4.9 Cultural Resources

This section addresses potential impacts to cultural resources that could result from development of the proposed Whittier Main Oil Field. Cultural resources are districts, buildings, sites, structures, areas of traditional use, or objects with historical, architectural, archeological, cultural, or scientific importance. They include archeological resources (both prehistoric and historical), historic architectural resources (physical properties, structures, or buildings and hardscape and landscape elements), and traditional cultural resources (those important to living Native Americans for religious, spiritual, ancestral, or traditional reasons). Under the California Environmental Quality Act (CEQA), paleontological resources and unique geological formations are considered in addition to cultural resources. A paleontological resource is defined as a locality containing vertebrate, invertebrate, or plant fossils (i.e., fossil location, fossil bearing formation, or a formation with the potential to bear fossils).

4.9.1 Environmental Setting

The topography surrounding the Puente Hills Landfill Native Habitat Preservation Authority (Preserve) is characterized by steep hillsides surrounding deep canyons, including Sycamore Canyon, Turnbull Canyon, and Powder Canyon. Most hilltops range from 700 feet above mean sea level to just above 1,300 feet above mean sea level and decrease in the low-lying drainages varying from 400 to 600 feet above mean sea level (LSA 2007a). The Preserve supports coastal sage scrub, chaparral, native and non-native grassland, and oak, walnut, and riparian woodlands (LSA 2007a). The soils are alluvium and colluvium underlain by the Miocene Puente Formation. The hills are gently rolling with some steep ravines. Faulting and folding in the area trapped the oil, creating the oil-rich bearing deposits (Fulton and Michalsky 2004). Within the current Project area, the proposed Project Site and pipeline locations are covered with moderate to dense vegetation and paved roads.

4.9.1.1 Prehistoric Chronology

Available evidence based on recent research for the Santa Barbara Channel region and along the southern California coast suggests that early human occupation of the coastal regions dates to 10,500 Before Present (BP) or earlier (Erlandson, Rick, and Vanelloweth 2008; Rick and Erlandson 2004). A number of chronological schemes have been proposed for the southern California coastal region prehistory. The one used here identifies three periods of occupation based on research conducted by Mason and Peterson (1994) and Altschul and others (2007). The Early period (Millingstone Horizon) is subdivided into three phases: Phase I from 10,500 BP to 8,000/7,500 BP; Phase II from 8,000/7,500 BP to 5,000 BP; and Phase III from 5,000 BP to 3,000 BP. This early period is followed by the Intermediate Period, from 3,000 BP to 1,300 BP. The Late Prehistoric Period is divided into two phases: Phase I from 1,300 BP to 700 BP; and the Late Prehistoric Period Phase II from 700 BP to 240 BP.

4.9.1.2 Historic Period Development

The Protohistoric period of the area starts with early European contact with California Native Americans in 1542 when Juan Rodriguez Cabrillo sailed along the coast of California. Post-contact history for California is generally well documented and is divided into three periods of known historic development: the Spanish Period from 1769 to 1822, when the Spanish missions, presidios, and pueblos were built; the Mexican Period 1822 to 1848, starting with a shift in power from Spain to Mexico followed by secularization of the missions, and culminating with the Treaty of Guadalupe Hidalgo ending the Mexican-American War; and the American Period from 1848 to the present, characterized by American dominance in California. The development during the early American Period through the emergence of the oil industry and its demise in the 1990s is most germane to the Project area.

Early in 1842, John Rowland and William Workman applied for a land grant from Governor Juan B. Alvarado at Monterey—then the state capital—and obtained title to the nearly 49,000-acre Rancho La Puente for $1,000 in gold and a pledge to hire local Native Americans. Rancho La Puente prospered and was practically self-sufficient by 1850. Although the two men split the property in 1851, they continued working the land successfully with grist mills, cattle ranching, wheat cultivation, and wine and brandy production (County of Los Angeles Public Library 2009).

Oil was first discovered in the Puente Hills in 1880 protruding from seeps (Yerkes 1972). In 1884, approximately 7 miles north of Fullerton and 4 miles south of Puente, William “Billy” Rowland discovered oil on his father William's former ranch; the first exploratory well was drilled in 1896.

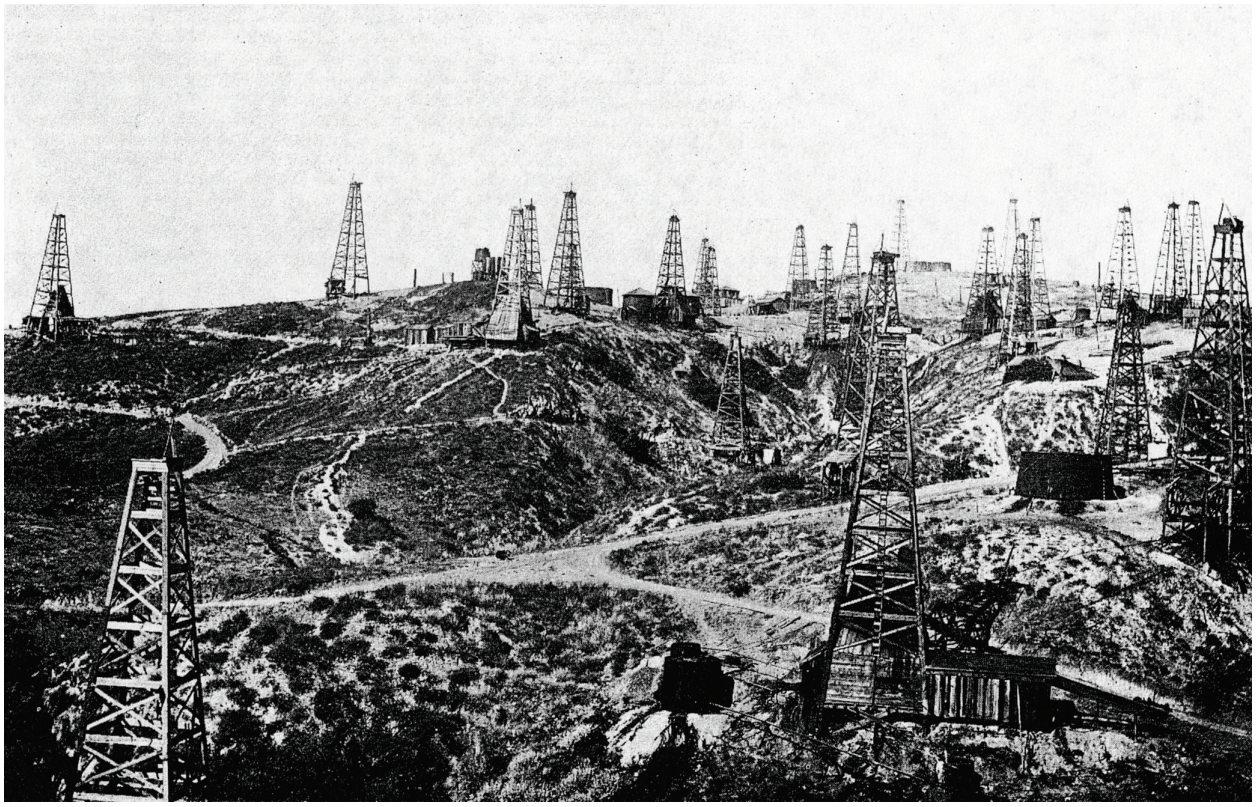
The Home Oil Company drilled the first commercial well in the Whittier Oil Field on a tract of land east of Whittier College where local citizens had obtained quantities of crude oil from ground seeps (Daily News 1962). More wells drilled along a fault line began producing 10 barrels per day (Holman 1943). In 1897, the Los Angeles Times reported, “The total daily output of the Whittier Oil Field is reported to be less than 75 barrels. There are but three producing wells in this district but valuable addition would be made to the number in the near future.” The development of six drilling rigs soon followed. Of these, three were under the direction of Mr. Neuer from Los Angeles. He operated under the name of the Central Oil Company (Los Angeles Times 1897). The Central Oil Company’s Number 1-A well flowed 10 barrels per day from a depth of 984 feet (Franks and Lambert 1985) although general productivity was slow.

The Los Angeles Times reported that the formation at the Whittier Oil Field was far more resistant than fields in the Los Angeles district. Granite above the petroleum made drilling operations slow and required up to three months of persistent drilling to develop a productive oil well. The oil had “much lighter gravity” than the product of other local fields, and it was far more valuable when placed on the market. The Los Angeles Times observed that compensation for the heavy cost of developing oil in that field worked against the would-be producer with moderate amounts of capital (Los Angeles Times 1897).

Exploration at that time used experimental methods, first following seeps, then using geological principles such as anticlines, and finally drilling with newly developed cable tools. The cable method drove a heavy bit, aided by gravity, into the rock. By the 1890s, oilmen developed a cable tool, the standard rig, employing a steam engine powered by a band wheel, which was connected by a crank and rod to a wooden beam balanced near its center on a large wooden frame (Rintoul 1976).

Wooden derricks were used until the 1920s when steel derricks began to replace them (Rintoul 1976), and cable tools were the means of drilling for oil until to the 1930s when rotary bits were developed (Holman 1943). By 1901 numerous companies were operating in the Whittier oil field and derricks covered these hills, shown in Figure 4.9-1. These companies included the Home Oil Company, East Whittier Oil, Whittier Oil and Development, Raymond Oil, New England Oil, Los Angeles Petroleum, Central Oil, Fidelity Oil, Turner Oil, El More, Warner Oil, and Whittier Consolidated Oil (Los Angeles Times 1901).

Figure 4.9-1 Home Oil Company Wells



Source: Whittier Historical Society 1987

In 1902, construction began on a pipeline that would connect the Whittier oil field with the Union Oil tanks in Los Angeles (Los Angeles Times 1902). Union Oil's main rival was the Standard Oil Company, which had minimal interest in the formative years of the Whittier Oil Field and in 1908 produced only a two percent share of California's crude (3,031 barrels per day) (White 1962). In 1910, Standard entered into an agreement with the Central Oil Company, a small producer of both light and heavy crude in the Whittier field, to take all of Central Oil not

under contract to other purchasers (White 1962). This 1-year agreement established Standard in the Whittier Field and by 1919 the company's crude production in California had grown to a 26 percent share (71,415 barrels per day) (White 1962). The Whittier-Fullerton fields produced refinable oil and the Standard Oil Company built refineries to process that oil (White 1962).

The Whittier Oil Field became well-known within California and throughout the region (Whittier News 1917, 1920). The quality of oil was consistent throughout the field; it was low in sulfur, easily refined, and made good lubricating stock (Holman 1943). Many considered the Whittier oil to be the best in the state because of its specific gravity and richness and the field's close proximity to railroads and ports (Whittier News 1920). Local landowners became wealthy by leasing land to oil companies for $250 to $500 per acre plus a royalty of one-sixth of the oil produced (Whittier News 1920). Many workers on the Whittier oil field and surrounding fields lived in Whittier, and the payroll bolstered the local economy. Some workers lived in camps in the field and the 1912 Standard Oil Emery Camp in the Whittier field included dwellings with all-around porches and outhouses.

4.9.1.3 Records and Literature Search

A records search of the California Historical Resources Information System at the South Central Coastal Information Center (SCCIC) housed at California State University, Fullerton, on December 9, 2009, identified previously recorded cultural resources reported within a 1- mile radius of the Whittier Main Oil Field Project area. The sources consulted included the California Points of Interest (PHI), the California Historical Landmarks (CHL), the California Register of Historical Resources (CRHR), the National Register of Historic Places (NRHP), and the California State Historic Resources Inventory (HRI).

The PHI listed one property within the search radius, identified as the East Whittier Woman's Improvement Club at 14148 East Second Street in Whittier. The structure, built in 1905, is on the location of a pump house built in 1897. While it is in proximity, this property is not within the Project Site. The HRI lists ten properties that have been evaluated for historical significance within the search radius. However, these historical structures in the City of Whittier are beyond the study area. Neither the CHL, HR, nor NRHP list any other properties within the Project area.

A 2004 survey of the Puente Hills Landfill Native Habitat Preservation Authority (Authority) identified the Whittier Oil Field as a NRHP/CRHR property and prepared a resource management plan (RMP) (LSA 2007a). Additional studies in the area that covered the entire Project area include a Cultural Resource Survey Report prepared by Scientific Resource Surveys, Inc., and the Archaeological Survey of the Colima Vegetation Management Plan (SRS 1989, Dillon 1997). The cultural resource assessment identified five historic wooden pumping units associated with the oil field, but it did not identify any prehistoric resources. The archaeological survey did not identify any cultural resources, and no further recommendations were made (Dillon 1997:2).

An LSA survey of the entire Preserve in 2004 identified nine historical resources determined to be more than 50 years old and two isolated prehistoric resources (Fulton and Michalsky 2004). The technical report prepared for that and the current Project provides details of each resource.

The study identified Whittier Oil Field, which consists of level pads marking the former location of oil wells, well markers, surface pipelines, and graded access roads associated with the field. Established in 1885, the Whittier Oil Field continued production until the latter part of the twentieth century (DPR 19-003341, LSA 2004). The study found that the oil field still shows characteristics of its setting and association between the pads and pipelines (DPR 19-003341, LSA 2004). The lack of development in the area has preserved this relationship and the oil field was found eligible for listing on the National and California Registers under Criterion A(1) for its association with the development of the petroleum industry in southern California. Prehistoric resources included only isolated tools. None of the previously recorded resources, with the exception of parts of the Whittier Oil Field, are situated within the current Project area.

The Preserve RMP prepared by LSA in 2007 set goals and objectives for management of cultural resources within the Preserve (LSA 2007).

Goal: CULT-1. Protect and preserve important cultural resources.

Objectives:

- CULT-1.1: For internal use, maintain maps of all cultural and paleontological sites. Monitor these sites to ensure that they are not harmed. Protect these sites using generally accepted methods of preservation.
- CULT-1.2: Perform cultural resources surveys in sensitive areas that are currently obscured by vegetation if there is a fire or other activity where the ground visibility becomes clear.
- CULT-1.3: Allow local Tongva/Gabrieleno tribes to use these sites if compatible with the RMP.

Goal: CULT-2. Preserve and interpret the remains of the Whittier Oil Field as a significant historic site for the education and enjoyment of preserve visitors.

Objectives:

- CULT-2.1: Allow the definitive elements of the oil field to remain in place and be passively managed.

Goal: CULT-3. Follow established protocol if human remains are encountered during ground-disturbing activities in the Preserve.

Objectives:

- CULT-3.1: Comply with State Health and Safety Code Section 7050.5 which states that no further disturbance should occur at a site until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98.

Additionally:

- CULT-4: 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. The Habitat Authority shall contact a qualified paleontologist to recommend appropriate mitigation measures pursuant to guidelines developed by the Society of Vertebrate Paleontology and a standard Paleontological Resource Impact Mitigation Program for treatment of the resources would be developed and followed.

In achieving these goals, the RMP recommended undertaking management actions for cultural resources within the preserve (LSA 2007a):

- Conduct a search of Native American Heritage Commission Sacred Lands files in order to identify Traditional Cultural Areas within the Preserve. Native American Groups should be appropriately consulted by Preserve management personnel in identifying sacred sites and natural resources procurement areas and to help develop management programs for these resources (PRC Section 5097.9).
- For any cultural resource work conducted within the Preserve, a Los Angeles County certified archaeologist should prepare a research design that identifies research strategies to be implemented during the research program. A review of cultural resource professionals should establish research priorities for the Preserve, and cultural resource work within the preserve should be designed to address these priorities.
- Create a cultural resources interpretive display to help disseminate information about the Whittier Oil Field remains to the public.
- Monitoring of any project that involves earth-disturbing activities in culturally rich soils should be conducted by a trained archaeologist under the supervision of a Los Angeles County Certified Archaeologist. Artifacts that are unearthed during this construction should be collected with provenience information where available (PRC Section 21083.2[c]).
- When sites and/isolates are located, they should be recorded on California Department of Parks and Recreation 523 series forms. Location data should be recorded using a hand-held GPS unit. Site updates, including photos and maps, should be completed for previously documented sites that are reevaluated. Surface collection is recommended for any materials encountered if the site appears to be threatened by natural or human factors (PRC Section 5020.4).
- When the significance of a site is unknown, a Los Angeles County certified archaeologist should conduct test excavations at those sites to determine if they are eligible for listing on the National Register and/or the California Register. The archaeologist shall provide recommendations for further action based on the findings of the test-level excavations (PRC 5020.1; PRC Section 21083.2; and California Code of Regulations, Title 14, Chapter 2, Section 15064.5).
- Implement an emergency response plan for sites that have been exposed by erosion. When cultural resources, including artifacts or features are encountered, either during a planned patrol or in an unexpected manner, a Los Angeles County certified archaeologist should be consulted. The certified archaeologist would both recommend and, with Habitat Authority approval, implement mitigation measures that are appropriate for the impacts to the sites (Section 110 of the National Historic Preservation Act).

- Presence/absence archaeological surveys are considered to have a five-year lifetime. A preserve-wide systematic reconnaissance survey should be conducted every five years under the direction of a Los Angeles County certified archaeologist. To help staff with this endeavor, qualified volunteer groups could be utilized to assist in the survey of the Preserve. Update the Preserve-wide survey every five years, particularly in high visitation and high erosion areas.

4.9.1.4 Cultural Resources Survey

For the proposed Project, the site was inspected on May 11, 2010, and an intensive-level field survey of the area was completed. All of the access roads within the Project area were surveyed on foot and the proposed Project Site was inspected also. Due to the dense vegetation covering these areas, surface visibility in these areas was often less than 10 percent. Special attention was paid to identifying surface features, structural remains, and artifacts associated with the historic-period use of the Whittier Oil Field (Site 19-003341). No prehistoric remains were encountered.

All of the existing paved roads found within the Project area are associated with the historic-period use of the Whittier Oil Field (Site 19-003341) and were recorded as historic-period features, contributing to the significance of the site as landscape elements. Level pads marking the former locations of oil wells were encountered at or near the proposed Project Site. Five pads in the area were recorded as historic-period features. These five level pads were densely overgrown with grass and chaparral. Three vertical pipes measuring 3 inches in diameter and 3 feet in height were found at different locations. Two of these pipes were found in eroded areas that revealed an 8-inch diameter pipeline. Presumably, all three of these pipes are standpipes interspersed along a buried pipeline.

Colima Road and La Mirada Boulevard, where an oil pipeline would be constructed, are both paved and landscaped and modern in appearance. They are bordered by dense commercial and residential developments, mostly modern in appearance, but some date to at least the early 1900s. The 2.8-mile long gas and crude pipeline route was surveyed by driving these roads.

A segment of the Southern Pacific Railroad spur to Whittier (circa 1888) crosses the Project area along Colima Road near the intersection of Lambert Road, but the proposed pipeline would be underground at this location, and therefore the Project has no potential to affect this segment of the Southern Pacific line. The windshield survey of the pipeline route and the records and literature search did not reveal any historical structures or archaeological features that would be potentially altered as a result of the proposed Project. The archaeological sensitivity of the pipeline route is low and there would be no visual impact to historic structures since the pipeline would be underground.

No prehistoric archaeological materials were found during the intensive-level field survey. No other historic-period sites, features, or artifacts, other than those associated with the Whittier Oil Field (Site 19-003341), were located.

4.9.1.5 Sacred Lands Search

The Native American Heritage Commission (NAHC) was contacted on November 24, 2009, for a review of the Sacred Lands File to determine if any known Native American cultural properties (e.g., traditional use or gathering areas, places of religious or sacred activity, etc.) are present within or adjacent to the Project Area of Potential Effect (see technical report for details of this search). The NAHC responded on December 10, 2009, stating that no Native American cultural resources are known to exist within the immediate Project area. The NAHC requested that Native American individuals and organizations be contacted to solicit information or concerns regarding cultural resource issues related to the proposed Project. Seven individuals and organizations were referred and contacted by letter on December 30, 2009. The Tongva Ancestral Territorial Tribal Nation responded via email on December 30, 2009, and raised concerns about water drilling rights. Details of this consultation are provided in the technical report prepared for the Project (Appendix F). The tribe objected to the Project on the grounds of use of sacred lands. On January 13, 2010, Applied Earthworks, Inc. contacted each individual by telephone. The Gabrieleno/Tongva Tribal Council of San Gabriel representative expressed concerns about previously unidentified cultural properties that may exist within the current Project area and requested monitoring of all ground-disturbing activities. No other concerns were raised.

4.9.1.6 Paleontological Assessment

The current field study did not identify any fossils, paleontological resources, or unique geologic features within the Project boundaries (LSA 2007). The Preserve is underlain by Cenozoic-age sediments of the Puente, Fernando, Coyote Hills, and La Habra geological formations. The Puente, Coyote Hills, and La Habra formations contain extensive fossils of marine and terrestrial plants, invertebrates, and vertebrates. These formations have a high sensitivity in regard to their potential for containing fossils. Recent alluvial sediments filling the valley bottoms of the Preserve, however, are considered to have a low sensitivity because they were deposited after the Pleistocene.

The results of a paleontological locality search initiated by LSA (2007), and carried out by the Natural History Museum of Los Angeles County, indicate that no vertebrate fossil localities have been documented directly within the Preserve boundaries. However, the same sedimentary deposits that occur within the Preserve are also found in the nearby vicinity. The closest fossil vertebrate localities to the Project are all from around the Puente Hills Landfill immediately north of the Preserve. Fossil localities in that area have produced a collection of fossil marine vertebrates, including great white shark, herring, hake, lantern fish, mackerels, swordfish, flounder, and whale.

4.9.2 Regulatory Setting

The CRHR is an authoritative guide to be used by state and local agencies, private groups, and citizens to identify and evaluate the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The

criteria for listing resources on the CRHR are based on those developed by the National Park Service for listing on the NRHP with modifications to include a broader range of resources that better reflect the history of California. Under CEQA, a historical resource is considered significant if it:

- Is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States;
- Is associated with the lives of persons important to the nation or to California's past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important to the prehistory or history of the State and the Nation.

According to CEQA Guidelines, a resource shall generally be considered "historically significant" if the resource meets the criteria for listing on the CRHR. The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]), does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1. The City of Whittier General Plan contains a Historic Resources Element that provides guidelines for the designation and preservation of historic resources within the City. The City Guidelines are consistent with the guidelines discussed here for the determination of significance.

4.9.3 Significance Criteria

Under CEQA, an impact on a historical resource is considered significant if the impact lessens the integrity of the qualities of the properties that qualify it for the CRHR. If the proposed Project may cause damage to a significant historical resource, the Project may have a significant effect on the environment. The CEQA Guidelines, Section 15064.5, provide significance threshold criteria for determining a substantial adverse change to the significance of a cultural resource:

- Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
- The significance of a historical resource is materially impaired when a project:
    - Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR;
    - Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to

section 5020.1(k) of the PRC or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the PRC; or

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for the purposes of CEQA.

CEQA Guidelines, Section 15064.5 (d), prohibit disturbance of any human remains, including those interred outside of formal cemeteries, without proper treatment and reburial with appropriate dignity. Human remains must also be treated in compliance with Health and Safety Code, Section7050.5, and PRC, Section 5097.98.

Paleontological resources are afforded protection under CEQA. Appendix G (V) of the CEQA Guidelines indicates that a project would have a significant impact on paleontological resources if it would disturb or destroy a unique paleontological resource or site or unique geologic feature. Section 5097.5 of the PRC prohibits knowing and willful excavation, removal, destruction, injury, and defacement of any paleontological site or feature on public lands (lands under jurisdiction of state, county, city, district, authority, or public corporation, or any agency thereof), except where the agency with jurisdiction has granted express permission. Section 30244 requires reasonable mitigation measures for impacts on paleontological resources that occur as a result of development on public lands.

Indirect impacts result primarily from the effects of project-induced population growth. Such growth can result in increased construction, as well as increased recreational activities that can disturb or destroy cultural resources.

4.9.4 Project Impacts and Mitigation Measures

Project-specific impacts include direct and indirect impacts. Direct impacts result from land modification directly and immediately caused by the construction, landscaping, operation, or maintenance of a facility. Indirect impacts also occur as a result of a specific project, but do not result from intentional ground disturbance. Common indirect impacts include erosion, unauthorized artifact collecting, and vandalism.

As currently planned, the proposed Project entails construction during two phases. The Drilling and Testing Phase would include clearing portions of the Project Site, road improvements, and drilling activities. The Design and Construction Phase would improve the North Access Road, construct oil and gas processing facilities, truck loading facility, gas and crude pipelines and well sites, and cellars and related vessels. These proposed construction activities could physically alter or destroy historic oil well pad features and roadways identified and recorded during this study as part of the historic Whittier Oil Field. These remnant features are a principal element of the historic Whittier Oil Field as it exists today and are contributing components of this historical resource. While numerous roadways and oil well pads associated with the historic Whittier Oil Field likely exist throughout the Preserve, removal of the features within the Project Site does constitute a “substantial adverse change in the significance of an historical resource” as defined by CEQA.

At present, the RMP provides measures that should be applied to the proposed Project and proposed Project alternatives. Those measures are included as mitigation measures in the discussion of specific impacts.

Impact #	Impact Description	Phase	Residual Impact
CR.1	Impacts to historical resources, such as well pads, roadways, and the landscape due to ground disturbance.	Drilling and Testing, Construction	Less Than Significant With Mitigation

Mitigation Measure

The Project as currently proposed involves a limited number of alterations of well pad locations within the historic Whittier Oil Field and construction of roads and pipelines. As such, this stage of the proposed Project does not require Historic American Engineering Record documentation.

To ensure that the current Project does not result in a substantial adverse change to the significance of the Whittier Oil Field as a historical resource under CEQA, the following mitigation is recommended.

CR-1 Develop of a monitoring plan, subject to City and Habitat Authority 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.*

Monitoring must be conducted by a trained archaeologist under the supervision of a Los Angeles County Certified Archaeologist. The monitor must be empowered to halt or redirect construction equipment to be able to document any oil field-related features exposed as a result of construction, as well as to evaluate and document any previously unanticipated discoveries that may be uncovered.

If isolated artifacts are collected during monitoring, once analyzed, they would be donated to the Preserve for display purposes. Monitoring the Colima Road gas and crude pipeline is not recommended since archaeological sensitivity along the developed roadway appears low. Nonetheless, if unidentified archaeological deposits are exposed, construction must cease and a qualified monitor must evaluate the find.

Residual Impacts

Implementing mitigation measure CR-1 would reduce the impact of potentially encountering and disturbing historical resources during grading and excavation to less than significant with mitigation.

Impact #	Impact Description	Phase	Residual Impact
CR.2	Unanticipated disturbance to human remains due to construction.	Drilling and Testing, Construction	Less Than Significant With Mitigation

If human remains were encountered during grading and excavation, the potential for disturbance of these remains would be a significant impact.

According to CEQA, "Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section (7050.5) Health and Safety Code." The PRC also ensures the protection of human remains (Sections 5097.94, 5097.98, and 5097.99). Therefore, the following mitigation measure is proposed.

Mitigation Measure

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.*

If the remains were determined to be of Native American origin, the remains would be protected in place and the Native American Heritage Commission must be contacted by the Los Angeles County Coroner, and a Most Likely Descendant must be designated. Any further treatment of the remains would occur in consultation with the Most Likely Descendant, the Native American Heritage Commission, and a qualified archaeologist.

Residual Impacts

Implementing CR-2 would reduce the impact of potentially encountering and disturbing human remains during grading and excavation to less than significant with mitigation.

Impact #	Impact Description	Phase	Residual Impact
CR.3	Unanticipated disturbance to paleontological resources.	Drilling and Testing, Construction	Less Than Significant With Mitigation

At present, there are no known paleontological resources or unique geologic formations or sites located within the Project area. However, the Preserve is underlain by sedimentary formations that are considered to have a high sensitivity in regard to their potential for containing fossilized remains. Therefore, it is possible that paleontological resources could be discovered during ground disturbing activities associated with construction of Project components, including wells, road, pipelines, or other Project infrastructure. However, implementation of the following mitigation measure would reduce potential impacts to unknown paleontological resources to a level less than significant.

Mitigation Measures

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.*

Residual Impacts

Residual impacts would be less than significant with mitigation.

4.9.4.1 Other Issue Area Mitigation Measure Impacts

None of the mitigation measures proposed for other issue areas would change the impacts to cultural resources or archaeology as discussed in this section, and additional analysis or mitigation is not required.

4.9.5 Cumulative Impacts and Mitigation Measures

Erosion and increased site usage, such as the opening of previously inaccessible land, establishment of new transportation routes and increased access or removal of vegetation, can

result in cumulative impacts to archaeological deposits or structural remains. These additions would also alter the terrain, which is considered an important component of the Whittier Oil Field landscape. The proposed Drilling and Testing Phase of the Project would not have significant cumulative impacts providing that mitigation measures are implemented. However, if the Drilling and Testing Phase of the proposed Project is realized and the drilling operations are expanded, then cumulative impacts should be anticipated. Impacts may include the erosion or destruction of additional surface features, such as well pads, disturbance of subsurface remains (pipeline), changes in the network of roads, and visual impacts from the addition of modern intrusive elements (albeit oil production in nature) to the historic landscape and view shed.

Based on the records and literature search there would be no cumulative impacts to known prehistoric resources. A historical archaeological resource itself, the Whittier Oil Field would be impacted, and there is a potential for cumulative impacts to previously unrecorded prehistoric or historical archaeological deposits. These same archaeological deposits may have been impacted by historical exploitation of the oil field, and additional construction would further erode these non-renewable resources.

4.9.6 Mitigation Monitoring Plan

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
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	Monitoring plan	Development of a monitoring plan by a qualified archaeologist	Review and approval prior to land use clearance	Applicant and the City of Whittier

Mitigation Measure	Requirements	Compliance Verification		
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mitigation/monitoring program.				
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.	Notification and protection of discovered human remains	Contact the Native American Heritage and a Most Likely Descendant must be designated	Upon discovery of human remains	Applicant and Construction Contractor
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.	Develop and implement a paleontological resource impact mitigation program	Paleontological resource impact mitigation program	Upon discovery	Applicant and Construction Contractor