Summary of Environmental Impact Reports (EIRs)

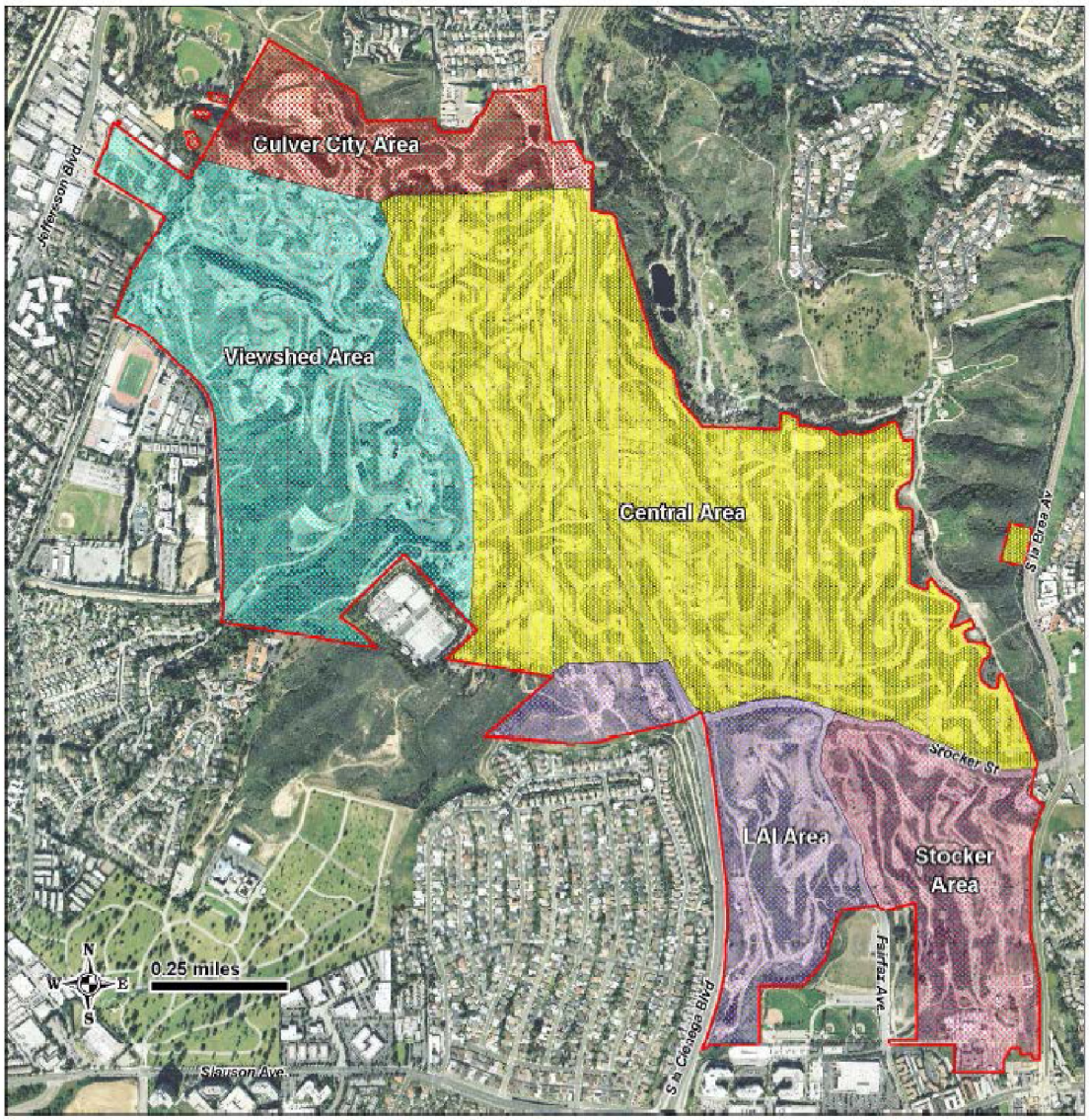
The following eight California oil and gas related Environmental Impact Reports (EIRs) are summarized below:

1. Baldwin Hills Community Standards District Final Environmental Impact Report (**Baldwin Hills**)
2. ERG Operating Company West Cat Canyon Revitalization Plan Project County Final Environmental Impact Report (**ERG**)
3. E & B Oil Drilling & Production Project, Final Environmental Impact Report for Hermosa Beach (**Hermosa**)
4. Environmental Impact Report for Revisions to the Kern County Zoning Ordinance – 2015 (There's also a 2018 version that I haven't reviewed, since MRS and industry data was based on the 2015 version) (**Kern County**)
5. Draft Environmental Impact Report for OXY USA Inc. Dominguez Oil Field Development (The proponent withdrew the application for the project in 2015, so there was no final EIR) (**Oxy**)
6. County of Santa Barbara Planning & Development Department, FINAL Environmental Impact Report, Santa Maria Energy Production Plan and Development Plan (**SME**)
7. Aspen Environmental Group. Final Environmental Impact Report. Analysis of Oil and Gas Well Stimulation Treatments in California (**SB4 EIR**)
8. Whittier Main Oil Field Development Project Final Environmental Impact Assessment (**Whitter**)

1) Marine Research Specialists. **Baldwin Hills Community Standards District Final Environmental Impact Report**. Final EIR October 2008. Accessible online at http://planning.lacounty.gov/baldwinhills/background.

Project Description: Over a 20-year period (2008-2028), an average of approximately 53 wells per year could be drilled in the Inglewood Oil Field, for an average of 742 rig-days per year. The well locations were grouped into 5 drilling areas; Culver City area, located within Culver City; the Viewshed area where some of the areas are viewable from Culver City; the Central area located in the center of the field north of Stocker St. and east of La Cienega; the South LAI area located west of Fairfax Blvd. and south of Stocker St.; and the Stocker area located south of Stocker St. and east of Fairfax Blvd. (Figure ES-5 shows the location of these five drilling areas.)

Figure ES-5 Drilling Areas



During the peak year, as many as 85 wells could be drilled for a peak annual activity of 1,190 rig-days, and up to three new-well drill rigs could be operating at the oil field at any one time. The average number of drilling rigs at the site would be between one and two per year over the 20-year period.

Future drilling could increase the production of oil and gas from the field. Potential crude oil production is estimated to peak at about 21,000 bpd and gas production is estimated to peak at about 15,000 mscfd. Water produced and then re-injected is estimated to peak at about 720,000 bpd.

Impacts: Impacts identified in the EIR include: **Drilling Noise, Air Toxics, Subsidence/Uplift, Oil Spill Risk, Vibration and Odors**

- **Drilling Noise.** During drilling of new wells, potential impacts are exacerbated because drilling continues day and night, 24-hours per day. Major noise sources associated with new well drilling include: internal combustion engines, metal-to-metal contact, electric motors, pumps, brakes on the drawworks, personnel voices (yelling instructions) and warning devices such as backup alarms on equipment.
- **Air Toxics.** Toxic emissions associated with future construction and operations would increase over the current emissions due to an increase in drilling, well workovers, crude oil throughput, fugitive emissions associated with new equipment, an increase in combustion associated with existing heaters and new heaters associated with steam generators. In addition, more construction would be taking place at the field, including grading, and new equipment installation. All of these construction activities utilize diesel engine powered construction equipment, which emits toxic pollutants.
- **Subsidence/Uplift**. The maximum cumulative subsidence of any of the areas along the Newport-Inglewood Fault Zone is centered over the Inglewood Oil Field. Subsidence is often accompanied by large-scale earth cracking, and in some cases the earth cracking includes vertical movement, creating incipient or actual faulting. Surveying indicated that greater than two feet of subsidence-related, horizontal earth movement had occurred in the Baldwin Hills from 1934 to 1961, in the vicinity of the southeast active surface field boundary. By 1957, up to 10 feet of subsidence had occurred in other localized areas of the Baldwin Hills.
- **Oil Spill Risk.** The potential development would increase the throughput of crude oil throughout the field including piping and tanks. There would also be additional piping from the added well heads and additional separation equipment associated with the oil cleaning plant and the water treatment plant that would be handling crude oil or emulsion.
- **Vibration**. The major source of vibration at the oil field is associated with the gas plant flare. Under normal operating conditions, gas from the gas plant is shipped via pipeline into a Southern California Gas transmission pipeline. There are times when this transmission pipeline is shut-down without prior knowledge of the oil field operator. When this happens, the gas from the gas plant must be routed to the flare. This places a large volume of gas through the flare which produces low tonal vibrations that affect offsite areas, particularly in the Ladera Heights area. Given that these events are unplanned, it was not possible to measure the level of vibration. However, the vibration associated with flaring large volumes of gas would be considered significant, but mitigatable.
- **Odors**. Odor events could increase due to the addition of equipment, increased operations at existing equipment and increased drilling. Added equipment would increase the number of components that could leak causing odors. Increased operations would increase the use of tanks, potentially leading to odor events. Increased drilling would increase the frequency of emissions from drilling muds during drilling operations. Some of these types of releases have caused Notice of Violations historically. These would be considered a significant impact.

Mitigations: A number of mitigation measures are provided in the EIR to reduce odor impacts and they include the following.

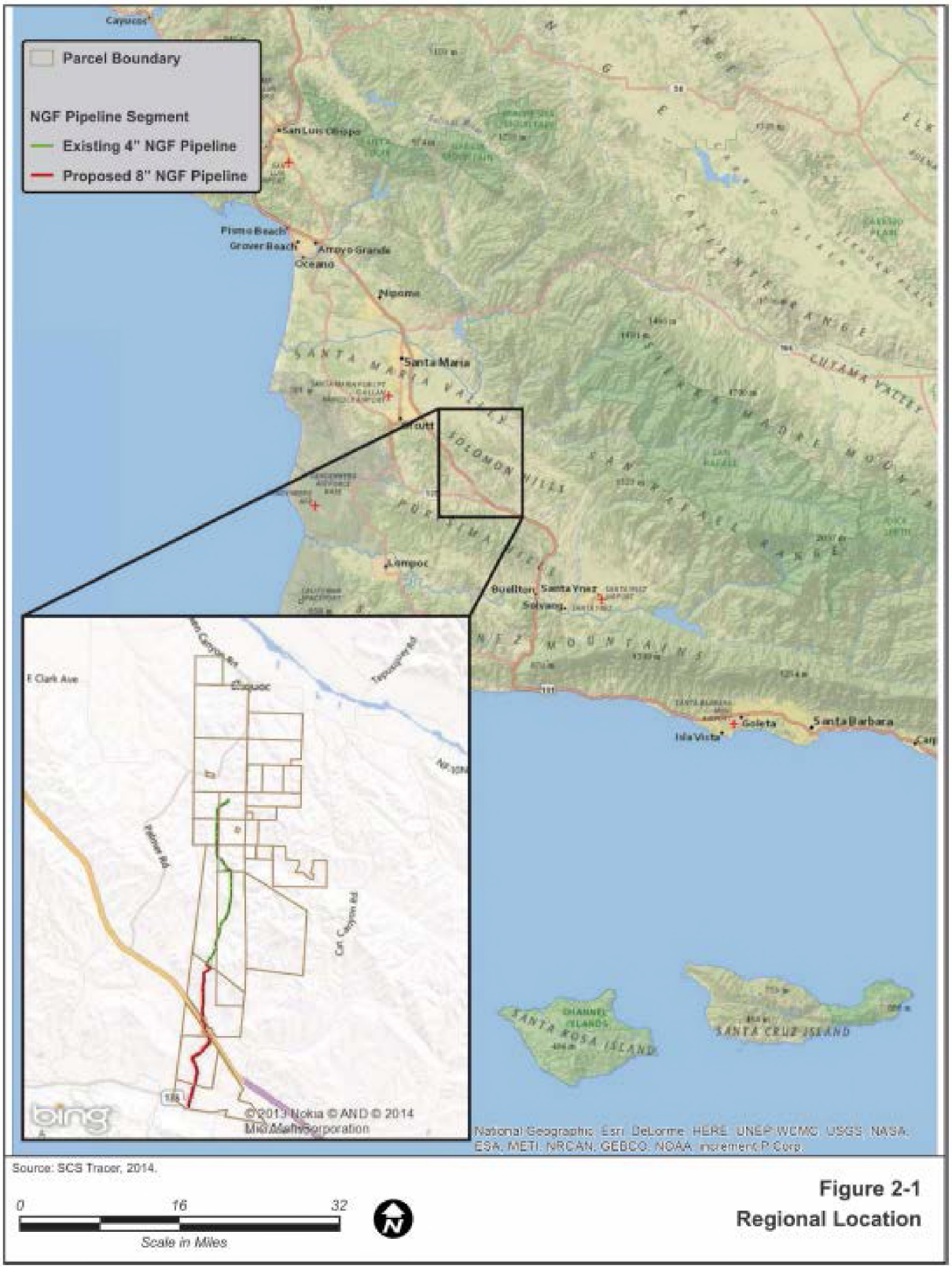
- The use of a portable flare as part of drilling operations for wells where there exists a potential for gas releases during drilling.
- The installation of a pressure monitoring system in the vapor space of all crude oil tanks. Possible upgrades to the tank vapor recovery system if hatches on the crude oil tanks are determined to lift and vent to atmosphere on a regular basis (more than once per quarter on any tank).
- Use of an odor suppressant when loading material into the bioremediation farms.
- Ensuring that all produced water and crude oil are contained within closed systems during production, processing, and storage.
- The installation of a meteorological monitoring station at the Inglewood Oil Field that meets the requirements of the U.S. EPA guidelines.
- In addition, the air monitoring program has been included as a mitigation that would be required for drilling operations and the gas plant. At all drill sites air would be monitored for total hydrocarbon vapors and hydrogen sulfide. If the total hydrocarbon vapors or hydrogen sulfide exceeded prescribed levels, the operator would be required to take specific action, up to and including, shutting down the drilling operation. At the gas plant air would be monitored for total hydrocarbon vapors. If the total hydrocarbon vapors exceeded prescribed levels the operator would be required to take specific action up to and including shutting down the gas plant.

2) Aspen Environmental Group. Final Environmental Impact Report. **ERG Operating Company West Cat Canyon Revitalization Plan Project** County EIR No. 15EIR-00000-00004 and State Clearinghouse No. 2015081063, Prepared for the County of Santa Barbara Planning & Development, Energy & Minerals Division, Final EIR February 2019. Accessible online at (https://www.countyofsb.org/plndev/projects/projects.sbc) (https://cosantabarbara.app.box.com/s/pe8ttgohtdpc592zcg99nivsfu723m5x?page=1)

Project Description: The proposed Project would involve the development and operation of 233 new thermally enhanced (cyclic steaming) production wells, as well as the following ancillary facilities:

- Development of 10 new well pads and one new steam generator pad, and the expansion and use of 91 existing pad locations for a total of 102 well and equipment pads;
- Reactivation of four previously permitted steam generators and increased use of three existing steam generators; each of the seven generators would have a maximum operational capacity of 85 MMBtu/hr;
- Expansion of nine existing equipment areas and production facilities to accommodate appurtenant equipment;
- Construction and operation of various inner-field piping needed to service the existing and proposed wells; and
- Replacement of an existing 4-inch natural gas fuel (NGF) pipeline (approximately 3.5 miles long) with an 8-inch line.

All proposed Project facilities would be located on approximately 75 acres of the Applicant's 8,054-acre West Cat Canyon property holdings (leases) scattered within the 26,440-acre Cat Canyon State Designated oil field near the community of Sisquoc (see Figures ES-2a and ES-2b, as well as Appendix B of the EIR). Approximately 500 existing oil wells and associated ancillary facilities have been developed on the nine West Cat Canyon leases associated with the Project over several decades of oil field activity. The existing wells are sited on approximately 260 pads spread throughout ERG's West Cat Canyon leases. Of the 500 existing wells, approximately 314 are active or idle thermal oil wells using cyclic steaming and/or steam flood operations to enhance production from the Sisquoc formation at depths ranging from 2,000 to 3,000 feet. To accomplish the proposed Project, approximately 75 acres of permanent disturbance within the West Cat Canyon oil field would be required, plus an additional 3.5 acres in temporary disturbance for the NGF pipeline.



Source: SCS Tracer, 2014.

0 16 32

Scale in Miles

Figure 2-1
Regional Location

Impacts and Mitigations: Three significant impacts were identified for the ERG West Cat Canyon Revitalization Plan Project and are related to the effects of on- and offsite accidental oil spills to biological and hydrological resources, and increased noise levels related to well drilling which could occur intermittently over a several-year period; **i.e. Biological Resources, Noise and Surface and Ground Water Resources.**

Significant impact Mitigation Measures (MM) include MM BIO-1 that requires the development of an Emergency Response Action Plan prior to the start of construction for implementation during spill response. The Plan would define measures for adequate spill cleanup, as well as measures to minimize impacts to biological and hydrological resources not only from a spill, but from the cleanup activities as well. MM NOISE-1 would require the development of a Construction Noise Control Plan.

- **Biological Resources.** Construction and routine operations activities could result in the temporary and permanent loss of vegetation and potential injury or "take" of special-status species, as well as other direct and/or indirect impacts to biological resources and waters of the U.S./State through construction induced erosion, dust, and spills. Development of new facilities also has the potential to result in a loss or change of the functional value of sensitive vegetation communities, and impair the movement, migration, or dispersal of resident and migratory species. The horizontal directional drill crossing of San Antonio Creek for the NGF pipeline could result in an unanticipated surface expression of drilling fluid into the creek. MM BIO-2 through BIO-17 are proposed to reduce these impacts to an insignificant level.
- **Air Quality and Climate Change/Greenhouse Gases.** Construction and operation of the proposed Project would result in air emissions related to construction activities, operations of facilities over a 40-year period, trucking of light crude oil, and trucking of blended production when the Foxen Petroleum Pipeline (FPP) is not operational. Vehicle movement during construction activities, as well as operations, would generate particulate dust.
- **Cultural Resources.** Buried archaeological and/or tribal resources, as well as human remains, could be exposed during construction activities. Mitigation is required to ensure monitoring of construction activities in sensitive areas, and proper treatment of any identified resources. In the event human remains are discovered, the County Coroner would be contacted.
- **Geology and Geological Hazards.** Construction of the proposed Project could trigger landslides within the oil field, and construction and routine operations could trigger or accelerate soil erosion. Seismic activity and expansive or other unsuitable soils could cause damage to project structures and/or result in injury or death. County and State building codes would be implemented during facility design and construction; thereby, reducing these possible impacts to an insignificant level (Class II)
- **Risk of Upset/Hazardous Materials/Fire.** The proposed Project could generate risks to the public traveling on U.S. 101 by exposing the public to natural gas releases from the NGF Pipeline that result in a vapor cloud fire which could cause significant injury for a maximum impact distance of 2,232 feet. The proposed Project could also generate risks to public safety by exposing the public traveling through the oil field to produced gas releases from the oil field gathering pipelines (> 2" diameter). The estimated number of fatalities or injuries associated with a crude oil tanker truck accident over the Project life is less than one, and the fire risk due to a truck accident is just over two over the 40-year life of the Project. Hazardous materials such as gasoline, diesel, fuel, oil, lubricants, and paint and solvents could be released during construction and routine operations. The proposed Project would introduce additional development and ignition sources within a high fire hazard area with limited firefighting capability. Mitigation measures have been identified to address these possible

impacts. In addition, County, State, and federal safety and environmental standards would be implemented during design and operations.

- **Noise.** Operational noise from well workovers and truck transport could exceed the nighttime 3 dBA (additional) threshold at some sensitive receptors. MM NOISE-2 requires the development of an Operations Noise Control Plan prior to the start of construction to be implemented during operations. The Plan would define noise abatement measures, as well as limit nighttime well workover and trucking activities.
- **Surface and Groundwater Resources.** Proposed cyclic steam injected under pressure to enhance oil recovery in oil-bearing formations or injection of produced water/brine could adversely affect groundwater quality. Disturbance of soil during construction has the potential to reduce surface water quality through the introduction of disturbed sediments into local streams or other water bodies. Spills or disposal of potentially harmful materials used during construction and routine operations could affect surface and groundwater resources. Some Project features are located within areas mapped by the Federal Emergency Management Agency as Zone A floodplains of Cat Canyon Creek and San Antonio Creek. Excavation and grading for well pads, foundations for new equipment, the NGF pipeline, and access roads could increase the rate or amount of surface runoff in a manner which could result in flooding. Well development and operation would be conducted in accordance with required mitigation, as well as local and State requirements. Project construction and operation would be conducted in accordance with required mitigation, and local and State building codes and federal/State water agency permitting requirements would be met.
- **Traffic and Transportation.** ERG proposes that all blended produced crude oil would be transported from the West Cat Canyon Oil Field via the Foxen Petroleum Pipeline (FPP). Therefore, until such time the FPP is operational or when it is shut down for maintenance or otherwise out of service, crude transport would be limited to no more than 7 truckloads daily of light crude oil (LCO) and no more than 30 truckloads per day blended crude oil per MM AQ-2d. When the FPP is constructed and becomes operational, the Project would still contribute to roadway damage because of a net increase of LCO truck trips over existing conditions (30 additional one-way trips). MM TR-2 requires that the facility owner enter into a Roadway Maintenance Agreement with the County regarding pavement or other infrastructure damage caused by the net increase in daily haul trucks prior to Zoning Clearance. Project truck trips, with or without use of the FPP, would not degrade roadway and intersection level of services.

3) Marine Research Specialists. E & B Oil Drilling & Production Project, **Final Environmental Impact Report, State Clearinghouse No. 2013071038, Prepared For the City of Hermosa Beach**, Final EIR June 2014. Accessible online at (http://www.hermosabch.org/index.aspx?page=755)

Project Description: E&B Natural Resources Management Corporation (E&B), the Applicant, is proposing the E&B Oil Drilling & Production Project (Proposed Oil Project) on a 1.3 acre site located in the City of Hermosa Beach (City). The Proposed Project is composed of two parts: 1) the relocation of the City Maintenance Yard (Proposed City Maintenance Yard Project); and 2) the development of an oil and gas facility on the current City Maintenance Yard site. In order to clear the current City Maintenance Yard site for the construction of the proposed oil and gas facility, the City Maintenance Yard would be temporarily relocated. If it is determined that the production of oil and gas on the Project Site would be economically viable, construction of the permanent City Maintenance Yard would be completed. It is estimated that it will take approximately 3.25 years from the commencement of the Proposed Project until the commencement of Phase 4, when the permanent oil and gas facility would be operational.

The Applicant proposes the development of an onshore drilling and production facility site that would utilize directional drilling of 34 wells (30 oil wells, four wells for water disposal/injection) to access the oil and gas reserves in the tidelands (pursuant to a grant from the State of California to the City) and in an onshore area known as the uplands. Both of these areas are located within the Torrance Oil Field within the jurisdiction of the City. In addition, the Proposed Project would result in the installation of offsite underground pipelines for the transportation of the processed crude oil and gas from the Project Site to purchasers, extending through the Cities of Redondo Beach and Torrance. The Applicant proposes a laydown site for supply staging/storage within the basement level of the industrial building at 601 Cypress Avenue during the construction phases. The Applicant also proposes to construct a parking lot at 636 Cypress Avenue for use by some of its construction employees/contractors on weekdays and by the public at other times.

Figure ES.1 Proposed Project Location

Impacts and Mitigations: The Proposed Oil Project would generate potentially significant and unavoidable environmental impacts in the areas of **Aesthetics, Air Quality, Biology, Hydrology, Land Use, Noise, Recreation and Safety and Risk of Blowout.**

- **Aesthetics.** An 87-foot electric drill rig with three-sided acoustical shield would be installed at the Project Site at the beginning of Phase 2 for about 4 months, then during Phase 4 for 30 months, then periodically thereafter for re-drills for up to a maximum average of 30 days per year or a maximum of 150 days once every 5 years. The rig would introduce, primarily into the foreground and middleground environments, a visually dominant vertical feature which is distinct in form, mass, height, material and character from structures in the viewshed of locations which are considered to have high sensitivity. The effects of light, shade and shadow would produce contrasting geometric vertical planes and would project into a typically uniform (or otherwise naturally varied) sky backdrop. Night views of the open (illuminated) side of the drill rig, with the pattern and scale of this illuminated feature, would be out of character with existing nighttime views. Similar to day time impacts, this vertical feature would project above the horizontal plane of the existing illuminated environment and would become a focal element. Mitigation measures include the selection of materials and lighting to minimize glare and reflectivity and the installation of a permanent 32-foot wall. Some of the impacts would be mitigatable, but impacts would remain significant and unavoidable.

- **Air Quality** Due to the close proximity of the site to neighbors, businesses and the public (within 100 feet of businesses, 160 feet of residences, 55 feet of the Greenbelt and 20 feet of the public sidewalks), numerous scenarios could cause odors offsite. These could include various maintenance activities such as line, tank or vessel openings; workovers removing well hole equipment (pumps or tubing), thereby exposing the well equipment to the atmosphere; minor accident scenarios; and drilling activities including muds handling that could cause short-duration, intermittent odors, or pump leaks. Because odor thresholds for certain compounds found in the oil and gas industry are very low, in the parts per billion range, release of these compounds can cause odor impacts offsite. Therefore, due to the close proximity of neighbors, odor impacts could impact surrounding areas and would be a significant impact.

  Mitigation measures proposed to reduce the frequency of odor events include the implementation of systems that direct odor-causing releases to flare-type systems, the implementation of systems to notify operators when releases could or do occur, and the use of odor masking materials. Increased vigilance associated with SCAQMD Rule 1173 (related to controlling "leaker" components) can also reduce emissions from fugitive components, but impacts would remain significant and unavoidable. Impacts related to construction and operational emissions, health risk and Green House Gases (GHG) would produce significant impacts but would be less than significant with mitigation.

- **Biology** Oil spills and ruptures from the installed pipelines could result due to geologic hazards, mechanical failure, structural failure, corrosion, or human error during operations. A spill of crude oil could spread through storm drains to the beach and potentially to the numerous sensitive habitats and species present in the Pacific Ocean. Oil spills and cleanup activities would potentially result in impacts to biological resources. Direct impacts on wildlife from oil spills include physical contact with the oil, ingestion of oil, and loss of food and critical nesting and foraging habitats. Implementing the proposed mitigation measures, including developing emergency response plans with specific criteria, implementing infrastructure preventative maintenance, and conducting structural integrity tests and routine inspections, would reduce the likelihood and severity of

potential oil spills and exposure impacts to sensitive biological resources, but impacts would remain significant and unavoidable.

The fully enclosed drain systems proposed by the Applicant would retain any spills at the Project Site on-site, therefore, potential spills at the Project Site would not produce a significant impact.

- **Hydrology.** As described under Biology, a release from the pipeline between the Project Site and Prospect Avenue, near the corner of Herondo Street and Valley Drive, could produce a worst-case oil spill of 16,799 gallons that could drain directly into subsurface soils and/or to the ocean through storm drains. Mitigation measures, in addition to those listed for Biology, include spill training, the required spill control equipment, the installation of a check valve into the crude oil pipeline at Herondo Street and the installation of an oil separator in storm drain systems of Herondo Street. These mitigation measures would reduce the frequency or severity of an oil spill reaching the ocean, but impacts would remain significant and unavoidable.

- **Land Use.** The drilling, construction, and potential future operations would be in close proximity to land uses zoned as open space (parks, baseball fields and the Greenbelt) and residential. Proposed Oil Project activities during all phases may generate significant noise, odor and visual impacts that would be incompatible with these adjacent land uses. Mitigation measures are proposed to reduce these impacts in the respective issue areas, but impacts would remain significant and unavoidable.

- **Noise.** The predicted noise impact of demolition and construction activities in Phase 1 and 3 of the Proposed Oil Project is significant at many of the neighboring sensitive uses. The most significant impacts occur during the construction phase, when Project-related noise is expected to result in an increase in daytime noise levels over existing noise levels at the homes to the northwest and west of the Project Site.

  Predicted noise impacts during the Phase 2 and Phase 4 drilling stages and during Phase 4 re-drills are significant along the entire perimeter of the Project Site. Mitigation measures include increasing the height of walls (where allowable by code), adding additional noise protection, and essentially not allowing drilling late at night, would reduce impacts to less than significant with mitigation.

  Noise levels when drilling is not occurring during Phase 2 and 4 would be less than significant. During re-drills, noise levels would be the same as those during drilling. Noise levels during the construction of the Proposed City Maintenance Yard, both the temporary and permanent sites, would also exceed the noise thresholds. Noise mitigation includes the use of noise barriers, but impacts would remain significant and unavoidable. Noise levels during the operations of the Proposed City Maintenance Yard would be less than significant with mitigation.

- **Recreation.** During a rain event, a potential oil spill from the oil pipeline along Valley Drive or at the intersection of Valley Drive and Herondo Street could drain directly into storm drains and flow to the ocean. Even without rains, the capacity of the storm drains is such that an oil spill could still reach the ocean, depending on the arrangement of sand at the mouth of the ocean discharge. An oil spill along the coastline could affect beach areas, leading to beach closures and boating restrictions in contaminated areas during and potentially after cleanup. Public perception of the recreational quality of the areas beaches (Hermosa, Manhattan, Redondo, etc) could also be affected, causing a reduction in beach recreational activities for a substantial period of time. Mitigation measures previously discussed under Hydrology and Biology would further reduce the frequency and severity of an oil spill reaching the ocean, but impacts would remain significant and unavoidable.

- **Safety and Risk of Blowout.** The potential for a blowout resulting from drilling into potentially pressurized areas within drilled reservoirs presents a significant offsite risk. Although it is not known at this time which reservoir areas, if any, are pressurized to the extent that pressures could produce a blowout, historical data from drilling in Redondo Beach indicates that such potential does exist. Pressurization once the wells are placed into production (after drilling) would last for only a short period of time (estimated at 30 days based on the Redondo Beach wells), but could still result in a blowout during drilling. The Applicant indicated in their Application that wells would be pressurized for a short period after drilling. Mitigation includes the installation of back-flow prevention devices on the gas pipeline, minimization of the ability of equipment to ignite a spill of crude oil at the Project Site, and timely and thorough audits. Impacts would remain significant and unavoidable. Impacts when drilling is not occurring would be less than significant with mitigation.

4) Environmental Impact Report for Revisions to the **Kern County** Zoning Ordinance – 2015 C, focused on Oil and Gas Local Permitting Kern County Planning and Community Development Department, Final EIR November 2015. Accessible online at https://kernplanning.com/environmental-doc/environmental-impact-report-revisions-kern-county-zoning-ordinance-2015-c-focused-oil-gas-local-permitting/

Project Description: The proposed Project consists of an Amendment to Chapter 19.98 (Oil & Gas Production) of the Kern County Zoning Ordinance and related sections of the Kern County Zoning Ordinance to include updated procedures, development standards, and conditions for future oil and gas exploration, development, and production activities in unincorporated Kern County. Representatives of the oil and gas industry associations—specifically the California Independent Petroleum Association (CIPA), the Independent Oil Producers Agency (IOPA), and the Western States Petroleum Association (WSPA) (collectively, "Project Applicant")—requested an amendment to Chapter 19.98 (Oil and Gas Production) and related chapters of the Kern County Zoning Ordinance to include additional provisions for local permitting of oil and gas activities.

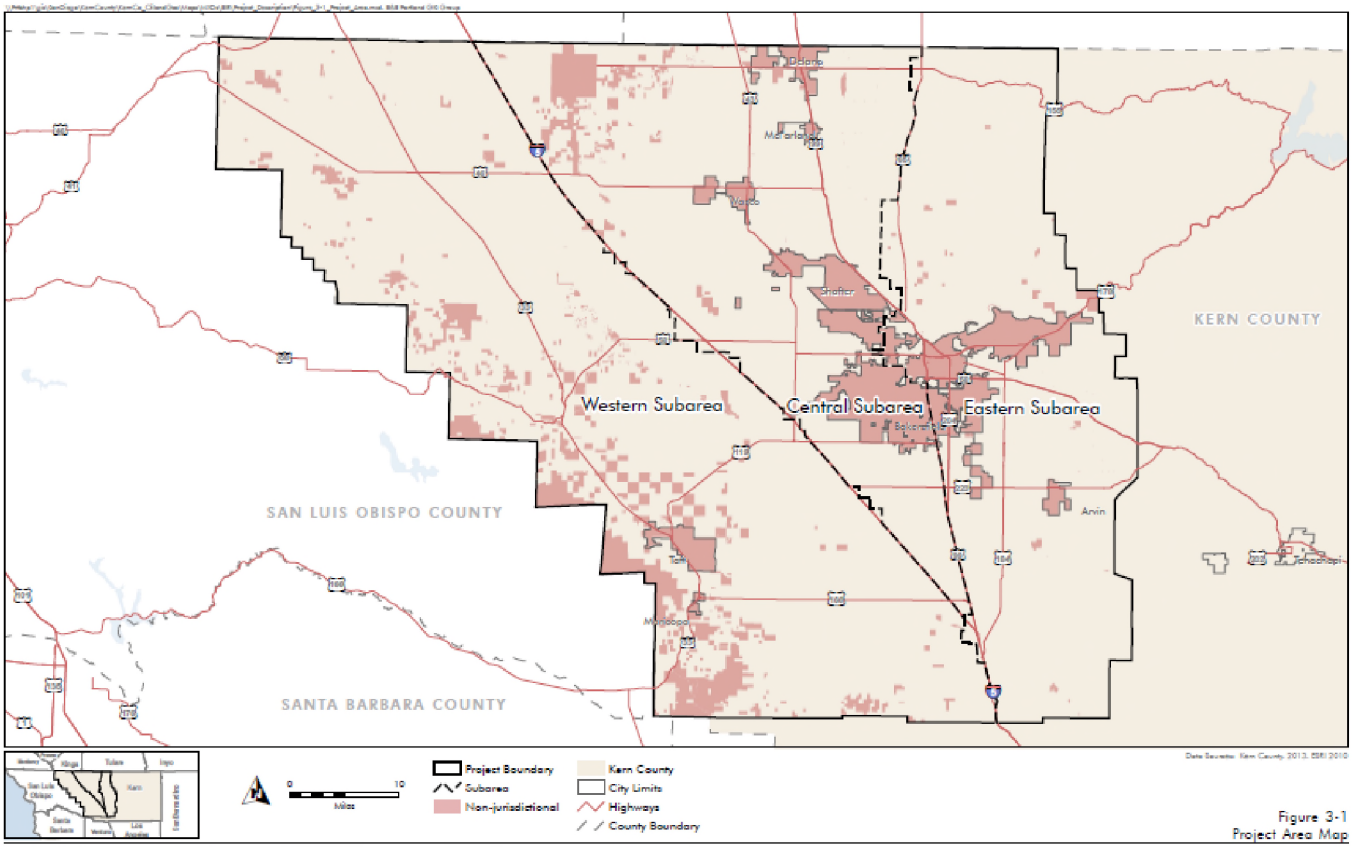


Figure 3-1
Project Area Map

Impacts and Mitigations: The following potential environmental effects of the Project are less than significant with the incorporation of mitigation measures: Agriculture and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Public Services, Transportation and Traffic, and Utilities and Service Systems. Significant and Unavoidable Impacts identified in the EIR include: **Aesthetics and Visual Resources, Air Quality, Greenhouse Gases, Hydrology and Water Quality, and Utilities and Service Systems.**

Summary of Unavoidable Significant Adverse Project Impacts:

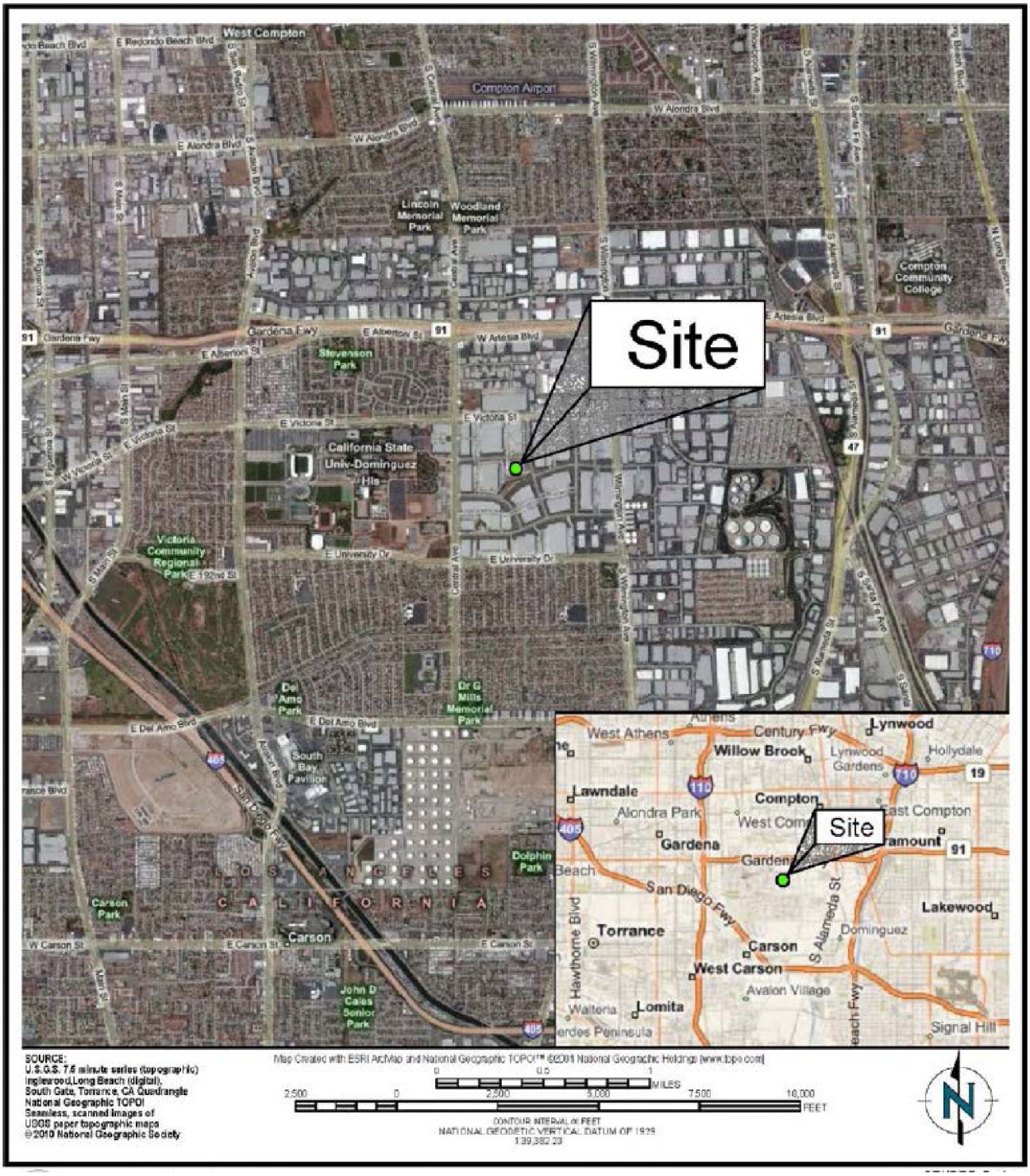
- **Aesthetics and Visual Resources**. Although implementation of mitigation measures would reduce the adverse visual changes experienced at individual key observation point locations, there are no mitigation measures that would preserve the existing character and quality of the Project Area and its surroundings. Project-related oil and gas activities would continue to produce visible changes to the existing environment and the resultant visual impact is considered significant and unavoidable. The Project has the potential to create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. After implementation of MM 4.1-6, this impact would remain significant and unavoidable.
- **Air Quality.** The Project would continue to generate odors. With implementation of MM 4.3-7, impacts would still be significant and unavoidable.
- **Greenhouse Gases.** The Project has the potential to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With the implementation of MM 4.7-5, the impact would remain significant and unavoidable.
- **Hydrology and Water Quality.** While MM 4.17-2 through MM 4.17-4 would encourage the additional reuse of produced water, the extent to which oilfield operators can increase produced water reuse and decrease municipal and industrial (M&I) demand is uncertain. As a result, potential impacts to groundwater levels and aquifer volumes would be significant and unavoidable with mitigation.
- **Utilities and Service Systems.** Implementation of MM 4.17-2 to MM 4.17-4 could reduce water supply impacts, but the allocation of water supplies and water demands, the complex laws affecting water rights, the many water districts that have legal jurisdiction over one or more sources of water in the Project Area, the varied technical feasibility of treating produced water, and the produced water reuse opportunities all present complex variables that fall outside the scope of the County's jurisdiction or control under CEQA. The County concludes that other agencies can and should cooperate in water management planning and implementation actions under the Sustainable Groundwater Management Act and other applicable laws to improve the quantity and reliability of water supplies in the Project Area. Project impacts to water supplies would be significant and unavoidable.

5) Environmental Audit, Inc., Draft Environmental Impact Report for **OXY USA Inc. Dominguez Oil Field Development.** Prepared for the City of Carson, Draft EIR January 2014. Note: The proponent withdrew the application for the project in 2015, so there was no final EIR. Accessible online at

   (http://ci.carson.ca.us/Search.aspx?q=Dominguez+Oil+Field+Development)
   (http://ci.carson.ca.us/content/files/pdfs/planning/oxyproject/Volume1-DEIR_part1.pdf)

Project Description: OXY USA Inc. (OXY) is proposing the construction and operation of a new oil and gas production facility to develop a portion of the Dominguez Oil Field that has been out of production for many years. The proposed Project will be designed and constructed to incorporate an existing oil and gas test well facility and to be visually compatible with the existing industrial and commercial buildings at the Dominguez Technology Centre.

OXY proposes to construct a production facility (Facility) located at 1450 -1480 Charles Willard Street, consisting of up to 202 wells (2 existing test wells and 200 new wells), an oil and gas processing facility, water treatment, water injection operations, slurry injection or disposal operations, an electrical connection, emergency flare, and shipping and pipeline facilities to produce and transport approximately 6,000 barrels per day of oil and three million standard cubic feet per day of natural gas. Directional drilling techniques will be used in order to pinpoint oil reservoirs at depths of 4,000 to 13,500 feet. The Facility will be constructed within a 30-foot high walled 6.5 acre compound, with the drill rig mast enclosed.


Site
Site
West Compton
Compton Airport
Lincoln Memorial Park
Woodland Memorial Park
Compton Community College
Stevenson Park
California State Univ-Dominguez Hls
Victoria Community Regional Park
Del Amo Park
Dr G Mills Memorial Park
South Bay Pavilion
Dolphin Park
Carson Park
Carson
John D Calles Senior Park
L O S A N G E L E S
C A L I F O R N I A
West Athens
Willow Brook
Lynwood
Lynwood Gardens
Hollydale
Lawndale
Alondra Park
Compton
Gardena
Torrance
Carson
West Carson
Avalon Village
Lomita
Dominguez
Lakewood
Signal Hill
SOURCE:
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South Gate, Torrance, CA Quadrangle
National Geographic TOPO!
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Impacts and Mitigations: The following environmental effects were identified as potentially significant: **Air Quality, Geology and Soils, Greenhouse Gases, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Transportation and Traffic.**
Note: The proponent withdrew the application for the project in 2015, so there was no final EIR and no final assessment of these impacts.

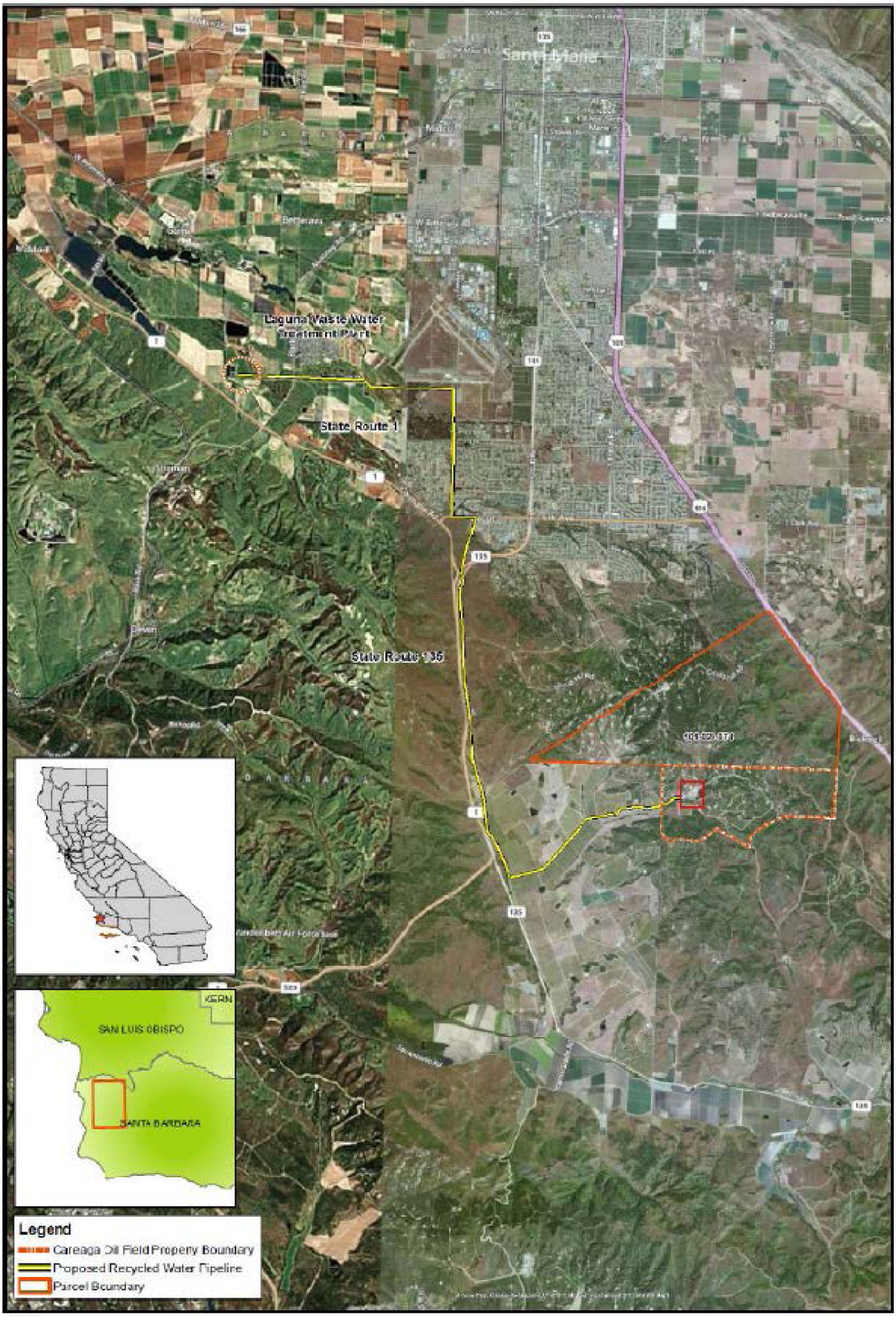
- **Air Quality.** The proposed Project is expected to have significant adverse air quality impacts during the construction phase. Therefore, mitigation measures will be imposed on the proposed Project to reduce emissions associated with construction activities (NOx, CO, SOx, VOC, PM10, and PM2.5) from heavy construction equipment. Construction emissions for the proposed Project are expected to be less than significant after implementing mitigation measures.
- **Geology and Soils.** The study determined that the proposed Project has the potential to generate significant adverse geology and soil hazards related to anthropogenic (manmade) seismic ground-shaking from oil and gas production. There is the possibility that minor earthquakes can be a result of anthropogenic activities, such as extraction of oil at major oil fields, due to a net liquid mass depletion (i.e., removal of oil without replacement of water). The oil and gas production activities associated with the proposed Project will include the injection of salt water as well so net liquid mass depletion will not occur.
- **Greenhouse Gases.** The proposed Project is expected to emit GHGs. However, GHG emission reductions from the substitution of Dominguez Hills crude oil for foreign oil are expected to occur. The cumulative adverse GHG emission impacts are not expected to exceed the SCAQMD significance threshold.
- **Hazards and Hazardous Materials.** The 18 identified existing abandoned oil wells have the potential to be influenced by the proposed Project. Additionally, the proposed Project has a potential to damage the existing abandoned oil wells. the hazard impacts associated with emergency access, hazardous materials and wastes will remain less than significant following mitigation.
- **Hydrology and Water Quality.** The proposed Project will require potable water during the initial well drilling operations of 4,500 gpd until the saltwater production wells are completed. Once the saltwater production wells are completed, potable water demand for operations will cease. Domestic water demand is not expected to increase, since the existing warehouse activities and associated water demand will be eliminated. The stormwater drainage to the existing stormwater drainage system for the Dominguez Technology Centre will no longer receive surface water runoff from the enclosed areas of the proposed Project site; therefore, the proposed Project would reduce stormwater runoff from the site and would not contribute runoff water that would exceed the capacity of existing stormwater drainage systems. In addition, the proposed Project would capture and treat most stormwater onsite and is, therefore, not expected to result in surface water quality impacts. While the proposed Project will produce oil and saltwater, and inject saltwater (and potentially slurry materials) into oil producing zones, the features described herein help ensure that the proposed Project will not impact fresh water aquifers. The oil zones are geologically isolated from the fresh water aquifer by many impermeable layers of siltstone. Engineering designs and regulations will also help ensure that the operations do not impact different zones. The casing procedure protects both the environment and the mechanical integrity of the well. The casing requirements will isolate the wells from the fresh water aquifers and will meet or exceed requirements of DOGGR3 and U.S. EPA. All wells will be designed and constructed to prevent contact between the water in the fresh water aquifers and the produced fluids and the injected fluids.
- **Noise.** The study determined that the proposed Project has the potential to generate significant adverse noise impacts associated with the construction and operation of the proposed Project. The

construction noise impacts, while temporary, are considered significant even with incorporation of the recommended mitigation measures. Construction noise impacts will cease after the completion of the construction period. Operational noise impacts are less than significant and no mitigation is required.

- **Transportation and Traffic.** The traffic associated with the construction phase of the proposed Project could result in potentially significant traffic impacts. The impact of the proposed Project construction activities on traffic and transportation would be less than significant following mitigation.

6) County of Santa Barbara Planning & Development Department, FINAL Environmental Impact Report, **Santa Maria Energy Production Plan and Development Plan**, Laguna County Sanitation District Phase 3 Recycled Water Pipeline, Santa Barbara County EIR No. 12EIR-00000-00003, State Clearinghouse No. 2011091085 Santa Maria Energy Oil Drilling and Production Plan, Final EIR September 2013. Accessible online at (http://www.sbcountyplanning.org/energy/projects/SantaMariaEnergyOPP.asp#docs) (https://cosantabarbara.app.box.com/folder/81724042868)

Project Description: The Environmental Impact Report (EIR) is for two interrelated, but independent, projects: 1) Santa Maria Energy's (SME) proposed 136-well cyclic-steaming Oil Drilling and Production Plan (ODPP), including installation of a crude oil transmission pipeline (6-inch diameter, approximately 3 miles in length) within existing road right of way to connect the SME Careaga Lease facilities with the existing Phillips 66 12-inch oil line, located in the Graciosa Road Right of Way and terminating at the Phillips 66 Santa Maria Refining Facility in San Luis Obispo County; and 2) Laguna County Sanitation District's (LCSD) Phase 3 recycled-water pipeline project.


Santa Maria
Laguna Vaisie Water Treatment Plant
State Route 1
State Route 135
SAN LUIS OBISPO
KERN
SANTA BARBARA
Legend
Careaga Oil Field Property Boundary
Proposed Recycled Water Pipeline
Parcel Boundary

Impacts and Mitigations: The following environmental effects were identified as potentially significant for the SME project: Aesthetics, Air Quality, Biological Resources, Cultural Resources, Fire Protection, Hazardous Materials, Transportation and Water Resources. Per the EIR there is a single unavoidable significant (Class I) impact: **Class I impacts resulting from a leak or rupture in the proposed crude oil transmission line would occur from contamination of Biological Resources and Ground and Surface Water Resources.** All other impacts would be less than significant with mitigation (i.e. Class II).

- **Aesthetics**. Lighting was identified as an impact. Proposed drilling activities would occur 24 hours per day, seven days per week during the drilling phase for each well. Night lighting would be required during this initial drilling phase, estimated at two to four weeks per well. By applying the mitigation of minimizing exterior night lighting the impacts would be less than significant.
- **Air.** Construction emissions associated with the oil development project could exceed the Air Pollution Control District (APCD) construction thresholds. By applying the mitigations of Best Available Control Measures (BACMs) to control PM10 generation during construction and paving of the access road from SR 135 to the project site, the impacts would be less than significant. Operational activities associated with the oil development could cause emissions of criteria pollutants to exceed the APCD significance thresholds. By applying the mitigation of reducing NO_x, SO_x and PM_{10} from Operations, the impacts would be less than significant. Operations and drilling could create odor events. By applying the mitigations of Gas buster and portable flare onsite for use upon gas encountered during drilling and an Odor Minimization Plan to reduce sources of odors from all oil field equipment, including wells and drilling operation; detection system to monitor vapor space on crude oil tanks, the impacts would be less than significant. Operational activities could increase Greenhouse Gas (GHG) emissions. By applying the mitigations of quantify GHG emissions associated with operations and reduce emissions to an annual level that is equal to or less than a prescribed threshold selected by decision-makers, the impacts would be less than significant.
- **Biological Resources.** Temporary and permanent disturbance to habitat was identified as an impact. By applying the mitigations of adherence to Biological Resources Mitigation Compliance Plan, on-site restoration and off-site conservation, the impacts would be less than significant. Oak tree removal and temporary and permanent disturbance to oak woodland habitat were identified as impacts. By applying the mitigations of adherence to Biological Resources Mitigation Compliance Plan, and oak tree restoration at 10:1 ratio, the impacts would be less than significant. Temporary disturbance to streams and riparian areas during construction were identified as impacts. By applying the mitigations of adherence to Biological Resources Mitigation Compliance Plan and to CDFW Streambed Alteration Agreement conditions, the impacts would be less than significant. Temporary and permanent disturbance to California tiger salamander upland habitat were identified as impacts. By applying the mitigations of on-site avoidance and monitoring, worker training and offsite habitat conservation, the impacts would be less than significant. Grading or other construction activities could disturb American badger dens, habitat, or individuals were identified as impacts. By applying the mitigations of pre-construction Biologist Survey to identify and excavate dens, the impacts would be less than significant. Incidental mortality or disturbance to coast horned lizards during construction activities were identified as impacts. By applying the mitigations of pre-construction Biologist Survey to identify and relocate individuals; worker training; biologist monitoring during construction, the impacts would be less than significant. Direct or indirect loss of active nests of bird

species protected under the Migratory Bird Treaty Act were identified as impacts. By applying the mitigations of pre-construction Biologist Survey to identify active nests and no construction in nesting season near active nests, the impacts would be less than significant. Development of the Lease potentially could affect vernal pool fairy shrimp was identified as an impact. By applying the mitigations of adherence to pre- and post-construction topographic/land survey of work areas, the impacts would be less than significant.

- **Cultural Resources.** Unknown Cultural Resources Encountered during grading were identified as impacts. By applying the mitigations of Stop/redirect work if resources encountered, the impacts would be less than significant.
- **Fire.** Project-created Fire Hazard was identified as an impact. By applying the mitigations of access standards, stored water requirements, on-site fire extinguishers, automatic fire sprinkler systems, building address identification, hazardous materials storage, and payment of fire mitigation fees, the impacts would be less than significant.
- **Hazardous Materials.** Soil Contamination effects on groundwater, environmental and public health were identified as impacts. By applying the mitigations of adherence to remediation plan, site assessment and clean-up requirements, the impacts would be less than significant.
- **Transportation.** Traffic Hazards associated with construction and operational activities were identified as impacts. By applying the mitigations of Adherence to approved Traffic Control and Haul Route Plans, the impacts would be less than significant.
- **Water Resources.** Construction Impacts on Creeks were identified as impacts. By applying the mitigations of Adherence to Storm Water Pollution Prevention Plan (SWPPP) and documentation to ensure compliance with the Clean Water Act Sections 401 and 404, the impacts would be less than significant. Surface Expression of Oil was identified as an impact. By applying the mitigation of adherence to Contingency Plan, the impacts would be less than significant. Facilities Leaks and Impacts to Nearby Waterways were identified as impacts. By applying the mitigations of Construction of a retention pond or berming along project site boundary; adherence to SPCC; pipeline and valve leak testing, the impacts would be less than significant.

7) Aspen Environmental Group. Final Environmental Impact Report. **SB 4 Analysis of Oil and Gas Well Stimulation Treatments in California,** State Clearinghouse No. 2013112046. Prepared for the California Department of Conservation, Final EIR June 2015. Accessible online at (https://www.conservation.ca.gov/dog/Pages/SB4_Final_EIR_TOC.aspx)

Project Description: State law Senate Bill Number 4 (SB 4) is to establish a comprehensive regulatory program for oil and gas well stimulation treatments. The SB 4 EIR is to provide the public with detailed information regarding any potential environmental impacts associated with well stimulation treatments in California. For the purposes of this EIR, well stimulation treatments include hydraulic fracturing, acid fracturing, and acid matrix stimulation. It does not include routine well cleanout work, routine well maintenance, routine removal of formation damage due to drilling, bottom hole pressure surveys, or routine activities that do not affect the integrity of a well or formation. This EIR focuses on the physical acts associated with hydraulic fracturing, acid fracturing, and acid matrix stimulation as they apply to both existing and future oil and gas wells in the State. For the purposes of these evaluations, the State was divided into six study regions, which follow the boundaries of DOGGR's six administrative Districts. Further refinement of these study regions was applied to reflect where oil and gas development can either be reasonably predicted to occur in the future, or has occurred.

For each subject programmatically evaluated, the EIR, assesses direct and reasonably foreseeable indirect impacts of the project, as well as three specific oil and gas fields, including the: Wilmington Oil and Gas Field (Study Region 1); Inglewood Oil and Gas Field (Study Region 1); and Sespe Oil and Gas Field (Study Region 2).


Sacramento
Coalinga
Bakersfield
Orcutt
Ventura
Cypress
Aspen
Environmental Group
0
50
100
Miles
Study Regions/DOGGR Districts
1
2
3
4
5
6
Figure 5-2
EIR Study Regions

Impacts and Mitigations: The following environmental effects were identified as significant and Unavoidable (Class I) impacts of the Project: **Aesthetics, Air Quality, Biological Resources, Cultural Resources, Geology, Soils and Mineral Resources, Greenhouse Gas Emissions, Land Use and Planning, Risk of Upset/Public and Worker Safety, Transportation and Traffic.** All other impacts would be less than significant impacts with mitigation incorporated (Class II), less than significant impacts (Class III), or no impact (Class IV) could occur.

- **Aesthetics**. Substantially adversely affect scenic vistas, substantially alter or damage scenic resources, substantially degrade the existing visual character or quality of a site and its surroundings and create new sources of substantial light and glare were identified as impacts. The mitigations of Prepare and Implement a Site Plan to Reduce Visual Impacts to Sensitive Receptors and Minimize Lighting Visibility Offsite will bring the impacts to Class I or II levels.
- **Air Quality**. Conflict with or obstruct implementation of an applicable air quality plan was identified as an impact. The mitigations of Improve Air Quality Planning Inventories and Local Control Measures and Improve Methodologies and Emission Factors Used in Inventory Development will bring the impacts to Class I or III levels. Increase criteria pollutants or precursor pollutants to levels that violate an air quality standard or contribute substantially to an existing or projected air quality violation were identified as impacts. The mitigations of Reduce Hydrocarbon Emissions from Well Stimulation Treatments, Reduce Emissions from Portable Equipment and Mobile Sources and Reduce Emissions from Dust-Causing Activities will bring the impacts to the Class I level. Expose sensitive receptors to substantial pollutant concentrations was identified as an impact. The mitigations of Comply with Local Air District Protocols Relating to the Preparation of a Health Risk Assessment and Implement Emission Controls and Avoid Unnecessary Exposure to Air Pollutants by Improving Local Land Use Compatibility will bring the impacts to the Class I level. Create objectionable odors affecting a substantial number of people was identified as an impact. The mitigations of Prepare and Implement an Odor Minimization Plan and Avoid Unnecessary Exposure to Odors by Improving Local Land Use Compatibility will bring the impacts to the Class I level.
- **Biological Resources**: **Terrestrial Environment. Substantially reduce the habitat of a fish or wildlife species** was identified as an impact. The mitigations of Evaluate Impacts to Native Vegetation and Fish and Wildlife Habitat, Minimize Impacts to Native Vegetation and Habitat, Replace or Offset Loss of Sensitive Habitat, Reduce Emissions from Dust-Causing Activities, Use Alternative Water Sources to the Extent Feasible, Minimize Groundwater Impacts, Ensure that Spill Contingency Plan Provides Adequate Protection Against Leaks or Discharges of Dangerous Fluids and Other Potentially Dangerous Materials, Require Stormwater Pollution Prevention Plan, Implement Erosion Control Plan and Ensure Adequate Water Availability will bring the impacts to the Class I through III level**. Cause a fish or wildlife population to drop below self-sustaining levels** was identified as an impact. The mitigations of Minimize Impacts to Native Vegetation and Habitat, Replace or Offset Loss of Sensitive Habitat, Prevent Hazards to Fish and Wildlife, California Condor Protection Measures, Nelson's Bighorn Sheep Protection Measures, Minimize and Mitigate Impacts to Special-status Fish and Wildlife, Minimize Impacts to Protected Birds, Prevent or Mitigate Habitat Fragmentation and Impacts to Fish and Wildlife Movement, Demonstrate that Wells within the Axial Dimensional Stimulation Area (ADSA) Have Effective Cement Well Seals and Monitor Wells during Well Stimulation, Install a Well Seal Across Protected Groundwater for New Wells Subject to Well Stimulation Treatments, Ensure that Spill Contingency Plan Provides Adequate Protection Against Leaks or Discharges of Dangerous Fluids and Other Potentially Dangerous Materials, Require Stormwater Pollution Prevention Plan, Implement Erosion Control Plan will bring the impacts to the Class I through III

level. **Substantially reduce the number or restrict the range of an endangered, rare, or threatened species** was identified as an impact. The mitigations of Minimize Impacts to Native Vegetation and Habitat, Replace or Offset Loss of Sensitive Habitat, Prevent Hazards to Fish and Wildlife, Minimize and Mitigate Impacts to Special-status Fish and Wildlife, Minimize and Mitigate Impacts to Special-status Plants, Minimize Impacts to Protected Birds, Prevent or Mitigate Habitat Fragmentation and Impacts to Fish and Wildlife Movement, Reduce Emissions from Dust-Causing Activities, Require Stormwater Pollution Prevention Plan will bring the impacts to the Class I through III level. **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW, formerly California Department of Fish and Game) or U.S. Fish and Wildlife Service (USFWS)** was identified as an impact. The mitigations of Minimize Impacts to Native Vegetation and Habitat, Replace or Offset Loss of Sensitive Habitat, Prevent Hazards to Fish and Wildlife, Minimize and Mitigate Impacts to Special-status Fish and Wildlife, Minimize and Mitigate Impacts to Special-status Plants, Minimize and Mitigate Impacts to All Species Identified as a Candidate, Sensitive, or Special-status Species in Local or Regional Plans, Policies, or Regulations, or by CDFW or USFWS, Minimize Impacts to Protected Birds and Prevent or Mitigate Habitat Fragmentation and Impacts to Fish and Wildlife Movement will bring the impacts to the Class I through III level. **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS** was identified as an impact. The mitigations of Evaluate Impacts to Native Vegetation and Fish and Wildlife Habitat, Minimize Impacts to Native Vegetation and Habitat, Replace or Offset Loss of Sensitive Habitat, Reduce Emissions from Dust-Causing Activities, Demonstrate that Wells within the ADSA Have Effective Cement Well Seals and Monitor Wells during Well Stimulation, Install a Well Seal Across Protected Groundwater for New Wells Subject to Well Stimulation Treatments, Require Stormwater Pollution Prevention Plan, Surface Water Protection, Implement Erosion Control Plan, and Ensure Adequate Water Availability will bring the impacts to the Class I through III level. **Have a substantial adverse effect on federally protected wetlands as defined by Section 404, of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means** was identified as an impact. The mitigations of Evaluate Impacts to Native Vegetation and Fish and Wildlife Habitat, Minimize Impacts to Native Vegetation and Habitat, Replace or Offset Loss of Sensitive Habitat, Prevent Hazards to Fish and Wildlife, Minimize and Mitigate Impacts to Special-status Fish and Wildlife, Protect Jurisdictional Waters, Use Alternative Water Sources to the Extent Feasible, Minimize Groundwater Impacts, Demonstrate that Wells within the ADSA Have Effective Cement Well Seals and Monitor Wells during Well Stimulation, Install a Well Seal Across Protected Groundwater for New Wells Subject to Well Stimulation Treatments, Require Stormwater Pollution Prevention Plan, Surface Water Protection, Implement Erosion Control Plan, and Ensure Adequate Water Availability will bring the impacts to the Class I through III level. **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites** was identified as an impact. The mitigation of Prevent Habitat Fragmentation and Impacts to Fish and Wildlife Movement will bring the impacts to the Class I through III level. **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance** was identified as an impact. The mitigation of Coordinate with Local Agencies and Jurisdictions Regarding Local Policies and Conservation Plans will bring the impacts to the Class I through III level. **Conflict with the provisions of an**

adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan was identified as an impact. The mitigation of Coordinate with CDFW, USFWS, and Permittees Regarding NCCPs, HCPs, and Other Conservation Plans will bring the impacts to the Class I through III level. Contribute to global climate change and consequent impacts to biodiversity was identified as an impact. The mitigations of Reduce Hydrocarbon Emissions from Well Stimulation Treatments, Reduce Emissions from Portable Equipment and Mobile Sources, Prevent Methane Emissions from Associated Gas and Casinghead Gas, Reduce Emissions by Implementing Clean Development Mechanism (CDM) Strategies, Require Applicant to Enter into Mitigation Programs or Agreements for GHG Emissions not Covered by or Exempt from the California Air Resources Board (CARB)'s Cap and Trade Program will bring the impacts to the Class I level.

- **Cultural Resources. Affect historic-era archaeological and built-environment resources** was identified as an impact. The mitigations of Require Information and Evaluate Cultural Resources, Complete Native American Coordination, Prepare and Implement Cultural Resources Management and Treatment Plan, Prepare Plan for the Inadvertent Discovery of Human Remains, Provide Cultural Resources Specialist with the Authority to Halt Earth Disturbing Activities, Conduct a Cultural Resources Worker Environmental Awareness Program, Monitor Earth Disturbing Activities for Cultural Resources, Provide Native American Monitors during Earth Disturbing Activities, Prepare Cultural Resources Documents for the Monitoring of Earth Disturbing Activities, and Curate all Discovered Cultural Resources Associated with Earth Disturbing Activities will bring the impacts to the Class I or Class II Level if historic or built environment resources are present or Class III or Class IV if historic or built environment resources are not considered significant or are not present. **Affect prehistoric resources** was identified as an impact. The mitigations of Require Information and Evaluate Cultural Resources, Complete Native American Coordination, Prepare and Implement Cultural Resources Management and Treatment Plan, Prepare Plan for the Inadvertent Discovery of Human Remains, Provide Cultural Resources Specialist with the Authority to Halt Earth Disturbing Activities, Conduct a Cultural Resources Worker Environmental Awareness Program, Monitor Earth Disturbing Activities for Cultural Resources, Provide Native American Monitors during Earth Disturbing Activities, Prepare Cultural Resources Documents for the Monitoring of Earth Disturbing Activities and Curate all Discovered Cultural Resources Associated with Earth Disturbing Activities will bring the impacts to the Class I or II Level if prehistoric resources are present or Class III or Class IV if prehistoric resources are not considered significant or are not present. **Disturb human remains or cultural items, including funerary objects, sacred objects, and objects of cultural patrimony** was identified as an impact. The mitigations of Require Information and Evaluate Cultural Resources, Complete Native American Coordination, Prepare and Implement Cultural Resources Management and Treatment Plan, Prepare Plan for the Inadvertent Discovery of Human Remains, Provide Cultural Resources Specialist with the Authority to Halt Earth Disturbing Activities, Conduct a Cultural Resources Worker Environmental Awareness Program, Monitor Earth Disturbing Activities for Cultural Resources, Provide Native American Monitors during Earth Disturbing Activities, Prepare Cultural Resources Documents for the Monitoring of Earth Disturbing Activities and Curate all Discovered Cultural Resources Associated with Earth Disturbing Activities will bring the impacts to the Class I or II Level if human remains or cultural items are present Class III or Class IV Level if cultural items are not considered significant or are not present or Class IV if human remains are not present. **Affect cultural landscapes** was identified as an impact. The mitigations of Require Information and Evaluate Cultural Resources, Complete Native American Coordination, Prepare and Implement Cultural Resources Management and Treatment Plan, Prepare Plan for the

Inadvertent Discovery of Human Remains, Provide Cultural Resources Specialist with the Authority to Halt Earth Disturbing Activities, Conduct a Cultural Resources Worker Environmental Awareness Program, Monitor Earth Disturbing Activities for Cultural Resources, Provide Native American Monitors during Earth Disturbing Activities, Prepare Cultural Resources Documents for the Monitoring of Earth Disturbing Activities and Curate all Discovered Cultural Resources Associated with Earth Disturbing Activities will bring the impacts to the Class I or II Level if cultural landscapes are present or Class III or Class IV if cultural landscapes are not considered significant or are not present.

- **Geology, Soils and Mineral Resources. Result in the loss of availability of known mineral resource loss of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan** was identified as an impact. No mitigations were proposed. The Level would be Class III in most instances; Class I in some instances.
- **Greenhouse Gas Emissions. Generate greenhouse gas emissions that may have a significant impact on the environment** was identified as an impact. The mitigations of Reduce Emissions from Well Stimulation Treatments, Reduce Emissions from Portable Equipment and Mobile Sources, Prevent Methane Emissions from Associated Gas and Casinghead Gas, Reduce Emissions by Implementing Clean Development Mechanism (CDM) Strategies, Detect and Quantify Fugitive and Vented Methane and Carbon Dioxide will bring the impacts to the Class I Level. **Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases** was identified as an impact. The mitigations of Reduce Emissions from Well Stimulation Treatments, Reduce Emissions from Portable Equipment and Mobile Sources, Detect and Quantify Fugitive and Vented Methane and Carbon Dioxide, Require Applicant Enter into Mitigation Programs or Agreements for GHG Emissions Not Covered by or Exempt from CARB's Cap and Trade Program will bring the impacts to the Class I Level.
- **Land Use and Planning.** Preclude existing or permitted land uses, or create a disturbance that would diminish the function of land uses was identified as an impact. No mitigations were available for the unavoidable and significant impacts associated with Risk of Upset/Public and Worker Safety and the impacts would remain at the Class I Level.
- **Risk of Upset/Public and Worker Safety. Create a hazard to the public or environment through crude oil transport and reasonably foreseeable accidents and releases** was identified as an impact. The mitigations of Increase the Number of California Public Utilities Commission (CPUC) Rail Inspectors, Expedite the Phase-out of Older Tank Cars, Implement New Accident Prevention Technology, Monitor and Enforce New Speed Limits, Monitor the Implementation of Trackside Safety Technology, Improve Emergency Preparedness and Response Programs, Provide Real-Time Shipment Information to Emergency Responders, Provide Additional Accident and Injury Data to the State will bring the impacts to the Class I Level. **Increase risks to public safety by exposing the public to accidental hazardous materials releases from pipelines** was identified as an impact. The mitigations of Increase Inspection of Mechanical Integrity, Improve Leak Detection Capability, and Reduce Mainline Valve Spacing would maintain the impact at the Class I Level.
- **Transportation and Traffic.** Transport hazardous materials was identified as an impact. The mitigation of Know Spill Prevention Measures would maintain the impact at the Class I Level.

8) Marine Research Specialists. **Whittier Main Oil Field Development Project** Final Environmental Impact Assessment, Final. Prepared for the City of Whittier, Final EIR October 2011. Accessible online at (https://www.cityofwhittier.org/government/community-development/mineral-extraction-information/final-environmental-impact-report)

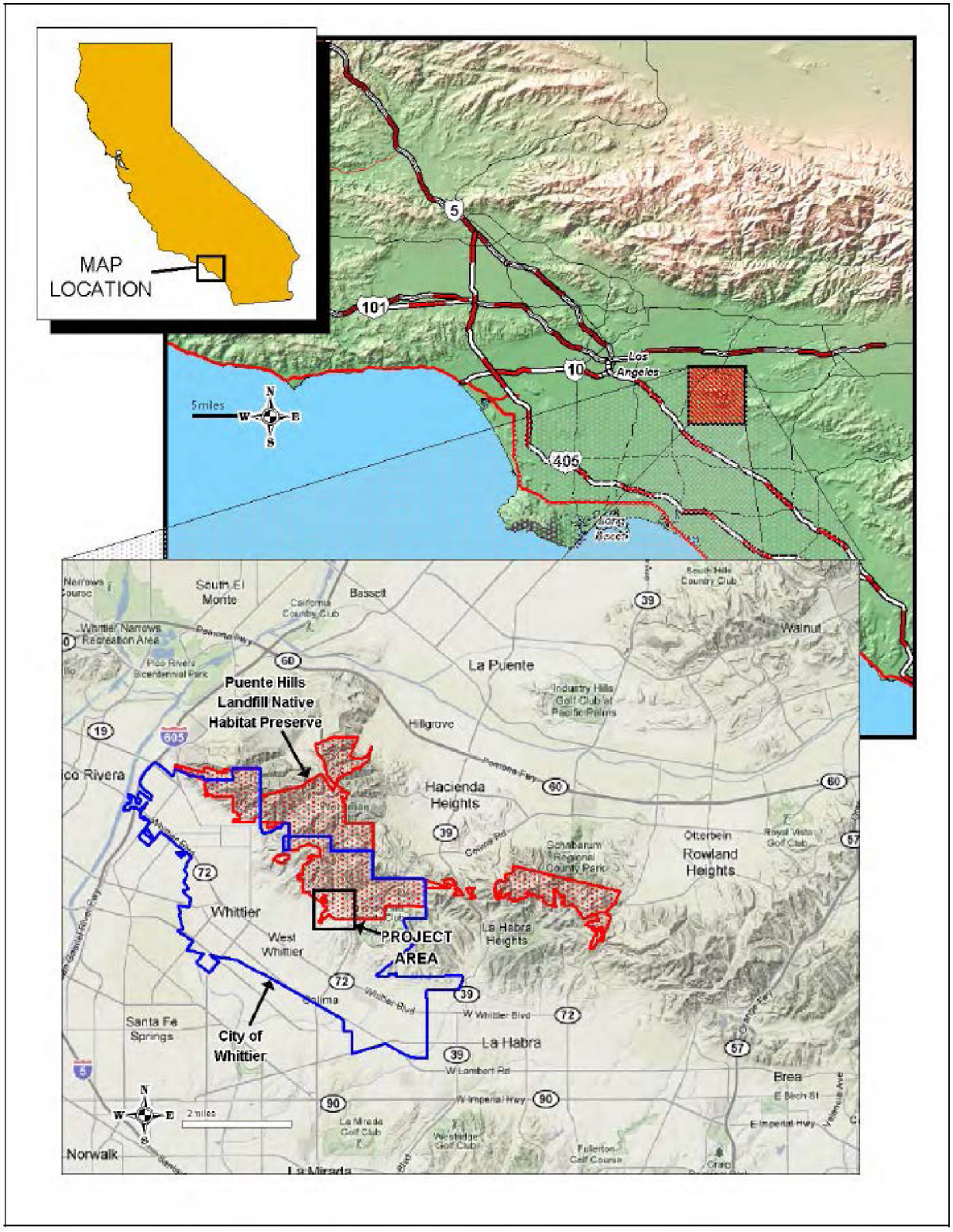
Project Description: The proposed Project would involve drilling wells and producing oil and gas from the Project Site, which comprises a pad area plus additional disturbed and modified areas and roads, owned by the City, which is part of the Puente Hills Landfill Native Habitat Preserve.
The 3,869-acre Preserve is located at the eastern edge of Los Angeles County and extends across three jurisdictions: the City of La Habra Heights; the City of Whittier; and the communities of Rowland Heights and Hacienda Heights, both in unincorporated Los Angeles County. Both the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy and the Wildlife Corridor Conservation Authority, public agencies, have jurisdictional interests in the western Puente Hills (PHLNHPA 2007).

As proposed, the fully developed Project would consist of a single pad with wells, and an oil processing plant, a gas plant, and an oil-truck loading facility all located on an approximately 6.9 acre site (Project Site) within the 1,290-acre City-owned Whittier Main Oil Field. Roads, pipelines, and utility poles would also be constructed. Electrical and pipeline interconnections would be made to the Southern California Edison (SCE) grid and the City of Whittier Sewer and Water District systems. After initial testing, access to the Project would be from both Catalina Avenue and Penn Street through the Landfill property and through the Preserve to the Project Site (North Access Road). A crude oil sales pipeline and a natural gas sales pipeline would be installed underneath existing Preserve roads (the Loop Trail Road) between the Project Site and Colima Road. The crude oil and gas pipelines would continue south under Colima Road to transport crude oil and natural gas to markets.

The proposed Project would involve three distinct development phases. The first phase, the Drilling and Testing Phase, would involve drilling up to three test wells at the Project Site and assessing the quality and quantity of oil and gas produced. Assuming successful testing, the second phase, the Design and Construction Phase, would involve construction of well cellars, the installation of gas and oil processing equipment, and gas/crude transportation facilities. The third phase, the Operations and Maintenance Phase, would involve drilling the remaining wells (for a total of up to 60 wells; three test wells drilled during the test phase and the remaining 57 wells drilled during the Operations and Maintenance phase), as well as the operation and maintenance of the gas and oil facilities and the wells, which would include well workovers and occasional well re-drilling.

During operations, Matrix proposes two methods for transporting the marketable crude oil. One method would be via the Truck Loading Facility inside the Project Site area, where the oil would be loaded onto oil tanker trucks and transported via the North Access Road to a nearby receiving terminal and then transferred into the Crimson California Pipeline System. Oil would be transported by this method during rare periods when the pipeline system is shut down.
The second oil transportation method would transfer the marketable crude oil by pipeline from the Project Site to the existing Crimson Pipeline System via a new 2.8-mile pipeline connection to a tie-in at Leffingwell Road and La Mirada Boulevard. The Crimson Pipeline System would transport the crude to the ConocoPhillips Refinery in Wilmington. This would be the primary transport method, while the tanker truck method would be used during the oil pipeline

construction and then as a back-up when the pipeline is temporarily shutdown.



Impacts and Mitigations: Impacts identified in the EIR include potentially significant environmental impacts in air quality, biological resources, safety, risk of upset and hazardous materials, geology, noise and vibration, aesthetics, traffic, hydrology and water resources, land use, fire protection and recreation, as well as significant and unavoidable impacts in **aesthetics, air quality, hydrology, land use and recreation**. The significant and unavoidable impacts are summarized below:

- **Aesthetics.** Significant and unavoidable impacts to area aesthetics would occur during the Project. Specifically, public viewsheds would be impacted by the installation of the oil drilling rig. Although mitigation measures would not reduce the impacts to a less than significant level, berms and landscaping with native vegetation shall be planted at the periphery of the property and all visible structures shall be painted non-reflective earth-tone colors.
- **Air Quality**. Significant and unavoidable impacts to air quality would occur during construction activities as emissions would exceed the South Coast Air Quality Management District (SCAQMD) significance thresholds, and operations and drilling at the Project Site would likely produce emissions of greenhouse gases (GHG) beyond SCAQMD thresholds. Although mitigation measures would not reduce the impacts to a less than significant level, the operator would submit and implement a Fugitive Dust Control Plan, and implement a program to quantify and reduce greenhouse gas emissions associated with operations.
- **Hydrology.** Significant and unavoidable impacts to surface and groundwater quality could occur from a rupture or leak of crude oil from drilling, operations or from pipelines or other infrastructure. These impacts could not be mitigated to insignificance. Although mitigation measures would not reduce the impacts to a less than significant level, Project Site inspections would be required and the Applicant would be required to properly maintain the crude oil pipelines within the Preserve.
- **Land Use.** A significant and unavoidable impact to land use and policy consistency includes views of Project-related equipment (the drilling rig) that could be incompatible with adjacent land uses. Although mitigation measures would not reduce the impacts to a less than significant level, the Applicant would be required to implement applicable aesthetic and visual resources mitigation measures.
- **Recreation**. A significant and unavoidable impact to recreation would occur due to an adverse effect on recreational viewsheds due to new drilling and operations. Although mitigation measures would not reduce the impacts to a less than significant level, the Applicant would be required to implement applicable aesthetic and visual resources mitigation measures.