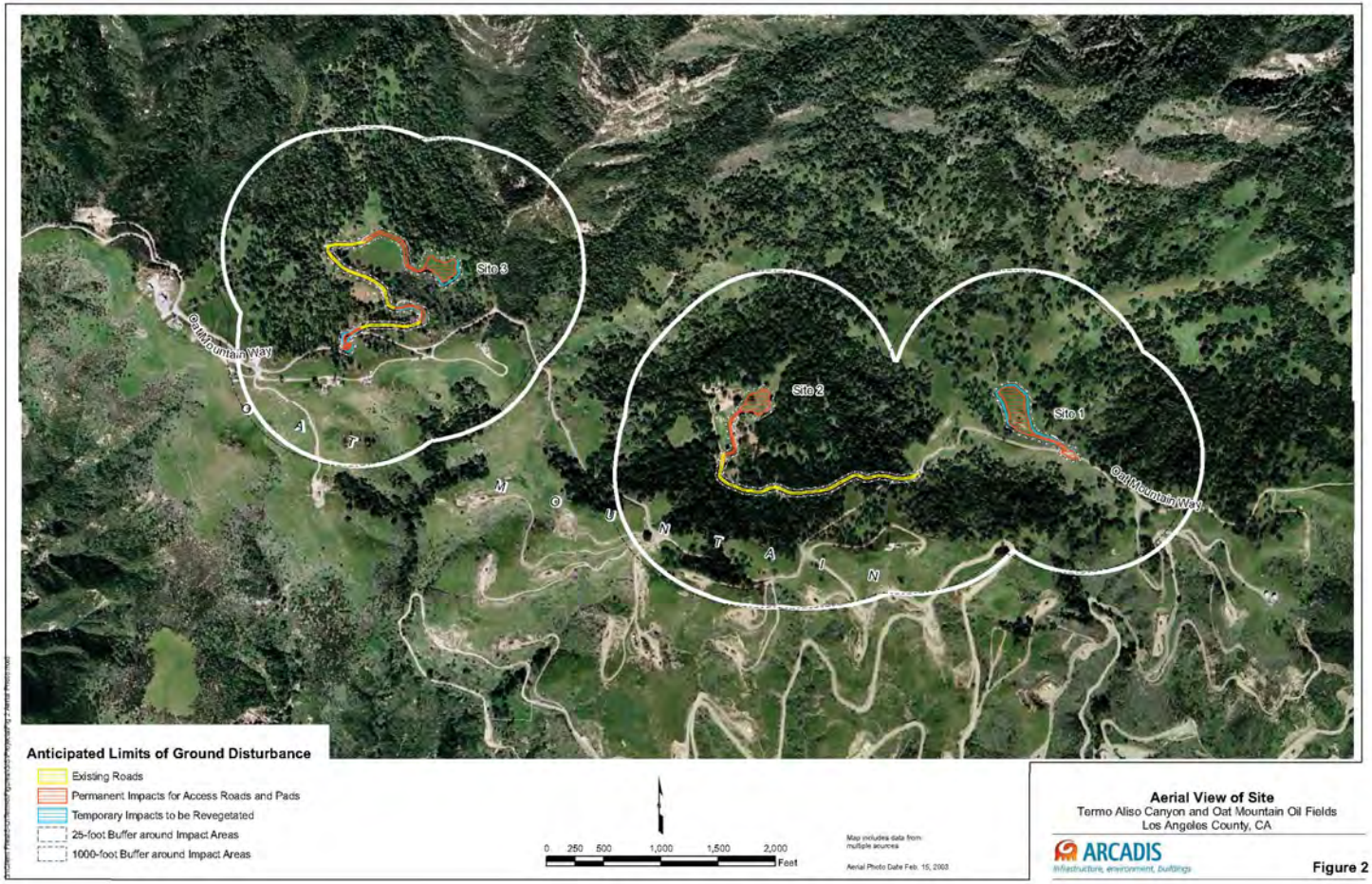
assessing a project's impact on biological resources and the functional role of an SEA. Project review before the SEATAC requires input from a DRP staff biologist and may include submittal of a Biological Constraints Analysis and a Biota Report. The proposed Project was found to be compatible with the Santa Susana Mountains SEA by the SEATAC on July 21st, 2014.

Figure 2-1 Proposed Project Location



Source: Termo, LA County GIS-NET3

Figure 2-2 Project Site Location Aerial View



Source: Project Application, Arcadis

2.3 Background and Existing Conditions

The Aliso Canyon Oil Field has been in operation since 1938 and a portion of the field has been owned and operated by Termo since 1989. Termo currently operates 8 oil wells in the Aliso Canyon Oil Field and 10 oil wells in the adjacent Oat Mountain Oil Field.

Current production from the Oil Field is transported by an existing pipeline system to the existing Aliso Canyon Tank Farm located within the Oil Field. Prior to pipeline transfer to the Facility, the oil and gas is separated at each well site and then moved via separate oil and gas above ground pipelines to a main pipeline corridor and on to the Facility, or, in some cases, the oil and gas undergo separation at the main Facility. The Facility separates the oil and water with the oil transported out of the field by truck and the water by pipeline to an approved waterflood Project injection well operated by the Southern California Gas Co/Sempra Energy at the Aliso Canyon Gas Storage Facility. Natural gas is also transported by pipeline to the Gas Company gas custody transfer meter.

2.4 Project Objectives

Pursuant to Section 15124(b) of the California Environmental Quality Act (CEQA) Guidelines, the description of the proposed Project is to contain "a clearly written statement of objectives" that would aid the lead agency in developing a reasonable range of alternatives to evaluate in the EIR and would aid decision makers in preparing findings and, if necessary, a statement of overriding considerations. The County is the lead CEQA agency that is preparing the EIR, considering the EIR for certification and presenting the Project to the County Planning Commission for consideration of approval.

The Applicant's Project objectives include the following:

- Explore, develop, and optimize the oil and gas reserves of the Aliso Canyon Oil Field, which is a natural resource found in limited areas of the County, to help meet domestic oil and gas requirements.
- Implement a project designed to avoid or minimize impacts to ecological resources and maximize the use of existing infrastructure.
- Promote a strong local and state economy by investing in local oil field development.
- Promote the fiscal health of the County and State by promoting development that would increase tax revenues.
- Reduce the need for importing foreign oil.

2.5 Description of Proposed Project

The Project is proposed in two phases. The first phase involves the drilling of a test well at Site #1 to determine whether commercial quantities of oil and/or natural gas are feasible for production. Should the test well be successful, development of Sites #2 and #3, the installation of on-site production equipment, pipelines, power-lines, and road improvements would be completed, as necessary or appropriate. If the test well is not successful, the well will be plugged and abandoned in compliance with the California Division of Oil, Gas and Geothermal Resources (DOGGR) and the drilling pad restored to its prior condition.

2.6 Phase I - Test Well

The test well is proposed to be drilled at well pad Site #1. Once the drilling pad is prepared, the mobile drilling rig would be brought to the drilling site. Mobilization and rigging up of the drill rig would take approximately three to five days. The drilling rig proposed for the Project would have a derrick height of approximately 125 to 145 feet. The rig would be brought to the site in sections requiring approximately 20 to 30 truck trips.

Temporary facilities, equipment and materials necessary for the drilling operation would be set up and temporarily stored until needed on the drilling site with additional material and supplies being centrally located at the Aliso Canyon Tank Farm (e.g., drilling mud supplies, water, drilling materials and casing, crew support trailers, pumps and piping, and portable generators, etc.). Once the rig is in place, surface casing would be set and cemented, and blowout prevention equipment would be installed on the wellhead and tested. Once this step is complete, the well drilling operations would begin. Drilling would occur 24 hours a day until target depth of between 7,500 and 9,000 feet is reached and the well is fully evaluated and cased.

Once the test well has been completed and tested, the Applicant would complete an analysis of the results to determine if economically viable quantities of oil and gas are present. If the proposed Project is determined to be economically viable, the temporary equipment would be removed, and permanent equipment would be installed at the well pad.

2.6.1 Phase II – Well Pads, Pipelines, and Road Improvements

If the test well proves successful, full development of well pad Site #1 and development of Sites #2 and #3 would be completed as necessary or appropriate. Associated oil and gas production infrastructure such as oil/gas separation equipment, vessels, pipeline headers, and testing devices would be installed at each well pad location, as needed. If maximum build-out is necessary, the remaining eleven wells would be drilled with four wells at each new well pad location and an approximate drilling schedule of two wells per year. The well production fluids (oil, water, and gas) would be separated into emulsion (oil and water) and gas at each well pad facility. Installation of oil (emulsion) and gas pipelines would be completed to transport the production of each well site to the Aliso Canyon Tank Farm. Separate above ground oil and gas pipelines would be utilized from each well pad location which would tie into the existing pipeline corridor system in the Aliso Canyon Oil Field. Minor improvements to existing oil field roads would also be completed as part of the proposed Project.

Preparation of the well pad sites, installation of the pipelines, and road improvements would require temporary construction activities. Construction activities are estimated to require up to 90 days; the drilling and completion phase is estimated at approximately 45days for each well.

2.6.2 Oil and Gas Production and Transport

All production of oil and gas would be processed at the existing Aliso Canyon Tank Farm, operated by the Applicant. The oil and water would be separated using existing equipment; the produced water would then be re-injected back into the formation in an existing Oil Field wastewater injection well as permitted by DOGGR, or be transported by existing pipeline to the Aliso Canyon Gas Storage Facility to an existing waterflood project injection well consistent with current oil field operations. The produced oil would be transported via tanker truck consistent with the existing oil production in the Oil Field. It is estimated that the increase in tanker truck activity would be between one and three additional tanker trucks per day from the proposed Project.

The produced natural gas would be transported via an existing pipeline to the adjacent existing Southern California Gas Co/Sempra Energy gas custody transfer meter gas sales line.

3.0 Scope of the Environmental Impact Report (EIR)

The EIR will assess the impacts of the proposed Project and develop mitigation measures to reduce potentially significant impacts. The environmental issue areas that will be addressed in the EIR are presented below. These are the issue areas by which potentially significant impacts could occur with drilling and operational activities proposed for the Oil Field.

Additional issues may be identified at the public scoping meeting and in written comments on the NOP: these will also be addressed in the EIR. Issue areas that have been determined not to result in potentially significant impacts are discussed in Section 3.2.

3.1 Issue Areas with Potentially Significant Impacts

As part of a preliminary scoping analysis conducted by the County of Los Angeles and the EIR consultant, thirteen environmental issue areas have been identified that could have potentially significant impacts as a result of oil and gas development activities. The analysis in the EIR for each of these issue areas will address the environmental baseline, the impacts associated with the proposed Project drilling and operational activities, cumulative impacts, and mitigation monitoring. The mitigation monitoring plan will include the requirements, the responsible agencies and the timelines for each mitigation measure. The preliminary scope of the EIR analysis for each of these issue areas is discussed below.

3.1.1 Aesthetics/Visual Resources

Environmental Setting
The proposed Project site is located in the Aliso Canyon Oil Field located in the Santa Susana Mountains. The Project site is not visible from public viewing areas due to the mountainous topography and trees. The nearest residence is 1.6 miles away and on the far side of a mountain ridge. The environmental setting section will document the existing visual character and quality of the Project area. The EIR will supplement the baseline environmental setting with photographs from critical public and residential viewing locations.

Impact Discussion
The proposed Project is in an existing oil field and is therefore consistent with the visual character of the area. The proposed Project would not be visible to the public, and there are no known hiking or riding trails through the Project area. The EIR will focus on the aesthetic impacts associated with the proposed drilling and operational activities; however, as noted above, significant impacts are not expected. If potentially significant impacts are identified, mitigation measures will be proposed, where possible, and address issues such as landscaping, removal of abandoned equipment, and painting of equipment.

3.1.2 Air Quality/GHGs

Environmental Setting
The existing air quality and meteorological conditions will be characterized to provide an environmental setting against which the proposed Project will be assessed. The existing and projected air quality will be described for the Project area. The attainment status with respect to the Ambient Air Quality Standards (AAQS), particularly for ozone (for state and federal standards) and particulate matter (for state standards), will indicate the areas most sensitive to increases in ambient concentrations of air pollutants.

Impacts from the emissions of inert pollutants will generally be limited to the regional vicinity of the oil field and transportation corridors. Thus, for the EIR, a study area that includes the Los Angeles basin will be selected.

The environmental setting will include characterization of the area with regard to the existing air quality, the regional meteorology, and the applicable air regulations. Existing data will be updated and refined as they apply to the oil field operations. Federal, State and SCAQMD air quality regulations will be reviewed to identify those items that apply to the Oil Field operations. Discussions with regulatory agencies will be carried out to identify pending regulations that might affect the Oil Field operations.

A detailed description of the baseline air pollutant concentrations and trends in the region will be prepared based on data from local air quality monitoring stations. Regional toxic air contaminant concentrations and trends will also be characterized based on any available data from the Air Resources Board (ARB) and the SCAQMD. These various sources will be aggregated into a database to characterize site-specific background conditions for inert pollutants. The baseline will also include an assessment of odor violations and complaints that have been recorded for the Oil Field.

The EIR will also provide the current SCAQMD emissions inventory for the Oil Field as the baseline.

Impact Discussion

Construction activities such as well pad preparation and pipeline construction in the Oil Field would result in new short-term emissions. Increased oil and gas processing and drilling would result in an increase in operational air emissions, including emissions of particulate matter, nitrogen oxides (NOX), and reactive organic compounds (ROC). All of these emissions have the potential for significant environmental effects.

The EIR will develop emissions inventories for the drilling of the proposed twelve wells and the associated increase in operational activities. Emissions from all equipment used in construction and operations, including pumps, compressors, mobile equipment, drilling equipment and other miscellaneous sources, will be estimated using the appropriate emission factors. Emissions will be developed for peak hour, peak day, and tons per year. The emission estimates will include all drilling and production equipment as well as mobile sources. The emission calculations will also include an estimate of the fugitive emissions.

For any source of toxic air contaminants, emissions will be estimated using the appropriate SCAQMD emission factors and source specific profiles, and the California Air Pollution Control Officers Association (CAPCOA) Technical Guidance document that was developed for estimating toxic emissions for the Hot Spots program and the EPA Superfund Guidance documents.

The analysis for toxic emissions will be conducted according to the guidelines set forth by the Office of Environmental Health Hazard Assessment (OEHHA) and the SCAQMD guidelines. As part of the EIR, the potential toxic air emissions associated with the new and modified equipment will be estimated following the SCAQMD guidelines. The new air toxic emissions will be added to the baseline values, and a Project specific Health Risk Assessment (HRA) will be conducted per the SCAQMD guidelines. Mitigation will be developed for any potentially significant air toxic emissions.

Potential sources of odors and the frequency of odors from sources in the Oil Field will be identified. Odor complaints from the SCAQMD will also be examined for the area to consider the historical information. The potential significance of odor impacts will be based on the relative increase or decrease in the frequency of Project-related odor events that may result from the possible future drilling and operational activities. Mitigation will be developed that could reduce the frequency of odor events.

Greenhouse gas emissions from well drilling and operational activities will also be quantified for all elements of the Project. As needed, mitigation measures will be developed to reduce the significance of any greenhouse gas emissions.

3.1.3 Biological Resources

Environmental Setting

Biological resources include terrestrial habitats and biota, including vegetation, wildlife, and potentially including sensitive botanical and wildlife species. In addition, the Oil Field is located in the County designated Santa Susana Mountains Significant Ecological Area (SEA). The Los Angeles County Department of Regional Planning (DRP) defines a Significant Ecological Area (SEA) as areas within the County identified for their biological value. These areas warrant special management because they contain biotic resources that are considered to be rare or unique; are critical to the maintenance of wildlife; represent relatively undisturbed areas of County habitat types; or serve as linkages (see Section 2.2).

The California Natural Diversity Data Base (CNDDB) will be referenced to identify previously recorded observations and potential presence of sensitive species within and adjacent to the Oil Field. This information will supplement the Significant Ecological Areas Biological Constraints Analysis prepared for the proposed Project in June 2010 and updated in July 2013. There will also be a review of County databases, recent CEQA compliance documents, the County Oak Tree Permits Ordinance, technical reports prepared for the County, and additional field surveys in the Aliso Canyon Oil Field area.

Impact Discussion

Proposed Project activities could potentially result in disturbance or loss of vegetation and wildlife habitat and possible injury to wildlife existing on the premises. Some construction activities would be within previously disturbed areas and would be unlikely to result in new biological impacts. Construction activities could, however, result in an adverse increase in lighting and noise impacts, and erosion and sedimentation in adjacent areas.

Biological issues associated with the drilling of the twelve wells and operational activities include their potentially significant effects on the biology in the vicinity of the Oil Field. In particular, the following potential effects will be assessed:

- Lighting and glare affecting habitats;
- Equipment noise affecting habitats;
- Erosion and sedimentation during construction affecting adjacent watercourses and associated habitats; and
- Surface disturbing activities affecting habitats.

All of these areas have the potential for significant impacts to biological resources. Appropriate mitigation measures will be developed, if necessary, to avoid potentially significant impacts.

3.1.4 Cultural Resources/Archaeology

Environmental Setting

The cultural resources/archaeology component of the EIR will determine the probability for intact, potentially significant resources (e.g., a resource that has yielded, or may be likely to yield, information important in prehistory or history), to exist within the Oil Field. This assessment will be based on archival research and an intensive archaeological survey of the Oil Field. The establishment of the cultural resources baseline environmental setting will include three steps.

1. A cultural resources record search of relevant archaeological and historical documents at the State Historic Preservation Office will be completed for the Oil Field and within a 0.5 mile buffer. This will provide the location of all recorded archaeological sites, as well as previous

investigations. The resulting presence or absence of archaeological site data will provide a context for assessing the potential impacts of the Project.

2. A review of the Oil Field site will be conducted to determine the nature and extent of previous ground disturbances, which are expected to be significant given the extensive oil development activities that have occurred at the site.
3. An archaeological Phase 1 survey (e.g., a records search and field survey) of select portions of the Oil Field will be completed, if necessary, to determine areas where cultural or archaeological resources are likely to exist within the Oil Field.

Preliminary research indicates one historic era cultural resource located within the well pad Site #3 Project area. Two additional cultural resources have also been identified within the Oil Field; the W.J. Willet caretaker complex located within Site #2 and a pipe corral and reservoir structure within the Site #1 location.

Impact Discussion

Although the Oil Field site was previously disturbed in some locations by the construction of the existing facilities, some local areas may possess potentially significant historic and/or cultural resources that may be disturbed by new construction. The proposed drilling and operational activities could result in ground disturbance with the potential to cause significant impacts on any cultural resources in the area.

The cultural resources section will address CEQA Guidelines Sections 15064.5 and 15126.4 that define a significant cultural resource, either prehistoric or historic, as an "historical resource." The relevant criterion for defining significant archaeological resources is a resource that: "Has yielded, or may be likely to yield, information important in prehistory or history."

Criteria for assessing what types of activities would constitute an adverse effect on significant historical resources are identified in CEQA Guidelines Section 15064.5. The proposed drilling and operational activities would result in a significant impact on historical resources if the activities would:

- Cause demolition, destruction, relocation, or alteration of the character-defining features of a significant historical resource;
- Cause the loss of integrity, causing a historical resource to lose its significance; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Appropriate mitigation measures will be developed, if necessary, to avoid potentially significant impacts and will be evaluated as to their effectiveness and residual impact. These will use a hierarchy of preferred strategies, as considered technologically and economically feasible.

1. Avoidance of impacts to intact, significant resources by minor redesign of Project infrastructure.
2. Archaeological excavation to determine the precise spatial (horizontal and vertical) extent of the significant archaeological deposit (e.g., a Phase 2 significance assessment), followed by data recovery of a portion of the significant archaeological resource to be impacted through a Phase 3 archaeological excavation program (e.g., a program where the archeological artifacts are excavated mapped, removed, and cataloged).
3. Construction monitoring by a County-qualified archaeologist and documented contemporary Chumash descendant of those Native American populations that would have occupied the Project site and vicinity.

3.1.5 Energy and Mineral Resources

Environmental Setting
With the development of any oil and gas resource, a small amount of energy is consumed, and a large amount is produced. The consumption occurs from drilling operations, processing, and transportation. The energy produced is in the form of natural gas and oil.

The Oil Field is a net producer of energy (e.g., natural gas and crude oil). With the proposed drilling and operational activities, the amount of energy produced by the facility would increase. This additional energy production will not serve to increase the demand for natural gas or crude oil, but rather will serve to replace natural gas and crude oil supplies from other places. Given that California does not have sufficient crude oil and natural gas to meet its needs, it is likely that the crude and natural gas production will displace other material being imported from outside of California. The oil production will serve to reduce oil imports from foreign sources. This section will provide a discussion of the current crude oil and natural gas balance in California and how the future increase in production could affect this balance.

The EIR will provide estimates of the fuel and electrical power that are currently being used in the Oil Field. The baseline section will also discuss the current energy production from the Oil Field as well as the projected crude oil and natural gas demand for California. The crude oil and natural gas demand data will be developed from various California Energy Commission reports.

Impact Discussion
Based upon the equipment list for the Project, the increase in processing throughput, and the transportation needs, an estimate of the additional energy consumption will be made for the proposed Project activities. Energy consumption will be estimated for electricity, diesel fuel and natural gas. This will then be compared to the estimated natural gas and oil production. In evaluating the energy consumption of the future facility equipment, special attention will be given to evaluating the overall energy efficiency of the equipment. If potentially significant issues are identified, mitigation measures will be proposed.

3.1.6 Fire Protection/Emergency Services

Environmental Setting
The environmental setting will provide a summary of the existing fire protection and emergency response services and plans for the Oil Field. The section will also provide a discussion of the existing fire suppression systems and emergency response equipment in the Oil Field and at the Aliso Canyon Tank Farm. The baseline would also discuss the current emergency response times and capabilities that exist at the site and from adjacent and nearby fire stations that would respond to a fire or emergency. The Oil Field is served by Los Angeles City Fire Department Station #8 and Los Angeles County Fire Department Stations #28 and #75.

Impact Discussion
This impact section will be coupled closely with the risk of upset impact section. The results from the risk of upset analysis will provide an estimate of the increased risk of a fire, explosion, oil spill, or other emergency situation that could result from Project drilling and operational activities. The analysis will also provide information on the hazard zones associated with potential accidents. The EIR will look at all new equipment to assure there is adequate spacing to help prevent fires and impacts on adjacent equipment. The risk of upset section will also look at the maximum oil spills and address the adequacy of containment systems. As part of the fire protection services analysis, the EIR would address compliance with American Petroleum Institute (API) guidelines and National Fire Protection Association (NFPA) requirements, with a particular focus on the adequacy of the fire suppression systems.

The significance of potential impacts will be qualified using significance criteria that focus on compliance with NFPA requirements and API guidelines and the ability to adequately respond to an emergency, including evacuation of residential and business areas. Also, the ability of the Applicant to respond to a spill and other hazardous situations, including any bonding requirements, will be assessed.

If potentially significant impacts are identified, mitigation measures will be proposed, where possible, to reduce the impact to a level of insignificance. The EIR will identify feasible measures to mitigate the adverse impacts of the Project on fire protection and emergency services.

3.1.7 Geological Resources

Environmental Setting

The Oil Field site is rich in geological information and activity. The Santa Susana Fault is near the Project site and is a key component of oil development in the area due to the fact that oil gathers in traps caused by the Fault. The Santa Susana Mountains include an east-west trending ridge where the three proposed Project well pad sites are located. Other area main landform features are the Oat Mountain Syncline and the Pico Anticline. The Santa Susana Mountains contain Oak Ridge and South Mountain; these landforms descend to the north to the Oxnard plain. The Alquist-Priolo Earthquake Fault Zone is mapped in the Santa Susana Mountains area with the nearest section approximately 1.7 miles southeast of proposed well pad Site #1.

The baseline environmental setting will describe the regional and local geologic setting, including stratigraphy, soils, faulting, and earthquakes. The baseline section will also discuss the historical subsidence or uplift that has occurred in the area and will discuss the Santa Susana Fault. The baseline section will also provide a description of the oil reservoirs that have been developed at the Oil Field.

Impact Discussion

The impact evaluation will focus on potential geologic hazards, including active faulting in the vicinity of the site, which might result in potential upset of the future drilling and production facilities. Potential geologic hazards, such as seismically-induced ground shaking, fault rupture, landslides, liquefaction, subsidence, sinkholes and erosion, will be discussed with respect to the current environmental setting. These types of hazards could result in potentially significant impacts.

There is a history of faulting in the Aliso Canyon area, and the Alquist-Priolo Earthquake Fault Zone is mapped in the proposed Project area. The impact discussion will address the potential for surface fault rupture due to future oil and gas production. It will also address the potential effects the increase of produced water injection from the proposed Project could have in relation to subsidence and earthquakes.

Mitigation for reducing the effects of potentially significant impacts will be developed, emphasizing conveyance of surface water runoff during repair and/or remediation operations and establishment of erosion control measures such as silt fences to minimize sedimentation entering nearby drainages. Mitigation to reduce potentially significant impacts associated with geologic hazards will also be provided.

3.1.8 Hazardous Materials/Risk of Upset

Environmental Setting

A quantitative risk analysis will be prepared to establish existing baseline risk associated with the Oil Field operations. The quantitative risk analysis will include all existing operations at the Oil Field and will address flammable, toxic and explosive hazards. The risk analysis investigates the potential for acute risk to offsite populations associated with accidental releases.

Impact Discussion

The proposed Project would include potentially hazardous activities (i.e., drilling of twelve wells, increased processing of oil and gas, and increased injection of produced water). These activities all currently occur under the existing operations at the Oil Field. Drilling of the additional wells under the proposed Project could result in a slight increase for the potential of impacts to public safety due to accidental release of oil and gas that could result in fires, explosions, or toxic hazards.

This section of the EIR will assess the risks associated with the drilling of the twelve proposed wells and the corresponding increase in oil and gas processing and hazardous material transportation. The evaluation of risk will cover all aspects of the Project including construction, transportation, production, processing, and temporary storage

The EIR will use Fault Tree Analysis (FTA) to evaluate potential changes in the likelihood of a release of hazardous materials from the Oil Field. The results of the FTA will be used with a consequence analysis to evaluate the incremental changes in risk over the baseline. Historical records of operations in the Oil Field will be used to assess the accuracy of the frequency analysis. Records will include fire department response records, South Coast Air Quality Management District (SCAQMD) breakdown and odor complaints, California State Fire Marshall (CSFM) records, DOGGR records, etc. The EIR will propose mitigation measures if significant changes to risk are identified.

The EIR will evaluate hazardous material transportation to estimate the incremental changes in risk over the current baseline. The proposed Project would result in an increase of oil production and truck transportation of oil.

The proposed Project would also require increased usage of hazardous materials in the Oil Field and disposal of hazardous waste streams. The EIR will evaluate the level of increased risk due to the additional hazardous material transportation that may be necessary.

Mitigation measures will be proposed for each hazard that has the potential to impact public safety. Mitigation may include system and operational issues, such as equipment design, site security, communication systems, maintenance, operational procedures, etc. The mitigation measures will be evaluated in terms of feasibility, adequacy and most importantly, effectiveness. Two key considerations in the application of specific mitigation measures will be the specific activity and the location of people in proximity to specific activity.

3.1.9 Hydrology and Water Resources

Environmental Setting

The baseline environmental setting will describe the regional and local hydrologic setting, including the encompassing watershed, groundwater quality and levels, surface water runoff, drainage, Regional Water Quality Control Board (RWQCB) monitoring/plans, and general water quality. It will be prepared based on a review of published hydrologic maps, published geologic/hydrologic reports, as well as documents prepared by the County, RWQCB and others. The existing Oil Field Spill Control Plan will be reviewed. The baseline will also document the existing stormwater runoff system at the Oil Field.

Impact Discussion

The water resources analysis will include the potential for impacts to water quality (surface or ground water) as a result of Project activities including well drilling, pipeline transportation or trucking. Proposed drilling and development of the three well pads could increase the risk of potential upset of components of the Oil Field and increase the risk of adverse water quality impacts to groundwater, and the Project area watershed. This will include an analysis of drilling muds disposal. Produced water for the proposed Project would be re-injected at the Southern California Gas/Sempra Company at the Aliso Canyon Gas Storage Facility consistent with current operations as permitted by DOGGR.

The Oil Field Spill Control Plan will be evaluated for effectiveness in protecting surface water and groundwater. In the event that inadequacies are detected in the plan, mitigation measures will be provided to further enhance spill prevention and containment at the well pads and Aliso Canyon Tank Farm, thereby reducing potential impacts.

Construction activities such as well pad preparation and pipeline construction will be evaluated since they could result in erosion and sedimentation of adjacent watercourses. Construction could also impact adjacent watercourses with other types of construction debris such as oil and grease, construction chemicals, etc. Particular emphasis will be placed on providing Best Management Practices for containment of stormwater during construction and during operations. These will include directing runoff to facilities including sediment traps, catchment basins, or bioswales that can be effectively maintained.

3.1.10 Land Use/Policy Consistency

Environmental Setting

The proposed Project is the development of twelve new wells in an existing and permitted oil field. The proposed Project site area is zoned A-2, heavy agricultural, under Title 22.24.120(D) of the County zoning ordinance. Title 22.24.120(D) allows for oil and gas development including the structures and facilities necessary for all drilling and producing operations. Adjacent land uses to the proposed Project site include oil and gas production, telecommunication towers and facilities, roads and highways, and the Southern California Gas/Sempra Company Aliso Canyon Gas Storage Facility. Other regional land uses include residential neighborhoods, landfills, parks, and nature preserves. The nearest residential development to the proposed Project site is 1.6 miles away.

Impact Discussion

The EIR will review the compatibility of the proposed Project activities with the existing and adjacent land uses and will address the consistency of these activities with the County's General Plan policies and with the County's Oil and Gas regulations as codified in Title 22.24.120. In particular, the EIR will focus the policy analysis on key areas such as aesthetic and visual resources, noise, odors, environmentally sensitive areas, public access, and recreation. The EIR will also evaluate the potential impacts on the quality of life in the surrounding area resulting from proposed drilling and operational activities.

The Project is located in the Santa Susana Mountains Significant Ecological Area (SEA) (see Section 2.2) and is therefore subject to the County Significant Ecological Area Technical Advisory Committee (SEATAC). The SEATAC found the proposed Project compatible with the Santa Susana Mountains SEA on July 21st, 2014.

Mitigation measures would be developed in close coordination with other issue areas. The primary task of the land use mitigation section is to assess the effectiveness of these interdisciplinary mitigation measures in reducing or avoiding land use impacts. As noted above, the proposed Project is consistent with the current land use and zoning for the Project area.

3.1.11 Noise

Environmental Setting

The EIR will describe the existing noise environment throughout and around the Oil Field by compiling and reviewing existing noise data for the study area and by taking supplemental, site specific noise measurements. Noise levels in the study area will be taken to confirm and update existing noise measurements. Noise measurements will be taken at the perimeter of the Oil Field as well and other appropriate locations in close proximity to the Oil Field. The nearest residential receptor is 1.6 miles away.

Impact Discussion

The proposed Project drilling and operational activities in the Oil Field could potentially result in an increase in ambient noise levels in the Project area. The noise analysis will address the level of noise associated with the drilling and operational activities as a function of distance from the Oil Field.

Proposed drilling and operational noise levels will be calculated based on the schedules and equipment lists developed in the Project Description. The impact analysis will be based on the relationship between projected noise levels (and the duration of these levels) and applicable policies of the County of Los Angeles.

Noise impacts will be discussed on the basis of the change in the ambient noise environment in the study area that would be caused by the proposed drilling and operational activities. The various elements of the future activities will be evaluated to determine which of them could influence ambient noise levels. The next step would be to determine how much change would be expected. The analysis will proceed as follows:

1. Calculate noise levels and the duration of the impact for sensitive receptor locations in the noise study area utilizing existing equipment-specific noise level databases and measurement studies.
2. Determine the elements of the future drilling and operational activities that will cause a noticeable change over the measured background noise levels.
3. Evaluate projected noise levels and incremental noise increases against appropriate significance criteria.
4. Evaluate potential conflicts as a result of noise on surrounding residential areas.

Calculations will be made to estimate noise levels at noise sensitive locations in the vicinity of the Oil Field. Noise will be modeled using an existing procedure such as the one developed for the EPA titled "Regulation of Construction Activity Noise," in which construction equipment source levels are defined and combined with information on distance to receiver, duration of equipment usage, operating characteristics, etc. These methods will define peak and average noise exposure levels (Leq and CNEL). Source noise levels will be obtained from the available technical literature and from actual on-site noise measurements.

Noise measurements of drilling operations will be taken. Data will be collected in the vicinity of the drilling operations, as well as at a number of locations in close proximity to the Oil Field.

The EIR will identify feasible measures to mitigate any potentially significant adverse impacts of the Project on noise that are identified in the impact section. For each measure, a discussion will be provided as to whether the mitigation measure would, by itself or in concert with other proposed measures identified in this analysis, fully or partially mitigate the impact it addresses.

3.1.12 Public Services and Utilities

Environmental Setting

The existing operation of eight wells at the Oil Field does not utilize a significant amount of public services or utilities. The produced water generated from the existing production of oil is re-injected at the nearby Southern California Gas Co/Sempra Energy Aliso Canyon Gas Storage Facility. The existing Oil Field operations do not generate a significant amount of municipal solid waste. Water for existing Oil Field operations is obtained from local private suppliers and the Applicant. Existing electrical lines provide electrical power to the Oil Field.

Impact Discussion
The development of three drill pad areas and the drilling of twelve wells would not require any additional public services or utilities. The proposed Project would use the existing electrical lines that currently serve the Oil Field, and the proposed electrical use is expected to be minimal. The produced water generated from the proposed wells would be re-injected along with the existing field operations at the Aliso Canyon Gas Storage Facility; therefore, no disposal of wastewater offsite would be required. The Project would not generate significant quantities of municipal waste. Solid (drill cuttings) and liquid waste from the drilling process would be separated, recycled as feasible, and hauled to licensed waste disposal sites. If potentially significant impacts are identified, mitigation measures will be proposed.

3.1.13 Transportation/Circulation

Environmental Setting
The proposed Project is located in the Oil Field. Existing wells and the proposed well pad sites are accessed by existing roads. Access to the Project area is via Highway 118 and existing public surface roads in the Porter Ranch community.

Impact Discussion
Construction and drilling activities would require the use of public roadways to deliver the drilling rig and other associated equipment to the Project site. The rig would be brought to the site in sections requiring approximately 20 to 30 truck trips (it will also require the same number of truck trips to remove the drilling rig). Once the heavy equipment is onsite, construction related traffic would be limited to between two and five passenger truck trips per day and between two and seven supply and service truck trips per day. Oil production from the proposed Project would be transported via truck along with the existing Oil Field production. The increase in truck trips is estimated to be between one and three truck trips per day. Operational activities would be completed by existing Oil Field staff and contractors.

Existing Oil Field roads would be improved as part of the proposed Project; no new public roadways would be required. Due to current traffic levels on the Project area public roads, potentially significant impacts are not expected. If potentially significant impacts were identified, mitigation measures would be proposed and would potentially include alternate routes and time of day travel restrictions for oil truck transport traffic.

3.2 Issue Areas with No Impacts or Less Than Significant Impacts

The following issue areas were determined to have no impacts or less than significant impacts. Should the results of the scoping process indicate that there may be potentially significant impacts to these resource areas, they will be included in more detail in the EIR analysis.

3.2.1 Agriculture

The Oil Field is zoned Heavy Agriculture (A-2), which allows for oil production. The site is not used for agricultural purposes, and the property is not considered prime agricultural land. The proposed Project would not impact unique farmland or farmland of State-wide importance.

None of the surrounding land uses in the vicinity of the Oil Field are used for agriculture. Neither the current Oil Field activities nor the proposed Project would affect any agricultural activities; therefore, significant impacts to agriculture are not expected.

3.2.2 Population and Housing

The development of three drill pads and twelve wells in an existing oil field would not affect existing housing through demolition, conversion, or removal of existing housing stock, as there are currently no occupied residential structures on the site. Therefore, no residents would be displaced as part of the proposed Project or the proposed drilling and operational activities.

The proposed drilling and operational activities would not result in a significant increase in the number of workers in the Oil Field. The majority of workers at the Oil Field come from the Los Angeles basin and would not place new demands on housing in the area.

3.2.3 Recreation

The Oil Field is located on private property, and all current and proposed Oil Field operations take place on land that is not currently, or has in the past been, open to the public. No new fences or closures of open space areas are proposed as part of the Project. The proposed Project is not expected to have a significant impact to existing area recreational areas such as Rocky Peak Park, O'Melveny Park, Michael D. Antonovich Regional Park, Santa Clarita Woodlands Park, or the Michael D. Antonovich Open Space.

3.2.4 Schools and Police Protection

The proposed Project drilling and operational activities would not result in a significant increase in the number of workers in the Oil Field. The majority of workers at the Oil Field come from the Los Angeles basin and would not represent new population in the area. Therefore, the propose Project would not result in a need for new or altered police protection and/or health care services, nor would it generate a significant increase in the number of local students.

4.0 Alternatives to the Proposed Project

The California Environmental Quality Act, Section 15126.6, requires an EIR to describe a reasonable range of alternatives to a project or to the location of a project which could feasibly attain its basic objectives and evaluate the comparative merits of the alternatives. CEQA Guidelines Section 15126.6 provides direction for the discussion of alternatives to the proposed project. This section requires:

- A description of "...a range of reasonable alternatives to the project, or to the location of a project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." [15126.6(a)]
- A setting forth of alternatives that "...shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project." [15126.6(f)]
- A discussion of the "No Project" alternative, and "...If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." [15126.6(e)(2)]
- A discussion and analysis of alternative locations "[o]nly locations that would avoid or substantially lessen any of the significant effects of the project need to be considered for inclusion in the EIR." [15126.6(f)(2)(A)]

In addition, CEQA states that alternatives should "… attain most of the basic objectives of the project ..." (Section 15126.6(a)). If an alternative is found to not obtain the basic objective, then it can be eliminated from further consideration.

An objective of the proposed Project is to develop three new well pads and drill twelve wells in the existing Aliso Canyon Oil Field. Alternatives to a CSD will be evaluated in the EIR. Alternatives that will be evaluated in the EIR include:

No Project Alternative
Under the No Project Alternative, no additional wells would be drilled, and the development of three well pad sites, construction of associated pipelines and road improvements would not occur. Existing oil and gas production at the Oil Field would continue.

Alternate Well Pad Location(s) Alternative
Under this alternative, alternate locations for the three proposed Project well pad sites would be identified and reviewed. Alternate locations would be analyzed to determine if such locations could achieve the Project objectives with less potential environmental impacts.

Reduced Well Pads Alternative
This alternative involves reducing the number of wells and/or well pad sites. Each well pad location would be analyzed to determine whether the proposed Project targeted resources could be reached from one of the other well pad locations. The removal of one or two of the proposed well pad locations would reduce the potential environmental impacts of development of the proposed Project but may not meet the objectives of the Project.

Alternate Processing Location Alternative
This alternative would analyze the potential for processing the produced oil and gas at a different location, the Oat Mountain Tank Farm. This alternative processing location would be analyzed to

determine whether operations at the alternate facility could achieve the Project objectives with fewer potential environmental impacts than operations at the Aliso Canyon Tank Farm.

Other alternatives may be identified as part of the scoping process for the EIR