

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

8.1 Mitigation Monitoring Program

As the Lead Agency under the California Environmental Quality Act (CEQA), the City of Whittier (City) is required to adopt a program for reporting or monitoring regarding the implementation of mitigation measures for this Project, if it is approved, to ensure that the adopted mitigation measures are implemented as defined in this Environmental Impact Report (EIR). This Lead Agency responsibility originates in Public Resources Code Section 21081.6(a) (Findings) and the CEQA Guidelines Sections 15091(d) (Findings) and 15097 (Mitigation Monitoring or Reporting).

8.2 Monitoring Authority and Enforcement Responsibility

The purpose of a Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) is to ensure that measures adopted to mitigate or avoid significant impacts are implemented. A MMCRP can be a working guide to facilitate not only the implementation of mitigation measures by the Project proponent, but also the monitoring, compliance, and reporting activities of the City and any monitors it may designate.

The City may delegate duties and responsibilities for monitoring to other environmental monitors or consultants as deemed necessary, and some monitoring responsibilities may be assumed by responsible agencies, such as affected jurisdictions and cities, and the California Department of Fish and Game (CDFG). The number of monitors assigned to the Project will depend on the number of concurrent activities and their locations. The City or its designee(s), however, will ensure that each person delegated any duties or responsibilities is qualified to monitor compliance.

Any mitigation measure study or plan that requires the approval of the City must allow at least 60 days for adequate review time. When a mitigation measure requires that a mitigation program be developed during the design phase of the Project, the Applicant must submit the final program to City for review and approval for at least 60 days before any activity begins. Other agencies and jurisdictions may require additional review time. It is the responsibility of the environmental monitor assigned to the Project to ensure that appropriate agency reviews and approvals are obtained.

The City or its designee will also ensure that any deviation from the procedures identified under the monitoring program is approved by the City. Any deviation and its correction shall be reported immediately to the City or its designee by the environmental monitor assigned to the Project.

The City is responsible for enforcing the procedures adopted for monitoring through the environmental monitor assigned to the Project. Any assigned environmental monitor shall note

problems with monitoring, notify appropriate agencies or individuals about any problems, and report the problems to the City or its designee.

8.3 Mitigation Compliance Responsibility

The Applicant is responsible for successfully implementing all the mitigation measures in the MMCRP, and is responsible for assuring that these requirements are met by all of its contractors and field personnel. Standards for successful mitigation also are implicit in many mitigation measures that include such requirements as obtaining permits or avoiding a specific impact entirely. Other mitigation measures include detailed success criteria. Additional mitigation success thresholds will be established by applicable agencies with jurisdiction through the permit process and through the review and approval of specific plans for the implementation of mitigation measures.

8.4 General Monitoring Procedures

Environmental Monitors. Many of the monitoring procedures will be conducted during the operational phase of the Project and during construction if applicable. The City and the environmental monitor(s) are responsible for integrating the mitigation monitoring procedures into the operation or construction process in coordination with the Applicant. To oversee the monitoring procedures and to ensure success, the environmental monitor assigned to the Project must be on site during that portion of the operation or potential construction that has the potential to create a significant environmental impact or other impact for which mitigation is required. The environmental monitor is responsible for ensuring that all procedures specified in the monitoring program are followed.

Operations and Construction Personnel. A key feature contributing to the success of mitigation monitoring will be obtaining the full cooperation of operations and construction personnel and supervisors. Many of the mitigation measures require action on the part of the supervisors or crews for successful implementation. To ensure success, the following actions, detailed in specific mitigation measures, will be taken:

- Procedures to be followed by operations or construction companies hired to do the work will be written into contracts between the Applicant and any contractors. Procedures to be followed by operations and construction crews will be written into a separate document that all personnel will be asked to sign, denoting agreement.
- One or more meetings will be held to inform all and train personnel about the requirements of the monitoring program.
- A written summary of mitigation monitoring procedures will be provided to supervisors for all mitigation measures requiring their attention.

General Reporting Procedures. Site visits and specified monitoring procedures performed by other individuals will be reported to the environmental monitor. A monitoring record form will be submitted to the environmental monitor by the individual conducting the visit or procedure so that details of the visit can be recorded and progress tracked by the environmental monitor. A checklist will be developed and maintained by the environmental monitor to track all procedures

required for each mitigation measure and to ensure that the timing specified for the procedures is adhered to. The environmental monitor will note any problems that may occur and take appropriate action to rectify the problems.

Public Access to Records. The public is allowed access to records and reports used to track the monitoring program. Monitoring records and reports will be made available for public inspection by the City or its designee on request.

8.5 Mitigation Monitoring Table

Tables 8.1 through 8.16 present a summary of monitoring and reporting plan requirements for the mitigation measures identified in Chapter 4 of the EIR as applicable to the proposed Project. The Table provides the following information, by column:

- **Impact** (description of the impact identified in Chapter 4);
- **Mitigation Measure** (description of the mitigation measure identified in Chapter 4);
- **Applicable Projects** (list of projects associated relevant to each mitigation measure, such as the Proposed Project and/or any of the Alternative Projects);
- **Monitoring/Plan Requirements** (monitoring or plan requirements necessary to verify compliance with the mitigation measure);
- **Method of Verification** (this is how the responsible agency can determine if the mitigation measure has been implemented);
- **Timing** (this identifies when action needs to be taken on mitigation measure); and
- **Responsible Agency** (this is the agency that is responsible for assuring compliance with the mitigation measure).

Table 8-17 lists the mitigation measures that apply to the alternatives.

Table 8-1 Air Quality

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
AQ.1: Construction activities would generate emissions that exceed South Coast Air Quality Management District thresholds (Significant and Unavoidable).	AQ-1a The Applicant shall submit and implement a Fugitive Dust Control Plan that includes SCAQMD mitigations for fugitive dust mitigation, according to Rule 403, and SCAQMD CEQA Guidelines. The Plan shall also address fugitive dust measure impacts to native habitats. Fugitive dust mitigation measures in the plan should include the following: - Apply water every 3 hours to disturbed areas within a construction site (61% reduction). - Require minimum soil moisture of 12% for earthmoving, by using a moveable sprinkler system or water truck. Moisture content can be verified by lab sample or moisture probe (69% reduction). - Limit on-site vehicle speeds on unpaved roads to 15 mph with radar enforcement (57% reduction) and posting of speed limits. - Replace ground cover in disturbed areas as quickly as possible (5% reduction). - All trucks hauling dirt, sand, soil, or other loose materials are to be tarped with a fabric cover and maintain a freeboard height of 12 inches (91% reduction) - Install gravel bed trackout apron (3 inches deep, 25 feet long, 12 feet wide per lane, and edged by rock berm or row of stakes) to reduce mud and dirt trackout from unpaved truck exit routes (46 to 80% reduction). - Water industrial unpaved road three times per day (61% reduction). - Water storage piles by hand or apply cover when wind events are declared, according to SCAQMD Rule 403 when instantaneous wind speeds exceed 25 miles per hour (90% reduction). - Appoint a construction relations officer to act as a community liaison concerning onsite construction issues, such as dust generation.	Review of plan and inspection during construction and operations	Before construction and operations	City of Whittier and SCAQMD
	AQ-1b Treat all dirt roads with water three times per day prior to and during the Drilling and Resting Phase pad clearing to substantially reduce dirt road fugitive dust emissions.	Inspection of test drilling clearing and drilling activities	Before and during test drilling	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	AQ-1c Treat all roads (pave or apply non-toxic soil binders with at least 80% effectiveness) before beginning the development phase pad grading and facility construction to substantially reduce dirt road fugitive dust emissions during those phases of construction.	Inspection before facility construction and pad grading	Before pad grading/facility construction	City of Whittier
	AQ-1d The Applicant shall implement a NOx reduction program including the following, or equivalent, measures: - All off-road diesel construction equipment greater than 100 horsepower shall be EPA Tier 3-certified or better engines, or utilize other CARB-verified emission control technologies to achieve the same level of emission reduction. - All off-road construction equipment shall be tuned and maintained according to manufacturers' specifications. - Any temporary electric power shall be obtained from the electrical grid, rather than portable diesel or gasoline generators. - Soil hauling shall be coordinated with the Savage Canyon Landfill to receive the soil to limit haul truck travel distance, or utilize trucks that comply with the EPA 2010 model year emissions requirements. - Limit onsite truck idling to less than 5 minutes. - During the pad and access road grading phase, all off-road dump trucks shall meet EPA 2010 model year NOx emission requirements or achieve a certified NOx emission level of less than 2.0 g/bhp-hr. - A copy of the certified tier specification, best available control technology documentation, or the CARB or SCAQMD operating permit for each piece of equipment shall be provided when each piece of equipment is mobilized.	Inspection of engine certifications	Before construction	City of Whittier
AQ.2: Operational activities would generate emissions that exceed South Coast Air Quality Management District thresholds (Less Than Significant With Mitigation).	AQ-2a The Operator shall comply with all SCAQMD regulations, including but not limited to Regulation IV (Prohibitions), Regulation XIII (New Source Review), Regulation XI (Source Specific Standards), and Regulation XIV (New Source Review for Toxic Air Contaminants). The operator shall implement best available control technology and obtain emission offsets as required by SCAQMD Regulation XIII and/or Regulation XX for new and modified permitted emission sources. Emission offsets are required for all emission increases associated with stationary sources, thus, minimizing the impacts associated with emissions from stationary sources.	Inspection of offsets compliance	Before operations	SCAQMD

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	AQ-2b The Applicant shall implement a program to reduce NOx and PM emissions, including: - All drilling engines shall meet EPA Tier 3 emissions levels, or utilize other CARB-verified emission control technologies to achieve the same level of emission reduction, or utilize electric engines. - Treat all used Preserve dirt roads that will be used (pave or apply soil binders with at least 85% effectiveness) or pave all Preserve dirt roads that will be used during test drilling. - Limit onsite truck idling to less than 5 minutes. - Electrify service equipment and auxiliary power units where feasible. - Use clean street sweepers during operations. Pave roads and road shoulders during operational phase. - Utilize trucks that meet EPA 2010 emission standards and off-road equipment that meets EPA 2015 emissions levels to the extent feasible. - A copy of the certified tier specification, best available control technology documentation, or the CARB or SCAQMD operating permit for each piece of equipment shall be provided when each piece of equipment is mobilized. - Purchase emission offsets to reduce remaining NOx emissions to less than significant levels.	Inspection of engine certifications	Before drilling	City of Whittier
AQ.3: Potential operations and drilling at the Whittier Main Oil Field would create odor events (Less Than Significant With Mitigation).	AQ-3a The Operator shall have a gas buster and SCAQMD-approved portable flare at the oil field and available for immediate use to circulate out and combust any gas encountered during drilling. The flare shall be capable of recording the volume of gas that is flared. The operator shall report any flared gas from drilling to the Los Angeles County Fire Chief and the SCAQMD.	Inspection of drilling site	Before drilling	City of Whittier
	AQ-3b The Operator shall install a detection system that will monitor vapor space on all crude oil tanks. The detection system shall be capable of monitoring pressure in the vapor space of the tanks and notifying the operator via an alarm when the pressure in the tanks gets within 10 percent of the tank relief pressure. If the tank pressure exceeds the relief pressure, the Operator shall report the incident to the SCAQMD as a breakdown pursuant to Rule 430, and submit a report of the breakdown to the Los Angeles County Fire Chief and the SCAQMD, which shall detail the corrective actions the Operator shall take to avoid exceeding the tank relief pressure.	Inspection of crude tanks	Before operations	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	AQ-3c The Operator shall develop an Odor Minimization Plan. The Odor Minimization Plan shall address odors from all oil field equipment, including wells and drilling operation. The Plan shall address issues such as facility information, buffer zones, signs with contact information, logs of odor complaints, and the protocol for handling odor complaints.	Inspection of plan and signage	Before drilling	City of Whittier
	AQ-3d The Operator shall develop an Air Monitoring Plan. The Plan shall provide for the monitoring of total hydrocarbon vapors and hydrogen sulfide at each well drill and re-drilling site and total hydrocarbon vapors at the gas plant. At all times during drilling and redrilling operations, the Operator shall maintain monitoring equipment that shall monitor and digitally record the levels of hydrogen sulfide and total hydrocarbon vapors. Monitors shall be installed at the edge of the drill pad and around the outer edge of the gas plant. Such monitors shall provide automatic alarms that are audible or visible to the Operator of the drilling equipment for the drill rig monitors, and gas plant for the gas plant monitors, and shall be triggered by the detection of hydrogen sulfide or total hydrocarbon vapors. Alarm points shall be set at a maximum of 5 and 10 ppm H ₂ S and 500 and 1,000 ppm hydrocarbons, with the higher level requiring shut-down of drilling or gas plant operations and notification to appropriate agencies, including the Los Angeles County Fire Department and SCAQMD. A meteorological station to monitor wind speed and direction under the guidance and specification of the SCAQMD shall be installed at the Processing Site, or applicable location.	Inspection of plan and equipment	Before drilling	City of Whittier
	AQ-3e The Operator shall use an odor suppressant spray system or vapor capture hood and carbon filter system on the mud shaker tables for all drilling operations so that no odor can be detected at the edge of the oil field property.	Inspection of drilling operations	During drilling	City of Whittier

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
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AQ.4: Potential operations and drilling at the Whittier Main Oil Field would increase greenhouse gas emissions (Significant and Unavoidable).	AQ-4 The Applicant shall implement a program to quantify and reduce greenhouse gas emissions associated with operations, such as using green electrical power to run equipment, using high efficiency pumps and electrical devices, requiring diesel engines to use biodiesel, or offsite measures that could offset greenhouse gas emissions. Operations GHG emissions levels shall be quantified and reported to the City and to the SCAQMD for operations on an annual basis, and, if GHG emissions exceed the SCAQMD thresholds, then a GHG emission reduction program shall be implemented to reduce emissions to less than the threshold value. The reduction program shall include planting at least 500 trees within the Preserve to sequester GHG emissions, in coordination with the Habitat Authority and it shall follow the Climate Action Reserve protocols. The reduction program shall focus on on-site and local/basin area methods for GHG reductions.	Inspection of equipment and programs	During operations	City of Whittier
AQ.5: Potential operations and drilling at the Whittier Main Oil Field would emit toxic materials (Less Than Significant With Mitigation).	AQ-5 The Applicant shall install CARB-Verified Level 3 diesel catalysts on all diesel-powered drilling equipment. The current list of CARB-Verified Level 3 diesel catalysts is located at http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm . Catalysts shall be capable of achieving 85% reduction for diesel particulate matter.	Inspection of drilling operations	During drilling	City of Whittier

Table 8-2 Biological Resources

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
BIO.1: Project grading and vegetation clearing for fuel modification, and increased noise, would result in adverse effects, either directly or through habitat modifications on	BIO-1a To mitigate the Project's permanent loss of 4.16 acres of coastal sage scrub, the Applicant shall provide minimum 3:1 areal replacement. To mitigate the loss of habitat value due to the Project's temporary noise impacts affecting 5.49 acres of coastal sage scrub, the Applicant shall provide minimum 1:1 areal replacement. In total, the Applicant shall restore 17.97 acres of degraded habitats in the La Cañada Verde and Arroyo Pescadero watersheds to coastal sage scrub communities, or as otherwise agreed to by the appropriate resource agencies and the City. All aspects of this restoration	Comply with the Habitat Authority's Restoration Guideline	Plans prior to permit issuance and restoration prior to construction ; restoration	Habitat Authority, and City

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
sensitive wildlife species (Less Than Significant With Mitigation).	shall comply with the Habitat Authority's Restoration Guidelines, as specified in Appendix N of the RMP (LSA 2007, Pages 251-372). The following shall apply: All contractors involved in the restoration effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). The restoration specialist shall work with the Habitat Authority to select restoration sites in the Habitat Authority's Whittier Management Unit, preferably in the La Cañada Verde and Arroyo Pescadero watersheds. A conservation easement shall be placed over any site restored under this mitigation measure. Mandatory components of any restoration plan shall include, but not be limited to, Site Preparation, Implementation Specifications, Maintenance Methods, Performance Standards, Monitoring Methods, Documentation and Reporting, and Contingency Measures (in case performance standards are not met in any area). All components of any restoration plan prepared in satisfaction of this mitigation measure shall be reviewed and approved by the Habitat Authority prior to implementation. Maintenance of all plantings will be the Applicant's responsibility, and shall include any activities required to meet the performance standards set for the restoration program. A minimum of 5 years of maintenance shall be required unless the plan's long-term performance standards are judged by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) to be satisfied in less than 5 years. Monitoring all restoration sites will be the Applicant's responsibility for a minimum of 5 years, or until the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) judge all of the Project's long-term performance standards to be satisfied. The site monitor shall be a biologist, native landscape horticulturist, or other professional qualified to: (1) assess the performance of the planting effort; (2) recommend corrective measures, if needed; and (3) document wildlife use of planting areas over time. The site monitor shall be selected by the Applicant and approved by the City and the Habitat Authority. If performance standards are not achieved in any restoration area, an alternative or auxiliary mitigation plan may be submitted to the City, the	es	planting shall occur in the Fall.	

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
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	Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). The monitoring results shall be reported at least annually to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). Additionally, all mitigation must comply with the Restoration Plans for Mitigation and Monitoring Plans found on the Habitat Authority's web page (http://www.habitatauthority.org/devdedmit.shtml).			
	BIO-1b To prevent erosion and invasion by non-native weeds, and to help offset the Project's overall biological impacts, all graded slopes outside of permanent impact areas (approximately 8.03 acres) shall be revegetated exclusively with appropriate, locally indigenous plant species. All contractors involved in the revegetation effort, including the revegetation specialist and landscape contractor, shall be reviewed and approved by the City and Habitat Authority. Revegetation of graded slopes shall comply with the Habitat Authority's Restoration Guidelines, as specified in Appendix N of the RMP (LSA 2007, Pages 251-372). The following shall apply: All contractors involved in the restoration effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). Mandatory components of any restoration plan shall include, but not be limited to, Site Preparation, Implementation Specifications, Maintenance Methods, Performance Standards, Monitoring Methods, Documentation and Reporting, and Contingency Measures (in case performance standards are not met in any area). All components of any restoration plan prepared in satisfaction of this mitigation measure shall be reviewed and approved by the Habitat Authority prior to implementation. Maintenance of all plantings will be the Applicant's responsibility, and shall include any activities required to meet the performance standards set for the restoration program. A minimum of 5 years of maintenance shall be required unless the plan's long-term performance standards are judged by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) to be satisfied in less than 5 years. Monitoring all restoration sites will be the Applicant's responsibility for a	Comply with the Habitat Authority's Restoration Guidelines	Plans prior to permit issuance and revegetation during planting season after grading	Habitat Authority, and City

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	minimum of 5 years, or until the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) judge all of the Project's long-term performance standards to be satisfied. The site monitor shall be a biologist, native landscape horticulturist, or other professional qualified to: (1) assess the performance of the planting effort; (2) recommend corrective measures, if needed; and (3) document wildlife use of planting areas over time. The site monitor shall be selected by the Applicant and approved by the City and the Habitat Authority. If performance standards are not achieved in any restoration area, an alternative or auxiliary mitigation plan may be submitted to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). The monitoring results shall be reported at least annually to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). Additionally, all mitigation must comply with the Restoration Plans for Mitigation and Monitoring Plans found on the Habitat Authority's web page (http://www.habitatauthority.org/devdedmit.shtml).			
	BIO-1c. Restoration and revegetation efforts shall include salvage of weed-free topsoil (upper 12 inches of soil) from any and all areas of intact (non-weedy) native communities that are graded for Project implementation, as determined by the site monitor described in required by mitigation measure BIO-1 b, so that the soil can later be spread over graded slopes to increase native plant species diversity in the restored areas. Such salvage may also be appropriate for revegetation areas.	Comply with the Habitat Authority's Restoration Guidelines	Plans prior to permit issuance and salvage prior to grading	Habitat Authority, and City
	BIO-1d The Project proponent shall consult with the US Fish and Wildlife Service to obtain an Incidental Take Statement, if needed, pursuant to Section 7 or Section 10 of the federal Endangered Species Act to cover the Project's potential "take" (which includes the permanent and temporary loss of	Agency consultation	Prior to permit issuance	City

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	approximately 5 acres of critical habitat) of the coastal California gnatcatcher, a federally listed species.			
BIO.2: The proposed Project would result in the permanent and temporary loss of 1.0 acre of mulefat scrub riparian habitat, a federally protected aquatic resource as defined by Section 404 of the Clean Water Act, and increased noise could temporarily inhibit wildlife use of preserved riparian habitat. (Less Than Significant With Mitigation) .	BIO-2a To mitigate the Project's permanent loss of 0.22 acre of riparian habitat, the Applicant shall provide minimum 3:1 areal replacement. To mitigate the Project's temporary noise impacts affecting 0.75 acres of riparian habitat, the Applicant shall provide minimum 1:1 areal replacement. In total, the Applicant shall restore 1.41 acres of degraded areas within the La Cañada Verde and Arroyo Pescadero watersheds, or as otherwise agreed to by the appropriate resource agencies and the City. The 0.12 acre of temporary grading impact would be mitigated through the 1:1 revegetation specified in BIO-1.b. All aspects of this restoration shall comply with the Habitat Authority's Restoration Guidelines, as specified in Appendix N of the RMP (LSA 2007, Pages 251-372). The following points shall apply: All contractors involved in the restoration effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). Mandatory components of any restoration plan shall include, but not be limited to, Site Preparation, Implementation Specifications, Maintenance Methods, Performance Standards, Monitoring Methods, Documentation and Reporting, and Contingency Measures (in case performance standards are not met in any area). All components of any restoration plan prepared in satisfaction of this mitigation measure shall be reviewed and approved by the Habitat Authority prior to implementation. Maintenance of all plantings will be the Applicant's responsibility, and shall include any activities required to meet the performance standards set for the restoration program. A minimum of 5 years of maintenance shall be required unless the plan's long-term performance standards are judged by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) to be satisfied in less than 5 years. Monitoring all restoration sites will be the Applicant's responsibility for a minimum of 5 years, or until the City, the Habitat Authority, and appropriate	Comply with the Habitat Authority's Restoration Guidelines	Plans prior to permit issuance and restoration prior to grading; restoration planting shall occur in the Fall.	Habitat Authority, and City

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	resource agencies (e.g., U.S. Fish and Wildlife Service) judge all of the Project's long-term performance standards to be satisfied. The site monitor shall be a biologist, native landscape horticulturist, or other professional qualified to: (1) assess the performance of the planting effort; (2) recommend corrective measures, if needed; and (3) document wildlife use of planting areas over time. The site monitor shall be selected by the Applicant and approved by the City and the Habitat Authority. If performance standards are not achieved in any restoration area, an alternative or auxiliary mitigation plan may be submitted to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). The monitoring results shall be reported at least annually to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). Additionally, all mitigation must comply with the Restoration Plans for Mitigation and Monitoring Plans found on the Habitat Authority's web page (http://www.habitatauthority.org/devdedmit.shtml).			
	BIO-2b. The Project proponent shall be required to obtain all applicable federal and state permits and agreements, including (1) a Section 404 Permit from the US Army Corps of Engineers, (2) certification, or a waiver of certification, from the Los Angeles Regional Water Quality Control Board that the activity would not adversely affect water quality, and (3) a Streambed Alteration Agreement from the California Department of Fish and Game.	Agency consultation	Permit prior to issuance of grading permits	City
BIO.3: A rupture or leak from oil wells, pipelines, or other oil field-related infrastructure has the potential to result in a substantial adverse effect on native species and habitats, sensitive species, sensitive	BIO-3a. The applicant shall prepare an Emergency Response Action Plan that would address protection of sensitive biological resources and revegetation of any areas disturbed during an oil spill or cleanup activities. The Emergency Response Action Plan shall, at a minimum, include specific measures to avoid impacts to native vegetation and wildlife habitats, plant and animal species, and environmentally sensitive habitat areas during response and cleanup operations. Where feasible, low-impact, site-specific techniques such as hand-cutting contaminated vegetation and using low-pressure water flushing shall be specified to remove spilled material from particularly sensitive wildlife	Emergency Response Action Plan	Prior to issuance of grading permits	Habitat Authority, and City

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
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species habitat, and sensitive habitats including riparian and coastal sage scrub (Less Than Significant With Mitigation).	habitats, such as riparian woodlands, because procedures such as shoveling, bulldozing, and raking can cause more damage to a sensitive habitat than the oil spill itself. The Emergency Response Action Plan shall evaluate the non-cleanup option for ecologically vulnerable habitats. When habitat disturbance cannot be avoided, the Emergency Response Action Plan shall provide stipulations for development and implementation of site-specific habitat restoration plans and other site-specific and species-specific measures appropriate for mitigating impacts to local populations of special-status wildlife species and to restore native plant and animal communities to pre-spill conditions. Access and egress points, staging areas, and material stockpile areas that avoid sensitive habitat areas shall be identified. The Emergency Response Action Plan shall include species- and site-specific procedures for collection, transportation and treatment of oiled wildlife, particularly for sensitive species. The Emergency Response Action Plan shall include procedures for timely re-establishment of vegetation that replicates the habitats disturbed (or, in the case of disturbed habitats dominated by non-native species, replaces them with suitable native species). The Emergency Response Action Plan shall be approved by the City and Habitat Authority prior to commencing any construction activities.			
	BIO-3b To reduce exposure risks to wildlife in the Project Site area, all open basins containing any Project-related fluids shall either be emptied at the end of each day or fenced and covered to exclude all wildlife, including birds, bats, and amphibians. Drilling muds, concrete waste, and truck washing water shall be contained within closed Baker-style tanks or collected by a vacuum truck before the end of each day and shall not be stored overnight in open pits.		Prior to issuance of grading permits	City
BIO.4: The proposed Project could substantially interfere with the movement of native resident or wildlife species or with established native	BIO-4a Devices and measures shall be employed to minimize noise effects on wildlife. At a minimum, noise barriers shall surround the drill rig floor, mud mixers, cleaners, conveyers, shakers, pumps, and other oil development and operational facilities; construction activities shall be limited to daylight hours except for emergencies; construction machinery shall be operated per manufacture's specifications; and a Noise Reduction Plan and monitoring plan shall be implemented to ensure that Project activities are operating within the	Noise mitigation plan	Prior to issuance of grading permits	Habitat Authority and City

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resident or migratory wildlife corridors, or interfere with the use of native wildlife nursery sites. (Less Than Significant with Mitigation).	ranges included in mitigation measure N-4.			
	BIO-4b All Project lighting shall be designed and shielded with the intent of preventing spillage of light into adjacent preserved open space areas. Outdoor lighting shall be restricted to lights required by code for lighting building exteriors and for safety and security needs. All Project lighting shall be fully shielded and designed to prevent spillage of light into adjacent preserved open space areas. Lighting shall be constructed so that all light emitted by the fixture, either directly from the lamp or from a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal as determined by photometric test or certified by the manufacturer. Any structural part of the light fixture providing this shielding shall be permanently affixed. Light standard heights shall distribute light at ground level consistent with light levels for security, spill-over effects, and efficiency. After initial installation of Project lighting, a biological monitor acceptable to the City and Habitat Authority shall conduct a field inspection to confirm that the proper lamps have been installed and that light spillage into the Preserve has been minimized to the maximum extent feasible without compromising safety or other critical night-lighting requirements.	Lighting plan	Prior to issuance of grading permits	Habitat Authority and City
	BIO-4c. To minimize the potential for road mortality of wildlife, all roads used to access onsite oil facilities shall have enough traffic calming devices, appropriately sized and spaced, to limit traffic to a maximum speed of 10 miles per hour. All nighttime traffic shall be minimized during the construction and operational phases as feasible; all hauling activities shall be restricted to daylight hours.	Traffic speed control plan	Prior to issuance of grading permits	Habitat Authority and City
	BIO-4d. Any project landscaping shall consist entirely of species native to the Project Site and surrounding areas within the Preserve and approved by the County of Los Angeles Fire Department and the Habitat Authority. Any irrigation provided shall be limited to that required to initially establish the native plants; no permanent irrigation shall be permitted.	Landscaping plan	Prior to issuance of grading permits	Habitat Authority and City
	BIO-4e. To minimize potential impacts to nesting songbird species, and in compliance with the federal Migratory Bird Treaty Act and Sections 3503, 3503.5, or 3513 of the California Fish and Game Code, initial construction of the pad sites and facilities and annual fuel modifications involving vegetation	City and Habitat Authority shall	Mitigation measure applies to construction	Habitat Authority, and City

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	removal/trimming should be done outside the breeding season (February 15 through August 31). If construction must be completed during this period, then surveys for nesting birds must be conducted within 3 days prior to vegetation removal or other construction-related disturbances. USFWS protocol surveys for listed avian songbirds (California gnatcatcher and least Bell's vireo) shall be conducted if disturbances occur in coastal sage scrub or riparian habitats. If nesting songbirds are observed within the vicinity, then a minimum 100-foot buffer from the nest would be established. The buffer would be delineated by roping construction boundaries and would remain in place until the nest is abandoned or the young have fledged. Alternatively, the Project proponent may retain a biologist acceptable to the City and Habitat Authority to monitor the nest and to ensure that Project activities do not violate the Migratory Bird Treaty Act or the California Fish and Game Code.	review and approve biologist	work between February 15 and August 31	
	BIO-4f. Hawks and owls nest earlier than most songbirds. If initial construction activities, drilling, ground disturbance, or vegetation clearing, or annual fuel modification involving vegetation removal/trimming occurs from December 1 through August 31, the nest monitor would conduct a pre-construction survey within 3 days prior to vegetation removal or other construction-related disturbances focused on actively nesting hawks or owls. If any actively nesting hawks or owls (or other native birds) are found, a 300-foot buffer would be established around the nest tree to help ensure that nesting is not disrupted. If any active songbird nests are found, a 100-foot buffer would be established as described in BIO-4e. The buffer would be delineated by roping construction boundaries and would remain in place until the nest is either abandoned or the young have fledged. Alternatively, the Project proponent may retain a biologist acceptable to the City and Habitat Authority to monitor the nest and to ensure that Project activities do not violate the Migratory Bird Treaty Act or the California Fish and Game Code.	City and Habitat Authority shall review and approve biologist	Mitigation measure applies to construction work between December 1 and August 31.	Habitat Authority, and City
	BIO-4g. To avoid the direct loss of special-status bats that that could result from removal of trees that may provide maternity roost habitat (e.g., in cavities or under loose bark), the following steps would be taken: - Tree removal or relocation shall be scheduled between October 1 and February 28, outside of the maternity roosting season. - If trees must be removed during the maternity season (March 1 to September 30), a qualified bat specialist (i.e., a person holding a California Department of Fish and Game collection permit and a memorandum of	Retain a qualified bat specialist to implement the required		Habitat Authority and City

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	understanding allowing the handling and collection of bats) would conduct a pre-construction survey to identify those trees proposed for disturbance that could provide hibernacula or nursery colony roosting habitat for bats. - Each tree identified as potentially supporting an active maternity roost would be closely inspected by the bat specialist a maximum of 7 days prior to tree disturbance to more precisely determine the presence or absence of roosting bats. - If bats are not detected, but the bat specialist determines that roosting bats may be present, it is preferable to push the tree down using heavy machinery rather than felling it with a chainsaw. - Maternity season lasts from March 1 to September 30. Trees determined to be maternity roosts must be left in place until the end of the maternity season. - A 250-foot buffer, in which no construction activities are permitted, would be established around any tree, rock outcrop, or other occupied roost habitat until the end of the maternity season (September 30). - The bat specialist would document all monitoring activities, and would prepare a summary report upon completion of tree disturbance activities. Reports would include the following: - the number and type of affected trees determined to support or potentially support roosting bats prior to disturbance; - any actions undertaken to safely exclude roosting bats prior to disturbance and the results of those actions; - trees temporarily avoided to protect roosting bats; and - roosting bats found (alive or dead) after trees were removed or relocated. - This report would be provided to the City within 30 days following completion of tree removals within each tract map area.	survey and documentation	Mitigation measure applies to construction work between March 1 and September 30.	
	BIO-4h To reduce impacts to wildlife movement corridors and to provide protective cover for wildlife using the Service Tunnel, and consistent with the Resource Management Plan recommendations, the Applicant shall be required to install appropriate native screening vegetation around the western terminus of the Service Tunnel (LSA 2007). The Applicant shall consult with the Habitat Authority to identify the appropriate limits of screening vegetation. The plantings installed as screening shall comply with the Habitat Authority's Restoration Guidelines. All contractors involved in the native screening effort, including the restoration specialist and landscape contractor, shall be	Comply with the Habitat Authority's Restoration Guidelines	Plans prior to issuance of grading permits and planting prior to grading	Habitat Authority, and City

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	reviewed and approved by the City and Habitat Authority.			
	BIO-4i Consistent with the Resource Management Plan recommendations, Project lighting shall not be directly visible from the western terminus of the Service Tunnel.	Lighting plan	Prior to issuance of grading permits	Habitat Authority and City
	BIO-4j. Consistent with the Resource Management Plan recommendations, the Project proponent shall be required to consult with the Habitat Authority to develop and implement signage explaining the importance of limiting human disturbances in the vicinity of the Service Tunnel between sunset and sunrise.	Consult with the Habitat Authority	Prior to issuance of grading permits	Habitat Authority and City
	BIO-4k A qualified biological monitor approved by the City and the Habitat Authority shall be onsite during all vegetation removal and initial ground disturbance activities to ensure the compliance with all permit conditions protecting biological resources. The biological monitor shall be present to salvage wildlife species that may be otherwise killed or injured by heavy equipment and vegetation clearing. All salvaged wildlife shall be relocated to suitable adjacent habitat within the Preserve. The biological monitor shall have the authority to temporarily halt activities if permit requirements and conditions are not being met.			
	BIO-4l The Applicant shall fund and implement a biological resources training program for all construction workers, oilfield workers, and their contractors. Training shall occur annually and as needed for new workers. Training shall include a description of important biological resources within the Preserve and all applicable conditions, permit requirements, and protection measures implemented to protect those resources.			
	BIO-4m All grading limits shall be delineated by orange construction fencing and permanent signage every 50 feet along the fence stating “No Entry — Sensitive Habitat.” The City and the Habitat Authority shall approve the fencing prior to commencement of grading activities (including clearing and grubbing).			
	BIO-4n Recreational access to the Arroyo San Miguel Trail shall be closed during construction or drilling activities at the Drill Pad Site. To continue providing recreation access to the Arroyo San Miguel Trails (on the east side of Colima Road), the Applicant shall develop additional recreational access, in			

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	coordination with the Habitat Authority, to the Arroyo San Miguel Trail by any of the following or equivalent: (1) enhancing the parking area on the east side of Colima Road; (2) developing the parking area along La Flore Drive, approximately 1 mile east of Colima Road; or (3) develop pedestrian access along Colima Road from the Preserve parking area (on the west side of Colima Road) utilizing the new signalized intersection.			
BIO.5: The proposed Project would conflict with local policies and ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less Than Significant With Mitigation).	Implement mitigation measures BIO.1, BIO.2, BIO.3, and BIO.4.	See mitigation measures associated with impacts BIO.1, BIO.2, BIO.3, and BIO.4.	See mitigation measures associated with impacts BIO.1, BIO.2, BIO.3, and BIO.4.	See mitigation measures associated with impacts BIO.1, BIO.2, BIO.3, and BIO.4.

Table 8-3 Safety, Risk of Upset, and Hazardous Materials

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
SR.1: The proposed Project could introduce risk to the public associated with accidental releases from well drilling and processing operations (Less Than Significant with Mitigation).	SR-1a The Applicant shall implement site security methods, including but not limited to: (1) enclosing all wells and equipment (including the metering station) with 8-foot block walls with barbed wire on the inside at 7 feet; (2) Secure gates located at all entrances with automatic opening/closing and secure access; (3) Limitation of climbable landscaping near the facility; (4) Installation of video surveillance systems and burglar/intrusion alarm systems; (5) Contact information and site access limitations shall be posted in specific locations easily visible to the public, shall be provided to neighboring residents within a set radius, and shall be placed in Preserve information kiosks and on the Habitat Authority and City websites; (6) Visitor sign-in/sign-out and security policies for employees regarding access control, pre-employment screening, post-employment issues, vehicles, access keys, codes, and card security.	Review of site security measures and plan	Before construction and operations	City of Whittier
	SR-1b The Applicant shall conduct a third-party audit of the gas and crude oil plants and pipelines, once constructed, including the well pads, to ensure compliance with Fire Code, applicable API and NFPA codes, EPA RMP, OSHA PSM, and SPCC and emergency response plans requirements. The review shall include a seismic assessment of equipment to withstand earthquakes prepared by a seismic engineer in compliance with Local Emergency Planning Committee Region 1 CalARP guidance. All audit items shall be implemented in a timely fashion, and the audit shall be updated periodically, as directed by the City and the Los Angeles County Fire Department.			
SR.2: The proposed Project could introduce risk to the public associated with the transportation	SR-2a The Applicant shall install automatic valves that will automatically shut down under a low pressure scenario at the Processing Facility Area for all pipelines leaving the processing plant (Colima Road and the pipeline to the landfill), and a backflow prevention device or shut-down valve at the tie-in location at Lambert Road, to prevent the release of gas from the main transmission pipeline in the event of a rupture in the Colima Road pipeline.	Inspection of construction design plans	Before construction and operations	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
of natural gas along Colima Road. (Less Than Significant With Mitigation).	SR-2b The Applicant shall ensure that warning tape is installed above the pipeline within the pipeline trench to warn third parties that a pipeline is located below the warning tape and that the pipeline is capable of utilizing a smartpig.	Inspection of construction design plans and during construction before backfilling pipeline trench	Before construction	City of Whittier
SR.3: The proposed Project could mobilize soil contamination that could affect groundwater and environmental and public health (Less Than Significant With Mitigation).	SR-3 The Applicant shall conduct site assessments of the Project Site before commencing Project construction and shall sample soils and excavated materials associated with construction to ensure that the soils are not contaminated. Contaminated soils shall be completely excavated and the contaminated areas cleaned to LARWQCB specifications before moving forward with construction of the proposed Project components.	Review of sampling results	Before construction and operations	City of Whittier and RWQCB

Table 8-4 Geological Resources

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
GR.1: Seismically induced ground shaking could damage proposed structures and infrastructure, potentially resulting in loss of property, risk to human health and safety, and oil spills (Less Than Significant With Mitigation).	GR1-a Proposed drilling, production, processing, storage, and transportation infrastructure shall be designed and constructed to withstand anticipated ground acceleration in the Project Area, based on the California Building Code. The calculated design base ground motion for project components shall consider the soil type, potential for liquefaction, and the most current and applicable seismic attenuation methods that are available.	Review and approval of design drawings and seismic loading calculations	Approve design drawings and seismic loading calculations prior to issuance of building permits	City of Whittier
	GR1-b All surface facilities and equipment shall have suitable foundations and anchoring design, surface restraints, and moment-limiting supports to withstand seismically induced groundshaking.	Review and approval of design drawings	Approve design drawings prior to issuance of building permits	City of Whittier
	GR1-c All conceptual geotechnical recommendations provided by Heathcote Geotechnical (2011) shall be followed during grading and construction at the Project Site. In addition, a Registered Civil Engineer and Certified Engineering Geologist shall perform an updated geotechnical evaluation of the Project Site, as the proposed building pad and slope configuration has changed since completion of the geotechnical report completed in 2010 (Heathcote Geotechnical 2011). This report shall be completed prior to completion of the final project design and shall be submitted to the City of Whittier for review and approval and any new recommendations not included in the Heathcote Geotechnical (2011) report shall be adhered to. The project design must conform to the recommendations within the updated geotechnical evaluation.	Observe and test installation of buried pipelines	Monitoring during construction	City of Whittier
	GR-1d All proposed slope construction, roadways, and work pads shall be properly engineered, with fill placed in accordance with California Building Code and Los Angeles County requirements.	Observation and inspection. Submit semi-	Monitor during construction	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
		annual reports for review and approval.	n and operations	
	GR-1e All proposed pipelines shall be placed in properly constructed trenches and backfilled with bedding and engineered fill that increases the freedom of movement of the pipelines, or alternatively anchored to prevent pipeline movement, as determined by a California Registered Civil Engineer, in accordance with California Building Code, 2010, Los Angeles County requirements, and the American Public Works Association Greenbook.	Cease any drilling and production activities and inspect all project-related facilities, equipment and pipelines following any seismic event that generates a ground acceleration of fifteen (0.15g) percent of gravity.	Inspection for earthquake damage of drilling and production infrastructure immediately following threshold seismic events	City of Whittier
	GR-1f All existing facilities and equipment, including spill containment berms and Project-related pipelines, shall be inspected with respect to seismic integrity before operations. In the event that deficiencies are noted, such facilities, structures, or equipment shall be retrofitted for the seismic loading in accordance with applicable codes, including the California Building Code, 2010.	Cease any drilling and production activities and inspect all project-related facilities, equipment and pipelines following any seismic event that generates a ground acceleration of fifteen (0.15g) percent of	Inspection for earthquake damage of drilling and production infrastructure immediately following threshold seismic events	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
		gravity.		
	GR-1g The Applicant shall cease any non-essential drilling and production activities and inspect all project-related facilities, equipment, and pipelines following any seismic event that generates a ground acceleration of 15 percent of gravity. The Applicant/Operator shall prepare a written report of all inspections and findings to the City for review and approval prior to the recommencement of any operations.	Cease any drilling and production activities and inspect all project-related facilities, equipment and pipelines following any seismic event that generates a ground acceleration of fifteen (0.15g) percent of gravity.	Inspection for earthquake damage of drilling and production infrastructure immediately following threshold seismic events	City of Whittier
GR.2: Moderately expansive soils are prone to swelling and shrinking as a result of increased or decreased water content, which could potentially damage proposed structures and infrastructure, resulting in loss of	GR-2a. Thickened slabs, extending slab edges and additional reinforcement shall be installed to reduce negative impacts from any expansive soil movement. In addition, the use of capillary break under slabs shall be utilized to reduce the potential for moisture transport and pumping that leads to moisture infiltration as a result of heat and moisture gradients. It is essential that sand thickness under slabs be used for concrete curing only and be kept at 2 inches or less. The American Concrete Institute has found that greater thicknesses tend to provide conveyance of excessive moisture under the slabs. An alternative would be the use of low to non expansive soils for slab support, which would eliminate the potential risk. This can be accommodated by importing select materials. Select grading techniques during grading could utilize the granular soils in site for subsequent use. Measures shall be as described above or as otherwise approved by the City Engineer.	Design drawings and site inspections	Prior to permit issuance and during construction	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
property (Less Than Significant with Mitigation).				
GR.3: Existing uncertified fill onsite could potentially be subject to hydroconsolidation, excessive settlement, expansive soil shrink and swell and differential settlement/expansion, and thus could potentially damage proposed structures and infrastructure, resulting in loss of property (Less Than Significant With Mitigation).	Mitigation Measure GR-1c shall be completed in association with artificial fill impacts.	See MM GR-1c	See MM GR-1c	See MM GR-1c
GR.4 Landslide prone slopes are present in	Mitigation Measure GR-1c shall be completed in association with slope stability impacts.	See MM GR-1c	See MM GR-1c	See MM GR-1c

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
the Project Area. Such slopes could potentially damage proposed structures and infrastructure, resulting in loss of property and oil spills (Less Than Significant with Mitigation).				
GR.5: Temporary excavations could impact and adversely affect adjacent properties or de-stabilize the existing hillside (Less Than Significant with Mitigation).	GR-5a. Temporary shoring shall be designed to protect the temporary excavations, structures to remain in place, and adjacent properties. This shoring shall be designed by a State of California Registered Civil Engineer to take into account all lateral load parameters. Shoring above groundwater levels can range from steel cage to timber supports to sheet piling, soil nailing or shotcrete walls or as otherwise approved by the City Engineer.	Submit temporary shoring plans and calculations.	Prior to permit issuance	City of Whittier
	GR-5b. Implement slot cut excavation schemes during grading and foundation excavations to the extent possible to reduce the potential for failure along temporary cuts by limiting the area exposed by temporary cuts.	Submit temporary shoring plans and calculations.	Prior to permit issuance	City of Whittier
	GR-5c. All excavations for structures and buildings shall comply with all applicable regulations of the California Occupational Safety and Hazard Administration guidelines as they pertain to excavations.	Submit temporary shoring plans and calculations.	Prior to permit issuance	City of Whittier
GR.6: Corrosion could potentially	GR-6a. Site specific chemical testing shall be performed to assess corrosion and other adverse chemical aspects. A report with the lab tests shall be submitted to the City of Whittier with any appropriate mitigation measures included. The project design must conform to the	Submit chemical testing and corrosion protection	Prior to permit issuance and annual	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
damage the structural components and pipelines which would result in a pipe burst and subsequent oil spill (Less Than Significant With Mitigation).	recommendations within the geotechnical evaluation, or as per the City Engineer, and should occur prior to completion of the final project design.	mitigation measures for project components.	reports	
	GR-6b. All pipelines and metal components shall be coated and placed under impressed cathodic protection. To monitor for internal corrosion, corrosion coupons or equivalent measures can be utilized.	Submit chemical testing and corrosion protection mitigation measures for project components.	Prior to permit issuance and annual reports	City of Whittier
	GR-6c. External pipe inspections shall be conducted for the exposed pipeline sections to ensure atmospheric coatings are in good conditions. All external inspections shall be documented and reviewed by the operations management and repairs documented, when necessary.	Submit chemical testing and corrosion protection mitigation measures for project components.	Prior to permit issuance and annual reports	City of Whittier
	GR-6d. Mechanical testing, including ultrasonic and hydrostatic testing, shall be completed in coordination with the California Department of Conservation Division of Oil, Gas, and Geothermal Resources staff.	Submit chemical testing and corrosion protection mitigation measures for project components.	Prior to permit issuance and annual reports	City of Whittier, DOGGR
	GR-6e. All concrete in contact with the high sulfate or corrosive soils can be Type V concrete in accordance with the 2010 California Building Code.	Submit chemical testing and corrosion protection mitigation measures for project	Prior to permit issuance and annual reports	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
		components.		
GR.7: Oil withdrawal could result in ground subsidence (Less Than Significant With Mitigation).	GR-7a. Subsidence monitoring shall be completed annually in the vicinity of the wells. Surveying for both vertical and horizontal ground movement shall be completed along the perimeter and throughout the interior of the oil field, utilizing Global Positioning System technology in combination with a network of ground stations. The results shall be forwarded to the Division of Oil, Gas and Geothermal Resources and the City of Whittier for review.	Monitor subsidence with GPS technology.	Annually	City of Whittier
	GR-7b. In the event that the Global Position System monitoring indicates that subsidence is occurring in and/or around the project, wastewater reinjection operations shall be increased to alleviate such subsidence. The Applicant shall coordinate with the California Division of Oil, Gas and Geothermal Resources in determining appropriate increased levels of wastewater reinjection operations. The Applicant will also coordinate with the City of Whittier to verify that subsidence has been mitigated sufficiently.	Increase wastewater reinjection operations.	Following monitoring results indicating subsidence	California Division of Oil, Gas and Geothermal Resources and City of Whittier

Table 8-5 Noise and Vibration

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
N.1: Construction machinery would increase noise levels (Less Than Significant With	N-1a. Limit all construction activity at the Project Site (including deliveries and arriving and departing workers) to the hours from 7:00 a.m. to 6:00 p.m., Monday through Friday, and from 8:00 a.m. to 5:00 p.m. on Saturdays and prohibit activities on Sundays and federal holidays. In addition, for construction work within the County of Los Angeles unincorporated areas, the Applicant shall ensure that noise levels do not exceed County municipal code levels with a noise study and monitoring and measures, including high grade mufflers, engine tuning, and management of backup alarms. All contracts with	Site inspection	During construction	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
Mitigation).	construction personnel shall specify the allowable work hours and the study and monitoring requirements.			
	N-1b Maintain all construction machinery according to the manufacturers' specifications and ensure that mufflers and silencers are maintained properly. Back-up OSHA noise indicators shall be ambient sensitive and self-adjusting to minimize backup indicator noise or flaggers shall be used in the place of backup alarms (as allowed by OSHA).	Site inspection	During construction	City of Whittier
	N-1c. Relocate the construction parking and staging area farther from the school and residences on Catalina Avenue to an area north of the Ranger Residence or equivalent.	Construction drawings and site inspection	Before construction	City of Whittier
N.2: Drilling activities during the Drilling and Testing Phase would increase noise levels in the area (Less Than Significant With Mitigation).	N-2a The Applicant shall develop and implement a Noise Reduction Plan for all drilling (testing, development, and re-drills and workovers) to ensure that the Leq noise levels from activities, measured as a 1-hour Leq, is less than a 3-dBA increase at the closest sensitive residential receptor and less than a 5-dBA increase at the closest sensitive recreational receptor. The Plan shall be prepared by an acoustic consultant approved by the City and the Plan shall be subject to City review and concurrence. The measures in the Plan shall include but not be limited to the following: (1) enclose the drill rig area in soundproof barriers 30 feet high on the south and west sides; (2) utilize a central generator type drilling rig, with the generators the only diesel engines onsite and enclosed in a soundproofed generator house with appropriate grade muffler systems, or install sound enclosures around all diesel engines with appropriate grade muffler systems; (3) install noise barriers around the drill rig floor, mud mixers, cleaners, conveyers, and shakers; (4) enclose drawworks brake area with soundproofing shroud; (5) install pads on V-door and other appropriate areas, timbers and pads on drill deck, pads between drill and casing pipe while in storage, and pad and timbers at the boards on the mast to reduce metal-on-metal noise (for both drilling and workover operations); (6) enclose the drilling mast boards area (on drilling and workover rigs) with barriers 2 inches thick and 2 pounds per square foot in density at least 5 feet above and below any noise sources; and (7) install ambient sensitive backup indicators on all equipment requiring backup indicators.	Plan inspection and monitoring	Prior to and during drilling	City of Whittier, Habitat Authority

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	N-2b The Applicant shall institute a quiet-mode for all drilling activities between 7 p.m. and 7 a.m. Quiet-mode operation would apply to both drilling and operations and would involve: (1) using signalers for all backup operations instead of backup alarms and turning off backup alarms; (2) using radios instead of voice communication; (3) minimizing crane use and pipe handling operations, pipe offloading from trucks and board loading during daytime to the maximum extent feasible and nighttime loading only for safety reasons; (4) prohibiting material and supply deliveries to the Project Site between the hours of 7 p.m. and 7 a.m., with exceptions only for safety; and (5) limiting process alarms and communications over the broadcast system to the maximum extent feasible during all operations and use only for safety reasons.	Plan inspection and monitoring	Prior to and during drilling and operations	City of Whittier
	N-2c Provide a comprehensive noise abatement study, including noise and vibration monitoring at nearby sensitive receptors, under contract and supervision of the City, to monitor noise and vibration from the drilling and operations in the community, which shall have the authority to shut-down operations and require additional mitigation if the noise criteria are exceeded.	Monitoring	During drilling and operations	City of Whittier
N.3: Project activities would increase vibration levels in the area (Less than Significant).	None.	n/a	n/a	n/a
N.4: Operational activities would increase noise levels in the area (Less Than Significant With Mitigation).	N-4 The Applicant shall develop and implement a Noise Reduction Plan for all operations to ensure that Leq noise levels from operational activities, measured as 1-hour Leq, produce less than a 3 dBA increase over the minimum baseline hourly average level at the closest residential receptor to the facility. The measures in the Plan shall include, but not be limited to: (1) installing sound enclosures or buildings around all compressors; (2) installing noise barriers around all pumps and air coolers; (3) installing ambient-sensitive backup indicators on all equipment requiring backup indicators; (4) installing sound enclosures or buildings around all the oil area pumps (e.g.,	Plan inspection and monitoring	Prior to and during operations	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	shipping, IGFC, water injection, water booster, reject pumps); (5) installing sound enclosures or buildings around refrigeration units; (6) installing a secondary, 16-foot tall sound wall on the south, west and north sides of the gas plant; (7) ensuring that all office equipment (i.e., air conditioners, heating, ventilation) produces low noise levels or is surrounded by noise barriers; and (8) limiting traffic on the North Access Road to only from 7 a.m. to 7 p.m., except for emergencies.			
N.5: Concurrent operational activities and drilling activities during periods of the Project would increase noise levels in the area. (Less than Significant with Mitigation).	Implement mitigation measures N-1a and N-1b, N-2a through N-2c, and N-4.	n/a	n/a	n/a

Table 8-6 Aesthetics and Visual Resources

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
AE.1: The drilling rig could degrade public viewsheds (Significant and Unavoidable).	AE-1a. Landscaping with native vegetation shall be planted at the periphery of the property for the specific purpose of beautifying and screening the operations from adjoining residential and recreational areas, adjacent public streets, and highways. Berms shall be used in combination with landscaping where it would further reduce visibility. Care should be taken to ensure that the proposed screening does not affect existing desirable views by neighboring properties. A Landscaping Plan shall be prepared to address screening, irrigation, and planting protocols. The Plans and vegetation selection shall be reviewed and approved by the City and Habitat. Drip irrigation and drought tolerant plants shall be used for landscaping as coordinated with the Preserve. The Preserve and a certified landscape architect shall implement and monitor compliance with the Landscaping Plan. Landscaping at the site shall be inspected regularly and maintained in good condition.	Plan inspection and installed vegetation inspection	Before and during operations	City of Whittier and Habitat Authority
	AE-1b. Within 30 days of installation, all visible structures at the well or processing sites shall be painted non-reflective earth-tone colors or otherwise surfaced with a color or textured surface in consultation with the City, so that they are compatible with the surrounding area.	Design drawings review	Before and during construction	City of Whittier
AE.2: Oil processing equipment could degrade public viewsheds (Less than Significant with Mitigation).	Implement mitigation measures AE-1a and AE-1b.	See AE-1a and AE-1b	See AE-1a and AE-1b	See AE-1a and AE-1b

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
AE.3: The use of the north access road could degrade public viewsheds (Less than Significant).	Implement mitigation measures AE-1a and AE-1b.	See AE-1a and AE-1b	See AE-1a and AE-1b	See AE-1a and AE-1b
AE.4: The proposed Project could increase nighttime lighting and glare (Less Than Significant With Mitigation).	AE-4. All point lighting sources that may be introduced onsite in support of nighttime operations shall be screened and directed to prevent offsite spillover lighting effects. Spillover lighting shall be limited to 0.1 fc within 30 feet of facility boundaries. Outdoor lighting should be restricted to only those lights that are required by code for lighting building exteriors and safety and security needs. Consistent with public safety needs street lighting, pedestrian walkway lighting, and parking lot lighting shall use light fixtures that shield and direct light with a backlight shield or other equivalent type of shielding, to minimize light spill-over effects into adjacent areas. Light standard heights shall distribute light at ground level consistent with light levels for security, spill-over effects, and efficiency.	Review design documents specifying lighting	Before and during construction	City of Whittier

Table 8-7 Transportation and Circulation

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
T.1: Potential test drilling, Construction, and Operations and Drilling at the Whittier Mail Oil Field would increase traffic in the area (Less Than Significant With Mitigation)	T-1a. During Phase I at Intersection 6 - Catalina Avenue and Mar Vista Street, provide striping enhancements for northbound and southbound lanes to convert the existing single lanes to a left and shared through and right lane. Parking shall be restricted immediately north of the intersection, according to city engineer recommendations.	Inspection of striping and parking limitations	Before test drilling	City of Whittier
	T-1b A worker carpooling program shall be instituted offsite and away from congested areas to reduce Project traffic through congested areas during all Project phases.	Inspection of carpooling areas and records of trips	Before construction	City of Whittier
	T-1c During all phases, limit truck and employee access via Catalina Avenue and Mar Vista Street to no more than 40 daily round-trips and a peak hour of 12 one-way trips. No trucks shall be allowed on Catalina Avenue during Phase 2 or Phase 3.	Applicant required to maintain records of traffic into and out of Catalina Avenue gate, and subsequent records inspection	Before drilling or construction	City of Whittier
	T-1d Implement safety and access improvements, including: (1) During Phase 1, provide a wider turning radius at the northeast corner of Catalina Avenue to improve right turn movements; (2) Prohibit parking on the east side of Catalina Avenue north of Mar Vista Street to provide additional capacity for trucks during Phase 1, according to city engineer recommendations; (3) Provide flagmen for truck access on Mar Vista Street during Phase 1; (4) Applicant shall maintain a record of vehicular traffic moving in and out of the Catalina Avenue Gate; (5) Implement a pavement monitoring program to ensure Mar Vista Street and Catalina Avenue are maintained and damage from truck traffic is appropriately repaired, under direction of city engineers; and (6) Clearly posted speed limit signs on Catalina Avenue.	Inspection of contracts and design plans	Before test drilling	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	T-1e During Phase 2 soil export, if it is not deposited at the Savage Canyon Landfill, restrict truck traffic to non-am peak hours at the intersection of Hadley Street and Whittier Blvd.	Inspection of contracts and design plans	Before construction	City of Whittier
	T-1f Implement a Penn Street Traffic Program, in coordination with the City, evaluating: (1) Traffic levels and periods of heavy traffic along Penn Street; (2) Longer-term traffic monitoring to capture events and variation in traffic flow due to student populations and event traffic; (3) Construction truck traffic impacts on roadway capacity due to parking limitations and event activities; (4) Coordination with Whittier College to reduce impacts of events and parking issues along Penn Street; (5) Alternative parking locations and routes for Whittier College events; (6) Implementing safety improvements, including enhanced pedestrian crosswalks and signage; (7) Identifying sources of landfill traffic and ensuring the proposed Project truck traffic does not increase truck traffic levels on Penn Street; (8) Limited hours for proposed Project truck traffic on Penn Street to avoid congested or impacted periods (e.g., limit truck traffic to periods when the landfill is open); (9) Coordinate periods of heavy traffic flow on Penn Street due to events and prevent use of Penn Street for proposed Project-related construction truck traffic during these events.	Studies of Penn Street capacity related to events	Before construction	City of Whittier Whittier College
T.2: Construction of the pipeline along area streets could cause significant impacts (Less	T-2. A Traffic Management Plan shall be submitted to the City and County of Los Angeles Traffic Engineers for approval, as required, prior to issuance of encroachment permits. The Plan could include the following measures: provide methods to safeguard traffic flow; identify detours (if necessary); identify the placement of traffic control devices (e.g. signs, traffic cones) and flaggers (if needed); and provide other appropriate traffic control measures. Additional measures shall include:	Inspection and approval of plan	Before construction	City of Whittier

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
Than Significant With Mitigation).	(1) One travel lane shall be left open in each direction (delineated by temporary traffic cones/barricades) along roadways during construction (i.e. roads will not be closed). Any temporary street closures shall occur in coordination with city staffs. (2) Construction on major roadways through major signalized intersections will not be conducted during peak periods (6 to 9 a.m. and 3 to 6 p.m.), except where requested by the city to alleviate traffic impacts. (3) All trenches in areas without safety fencing shall be metal plated during non-construction hours. All trenches that interfere with access to residential and business driveways shall be metal plated to provide access. (4) Edges of steel plates shall be made safe for cyclists. (5) All county and municipal fire, police, and paramedic departments shall be notified of schedule and duration of construction activities. (6) As required, alternative routes shall be identified for emergency vehicles to avoid construction areas. (7) Coordination shall be undertaken with appropriate transit authorities to ensure uninterrupted service along bus or train routes, which shall be crossed or paralleled by the pipeline construction. (8) Alternative pedestrian and bicycle routes shall be identified to avoid construction areas if existing routes are obstructed by pipeline construction activities. (9) Transit stops shall be relocated as necessary to provide access during construction. (10) Staging areas for construction equipment and service truck traffic shall be located off the roadway. (11) Provision shall be made for off-street parking for worker vehicles in areas where parking is limited. (12) Advance notifications shall be made to affected residents, businesses, etc. through public information, such as a web site. (13) Scheduling construction adjacent to critical land uses so that at least one driveway is left unblocked at all hours or during business hours and ensuring resident and business access during trenching/construction.			

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	(14) Ensure that damaged roads are restored to at least their pre-construction condition and to the satisfaction of the responsible agency.			

Table 8-8 Hydrology and Water Resources

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
WR.1: Site grading and drainage improvements would alter existing drainage patterns and increase impervious surfaces, which could increase surface runoff, cause flooding, and adversely impact water quality (Less Than Significant With Mitigation).	WR-1a A registered civil engineer experienced in drainage shall prepare a hydrologic study, using the corresponding hydraulic calculations for interception, conveyance, and discharge of runoff. Based on these studies, the engineer shall prepare a drainage plan in accordance with City and County requirements.	The City of Whittier shall review and approve studies.	Prior to issuance of permit	City of Whittier
	WR-1b A registered civil engineer experienced in drainage shall design and implement onsite detention facilities to reduce runoff to existing levels. Onsite detention ponds would attenuate the runoff intensity, such that an excessive peak flow would not occur during high intensity storms and there would be no increase in runoff intensity over existing conditions. The project engineer shall conduct an onsite hydrologic study to determine the approximate increase in storm runoff to accurately scale any onsite detention facilities. Detention System Design Onsite detention facilities have the potential to create habitats for mosquito breeding. Any onsite detention facilities shall be designed as a 'dry system' in accordance with the California Department of Public Health. A dry system requires that the facility be designed to discharge all captured water within 4 days. The design slope shall be adequate and properly compacted to prevent standing water and a low flow channel shall be incorporated to direct low flows to the system outlet. The basin shall also provide access for maintenance and inspection.	The City of Whittier shall review and approve studies.	Prior to issuance of permit	City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	All catch basins and drainage facilities, including grass swales and bio-retention facilities shall also be designed to prevent standing water. An operation and maintenance plan shall be incorporated to remove vegetation, sediment, and debris accumulation biannually with an inspection at the beginning of the wet season. Waste from maintenance shall be disposed of according to local and state regulations. Onsite detention facilities shall be inspected quarterly for burrowing vector damage. Vector control measures shall be incorporated and maintained to prevent damage to the detention facility. Onsite detention facilities shall be surrounded by 6-foot fencing and provided access with a gate and access road per Los Angeles County standards. Discharge systems from onsite detention facilities shall be capable of discharging water from the basin while preventing a discharge of oil from the surface of the basin using a weir or subsurface discharge type design to prevent oil discharges from the basin in the event the basin reaches capacity and there is a crude oil spill.			
	WR-1c. Impervious surfaces shall be minimized to prevent pollutant runoff. Gravel roads and parking areas would allow infiltration of storm water and limit downstream runoff.	The Regional Water Quality Control Board shall review and approve the Storm Water Pollution Prevention Plans, which shall be submitted as part of the application to the City of Whittier for permits.	Prior to issuance of permit	Regional Water Quality Control Board and City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	WR-1d. Structural best management practices shall be used to mitigate the increased pollutant runoff. Directing runoff from impervious area to grass swales, bio-swales, or detention ponds would aid in filtering out suspended solids and potential contaminants. Grassbio swales shall not be planted with invasive species.	The Regional Water Quality Control Board shall review and approve the Storm Water Pollution Prevention Plans, which shall be submitted as part of the application to the City of Whittier for permits.	Prior to issuance of permit	Regional Water Quality Control Board and City of Whittier
	WR-1e. Pollution control products, such as catch basins with basket inserts, shall be used to catch trash and debris along with filtering elements such as silt fences, straw wattles and absorbent sponges within catch basins. Filter technology may be used to catch sediment, debris, oil, and pollutants.	The Regional Water Quality Control Board shall review and approve the Storm Water Pollution Prevention Plans, which shall be submitted as part of the application to the City of Whittier for permits.	Prior to issuance of permit	Regional Water Quality Control Board and City of Whittier
	WR-1f. Permanent water quality testing, drainage device, and erosion control maintenance shall be implemented.	The Regional Water Quality Control Board shall review and	Prior to issuance of permit	Regional Water Quality Control Board and City of

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
		approve the Storm Water Pollution Prevention Plans, which shall be submitted as part of the application to the City of Whittier for permits.		Whittier
	WR-1g. A Storm Water Pollution Prevention Plan manager shall oversee and monitor in-construction best management practices and storm water management programs in accordance with the State General Construction Permit and the Los Angeles Regional Water Quality Control Board.	The Regional Water Quality Control Board shall review and approve the Storm Water Pollution Prevention Plans, which shall be submitted as part of the application to the City of Whittier for permits.	Prior to issuance of permit	Regional Water Quality Control Board and City of Whittier
WR.2: Site grading and drainage improvements would alter existing drainage patterns at the	WR-2a. During construction operations, the Applicant shall implement storm water management protection measures and wet weather measures. These measures would include temporary and permanent best management practices to reduce the potential for erosion and sediment transport. Conventional measures typically recommended by the State Water Resource Board and the California Department of Transportation would reduce potentially significant erosion and runoff impact to less than significant levels.	The Regional Water Quality Control Board shall review and approve the Storm Water Pollution Prevention	Prior to issuance of permit	Regional Water Quality Control Board and City of Whittier

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
Project Site, which could increase erosion and impact water quality on or offsite (Less Than Significant With Mitigation).	Implement permanent erosion and sediment control measures: - Limit grading, clearing, and grubbing to preserve existing vegetation; - Use mulches and hydroseed to protect exposed soils; - Use geotextiles and mats to stabilize soils; - Use drainage swales and dissipation devices; and - Use erosion control measures outlined in the California Stormwater Quality Association Best Management Practice Handbook. Implement temporary best management practice mitigation measures: - Use silt fences, sandbags, and straw wattles; - Use temporary sediment basins and check dams; and - Use temporary best management practices outlined in the California Stormwater Quality Association Best Management Practice Handbook. Implement tracking control best management practices to reduce tracking sediment offsite. - Use stabilized construction entrance and exit with steel shakers; - Use tire wash areas; and - Use tracking control best management practices outlined in the California Stormwater Quality Association Best Management Practice Handbook.	Plans, which shall be submitted as part of the application to the City of Whittier for permits.		
	WR-2b. The Applicant shall implement a Storm Water Pollution Prevention Plan using best management practices and monitor and maintain storm water pollution control facilities identified in the Storm Water Pollution Prevention Plan, in a manner consistent with the provisions of the Federal Water Pollution Control Act (National Pollutant Discharge Elimination System Program).	The Regional Water Quality Control Board shall review and approve the Storm Water Pollution Prevention Plans, which shall be	Prior to issuance of permit	Regional Water Quality Control Board and City of Whittier

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
		submitted as part of the application to the City of Whittier for permits.		
	WR-2c. A registered civil engineer experienced in drainage shall prepare a hydrology study with the corresponding hydraulic calculations for interception, conveyance, and discharge of runoff. Based on these studies, prepare a drainage plan in accordance with City and County requirements.	The City of Whittier shall review and approve studies.	Prior to issuance of permit	City of Whittier
WR.3: New grading and construction, potential soil remediation, and/or drilling operations could degrade surface water quality (Less than Significant with Mitigation).	WR-3a The proposed well cellar shall be lined with an impermeable membrane to prevent groundwater from flowing into the cellar and to prevent oil-based substances from seeping into groundwater supplies. All drilling muds storage shall be contained within Baker-type enclosed tanks.			
	WR-3b An 18-inch berm shall be placed around the entire drilling rig to capture any spilled fluids.			
	WR-3c Personnel at the site shall be trained in equipment use and containment and cleanup of an oil spill. Dry cleanup methods, such as absorbents, shall be used on paved and impermeable surfaces. Spills in dirt areas shall be immediately contained with an earthen dike and the contaminated soil shall be dug up and discarded in accordance with local and state regulations.			
	WR-3d Oil spills shall be contained and cleaned according to measures outlined in the California Stormwater Quality Association Best Management Practice Handbook.			
	WR-3e An approved response manual and Oil Spill Contingency Plan shall be implemented to outline response actions in the event of a spill, including a spill response trailer, equipment, and personnel training.			
WR.4: A	WR-4a. The City of Whittier and other appropriate agencies shall	The Regional	Prior to	Regional

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
rupture or leak during oil drilling operation, from pipelines or other infrastructure, could substantially degrade surface and groundwater quality (Significant and Unavoidable).	inspect facility conditions at the Project Site on a yearly basis. Inspections shall also occur after earthquake induced land movement or upon periods of large rainfall in order to verify no leak or rupture risks have developed.	Water Quality Control Board shall review and approve the Storm Water Pollution Prevention Plans, which shall be submitted as part of the application to the City of Whittier for permits.	issuance of permit	Water Quality Control Board and City of Whittier
	WR-4b. The Applicant shall properly maintain the associated crude oil pipelines, storage tanks and processing facilities within and outside the Preserve, including smart-pigging according to State of California Office of the State Fire Marshal requirements and the standards outlined by the Department of Oil, Gas and Geothermal Resources, and the Regional Water Quality Control Board. Pipeline, tank and processing inspections, including walking the pipelines, shall occur at least daily.	The Regional Water Quality Control Board shall review and approve the Storm Water Pollution Prevention Plans, which shall be submitted as part of the application to the City of Whittier for permits.	Prior to issuance of permit	Regional Water Quality Control Board and City of Whittier
	WR-4c. The Applicant shall install a leak detection system for crude pipelines in the Preserve and the Colima Road pipeline. The system shall include pressure and flow meters, flow balancing, supervisor control and data acquisition system, and a computer alarm system in the event of a suspected leak. Temperature, pressure, and flow shall	The Regional Water Quality Control Board shall review and approve the	Prior to issuance of permit	Regional Water Quality Control Board and City of Whittier

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
	be monitored at each pipeline entry and exit. If any variable deviates by more than 10 percent of the normal operating range, the system shall trigger both audible and visual alarms. Flow balancing shall be conducted every 5 minutes, 1 hour, 24 hours, and 48 hours with the accuracy defined once the system is established and tested.	Storm Water Pollution Prevention Plans, which shall be submitted as part of the application to the City of Whittier for permits.		
WR.5: Reinjection of produced water could potentially impair water quality of aquifers within the Whittier Area of the Central Groundwater Basin (Less than Significant).	None.	n/a	n/a	n/a

Table 8-9 Cultural Resources and Archeology

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
CR.1: Impacts to historical resources, such as well pads, roadways, and the landscape due to ground disturbance (Less Than Significant With Mitigation).	CR-1. Develop of a monitoring plan, subject to City and Habitat approval, for treatment of areas of direct impact to elements identified as contributing components of Whittier Oil Field including, but not limited to, the following: - Monitoring concurrent with construction grubbing at the locations of all oil well pads, allowing time for detailed field recordation of each pad that could not be obtained during survey level recording efforts due to heavy vegetation. Recordation should include photographs in digital or 35mm format, scaled plan-view drawings of the well pads, and written documentation that describes construction methods, details, and associated material composition. - Monitoring concurrent with alteration of existing historic-period roadways to allow for detailed mapping of existing roadways as well as recordation of construction along a representative segment(s) of the roadway to document the methods used over time as the oil fields evolved; first relying on dirt roads, followed by oil-paved roads, and finally asphalt-paved roads. - Collection, analysis, reporting, and curation of any associated artifacts that might be unearthed during monitoring activities described above. - Completion of a report of findings and update of appropriate Department of Parks and Recreation 523 forms to document the information obtained as a result of the mitigation/monitoring program.	Development of a monitoring plan by a qualified archaeologist	Review and approval prior to land use clearance	Applicant and City of Whittier
CR.2: Unanticipated disturbance to human remains due to construction (Less Than Significant With Mitigation).	CR-2. If human remains are exposed during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has been notified and can make the necessary findings as to origin and disposition of the remains pursuant to Public Resources Code 5097.98. Construction must halt in the area of the discovery of human remains, the area must be protected, and consultation and treatment shall occur as prescribed by law.	Contact the Native American Heritage and a Most Likely Descendant	Upon discovery of human remains	Applicant and Construction Contractor

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
		must be designated		
CR.3: Unanticipated disturbance to paleontological resources (Less Than Significant With Mitigation).	CR-3. If any paleontological resources are encountered during ground-disturbing activities in the Project area, activities in the immediate area of the find shall be halted and the discovery assessed (LSA 2007). A qualified paleontologist must evaluate the discovery and recommend appropriate treatment options pursuant to guidelines developed by the Society of Vertebrate Paleontology. A paleontological resource impact mitigation program for treatment of the resources would be developed and implemented.	Paleontological resource impact mitigation program	Upon discovery	Applicant and Construction Contractor

Table 8-10 Wastewater

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
WAS.1: The proposed Project would generate sanitary wastewater that could exceed the existing capacity of downstream sewer and wastewater treatment facilities. (Less Than Significant with Mitigation).	WAS-1. A Registered Civil Engineer shall evaluate the capacity of the existing sewer line system, beginning at the proposed tie-in at Catalina Avenue and continuing downstream to the County Sanitation Districts of Los Angeles County sewer system, prior to any connections. A seven-day capacity performance test shall be performed, based on County Sanitation Districts of Los Angeles County average wastewater generation factors, to determine baseline and peak flows, and to ensure the sewer has adequate capacity in the downstream areas. The capacity analysis shall be submitted to the District for review and approval. In the event that existing sanitary sewer facilities are insufficient to accommodate increased flows from the proposed Project Site, the Applicant shall provide temporary mobile sanitary facilities (i.e., toilet, sink, and urinal) for on-site personnel, as necessary.	Area study of the proposed sewer line and a 7 day performance capacity test should be performed at select downstream locations to verify the adequacy of the existing sewer.	Prior to issuance of permit	City of Whittier
WAS.2: The proposed Project would generate wastewater that could impact water quality of nearby drainages and creeks (Less than Significant with Mitigation).	Mitigation measures WR-3a through WR-3e, in Section 4.8, Hydrology and Water Quality, shall be implemented.	See MM WR-3a through WR-3e.	See MM WR-3a through WR-3e.	See MM WR-3a through WR-3e.

Table 8-11 Land Use and Policy Consistency Analysis

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
LU.1: Noise generated independently from test drilling, construction, and potential future operations could be incompatible with adjacent land uses (Less Than Significant With Mitigation).	Implement mitigation measures N-1a through N-1b and N-2a through N-2c.	See N-1a, N-1b, and N-2a, N-2b, and N-2c.	See N-1a, N-1b, and N-2a, N-2b, and N-2c.	See N-1a, N-1b, and N-2a, N-2b, and N-2c.
LU.2: Concurrent operational activities at the Project Site would increase noise levels that could be incompatible with adjacent land uses (Less than Significant with Mitigation).	Implement mitigation measures N-1a and N-1b, N-2a through N-2c, and N-4.	See N-1a, N-1b and N-2a, N-2b, N-2c, and N-4.	See N-1a, N-1b and N-2a, N-2b, N-2c, and N-4.	See N-1a, N-1b and N-2a, N-2b, N-2c, and N-4.
LU.3: Views of drilling rigs, construction,	Implement mitigation measures AE-1a and AE-1b.	See AE-1a and AE-1b.	See AE-1a and AE-1b.	See AE-1a and AE-1b.

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
and potential future operations could be incompatible with adjacent land uses (Significant and Unavoidable).				
LU.4: Future oil field development could increase nighttime lighting and glare inconsistent with surrounding land uses (Less Than Significant With Mitigation).	Implement mitigation measures AE-1b and AE-5.	See AE-1b and AE-5.	See AE-1b and AE-5.	See AE-1b and AE-5.
LU.5: Emissions and odors from drilling and operations could be incompatible with adjacent land uses (Less Than Significant With Mitigation).	Implement mitigation measures AQ-1a through AQ-1d, AQ-2a and AQ-2b, AQ-3a through AQ-3e, AQ-4, and AQ-5.	See AQ-1a through AQ-1d, AQ-2a and AQ-2b, AQ-3a through AQ-3e, AQ-4, and AQ-5.	See AQ-1a through AQ-1d, AQ-2a and AQ-2b, AQ-3a through AQ-3e, AQ-4, and AQ-5.	See AQ-1a through AQ-1d, AQ-2a and AQ-2b, AQ-3a through AQ-3e, AQ-4, and AQ-5.

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
Mitigation).				
LU.6: The proposed Project conflicts with adopted land use plans, policies, ordinances, habitat conservation plans, or planning efforts to protect the recreational resources of the area (Less Than Significant With Mitigation).	Implement all mitigation measures in Section 4.1, Air Quality; Section 4.2, Biology; Section 4.5, Noise; Section 4.6, Aesthetics and Visual Resources; and Section 4.14, Recreation.	See all mitigation measures in Sections 4.1, Air Quality; 4.2, Biology; 4.5, Noise; 4.6, Aesthetics and Visual Resources; and 4.14, Recreation.	See all mitigation measures in Sections 4.1, Air Quality; 4.2, Biology; 4.5, Noise; 4.6, Aesthetics and Visual Resources; and 4.14, Recreation.	See all mitigation measures in Sections 4.1, Air Quality; 4.2, Biology; 4.5, Noise; 4.6, Aesthetics and Visual Resources; 4.14, Recreation; and Habitat Authority where appropriate.

Table 8-12 Fire Protection and Emergency Services

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
FP.1: Future oil field development activities at the site could be deficient in firewater supplies, equipment layout, detection systems, or emergency response (Less Than Significant With Mitigation).	FP-1a The oil field operator shall provide fire water supplies from either the Murphy Station 10-inch line or Suburban Water Supply along Colima Road (both of which are nearby and have sufficient supplies), or some other source, that provides sufficient water supply rates and duration to comply with codes and the LACoFD. Any new pipeline installations shall avoid any sensitive habitats (coastal sage scrub or riparian) and will be placed in non-native grassland or disturbed communities. Any non-native grassland in which new pipeline installations are placed shall be returned to its original state after pipeline installation.	Design of firewater supply systems	Before drilling or construction	LACoFD and City of Whittier
	FP-1b The oil field operator shall implement a community alert notification system to automatically notify area residences and businesses in the event of an emergency at the oil field that would require residents to take shelter or take other protective actions.	Installation and operation of community alert notification system	Before operations	City of Whittier
	FP-1c The oil field operator shall ensure that design and construction comply with applicable codes and standards for equipment spacing, particularly those related to flare location and distances to public areas (near the Preserve hiking trails), installation of fire detection and prevention systems, flame detection, flammable gas detection, fire foam, and associated alarms and alert systems.	Design documents showing fire detection systems and equipment spacing	Before operations	LACoFD and City of Whittier
	FP-1d The oil field operator shall develop emergency response plans addressing the facility's fire-fighting capabilities pursuant to the most recent NFPA requirements, Los Angeles County Fire Code, LACoFD, California Code of Regulation, and API requirements, in coordination with LACoFD and the City of Whittier. These plans should include, but not be limited to, fire monitor placement, fire water capabilities, fire detection capabilities, fire foam requirements, facility condition relating to fire-fighting ease and prevention, and measures to reduce impacts to sensitive resources.	Submission of emergency response plan	Before drilling and operations	LACoFD and City of Whittier
FP.2: Future oil field	FP-2a The oil field operator shall ensure that fuel modification areas create at least 30 feet of clearance from all oilfield equipment	Fire prevention plans showing	Before drilling and	LACoFD and City of

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
development activities at the site could increase the risk of wildfires (Less Than Significant With Mitigation).	and 10 feet from all roadways to reduce the potential for ignition sources starting wildfires. Firewater monitors located within the facility should be placed so that sprays could reach beyond the facility walls by at least 30 feet and could be used to extinguish a wildfire started at the facility fence line. Fire hydrants shall be placed along all roadways, spaced according to LACoFD Fire Prevention Regulations Chapter 8 or as specified by LACoFD. The Applicant shall ensure that appropriate wildfire response equipment is located at the site or at the Rangers residence if the Ranger Residence is located near the site.	fuel modification areas	operations	Whittier
	FP-2b Emergency response plans shall address the issues related to wildfire risks and response, including coordination with the area residences, the Preserve Rangers and the LACoFD, as well as first response tactics and equipment.	Emergency response plans showing wildfire planning and preparation	Before drilling and operations	LACoFD and City of Whittier

Table 8-13 Public Services and Utilities

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
PS.1: Future drilling, construction, and operations would generate solid wastes (Less Than Significant).	None.	n/a	n/a	n/a
PS.2: Future drilling, construction, and operations would increase demand for potable water (Less Than Significant).	None.	n/a	n/a	n/a

Table 8-14 Recreation

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
REC.1: Concurrent operational activities at the Project Site during periods of the Project could affect recreational activities (Less than Significant with Mitigation).	REC-1 The Applicant shall construct and maintain interpretative signage within the Preserve's trails in coordination with the Habitat Preserve. Interpretative signage shall provide an educational component about the Preserve, drilling activities, mitigation, descriptions of local wildlife, habitats, and the environmental values of the Puente Hills area; historic uses and others as determined by the City in consultation with the Habitat Preserve.	See N-1a through N-1b, N-2a through N-2c, and N-4.	See N-1a through N-1b, N-2a through N-2c, and N-4.	See N-1a through N-1b, N-2a through N-2c, and N-4.
REC.2: The new drilling and operations would increase odors that could reach recreational users (Less Than Significant With Mitigation).	Implement mitigation measures AQ-3a through AQ-3e.	See AQ-3a through AQ-3e.	See AQ-3a through AQ-3e.	See AQ-3a through AQ-3e.
REC.3: New drilling and operations would adversely affect public viewsheds (Significant and Unavoidable).	Implement mitigation measures AE-1a and AE-1b.	See AE-1a and AE-1b.	See AE-1a and AE-1b.	See AE-1a and AE-1b.

Table 8-15 Energy and Mineral Resources

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
ER.1: New electrical equipment at the potential project facilities would increase electricity consumption, thereby increasing energy demand (Less Than Significant).	None.	n/a	n/a	n/a
ER.2: Increased fossil fuel consumption and production (diesel, gasoline, and natural gas) at the potential project facilities could thereby decrease availability (Less Than Significant).	None.	n/a	n/a	n/a

Table 8-16 Environmental Justice

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
EJ.1: Future development could disproportionately impact minority and low-income populations (Less Than Significant).	Implement mitigation measures AQ-3a through AQ-3e, SR-3, N-1a through N-1b, N-2a through N-2c, and N-4.	See AQ-3a through AQ-3e, SR-3, N-1a through N-1b, N-2a through N-2c, and N-4.	See AQ-3a through AQ-3e, SR-3, N-1a through N-1b, N-2a through N-2c, and N-4.	See AQ-3a through AQ-3e, SR-3, N-1a through N-1b, N-2a through N-2c, and N-4.

Table 8-17 Applicability of Mitigation Measures to the Alternatives	
Alternative	Applicable Mitigation Measures
Savage Canyon Landfill Site	All mitigation measures would be applicable to the Landfill Site Alternative EXCEPT: • T-1a, improvements to Catalina Ave • T-1c, limits on Catalina and Mar Vista Traffic • T-1d, measures related to area improvements and pavement monitoring • REC-1a, interpretive signage within the Preserve
Loop Trail Road	The following measures would be applicable to the Loop Trail Road Alternative related to construction and roadway operational issues: Note: This alternative assumes that Catalina would be for phase 1 of the project. • AQ-1a: Fugitive dust • AQ-1c: Road treatment before facility construction • AQ-1d: Tier 3 engine on construction equipment • BIO-1a: Replacement of loss of sage scrub (if applicable) • BIO-1b: Re-vegetation • BIO-2a: Replacement of riparian habitat (if applicable) • BIO-4c: Road use during daylight hours only • BIO-4d: Landscaping with native species • BIO-4e: Nesting songbirds and construction timing • BIO-4f: Nesting hawks and owls and construction • BIO-4g: Nesting bats and construction • GR-1b: Roadway slopes • GR-6b: Slope repair • GR-9a: Best management practices for erosion and sediment control • GR-9b: Covering of stockpiles

Table 8-17 Applicability of Mitigation Measures to the Alternatives	
Alternative	Applicable Mitigation Measures
	• N-1a: Construction activities timing • N-1b: Maintenance of construction equipment • AE-1a: Landscaping along roadway • WR-1a: Minimize impervious surfaces • WR-1b, WR-1e and WR-2a: Best management practices • WR-2c: Drainage plan • FP-1a: Fire water supplies along roadway with hydrants • FP-2b: Wildfire risk • PS-1: Recycling plan during roadway construction
Lambert Railroad Right-of-Way Alignment	The following mitigation measures would be applicable to the Lambert Railroad Right-of-Way Alignment Alternative related to construction and pipeline issues: • AQ-1a: Fugitive Dust measures • AQ-1d: Tier 3 diesel engines on construction equipment • AQ-2a: SCAQMD regulations • SR-2a: Gas Pipeline automatic valves • SR-2b: Pipeline warning tape • GR-1c: Buried pipeline measures • GR-10b: Coating of pipelines • N-1a: Limits on construction hours • N-1b: Maintenance of construction machinery • T-2: Pipeline construction traffic management plan • WR-2a: Storm water best management practices • PS-1: Recycling plan