

# APPENDIX I

## Cultural Resources Technical Report

**CULTURAL RESOURCES TECHNICAL REPORT  
PALMDALE HYBRID POWER PROJECT  
PALMDALE, CALIFORNIA**

**Partial Disclosure: For Purposes of Confidentiality, Site Location Data Have Been Removed  
From This Report**



Prepared for:  
ENSR Corporation  
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Prepared by:



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July 2008

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## Management Review

William Self Associates, Inc. (WSA) has been contracted by ENSR Corporation (ENSR) to perform a cultural resource assessment for the Palmdale Hybrid Power Project (PHPP or Project) in Palmdale, California. The Project will involve construction of a new hybrid power plant (a combination of natural-gas fired combined-cycle power generation technology and solar thermal power generation technology), along with associated electrical transmission lines, a natural gas supply pipeline, a reclaimed water supply pipeline, a potable water pipeline, and a sanitary wastewater pipeline. The area that was surveyed for the assessment included the main plant site, a laydown area adjacent to the plant site, and the corridors for each of the linear features. The potable water pipeline is planned to be installed in the same trench as the reclaimed water supply pipeline for its entire length. For this reason, no separate discussion is provided for the potable water pipeline as its resources and impacts are subsumed under those presented for the reclaimed water supply pipeline.

Record searches at the South Central Coastal Information Center, California State University, Fullerton (SCCIC) indicated the presence of recorded historic and Native American sites within a ¼-mile radius of the entire Project site. The record search also included a search within a 1-mile radius of the plant site and laydown area in order to comply with the California Energy Commission's (CEC) guidelines. The Native American Heritage Commission had no additional information regarding sacred sites in the area.

During the pedestrian survey of the Project site, WSA identified 12 sites, six of which were newly recorded. One previously recorded site is considered a significant cultural resource according to CEQA criteria. This is the Palmdale ditch (LAN-1534H), which is currently listed in the California Register of Historical Resources (CRHR). It is recommended in this report that the proposed PHPP construction should avoid this resource. In addition, buried features of many kinds can remain undetected until being discovered during construction. At that time they must be evaluated and a determination made as to their significance. Should any resources be discovered during construction, their significance would have to be determined in terms of the criteria of eligibility for inclusion in the CRHR.

All materials compiled in preparation for this technical report, including copies of archival materials obtained from the SCCIC, field survey notes, and photographs, will be stored at the corporate office of William Self Associates, Inc., P.O. Box 2192, Orinda, CA 94563.

## 1.0 Project Description and Location

The Palmdale Hybrid Power Project (PHPP or Project) proposes to construct a hybrid thermal power plant in the vicinity of the City of Palmdale, in northeastern Los Angeles County (Figures 1-2). The proposed hybrid thermal power plant utilizes both gas-fired combined-cycle generating equipment and solar energy generating equipment to produce electricity. Combined-cycle equipment includes combustion turbine generators, heat recovery steam generators, and steam turbine generators; solar equipment includes parabolic, solar energy collectors. Solar energy is used to heat a working fluid to generate steam to run the steam turbine generator. The generating equipment would have a net electrical output of 570 MW.

The Project site consists of the following facilities: a 377-acre plant site with an adjacent 50-acre laydown area, a 7.4-mile-long reclaimed water supply pipeline, a 8.7-mile-long natural gas supply pipeline, a 1-mile-long sanitary wastewater pipeline, and a 35.6-mile long electrical transmission line (Figure 3).

- The main PHPP plant site is located within Township 6 North, Range 12 West, Sections 1 and 2, and Township 7 North, Range 12 West, Sections 35 and 36 as depicted on the 1958 (Rev. 1974) Lancaster East 7.5-minute USGS Topographic Quadrangle.
- The laydown area is located within Township 6 North, Range 12 West, Section 2 as depicted on the 1958 (Rev. 1974) Lancaster East 7.5-minute USGS Topographic Quadrangle.
- The reclaimed water supply pipeline is located within Township 6 North, Range 11 West, Sections 17, 18, 19 and 20 as depicted on the 1958 (Rev. 1974) Palmdale 7.5-minute USGS Topographic Quadrangle, Township 6 North, Range 12 West, Sections 1, 2, 11, 13, 14, 23 and 24 as depicted on the 1958 (Rev. 1974) Lancaster East, Lancaster West and 1958 (Rev. 1974) Palmdale 7.5-minute USGS Topographic Quadrangles, Township 7 North, Range 12 West, Sections 35 and 36 as depicted on the 1958 (Rev. 1974) Lancaster East and 1958 (Rev. 1974) Lancaster West 7.5-minute USGS Topographic Quadrangles.
- The natural gas supply pipeline is located within Township 5 North, Range 12 West, Section 2 as depicted on the 1958 (Rev. 1974) Palmdale 7.5-minute USGS Topographic Quadrangle, Township 6 North, Range 12 West, Sections 2, 11, 13, 14, 23, 24, 25, 26, 35, 36 as depicted on the 1958 (Rev. 1974) Lancaster East, 1958 (Rev. 1974) Lancaster West, and 1958 (Rev. 1974) Palmdale 7.5-minute USGS Topographic Quadrangles, Township 7 North, Range 12 West, Sections 35 and 36 as depicted on the 1958 (Rev. 1974) Lancaster East and 1958 (Rev. 1974) Lancaster West 7.5-minute USGS Topographic Quadrangles.

- The sanitary wastewater pipeline is located within Township 7 North, Range 12 West, Sections 25 and 36 as depicted on the 1958 (Rev. 1974) Lancaster East 7.5-minute USGS Topographic Quadrangle.
- The electrical transmission line is located within Township 5 North, Range 10 West, on unsectioned land as depicted on the 1957 (Rev. 1992) Littlerock 7.5-minute USGS Topographic Quadrangle, Township 5 North, Range 11 West, Sections 19, 20, 21, 22, 23 and 24 as depicted on the 1958 (Rev. 1974) Palmdale and 1957 (Rev. 1992) Littlerock 7.5-minute USGS Topographic Quadrangles, Township 5 North, Range 12 West, Sections 19, 23, 24, 26 and 27 as depicted on the 1958 (Rev. 1974) Palmdale and 1991 Pacifico Mountain 7.5-minute USGS Topographic Quadrangles, Township 6 North, Range 10 West, Sections 4, 5, 9, 16, 17, 20, 21, 22, 23, 26, 27, 28, 29, 34 and 35 as depicted on the 1992 Alpine Butte and 1957 (Rev. 1992) Littlerock 7.5-minute USGS Topographic Quadrangles, Township 6 North, Range 12 West, Section 1 as depicted on the 1958 (Rev. 1974) Lancaster East 7.5-minute USGS Topographic Quadrangle, Township 7 North, Range 10 West, Sections 28, 29, 30, 31, 32 and 33 as depicted on the 1992 Alpine Butte 7.5-minute USGS Topographic Quadrangle, Township 7 North, Range 11 West, Sections 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and 36 as depicted on the 1992 Alpine Butte and 1958 (Rev. 1974) Lancaster East 7.5-minute USGS Topographic Quadrangles, and Township 7 North, Range 12 West, Section 36 as depicted on the 1958 (Rev. 1974) Lancaster East 7.5-minute USGS Topographic Quadrangle.

The following table (Table 1) summarizes the Project components and the potential impact areas associated with each.

**Table 1. PHPP Components and Impact Areas**

<b>Structure</b>	<b>Description</b>	<b>Impact Area</b>
Plant Site	377 acres of undeveloped land	Surface grading and leveling; excavation of foundations, footings, and utility trenches.
Laydown Area	50 acres of undeveloped land	Surface grading and leveling.
Reclaimed Water Supply Pipeline	7.4 miles	Excavation of trench.
Natural Gas Supply Pipeline	8.7 miles	Excavation of trench.
Sanitary Wastewater Pipeline	1 mile	Excavation of trench.
Electrical Transmission Line	35.6 miles	Surface grading and leveling at tower locations; surface disturbance from heavy machinery at pull areas; excavation of tower foundations.

William Self Associates, Inc. (WSA) was contracted by ENSR Corporation (ENSR) to perform a cultural resource assessment of the Project site. In accordance with our ENSR contract, WSA implemented a complete record search of a 1-mile radius around the 377-acre plant site and 50-acre laydown area, and a ¼-mile radius surrounding all linear facilities, conducted an archaeological field survey of the entire Project site plus additional areas around each component (buffer areas), an architectural field reconnaissance (“windshield survey”) of the entire Project site in compliance with California Energy Commission (CEC) regulations ([2] Cultural Resources [C]), and assessed the potential impacts of all Project construction on the cultural resources identified within the Project site (Figure 4).

The analysis of potential Project impacts on cultural resources follows significance criteria from the California Environmental Quality Act (CEQA). Results of records search and surveys indicate that the Project will potentially impact only one significant cultural resource (LAN-1534H – the historic Palmdale Ditch). Mitigation measures to reduce impacts to a less than significant level are recommended.

## **2.0 Natural and Cultural Setting**

An overview of the environmental and cultural setting of the PHPP is designed to provide a context for the consideration of the significance of cultural resources found to be present in the Project site. Environmental factors have greatly influenced prehistoric occupation of Antelope Valley, as well as playing a major role in the historic and modern development of the Palmdale region. For example, availability of water necessarily affects availability of resources and hence, the viability of settlements. The cultural setting provides a general outline of the prehistoric and early historic Native American occupation of the valley, with brief discussions of the effects of the changing environment on settlement patterns, as well as an overview of the historic development of the area. This allows sites to be placed in an analytical framework within which the site’s importance can be understood and assessed.

### **2.1 Environmental Setting**

Palmdale is located in the southern reaches of Antelope Valley, which occupies the westernmost extent of the Mojave Desert. Antelope Valley is a closed basin, which covers at least 2,200 square miles (5,700 km<sup>2</sup>) in size. The valley is separated from the San Joaquin Valley to the north by the Tehachapi Mountains. On the south and southwest, it is bounded by the San Gabriel Mountains. The northern and eastern boundaries of Antelope Valley are marked by isolated buttes. The San Andreas Fault runs along the whole southern slope of Antelope Valley. The floor of Antelope Valley is

primarily alluvial fill, and the average elevation of the valley is 3,500 ft. above sea level (Schoenherr 1995:411).

Fluctuations in temperature, moisture variation, and seasonality through time have altered vegetation zones, which advanced and retreated in response to climatic conditions. In moister times, vegetation zones in the valleys and basins, like Antelope Valley, moved down slope. When the climate became drier, the vegetation zones moved up the slopes of the mountains, leaving the lower lands with sparser vegetation, acclimatized to the more arid conditions. Changes in climate and vegetation had a marked impact on the prehistoric populations of the area.

### Pleistocene

During the Late Pleistocene (ca. 20,000-10,000 years ago), the climate in California was cool and moist, a time of widespread glaciations that resulted in the creation of numerous deep pluvial lakes (Antevs 1953a, 1955; Sutton et al. 2007:230-231). Worldwide, so much water was trapped in glacial ice that sea levels were lower than they are today, exposing a portion of the California coast that is now inundated. In the lower elevations of the California interior, there was considerable rainfall (Chartkoff and Chartkoff 1984:59). Pluvial lakes were common within the Mojave Desert and were an essential source of food and water for the earliest inhabitants of the desert. Data indicates that Antelope Valley was covered by a large freshwater lake during this period.

### Holocene

During the Holocene, or recent epoch (10,000 years ago to present day), the temperatures in interior California rose, bringing warmer conditions to the desert valleys and less precipitation to the surrounding mountains (Chartkoff and Chartkoff 1984:68). Antevs (1953a, 1953b, 1955) has divided the Holocene into three distinct climatic intervals: the Anathermal (9,000-7,000 years ago), the Altithermal (7,000-4,000 years ago) and the Medithermal (4,000 years ago to present day). Antevs' model for the Great Basin (the immense area formed by the Sierra Nevada, Columbia Plateau and Rocky Mountains) posited a climate at the beginning of the Anathermal period that was similar to the climate of the 20th century. A warming trend began during the Anathermal that led to subhumid and semiarid conditions, and a rise in lake levels. During the Altithermal, the warming trend accelerated until the conditions were more arid than those existing today. Antevs suggested that the glaciers and ice sheets completely melted, and the pluvial lakes in the low-lying basins disappeared. In some instances, the arid conditions lasted for so long that the accumulated salts in the lake beds were completely blown away or buried. During the following Medithermal, moister conditions prevailed, even though the Great Basin remained arid to semiarid. During this time, beginning about 4,000 years ago, the

glaciers and ice sheets reformed and the basins refilled, forming lakes. The Medithermal is characterized by fluctuations in temperature and climate – some bringing extreme drought conditions.

The details of Antevs' model are not universally accepted, and continued research is providing new and more reliable information about regional conditions and fluctuations throughout the western states. Studies undertaken at Owens Lake, Rosamond Lake and Emerson Lake indicate that there was a general drying trend commencing sometime prior to 11,550 years ago, followed by relatively wet conditions between 10,000 and 8,000 years ago. Lake levels were generally shallow and fluctuated rapidly between 8,000 and 6,500 years ago, with a consistently dry lake bed from 6,500 to 3,900 years ago. This was followed by sporadic, generally short-term filling of the lakes during and after the Little Ice Age (ca. 600 to 125 years ago). These periods of change would have influenced the availability and distribution of water and biotic resources, and hence affected human occupation of the area (Sutton et al. 2007:231).

There is a relatively large body of environmental data available for the Late Holocene, and two climatic episodes, the Medieval Climatic Anomaly (MCA) and the Little Ice Age (LIA), which may have impacted prehistoric lifeways, have been identified. The MCA is generally accepted as a period of drought, dating from 1,200 to 650 years ago, with the warmest periods occurring approximately 850 years ago. A number of cultural changes occurred within the western Mojave Desert during the MCA. Climatic conditions became less favorable, and the large villages, established ca. 2000 years ago, declined. Portions of the desert may have been abandoned, or settlement patterns may have been adjusted to better suit the changing environment. The LIA, generally dated from ca. 600 to 125 years ago, was a period of greater winter precipitation and cooler temperatures, which marked the close of the MCA. These variations caused significant environmental changes, but it is unclear how this influenced the inhabitants of the western Mojave Desert (Sutton et al. 2007:232-233).

### Modern

The topographic differences between basins and adjacent mountain ranges within the Mojave Desert create climatic variations. The range of temperatures during the summer can vary by as much as 30° to 40°F, because of hot days and cool nights. Winter temperatures are generally mild, and although most precipitation falls in winter, rainfall is sparse throughout the Mojave Desert, with an annual average of about 4 inches across the desert (Schoenherr 1995:406). Winter temperatures generally reach a daytime maximum of 50° to 70°F (10 ° to 21°C). Polar air masses or the passage of a cyclonic storm can cause major temperature variations in the desert. Winter nocturnal temperatures are often

well below freezing. Winds, which blow especially strong in spring and winter, are characteristic features of the climate of the Mojave Desert (Lantis et al. 1989:48-51).

Palmdale has over 300 days of sunshine per year. Annual precipitation is 7.36 inches, which falls mainly in the winter. The average daytime highs during the winter are in the upper 50s to low 60s, while being in the low to mid 30s overnight. Palmdale's summers are very hot with little or no precipitation. Temperatures frequently soar into triple-digits. However, Palmdale's high desert location allows temperatures to cool down at night, unlike the low desert cities of Palm Springs and Blythe. Average day time highs are in the upper 90s, but drop into the mid to upper 60s overnight. The annual average high temperatures are 98°F (summer) and 59°F (winter); the annual average lows are 65°F (summer) and 33°F (winter).

In the Mojave Desert's climate zone vegetation is sparse, consisting mostly of desert shrubs and an intermittent understory of annual and perennial grasses and herbs (United States Department of Agriculture 1986:126). The vegetation is predominately Shadscale Scrub and, at slightly higher elevations, Creosote bush scrub. As the elevation increases, Blackbrush may flourish. Where elevations are sufficient for the soils to be both coarse and nonalkaline, and where there may be winter snowfall, the dominant vegetation is the Joshua tree, as well as other leaf succulent yuccas. Piñon pines grow in elevations above the Joshua tree zone, and Desert Willows and Honey Mesquite may be found along washes (Schoenherr 1995:410-413). Although most of the Mojave Desert is extremely arid, some areas, such as Antelope Valley, support limited farming.

## **2.2 Cultural Setting**

### Prehistory

The Mojave Desert is an area believed to have had limited prehistoric food resources and surface water, however, it supported a long and occasionally dense human population, particularly in Antelope Valley (Moseley and Smith 1962). Recorded archaeological sites provide evidence for villages and camps, burials, quarries, rock features, and bedrock mortars. These sites may contain evidence of a lengthy prehistoric time span. Although early remains are not found frequently, when they are, they are usually located along the margins of pluvial lakes or in areas of dune deflation. Conversely, artifacts on the desert floor may be sparse, widely scattered, and not easily recognized among the desert pavement. Some sites which are readily visible on the valley floor, a function of sparse vegetation and continual erosion, have been damaged or destroyed due to illegal collection and site looting, particularly when they lie near populated areas.

Most archaeologists have reached a broad consensus regarding the region's general cultural chronology, basing this on an observed sequence of assemblages that are identified predominantly by their distinctive types of projectile points (Bamforth 1990:72). Although the cultural chronology for the desert region has undergone major changes since it was first developed in the 1920s and 1930s (compare Campbell 1931, 1935; Campbell and Campbell 1935; Campbell et al. 1936, Rogers 1929, 1938), and absolute dates are limited, a relative cultural sequence is now fairly well established (Bettinger and Taylor 1974; Sutton et al. 2007; Warren 1980; Warren and Crabtree 1972). The sequence consists of the Paleoindian, Lake Mojave, Pinto, Deadman Lake (newly defined and not yet generally accepted), Gypsum, Rose Springs, and Late Prehistoric periods.

#### PALEOINDIAN PERIOD (CLOVIS COMPLEX) (12,000-10,000 YEARS AGO)

The earliest documented evidence of human occupation in the Mojave Desert comes from the Paleoindian period and is associated with the Clovis Complex. Clovis sites, characterized by fluted Clovis points, have been found primarily in the northern and western portions of the Mojave Desert, with concentrations of fluted points occurring in the drainage basins of Pleistocene China and Thompson lakes. There has been a lack of reliable dates for Clovis sites, and their exact position in the cultural chronology of the area has not been clearly determined. However, it appears that the Clovis Complex overlaps in some areas with a later Stemmed (GBS) Complex found in the greater Great Basin to the north (Sutton et al. 2007:233-234). Although data relating to the Paleoindian Period are limited, Sutton et al. (2007:234) hypothesize that there was likely a small population of Paleoindian peoples who were highly mobile, inhabiting small, temporary camps near reliable water sources.

#### LAKE MOJAVE COMPLEX (10,000-8,000 YEARS AGO)

The early Holocene in the Mojave Desert is represented by the Lake Mojave Complex (Sutton et al. 2007:236). The Lake Mojave Complex (previously referred to as the Western Pluvial Lakes Tradition) has been described as a cultural adaptation to pluvial conditions – lakes, marshes, and grasslands – that flourished for several millennia after 11,000 years ago, but then disappeared during the warmer and more arid Altithermal climatic period (Moratto 1984:90-91). It covered an area that stretched from the currently arid lands of southern California, encompassing the western Mojave Desert, to Oregon.

Although the exact boundaries of the Lake Mojave Complex have not been defined, available evidence suggests it may have covered a vast area, including parts of the southwestern Great Basin and the Mojave Desert, and may have reached as far south as the San Diego area. The Lake Mojave Complex is characterized by Lake Mojave and Silver

Lake projectile points (of the Great Basin stemmed series), bifaces, steep-edged unifaces, crescents, and some cobble-core tools and ground stone artifacts (Sutton et al. 2007:234).

Artifacts belonging to the Lake Mojave Complex were initially recovered from sites situated on shoreline strands alongside the former lake bed of Pleistocene Lake Mojave. Lake Mojave encompassed the Soda Lake and Silver Lake playas, which are located about 125 miles east of Palmdale. The investigations of several scholars indicate that an age of 10,000-8,000 years ago is a reasonable chronological range for the Lake Mojave Complex (Antevs 1953a, 1953b; Warren and DeCosta 1962; Warren and Ore 1978). Artifacts similar to those found around Pleistocene Lake Mojave have subsequently been recorded along the shoreline of many other pluvial lakes in the Mojave Desert, such as China Lake and Rosamond Lake, as well as in the Fort Irwin and Twentynine Palms areas (Sutton et al. 2007:237). Additionally, strong similarities have been noted between artifacts and radiocarbon dates recovered at the C. W. Harris site on the San Dieguito River, which is situated to the north of San Diego (24 km inland), and the Lake Mojave Complex (Moratto 1984:93-97; Warren 1967).

Sutton et al. (2007:237) state that flaked-stone artifact assemblages from Lake Mojave Complex sites reflect long-term curation and transport of stone tools. Groundstone is not a well represented component of sites, suggesting that vegetal resources were not of major importance. Lake Mojave Complex sites typically represent large residential accumulations, and some workshops and small camps with few formed tools.

#### PINTO PERIOD/COMPLEX (CA. 10,000-4,000 YEARS AGO)

The Pinto Period assemblages are characterized by a distinctive type of projectile point. The interpreters of the Pinto point series fall into two camps – those who support a short chronology and proponents of a longer chronology. The supporters of the short chronology (Donnan 1964; Kowta 1969; Wallace 1962; Wallace and Wallace 1977) suggest there was a cultural hiatus of over 1,000 years in much of the Mojave Desert between 7,000 and 5,000 years ago due to the extremely warm, dry climate. Other archaeologists (Susia 1963; Tuohy 1974; Warren 1980) do not see a break. Instead, they recognize a continual development of the Pinto assemblages out of the earlier Lake Mojave Complex assemblages (Moratto 1984:411). Data from sites investigated in the last two decades support this model of an early inception, with some temporal overlap between the Pinto Complex and the previous Lake Mojave Complex (Sutton et al. 2007:237). There appears to be some broad continuity between assemblages associated with the Lake Mojave Complex and those of the Pinto Complex, relating to factors such as stone tool raw material types, interaction with coastal groups evidenced through the presence of Olivella shell beads, and resource exploitation. The most notable difference between the two complexes is an increase in milling equipment and a widening of the subsistence resource base. New data indicate

that a reliance on plant resources developed ca. 9,000 years ago, prior to the onset of the Middle Holocene drier period (Sutton et al. 2007:238).

Sites that contain elements of the Pinto Period occur in a diverse range of environmental and topographic situations (Sutton et al. 2007:238). Sites tend to be small and often limited to surface deposits, although larger sites have been found, usually associated with well-watered habitats. Glennan (1971) advocated a “Pinto Age” assemblage for the western Mojave Desert. He based this on observations during an extensive surface collection at the Sweetser site (CA-KER-302) in Antelope Valley, as well as several other sites in the area. Glennan (1971) identified a Rhyolite Tradition, which consisted primarily of knives, choppers, scrapers, cores, and some milling stones.

There may have been a 1,000-year hiatus between 5,000 and 4,000 years ago, when conditions became hotter and drier and less suitable for supporting large populations. This possible abandonment of the Mojave Desert marks the end of the Pinto period, though this may have occurred even earlier than previously thought, as most Pinto components date to pre-6,500 years ago (Sutton et al. 2007:241).

#### DEADMAN LAKE COMPLEX (CA. 9,500 AND 7,200 YEARS AGO)

The Deadman Lake Complex was recently proposed by Sutton et al. (2007). This complex has so far been identified only in the Twentynine Palms area, though Sutton et al. (2007) suggest that it may extend further outwards as new sites are discovered and older sites are reassessed. The Deadman Lake Complex is characterized by small- to medium-size contracting-stemmed or lozenge-shaped points, along with large quantities of bifaces, simple flake tools, milling equipment, and battered cobbles and core tools. Sutton et al. (2007:239) stated that, in the Twentynine Palms region, Pinto sites are typically situated within remnant pluvial lake basins and Deadman Lake sites are located at higher elevations, with the Deadman Lake and Pinto assemblages reflecting differing subsistence strategies. They also acknowledge that Deadman Lake assemblages may not represent a previously unidentified cultural entity, but may rather be a “segment of the tactical inventory” of the Pinto Complex (Sutton et al. 2007:239).

#### GYP SUM PERIOD/COMPLEX (4,000-1,800 YEARS AGO)

The beginning of the Gypsum Period about 4,000 years ago coincides with the beginning of a period when the desert had a moister, milder climate, often referred to as the Little Pluvial (Antev's Medithermal period). The moist conditions present at the beginning of the Gypsum Period allowed for more intensive occupation of the Mojave Desert (Sutton et al. 2007:241).

Although hunting continued to be an important economic pursuit during the Gypsum period, the presence of milling tools indicates increased use of plant foods and reliance on hard seeds. Mortars and pestles, and manos and metates, are reported at Mesquite Flat in Death Valley and on the Amargosa River, where they dated between 2080 and 3250 B.C. These sites are located near or in mesquite groves, suggesting that the processing of mesquite pods with the mortar and pestle may have become an important element in the subsistence system.

Generally, the Gypsum period was a time in which the Mojave Desert population incorporated new technological items and ritual activities and increased socioeconomic ties through trade. Because of these new means of adaptation, the return of arid conditions toward the end of the Gypsum period had relatively little effect on the Mojave Desert's population density and distribution.

The presence of Humboldt Concave Base, Gypsum Cave, Elko Eared, or Elko corner-notched points are indicative of the Gypsum Period, which has been radiocarbon dated from 4,000 to 1,800 years ago. In addition to the diagnostic projectile points, the cultural assemblage at Gypsum Period sites includes leaf-shaped points, rectangular-based knives, flake scrapers, T-shaped drills, and occasionally large scraper-planes, choppers, and hammerstones. Artifacts that are indicative of trade and exchange with the cultures of the Central Valley include shaft-smoothers; incised slate and sandstone tablets and pendants; fragments of drilled slate tubes; Haliotis rings, beads and ornaments of Central California's "Middle Horizon" type; Olivella shell beads; and bone awls.

#### ROSE SPRING PERIOD/COMPLEX (1,800-900 YEARS AGO)

The Rose Spring Period, previously known as the Saratoga Springs Period, marked the onset of cultural diversification in the Mojave Desert, with the development of distinctive regional traits. Changes are most notable in the western portion of the Mojave Desert. Lake levels in the western Mojave began to rise ca. 2,000 years ago creating a more mesic environment. Rose Spring sites are typically found alongside water sources, such as springs, washes and lakeshores (Sutton et al. 2007:242). Data from Rose Spring sites in the area indicate that there was a large increase in population, marked changes in artifact assemblages, and the creation of well-developed middens. The bow-and-arrow first appears in the region during this time, with Rose Spring points inferred to have functioned as arrow points (Sutton et al. 2007:241). Hunting small- to medium-sized game formed the principal subsistence strategy, and trade with outside groups was common. Artifact types dating to this period include Eastgate and Rose Spring series projectile points, stone knives, drills, pipes, bone awls, a variety of milling tools, marine shell ornaments, and large amounts of obsidian (Sutton et al. 2007:241-242).

According to Sutton (1980), the people occupying the Antelope Valley during this period lived in large permanent or seasonally occupied villages in addition to a variety of smaller, special purpose sites that were also seasonally based. Sutton suggests that the presence of large villages with cemeteries, along with the large number and complexity of other sites, imply that the Antelope Valley supported a large population during the late prehistoric period. Besides village sites, smaller sites included rock rings, lithic scatters, and milling stations. Artifacts from these sites include shell beads, ornaments, and steatite from the southern California coast, as well as projectile points of the Rose Spring and Cottonwood types.

Grave goods from burials that date to this period – some of which may be attributed to the Serrano or the Kitanemuk – show the disparity in the distribution of wealth that existed among these populations. Sutton points to this as evidence that systems of prestige and status were in place. This would indicate a more complex socio-political organization than that usually attributed to the inhabitants of the Mojave Desert. He sees the social complexity as the result of intensive participation in a trade network, where the Antelope Valley inhabitants functioned as the conveyers of goods between the coastal and interior populations (Sutton 1980:221). Moratto (1984:391) agrees that the large villages and systems of status and prestige may represent a strong regional development that set Antelope Valley apart from the other areas of the Mojave Desert.

The MCA began around the middle of the Rose Spring period, producing drought conditions. The reduction in available water and resources, coupled with the relatively high population that had previously been supported by the wetter conditions, may have resulted in the end of the Rose Spring Complex ca. 900 years ago (Sutton et al. 2007:242).

#### LATE PREHISTORIC PERIOD (900 YEARS AGO TO THE TIME OF EUROPEAN CONTACT)

The historic aboriginal people of the California deserts are clearly the descendants of the prehistoric inhabitants, although some movements of peoples have occurred during historic times. The regional cultural developments, which were established during the Rose Spring Period, continued with some modifications. Later occupations in the Antelope Valley are identified by small triangular projectile points of rhyolite and obsidian and late shell bead types.

During the Late Prehistoric Period, the tradition of the Southern Desert moved northward and probably reached the PHPP vicinity. There is little doubt that late period sites along the Mojave River are the prehistoric remains of the Serrano of the historic period. The Serrano appear to be similar to the Yuman people of the Colorado River; this similarity is attributable to a Mojave River trade route that, for centuries, brought the Serrano into

contact with the cultural developments of the lower Colorado River. Because of the ongoing trade, there were undoubtedly opportunities to obtain relatively great amounts of wealth and to develop more complex socio-economic and political organization.

The major occupation of Antelope Valley appears to have ended by 300 years ago, after which the valley became a marginal area, as reflected in the ethnographic record. Although the exact reason for the decline is unknown, Sutton (1980:221) suggests that one possible explanation was a disruption in the trade network.

### Ethnography

The Project is near the intersection of four neighboring Native American groups, as depicted by Kroeber (1970): the Serrano, Vanyume, Kitanemuk, and Tataviam (Alliklik) (Figure 5).

### SERRANO

The Serrano territory included the San Bernardino Mountains, east of Cajon Pass, as well as the desert area that lies immediately south of Victorville, extending east as far as Twentynine Palms and south as far as Yucaipa Valley.

The Serrano were primarily hunters and gatherers. Vegetal staples varied with village locality: acorns and piñon nuts in the foothills; mesquite, yucca roots, cacti fruits, and piñon nuts in or near the desert regions. Diets were supplemented with other roots, bulbs, shoots, and seeds (Bean and Smith 1978:571). An increased yield of herbaceous plants was created by periodic burning. Communal gathering expeditions, involving several lineages under one leader's authority, were not uncommon (Bean and Smith 1978:571; Benedict 1924:391-392; Drucker 1937). Deer, mountain sheep, antelope, rabbits, and other small rodents were among the principal animals hunted. Various game birds were also hunted – quail being the most important. The bow-and-arrow was used for large game, while smaller game and birds were killed with curved throwing sticks, traps, and snares. Occasionally game was hunted communally, especially during annual mourning ceremonies (Bean and Smith 1978:571; Benedict 1924:391-392; Drucker 1937).

Individual family dwellings were occupied by a husband, wife, their unmarried female children, sometimes the husband's parents, and occasionally a widowed aunt or uncle. The Serrano lived in circular, domed structures that were constructed of willow frames and covered with tule thatch. These structures were utilized primarily as sleeping and storage areas, with most Serrano activities taking place outside or under a shade structure consisting simply of four posts and a roof. On occasion, an individual would erect a separate house for private use (Benedict 1924; Drucker 1937; Kroeber 1925).

Technologically, the Serrano were quite accomplished and produced a vast array of articles. Their manufactured goods included baskets, pottery, rabbit-skin blankets, awls, arrow straighteners, sinew-backed bows, arrows, fire drills, stone pipes, musical instruments (rattles, rasps, whistles, bull-roarers, and flutes), feathered costumes, mats, bags, storage pouches, and nets (Bean and Smith 1978:571). Food acquisition and processing required the manufacture of additional items such as knives, stone or bone scrapers, pottery trays and bowls, bone or horn spoons, and stirrers. Mortars, made of either stone or wood, and metates were also manufactured (Benedict 1924; Drucker 1937; Strong 1929).

The Serrano were organized into exogamous clans. Each of these, in turn, was affiliated with one of two exogamous moieties (Strong 1929). Although the exact nature of these clans, including their structure, function, and number is unknown, Strong (1929) determined that the clan was the largest autonomous political and landholding unit of the Serrano. The clan was patrilineal: all the male members recognized descent from a common male ancestor. The descendants and wives of these men were also regarded as clan members. When women married, however, they retained their own lineage names and participated in ceremonies of their natal lineage (Strong 1929:17).

Every clan had a headman or chief, which was a hereditary position passed from father to son. Under unusual circumstances this could pass to the wife of the previous headman (Strong 1929; Gifford 1918). Duties of the head of the clan included determining when and where to collect or hunt, as well as conducting religious and other ceremonies. An assistant (also a hereditary post passing from father to son) assisted the head or chief in these ceremonies. The assistant's duties included taking charge of the sacred bundle (a kit of ceremonial paraphernalia), notification of the time and location of the ceremonies, carrying shell money between groups for ceremonial purposes, and attending to the division of shell money and food at ceremonies (Bean and Smith 1978:572).

Like other California Indian groups, the Serrano had a shaman who acquired his various powers through datura-enhanced<sup>1</sup> dreaming (Strong 1929). Shamans were mainly curers, who healed their patients through administering herbal remedies and sucking out disease-causing agents (Benedict 1924).

## VANYUME

The Vanyume inhabited the Mojave River. Unlike their neighbors, the Serrano, the Vanyume maintained friendly relations with the Chemehuevi and Mojave peoples. The Vanyume had a small population, which dwindled rapidly following Spanish settlement of

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<sup>1</sup> Datura (Genus: *Datura*) are strong-scented herbs, shrubs, or trees of the nightshade family.

California. No Vanyume speaking members survived into the 20th century, so there is not much known about this group (Bean and Smith 1978:570; Kroeber 1970:614).

## KITANEMUK

The Kitanemuk were located primarily in the southern Tehachapi Mountains, but their territory extended down into Antelope Valley (Kroeber 1925). In 1917, Harrington found a few Kitanemuk living at Tejón Ranch (Blackburn and Bean 1978). The Kitanemuk lived to the south of the Yokuts of the Central Valley, to the east of the Chumash, to the north of the Tataviam, and to the west of the Kawaiisu. Primarily mountain dwellers they ranged into the arid lowlands to the south during the cooler seasons.

The Kitanemuk depended on both piñon pine nuts and on acorns as important food staples. The acorns were abundant on the western slopes of the Tehachapis, facing the San Joaquin Valley, while the groves of piñon pine tended to be found on the eastern side of the range, facing the desert.

The Kitanemuk, like other groups on the mountain margins of the Mojave Desert, lived in permanent winter villages of 50 to 80 people or more. These people dispersed into smaller mobile gathering groups during the late spring, summer, and fall months. The smaller groups made use of temporary camps for relatively short times, visiting different "environmental niches" as the important food-producing plants in them became ready to harvest (Antelope Valley Indian Museum 2006).

The Kitanemuk spoke a language that appears to have been a dialect of Serrano, which was spoken by groups located as far distant as modern Yucca Valley and Twentynine Palms, east of the San Bernardino Mountains (Blackburn and Bean 1978).

The Kitanemuk shared some elements of culture with the rest of the Serrano groups, who lived to the east in parts of the Antelope Valley, the upper Mojave River area, and the San Bernardino Mountains (Blackburn and Bean 1978). Some customs, however, such as rituals and practices to honor the dead, may have been different. The Kitanemuk appear to have buried their dead, while the Serrano cremated them. The population of the Kitanemuk has been placed in the 500 to 1000 range at the time of the arrival of the Spanish (Antelope Valley Indian Museum 2006).

There were no permanent communities on the valley floor. Instead, the Antelope Valley provided an Indian trade route from Arizona and New Mexico to the California coast. The Indian population of California was estimated to be 133,000 in 1770, just before the mission era. But by 1910, they numbered about 16,350. The Indian population of the

Antelope Valley consisted of just a few families in 1910 (Antelope Valley Indian Museum 2006).

## TATAVIAM

Tataviam speakers inhabited the upper reaches of the Santa Clara River, the majority of Piru Creek, Castaic Creek and possibly Pastoria Creek (King and Blackburn 1978:535; Kroeber 1970:613-614). Their territory extended into at least the southwestern fringes of the Antelope Valley, though the majority of the Valley was likely held by the Kitanemuk and Vanyume groups. Although Kroeber originally used the term Tataviam for people of this region, he later adopted the name Alliklik. King and Blackburn (1978:537) suggested that this may have been because Kroeber thought the term Tataviam had too broad an application. King and Blackburn (1978) continue to use the term Tataviam.

The Tataviam relied heavily on yucca as a staple food source, which related to their occupation of primarily south facing slopes, along with acorns, sage seeds, juniper berries and islay berries. Small mammals, deer and possibly antelope were the most common animal food sources. Tataviam villages varied in size, from approximately 200 inhabitants living in large settlements, to small camps of 10 to 15 people (King and Blackburn 1978:536).

Little is known about the Tataviam people. By 1810, nearly all of the surviving Tataviam people had been taken to the San Fernando and San Buenaventura missions. By the 1830s, most Tataviam people in the missions had married members of other groups, and by 1916 the last speaker of the Tataviam language had died (King and Blackburn 1978:536; Kroeber 1970:613-614).

### **2.3 Regional and Local History**

The availability of water, which in historic times was supplied to the desert regions by shipment in tanks and barrels, was a critical factor in the settlement of the Mojave Desert. Much of the 15,000-square-mile desert is uninhabitable in the hot summer months; however, its sporadic settlement was prompted by the desert's proximity to Los Angeles, in addition to its valuable mineral deposits. It also served as a crossing point for people traveling west during the period of exploration and settlement.

#### Spanish Period

Spanish explorer Francisco Garcés followed a western route in 1771 that was an ancient Indian trail into the San Bernardino Mountains. The trail passed by the Barstow area, which is located about 45 miles north of the proposed Project. The Pedro Fages (1772) trail,

initially referred to as the Old Spanish Trail, and later as the Salt Lake Road or Mormon Trail, is the earliest known in the Project region. It travels south of the proposed Project before ultimately reaching the coast. Francisco Garcés took this trail in 1776, and Jedediah Smith traveled it in 1826 and 1827 (Kyle 1990:304). Father Garcés' account is the first complete documentation of the Antelope Valley and its original inhabitants. For years after this initial contact, Spanish influence in Antelope Valley was sporadic and benign. However, in 1808 the Spanish sent a military expedition into Antelope Valley to relocate the Indians to the San Fernando Mission.

### Mexican Period

Mexican independence from Spain resulted in the division of land into large ranchos throughout California. In an attempt to incorporate the Antelope Valley into the zone of Mexican settlement, several land grants were established in western Antelope Valley in the early 1840s. However, there were no non-Native American permanent settlers within the southwestern portion of the valley and it remained a frontier zone until after the American conquest of California. By 1850, the furthest reaches of American settlement extended as far as Soledad Canyon (Earle 2003).

### American Period

New York native Jedediah Strong Smith made two trips into California's desert region, probably along the Old Spanish Trail into the San Bernardino Valley (Kyle 1990:304). He crossed the Mojave River for the first time in 1826, christening it the "Inconstant River," probably due to its intermittent, partially underground flow (Pierson 1970). His route passed an Indian village on the Mojave Desert named "Otangallavil," which was located near Hesperia (Pierson 1970:87). In April 1844, while searching for the Old Spanish Trail, General Fremont also recorded the "clear, bold stream" of the Mojave River (Pierson 1970:67). He heard it called the "Rio de las Animas" by the Spaniards, but on his map he named it the "Mohave River" (Pierson 1970:68).

In the 1850s, settlement of the southwestern corner of Antelope Valley was related to stock grazing, as well as the construction of roads to the mines, settlements, and military installations in the southern San Joaquin Valley and Tehachapi Mountains areas. Native American raids on stock stalled the stock raising industry, leading to the establishment of an Indian reservation at Fort Tejon, located in the mountains at the western edge of Antelope Valley (Earle 2003). In an attempt to halt the skirmishes between Native Americans and settlers, the U.S. government relocated at least 1,000 Indians from Antelope Valley to the Fort Tejon reservation. During the 1860s and 1870s, the sheep raising industry within the Antelope Valley was booming. During periods of drought, cattle and sheep were grazed in the highlands of the adjoining mountains (Earle 2003).

In 1853, Lieutenant R. S. Williamson was sent by the U.S. Government to map one of the routes for a possible railroad between the Mississippi River and the Pacific Coast. From the San Joaquin Valley, Williamson headed south to the Mojave Desert via the northern slope of the San Gabriel Mountains (Keeling 1976). The Williamson party passed near the present site of Palmdale and did not observe any non-Native permanent settlers within the region (Earle 2003).

Construction of the Southern Pacific Railroad (SPRR), linking San Francisco to Los Angeles via the Mojave Desert, was completed in 1876. Large numbers of Chinese workers were employed in the construction of the railroad, and following its completion, many became involved in placer mining in the upper Santa Clarita River area (Earle 2003). The SPRR Mojave line also included a 20-day (round trip) rail route that extended over 165 miles of mountains and desert, running from the Harmony Borax Works in Death Valley (Inyo County) to the railroad loading dock in Mojave (Kyle 1990:129).

With the construction of the railroad, historic development of Antelope Valley increased. Lancaster, to the northwest of Palmdale, was first settled in 1876 with the completion of the SPRR. Promotional literature espousing the charms of the new township location attracted settlers. In the early 1880s, Moses Langley Wicks founded a Scottish agricultural colony of around 150 people near present-day Lancaster. In 1884, Wicks purchased and platted the town site, which he named Lancaster after his Pennsylvania hometown. In the late 1880s, Lancaster was sold to James P. Ward, and the first land boom occurred in Antelope Valley. Ample rain during this period led to bumper wheat and barley harvests. The subsequent 10-year drought that affected nearby Palmdale so badly had the same consequences for farmers in Lancaster. Lancaster again became a boom town in the early 1900s, housing large numbers of workers constructing the Los Angeles Aqueduct. The town experienced a period of growth in the 1930s following construction of the Muroc Air Force Base (County of Los Angeles Public Library 2007).

The present town of Palmdale originated as two small communities called Palmenthal and Harold. Palmenthal was settled in 1886 by 50 or 60 families of Swiss and German settlers. The families, venturing west primarily from Illinois and Nebraska, were informed that once they saw palm trees they would be very near to the coast. Mistaking the Joshua trees for palm trees, they settled in the Antelope Valley, calling the township Palmenthal. That year, the Palmdale Water District was established, and shortly thereafter an irrigation ditch was excavated by the Palmdale Irrigation Company to divert water from Littlerock Creek to Palmdale. In 1890, the ditch was described as 7 miles in length, having cost \$16,000 to build. The principal crops the water supported were alfalfa, corn, potatoes, vegetables, fruit trees and vineyards (Newell 1890:60). In 1896, the California State Mining Bureau described the ditch as 8 miles long, 8 ft. wide at the top, 5 ft. wide at the bottom, and 3 ft. deep, with a grade of 7.5 ft. per mile (California State Mining Bureau 1896:538). In 1894,

drought hit the area, and an increased supply of water was needed. An earthen dam, forming Harold Reservoir (now Palmdale Lake), was constructed by the Antelope Valley Irrigation Company in 1895, and another earthen ditch, linking Littlerock Creek to Harold Reservoir, was excavated alongside the earlier ditch. A flume and wooden trestle were incorporated into this design (Palmdale Water District 2004). The settlers prospered temporarily growing grain and fruit. An extended period of drought in the 1890s brought the boom to an end, and Palmenthal was largely abandoned. Harold, also known as Alpine Station and Trejo Post Office, was established at the crossroads of the Southern Pacific Railroad and Fort Tejon Road (now Barrel Springs Road). It was essentially abandoned when the railroad moved the site of its booster engine station to another location north of Harold (County of Los Angeles Public Library 2007; Palmdale City Library 2008).

Mining in the Mojave Desert led to increased settlement during the latter half of the 19th century. Gold was discovered in the southwestern portion of Antelope Valley in 1842 in what is today known as Placerita Canyon. Gold seekers flocked to the canyon and an estimated \$100,000 of gold was mined there. Some of the miners settled permanently in the southwest Antelope Valley in the 1850s and 1860s, while others headed north to continue their search for wealth. Gold, silver and copper were also mined from the Soledad Canyon region during the Civil War period (County of Los Angeles Public Library 2007; Earle 2003). The town of Mojave was the rail terminus for the 20-mule-team borax wagons that operated from Death Valley between the years 1884 and 1889 (Kyle 1990:129). The United States Borax and Chemical Company (formerly the Pacific Coast Borax Company) developed sodium borate mining at Boron, about 30 miles north of Victorville. Gold was discovered at Standard Hill in 1894, and the Cactus Queen Mine produced the largest quantity of silver ore in California until World War II (Kyle 1990:130). By 1896, the Alpine Plaster Company had established a gypsum quarry one mile south of Palmdale, and the Fire Pulp Plaster Company also worked Palmdale's gypsum deposits (California State Mining Bureau 1896:504; Hess 1910:29). All of this activity rejuvenated the development of Antelope Valley.

The town of Palmdale was established in 1899 when settlers who remained at Palmenthal and Harold moved closer to the SPRR station and the San Francisco to New Orleans stagecoach line. In 1905, following the end of a drought, irrigation systems using pumps powered by gasoline, and later electricity, replaced the previous reliance on artesian wells. This more reliable source of water revived the agricultural industry in the Antelope Valley (County of Los Angeles Public Library 2007). Completion of the Los Angeles Aqueduct in 1914 (to the west of Palmdale) further prompted development of the Palmdale area. That year, the Southern California Panama Expositions Commission (McGroarty 1914:78) described Palmdale as “a new town on the railroad with considerable improvement going on including the planting of a large acreage to young fruit trees.” Palmdale's population began to steadily increase. Irrigated lands in the Valley increased from 5,000 acres in

1910, to 11,900 in 1919. The township apparently failed to impress at least one author who described it as “a lonely little town marking the terminus of the railroad”, although he saw fit to comment on the “frequent cultivated fields which showed the fertility of this barren desert when irrigated” (Murphy 1921:306). Alfalfa, pears and apples became staple crops in the area. Agriculture remained the primary industry of the Antelope Valley, with Palmdale serving as the “trading center of poultry and cattle ranchers and fruit growers” (Workers of the Writers’ Program of the Work Projects Administration in Southern California [Writers’ Program] 1941:397), until World War II. After World War II, Palmdale grew as a center for aerospace and defense industries with the establishment of Edwards Air Force Base in Kern County and U.S. Air Force Plant 42 in Palmdale (see below) (Palmdale City Library 2006).

The town of Littlerock, to the southeast of Palmdale, followed a similar path of development. The first settler moved into the area in the 1860s, building an adobe along Little Rock Creek. He was shortly thereafter killed by a grizzly bear, and the adobe became a bandit hide-out. Legitimate settlement of the Littlerock township, originally called Alpine Springs Colony and then Tierra Bonita, began in the 1890s, when settlers planted 2,000 acres of almond trees, along with some pear trees. The almond trees were unsuited to the desert climate, and failed, while the pear trees flourished. Pear growing subsequently became the major industry, and Littlerock Dam was constructed in 1924 to provide irrigation to the orchards. While agricultural pursuits were the primary industries on the floor of the Antelope Valley at this time, extensive stock grazing continued in the foothills and in some other areas of the valley (Earle 2003). Littlerock, known as “The Fruitbasket of the Antelope Valley,” did not experience the growth seen at Palmdale and Lancaster, and in 1941, with a population of 150, was described as “an isolated settlement surrounded by irrigation orchards” and as “the trade center of ranchers on 2,000 acres of land producing pears and miscellaneous fruits” (Workers’ Program 1941:399). Littlerock remains a small town with a current population of approximately 9,100 (Littlerock California Chamber of Commerce 2003).

Pearblossom, located to the east of Littlerock, was another early pear growing settlement. However, by 1941 the settlement was in decline, and the pear orchards had mostly reverted to desert as a result of increased competition from neighboring pear-growing regions. At this time, Pearblossom consisted of a few houses, a store and a garage (Workers’ Program 1941:399).

The military has played an important role in the modern history of the Mojave Desert. In 1933, Rogers Dry Lake (located between Barstow and Boron) was used as a gunnery and bombing range. In 1942, the first U.S. jet airplane was tested at Muroc Army Airfield. This installation became Muroc Air Force Base in 1948 and was renamed Edwards Air Force Base in 1981 (Kyle 1990:131-132). In 1940, the Palmdale Airport was used as the Palmdale

Army Air Field to serve as an emergency landing strip and for B-25 support training during World War II. In 1946, the Army Air Field was declared a surplus facility and Los Angeles County purchased it to serve as a municipal airport. The United States Air Force (USAF) again took over the airport in 1950 (purchased in 1951) to use in final assembly and flight testing of jet aircraft (California State Military Department 2008). In 1951, Lockheed Aircraft was contracted to develop a master plan for the site, which involved the construction of a facility “that would meet the requirements of full war mobilization and augment the industrial production potential of the major airframe manufacturing industry in southern California” (California State Military Department 2008). The plan was approved in 1953, and the site became officially known as Air Force Plant 42. The Federal Government took over ownership of the facility in 1954 (California State Military Department 2008). The Air Force Plant 42 is the home of the B1 and B2 bombers, along with the Space Shuttle. Palmdale has often been referred to as the Aerospace Capitol of the United States, with Rockwell, Northrop, Lockheed and McDonnell Douglas maintaining production facilities at Air Force Plant 42. The Federal Aviation Administration's Air Route Traffic Control Center, which handles air traffic for the Western Region of the United States, is also located in Palmdale. With the development of the Palmdale Regional Airport, the possibility of a bullet train linking Palmdale to Los Angeles International Airport, and the relocation of Lockheed’s secret research facilities to Palmdale, Palmdale’s future in aerospace seems assured (Palmdale City Library 2006). In 1998, the Joe Davies Heritage Airpark was opened at Air Force Plant 42. Several aircraft that were flown, tested, designed, produced or modified at Air Force Plant 42 are on display at the Heritage Airpark. The construction of a new visitors’ center is planned for the future (City of Palmdale 2008).

When Palmdale incorporated in 1962, its land area measured 2.1 square miles. By 1965, the city limits contained 22.4 square miles, and by 1983, Palmdale had grown to 45 square miles and had 130 additional square miles in its planning area. Palmdale was the fastest growing city in the state for the decade of the 1980s, climbing 573 percent from a population of 12,227 in 1980 to 68,842 in 1990. The vast majority of Palmdale's land is vacant (75%), providing space for continued growth and development in the future.

Palmdale’s growth in recent decades is not so much related to industrial growth as it is to the availability of affordable housing. Palmdale has become a ‘bedroom’ community, with a large number of residents commuting to the Los Angeles area to work.

Although the aerospace industry remains the area’s largest source of employment, both Palmdale and Lancaster are trying to entice industry and jobs into the area. Increased population in the last decade provides a large labor force available to employers, and is expected to attract more companies, thus broadening the area’s economic base. The

combined population for the cities of Palmdale and Lancaster is projected to reach half a million by the year 2010 (Oxford Enterprises 2008).

### **3.0 Research Design**

Any discovery, whether prehistoric, historic, or multi-component that is evaluated as significant under CEQA guidelines and cannot be avoided by project design, would be subject to mitigation to reduce project-related impacts to a less than significant level. Such mitigation is required to have a research design to guide the mitigation process.

#### **3.1 Prehistoric Resources**

The types of research topics that may be addressed, given the sample of data anticipated at Mojave Desert sites on the basis of previous research, comprise the following: site formation processes, chronology and dating, settlement patterns, subsistence, and trade and exchange.

##### Site Formation Processes

Three components of archaeological deposits are important in assessing the research potential and significance of a site. These are the horizontal extent, vertical depth, and the integrity of cultural material. A variety of post-depositional processes can lead to disturbance and alteration of the original character of archaeological sites. Cultural processes include discard behavior, trampling, scavenging, and various prehistoric, historic and modern land uses. Natural processes include alluviation, erosion and bioturbation. An understanding of site formation processes between different types of sites in differing geographic settings in San Bernardino County will be advantageous in defining the research potential and integrity of each site, and can serve as a predictive model of sorts in defining geographic settings associated with high and low potential for archaeological deposits. Recording and describing the geomorphic processes involved in site formation, such as alluviation/colluviation, bioturbation, erosion, and modern influences, should be implemented whenever the scale of excavation permits such an assessment.

##### Research Questions in Site Formation:

- Have recent (20th century) land use activities affected site integrity?
- Has alluviation, erosion or sheet wash affected site integrity?
- Are bioturbation or modern influences a factor in artifact distribution or site integrity?

##### Data Requirements:

- Requires sites with subsurface component and some depositional integrity.
- Documentation of post-formational processes wherever possible.

## Chronology and Dating

Establishing a firm temporal range for each archaeological site is one of the foundations of archaeological investigation and research. Many of the subsequent research topics in prehistory, such as culture change and adaptation, focus on questions that rely on establishment of site chronology. Although the basic cultural chronology for the Mojave Desert exists, there are data gaps. Contributing to this is the relative dearth of absolute dates for archaeological sites in the desert regions of Southern California. The earliest occupation of the region has probably not yet been established, although Early Holocene occupation of surrounding lands has been documented at 9,000-10,000 years ago (Warren and Ranere 1968). Transitional sites illustrating Early-Mid-Late Holocene occupation have also not been adequately documented in the region.

Absolute dating (through radiocarbon or obsidian hydration) of sites would provide valuable information on settlement of this part of the desert with less interference from detrimental site formation issues common to larger, more complex sites. It may be possible to identify, for example, whether small, low artifact density, desert sites are specialized procurement or activity locations associated with the larger occupational sites near the Mojave River.

The collection of viable quantities of material for absolute dating purposes, preferably accelerator mass spectrometry (AMS) radiocarbon dating, is essential to establishment of site chronology. Charcoal, shell or bone in quantities of 50 mg, 100 mg and 30 gm respectively, from discrete depositional loci within a site, are needed to provide an adequate sample. Preferably, multiple samples are needed to establish accurate dates and account for "noise" in the dating or recovery technique. Obsidian hydration may also prove useful, although the development of accurate results is dependent upon sourcing the material, collection of appropriate quantities of nonbiased samples, and application of an acceptable hydration rate. Although functional, obsidian hydration as an absolute dating tool for sites in this part of the Mojave Desert may be of limited utility.

### Research Questions in Dating and Chronology:

- Can sites shed light on the Holocene occupation of the Mojave Desert area?
- Can site chronology assist in interpreting the break between Pinto and Gypsum periods?
- Can site chronology assist in interpreting the link between Late Prehistoric and Ethnographic Periods?
- Is a single occupational episode evident in the chronological record?

### Data Requirements:

- Appropriate materials for absolute dating techniques available in sufficient quantities for radiometric and/or AMS radiocarbon dating.
- Obsidian in sufficient quantities to provide hydration dating.

## Settlement Patterns

Prehistoric hunter-gatherers in the Mojave Desert area practiced somewhat differing mobility strategies and settlement/subsistence practices over time. At present, prehistoric settlement organization in the regional area is documented to some extent. Binford's (1980) well-used distinction between foragers (who practice residential mobility) and collectors (who practice logistical mobility) is an appropriate method to examine the dynamics of prehistoric hunter-gatherer settlement organization. Foraging systems result in consumers frequently moving to goods; such a strategy is most effective when basic resources (food and water) are clustered in nearby larger occupational areas. For foragers, difficulty arises when these basic resources are not clustered or occur beyond the normal daily foraging radius. Movement of foraging camps between resources may not be a solution, since it may not be possible to locate the camps near certain essential resources. Storage can partially address the problem, but it can also restrict residential mobility. Hunter-gatherers address these problems through the use of food procurement parties to obtain distant resources and bring them back to base camps. Resource storage tends to diminish residential mobility and increase sedentism, since the availability of stored foods minimizes periodic food shortages. Diversification of subsistence patterns and settlement mobility over time tends to select for the development of collector settlement systems, once the technology was available to employ it.

### Research Questions in Settlement Patterns:

- Are sufficient data available to characterize the sites as seasonal or permanent camps?
- Can seasonality be determined?
- If seasonal, is a particular resource being exploited?
- How do sites compare with recorded sites in similar locales in the region?
- Does settlement vary between sites based on chronology (Archaic - Late Prehistoric)?

### Data Requirements:

- Adequate site structure (size, depth, artifact and ecofact characteristics) to permit extrapolation.
- Presence of bioarchaeological and technological data sets to permit extrapolation.

## Subsistence

The study of human subsistence systems involves investigation of the interaction between humans, technology, and floral and faunal resources. Research issues related to subsistence are interrelated with the previous discussion on settlement patterns, and data gathered to address that topic may be applicable to subsistence issues as well. Subsistence is considered one of the primary forces in culture change, and data related to subsistence are often common in many archaeological deposits, thus making it one of the basic themes in

archaeological research. Different approaches are taken to address the subsistence systems of past cultures. Traditionally there is a distinction between floral and faunal remains, with paleoethnobotanical and archaeofaunal studies being employed. Recently, bone chemistry and residue analysis have been utilized to study prehistoric subsistence issues. The goals and approaches of all subsistence studies are similar in that they seek to ascertain how prehistoric cultures obtained food, their consumption habits, and related activities. Common study questions that are addressed include: which plants and animals were eaten regularly, which were preferred, and which were the major components of the diet? Was there any social/gender/age differentiation in food consumption and acquisition? How was food procured? Moreover, subsistence studies, specifically archaeofaunal studies and archaeobotanical studies, require knowledge of the effect that formation processes have on the archaeological record. The issue of context, specifically the predepositional and depositional processes related to organic remains, is a major concern of investigations into subsistence.

There have been few substantive archaeological investigations into subsistence issues within this portion of the Mojave Desert, largely owing to a lack of stratified sites in the area, and/or excavation of such sites. Since much of the investigation of larger, more complex sites comes from deposits near the Mojave River, addressing subsistence questions on non-riverine, open-air sites becomes all the more valuable. Elucidation of subsistence orientation, and resource emphasis, is an integral aspect of archaeological interpretation of the status, importance and role of sites within a regional framework.

#### Research Questions in Subsistence:

- What plants and animals were being exploited as evidenced from site constituents, and in what quantities? Are there changes over time?
- Do the types and quantities of remains vary by site?
- How were food resources prepared and consumed?
- Is seasonality apparent in resource exploitation or consumption?

#### Data Requirements:

- The presence of macro and micro floral and faunal remains.
- The presence of food procurement and processing tools.
- Contextual integrity of food remains.
- The presence of human skeletal remains for forensic analysis.

#### Trade and Exchange

Culture contact (trade and exchange) during prehistory has been documented for much of California, especially between the coastal and desert regions. Marine shell beads, for

example, are not uncommon in desert prehistoric and ethnographic sites. Evidence for lithic raw material trade is most common (especially obsidian), nonetheless, trade of other items such as plant and animal materials was also prevalent. The use of obsidian by early occupants of the region has been established; sources of the raw material come from numerous locales from Baja California to Inyo County.

#### Research Questions in Trade and Exchange:

- What nonlocal resources are present that may represent trade, exchange or long distance procurement?
- Can lithic resources be sourced (e.g., Coso, Obsidian Butte or San Felipe obsidian)?
- Can nonlithic materials be sourced (e.g., bone artifacts, ceramics, shell beads)?
- Are there temporal associations with non-local materials vs. local materials?
- Are nonlocal food resources present?

#### Data Requirements:

- The presence of material culture that can be used to address trade or exchange, such as obsidian, ceramics, nonlocal food resources, etc.
- X-Ray Fluorescence (XRF) sourcing of obsidian.

### **3.2 *Historic Resources***

Some broadly defined historical archaeology research themes are proposed for the Project; they are described briefly below. The principal focus of historical archaeology within the PHPP area will be (1) to identify evidence of early ranching period and agricultural period residential occupation or industry through the discovery of either foundation or feature remains or artifact deposits dating from these periods; (2) to identify evidence of the early roadways that traversed portions of the area; and (3) to identify any additional historic use of the area (e.g. Chinese occupation during roadway or rail construction). Likely research themes associated with the potential historic materials within the Project area comprise early historic settlement of southwestern Antelope Valley, commerce and industry, consumer behavior, social status or ethnicity, and travel and transportation.

#### Early Historic Settlement of Southwestern Antelope Valley

The earliest settlement of the southwestern corner of Antelope Valley was associated with stock raising, particularly cattle and sheep. With the construction of the SPRR, and shortly thereafter, systems of irrigation, settlement of this portion of the valley intensified, focusing on agricultural pursuits, with some stock raising continuing in the foothills. Mining, such as for copper in Soledad canyon, also prompted settlement of the region.

#### Research Questions in Farming and Ranching:

- Can distinctive patterns of variability and change be identified for farming, ranching and mining frontiers?
- What is the role of water control technology for farming and ranching in the region?
- Are ethnic groups evident in the historical archaeological record for the Project area? Is there any patterning for these sites?
- What type of refuse disposal went on in the Project area? Can it be characterized as continuous or transitional?

#### Data Requirements:

- Recovery of artifacts relating to farming and ranching activities (e.g., agricultural equipment, fencing material, livestock tanks, etc.).
- Analysis of landscape features, such as canals, ditches, dams, wells, fence lines, roads, etc.
- The presence of material culture that can be used to address building techniques or construction materials.
- The presence of distinctive refuse.

#### Research Questions in Mining and Industry:

- Is there any evidence of mineral extraction or mining in the Project area? What types of mining took place?
- Is there any evidence of industrial activities in the Project area? Are these sites related to mining?
- Does consumption of goods and community planning vary between mining communities and agricultural settlements?

#### Data Requirements:

- Recovery of artifacts relating to mining activities (e.g., mining equipment, etc.).
- Analysis of landscape features, such as adits, ditches, tailings, roads, etc.
- The presence of material culture that can be used to address extraction techniques, etc.
- The presence of material culture that can be used to address building techniques or construction materials.

### Commerce and Industry

The archaeological remnants of contemporary industry can yield important remains that help define past technologies, workplaces, manufacturing processes, or other activities. These deposits can also include the remains of associated neighborhoods, residential encampments, domestic activities, and related human behavior. These features can then

yield potential data on labor history, economics, industrial history, ethnicity, and industrial culture.

#### Research Questions in Commerce and Industry:

- Do archaeological remains of local industry or commerce exist in the area?
- Do any existing remains possess information relevant to building methods or materials?
- Are construction techniques typical of this type, or are they in some way unique to the area or time of construction?
- Is there evidence of reuse, adaptation, or conversion?
- If artifacts are present, what can they reveal about the availability and sources of consumer goods from the time period involved?
- Will these resources aid in our understanding of the beginnings of urban planning in the city?

#### Data Requirements:

- The presence of material culture that can be used to address types of industry or commerce in the area.
- The presence of material culture that can be used to address building techniques or construction materials.
- The presence of sufficient artifacts that can be used to address commerce in the area.

#### Consumer Behavior

Historic cultural material could be potentially valuable as an indicator of consumer behavior. Discarded items may serve to illustrate the fluctuations in both fashion and utility of various items of 19th and 20th century material culture. Comparison of the historic material cultural with remains from similar 19th and 20th century deposits in the region would be of value in comparing consumptive patterns among early residents with neighboring communities.

#### Research Questions in Consumer Behavior:

- Does the historic deposit contribute to our knowledge of the various classes or types of consumer goods at a point in time or specific location?
- Does the assemblage contain evidence of trade or regional variation in consumer goods?
- Is there evidence of hand-made materials, mass production, or other types of manufacturing processes? Are they intermixed in the deposit?

Data Requirements:

- The presence of a diverse and dateable material culture that can be used to track consumer behavior in the area, address questions of trade, regional variation, as well as the production and manufacture of goods.

Social Status and Ethnicity

The history of minority populations in the region of northeast Los Angeles County (e.g., Hispanic, Italian, Irish, African-American, and Asian) are not well documented, nor have they been the subject of urban historical archaeological assessment to any great extent. Evidence of ethnicity can come from individual artifacts (overseas Chinese serving bowls and opium paraphernalia, for example), associated faunal remains, and the detritus from cisterns, privies or trash deposits.

Research Questions in Social Status and Ethnicity:

- Do identified historic deposits contain information on the consumer practices of a specific social, ethnic, occupational or economic group?
- Is there evidence of wealth or status in the deposit? Conversely, is there evidence of poverty?
- Can particular types of artifacts (e.g., faunal remains) be linked to certain ethnic or social groups?

Data Requirements:

- The presence of material culture that can be used to address specific social, ethnic, occupational, or economic group behavior.
- The presence of material culture that can be used to address questions of wealth and poverty.

Travel and Transportation

Various explorers have traversed the Antelope Valley since the 18th century, although there is little information regarding the exact location of early trails through the valley. The SPRR, completed in 1876, is the most easily recognizable early transportation route through the southwestern Antelope Valley. Likewise, the Angeles Forest Highway, completed in 1941 to connect the Angeles Crest Highway to the Pearblossom Highway and the Antelope Valley Freeway, is an obvious mid-1900s transportation route through the valley. While both the SPRR and Angeles Forest Highway have been regularly maintained, and no longer retain integrity of materials, workmanship or design, sites, such as construction camps, associated with these resources may exist within the PHPP area.

#### Research Questions in Travel and Transportation:

- Is there any evidence of railroad construction camps and maintenance facilities in the Project area? What types of activities took place?
- If railroad construction camps are located, is there any evidence of Chinese involvement?
- What transportation activities, such as camp sites relating to road construction, are located in the Project area?
- Is there any evidence of sites, such as service stations, hotels, cafes, and camp sites, relating to the historic Angeles Forest Highway in the PHPP area?

#### Data Requirements:

- Recovery of artifacts relating to railroad activities (e.g., tracks, ties, spikes, etc.).
- Analysis of landscape features, such as rail lines, spurs, construction camps, water tanks, roads, etc.
- The presence of material culture that can be used to address building techniques or construction materials.
- The presence of distinctive refuse.

## **4.0 Record Search Results**

The staff at the South Central Coastal Information Center, California State University, Fullerton (SCCIC) conducted a record search of the PHPP vicinity on June 4, 2007 (SCCIC #7629.4749), May 27, 2008 (SCCIC #8529.5554), June 25, 2008 (SCCIC #8608.5598) and June 26, 2008 (SCCIC #8613.5644). The record search included a review of all recorded archaeological sites within a 1-mile radius of the plant site and laydown area, and a ¼-mile radius of all linear facilities (e.g., the reclaimed water supply pipeline, the natural gas supply pipeline, the sanitary wastewater pipeline, and the electrical transmission line). In addition, the California Points of Historical Interest, the California Historical Landmarks, the California Register of Historical Resources, the National Register of Historic Places, and the California State Historic Resources Inventory listings were reviewed for the Project. Historic maps consulted include USGS 15-minute Alpine Butte, CA quadrangle (1945), USGS 15-minute Lancaster, CA quadrangle (1933 and 1958), USGS 15-minute Tujunga, CA quadrangle (1900), USGS 15-minute Tujunga, CA quadrangle (1944), and USGS 30-minute Elizabeth Lake, CA quadrangle (1941).

Seventy-four studies have been conducted within the 1-mile record search radius of the plant site and laydown area and the ¼-mile record search radius of the linear facilities (Table 2).

**Table 2. Cultural Resources Studies Conducted Within 1-Mile of the Plant Site and Laydown Area, and ¼-Mile of the Linears (T-Line = Proposed Electrical Transmission Line; WS-Line = Reclaimed Water Supply Pipeline; G-line = Natural Gas Supply Pipeline; S-line = Sanitary Wastewater Pipeline)**

Study #	Author	Date	Report Title	Location
LA 0017	Eggers et al.	1973	Preliminary Impact Report of Portions of the proposed Palmdale Intercontinental Airport, Los Angeles County, California.	Crosses proposed WS-line and T-line centerlines.
LA 0116	Love	1988a	Archaeology Report for Amargosa Drainage North of Avenue M in the City of Lancaster, California.	Less than 1 mile (more than ¼ mi) NW of proposed plant site.
LA 0162	Love	1988b	Archaeology Report for Avenue M Right-of-Way and Amargosa Culvert Project.	Crosses proposed G-line and WS-line centerlines. Adjacent (N) to proposed plant site. Less than ¼ mile N of proposed laydown area
LA 0249	Love	1988c	Archaeological overview of 508 Acres on the East Site of Lancaster Known as GPA 88-04 and 88-09.	Adjacent (N) to proposed T-line centerline.
LA 0410	Arthur D. Little, Inc.	1976	Palmdale International Airport: Amended Draft Environmental Impact Statement, Vol. 3, Chapter III: the Human Environmental Impacts.	Crosses proposed WS-line and T-line centerlines.
LA 0553	D'Altroy	1979	Archaeological Resources Report: the Potential Effect on Archaeological Resources of the Proposed Development of the 241.1-Acre Rockwell-Palmdale Proposed Site X, Palmdale, California.	Less than ¼ mile N of proposed WS-line centerline.
LA 0680	Barker	1979	An Archaeological Sampling of the Proposed Allen-Warner Valley Energy System, Western Transmission Line Corridors, Mojave Desert, Los Angeles and San Bernardino Counties, California and Clarke County, Nevada.	Less than ¼ mile W of proposed T-line centerline.
LA 0703	Dosh and Weaver	1980	Archaeological Survey of the Proposed Palmdale International Airport, Los Angeles County, California.	Crosses proposed T-line and WS-line centerlines.
LA 1222	Colby and Rechtman	1983	An Archaeological Resource Survey and Impact Assessment of the Area Northwest of Lake Palmdale, Los Angeles, California.	Less than ¼ mile SW of proposed G-line centerline.
LA 1422	Talley	1984	Van Nuys Air National Guard Relocation Study Air Force Plant #42, Palmdale Naval Air Station, Point Mugu, Norton Air Force Base.	Covers approx. 2/3 of proposed plant site. Adjacent to proposed WS-line (W) centerline and laydown area (E). Less than ¼ mile SW of proposed S-line centerline.
LA 1479	Greenwood and Foster	1985	Cultural Resources Investigation for Los Angeles Department of Water and Power Victorville-Rinaldi 500 kV Transmission Line 1, Final Report.	Less than ¼ mile S of proposed T-line centerline.

<b>Study #</b>	<b>Author</b>	<b>Date</b>	<b>Report Title</b>	<b>Location</b>
LA 1511	Scientific Resource Surveys	1985	Van Nuys Air National Guard Relocation Study, Air Force Plant #42, Palmdale, Supplemental Report: Stage 2.	Adjacent (N) of proposed WS-line centerline.
LA 1547	Dillon	1986a	An Archaeological Resource Survey and Impact Assessment of the Antelope Valley Master Plan of Drainage, Anaverde Basin to Lockheed Basin, Los Angeles County, CA.	Crosses proposed G-line and WS-line centerlines.
LA 1585	Weil	1986	City of Los Angeles Department of Water and Power Vincent Substation Loop-in Project Cultural Resource Records Check and Field Survey Results.	Adjacent (N and W) of proposed T-line centerline.
LA 1627	Milburn	1987	Archaeological Reconnaissance Report: Mt. Emma Range Allotment bedding Grounds ARR No. 05-01-VA-32.	Crosses proposed T-line centerline.
LA 1717	Blodgett	1988	Report of Archival Search and Field Inspection of Approximately 4.5 Linear Miles and Proposed Detention Basin Along Amargosa Creek in Palmdale, California.	Less than 1 mile (more than ¼ mi) W of proposed plant site.
LA 1732	Singer and Atwood	1988	Cultural Resources Survey and Impact Assessment for Lots 3 Through 6 of Tract No.42991 In Palmdale, Los Angeles County, California.	Adjacent (W) of proposed WS-line centerline. Less than ¼ mile W of proposed G-line centerline.
LA 1792	Love	1989a	Archaeological Assessment of Thirty Five Acres on Lockheed Way and 5 <sup>th</sup> Street East, Palmdale, Los Angeles County.	Adjacent (S) to proposed WS-line centerline. Crosses proposed G-line centerline.
LA 1799	Padon	1989a	Historic Property Survey Report Widening Avenue City of Palmdale.	Crosses proposed S-line centerline. Adjacent (N) to proposed plant site, and WS-line and G-line centerlines. Adjacent (S) to proposed T-line centerline.
LA 1806	Robinson	1989a	A Cultural Resources Investigation of Tentative tract Number 47046 in the City of Palmdale, North Los Angeles County, California.	Less than ¼ mile W of proposed G-line centerline.
LA 1851	Norwood	1989a	Cultural Resource Survey for 40.85 Acres, Palmdale, California.	Less than 1 mile (more than ¼ mi) SW of proposed plant site.
LA 1853	Dillon	1986b	An Archaeological Resource Survey and Impact Assessment of the Dean Parcel, Avenue N and Division Street, Palmdale, California.	Less than 1 mile SW of proposed plant site. Less than ¼ mile W of proposed WS-line centerline.
LA 1857	Norwood	1989b	Cultural Resource Survey Lockheed Plant 10 Expansion, Palmdale, California.	Adjacent (E) to proposed WS-line centerline. Crosses proposed G-line centerline.

<b>Study #</b>	<b>Author</b>	<b>Date</b>	<b>Report Title</b>	<b>Location</b>
LA 1909	Greenwood and McIntyre	1981	Class III Cultural Resource Inventory: Adelanto-Rinaldi 500 kV Transmission Line Corridors 1, 2, and 3, Los Angeles Department of Water	Crosses proposed T-line centerline.
LA 1933	McClelland Consultants (West), Inc.	1989	Draft Environmental Impact Report CUP 89-26, American National Can Company, Palmdale, California.	Crosses proposed WS-line and G-line centerlines.
LA 1938	Padon et al.	1989	Cultural Resources Assessment Southern California Gas Company Proposed Line 335 Los Angeles and San Bernardino Counties.	Crosses proposed G-line and T-line centerlines.
LA 1949	Norwood	1990a	Cultural Resource/Archaeological Report: Cultural Resource Survey of 4.26 Acres in Palmdale, California.	Adjacent (W) to proposed G-line centerline. Less than ¼ mile W of proposed WS-line centerline.
LA 1959	Norwood	1990b	Cultural Resource Survey for 4.3 Acres Adjacent to 10th Street Lot Subdivision Catman Development Company.	Adjacent (E) to proposed G-line centerline. Less than ¼ mile E of proposed S-line centerline.
LA 1976	Gerry	1989	Cultural Resources Assessment of the Proposed Monier Company Plant, Palmdale, Los Angeles County, California.	Less than 1 mile NE of proposed plant site.
LA 1983	Dawson and Woodward	1975	Draft Environmental Impact Report Tentative 29164 Malibu, Los Angeles County	Less than ¼ mile N of proposed T-line centerline.
LA 2023	Norwood	1990c	Cultural Resource Survey for Tentative Tract No. 49241, Palmdale, California.	Adjacent (E) to proposed G-line centerline. Less than ¼ mile S of proposed WS-line centerline.
LA 2088	Love and DeWitt	1990	Final Report of the Phase II Testing and Evaluation of GPA 88 04 & 88-09, Lancaster, Los Angeles, California.	Adjacent (N) to proposed T-line centerline.
LA 2125	King	1968	UCLA-Archaeological Survey Field Project Number UCAS-215:the Route Designation :7-LA-138 Between Rte. 48 Freeway and the San Bernardino County Line.	Crosses proposed G-line centerline.
LA 2172	Norwood	1990d	Cultural Resource Survey for 4.054 Acres Adjacent to 10th Street, East Palmdale, California.	Adjacent (E) to proposed G-line centerline.
LA 2323	Robinson	1990	A Cultural Resources Investigation of a Portion of the Amargosa Drainage System Within the City of Palmdale, Los Angeles County, California.	Less than 1 mile (more than ¼ mi) W of proposed plant site.
LA 2352	Robinson	1989b	A Cultural Resources Investigation of Tentative Tract Number 46925 in the City of Palmdale, North Los Angeles County, California.	Less than ¼ mile W of proposed WS-line and G-line centerlines.

<b>Study #</b>	<b>Author</b>	<b>Date</b>	<b>Report Title</b>	<b>Location</b>
LA 2476	Drover	1991	Environmental Impact Evaluation: An Archaeological Assessment of the Industry Trade Center Specific Plan Palmdale, California.	Adjacent (W) to proposed WS-line centerline. Less than ¼ mile W of proposed G-line centerline. Less than 1 mile W of proposed plant site.
LA 2485	Robinson and Kirkbride	1990	A Cultural Resources Investigation of Five Acres in the City of Palmdale, Los Angeles County, California.	Less than ¼ mile W of proposed WS-line and G-line centerlines.
LA 2634	Becker	1992	Cultural Resources Reconnaissance of Antelope Valley Courts Facility, City of Lancaster, Los Angeles County, California.	Less than 1 mile (more than ¼ mi) W of proposed plant site.
LA 2811	Norwood	1993	Phase I Cultural Resource Investigation for Approximately 3 Acres NW Corner Sierra Highway and Avenue S, Palmdale, Los Angeles County, California.	Less than ¼ mile W of proposed G-line centerline.
LA 2837	McKenna	1993	Archaeological, Historical and Paleontological Investigations of the Proposed Business Park Center Specific Plan Project Area, City of Palmdale, County of Los Angeles, California.	Covers the entire proposed plant site and laydown area. Crosses the proposed G-line centerline. Adjacent to proposed WS-line (E and S) and S-line (SW) centerlines.
LA 2869	Singer and Gomes	1993	Cultural Resource Survey and Impact Assessment for a Proposed 1 Million Gallon Water Tank in Waterworks District No. 27, South of the Community of Littlerock, Los Angeles County, California.	Less than ¼ mile S of proposed T-Line centerline.
LA 3017	Gibson	1994	Results of Archaeological Records Check for the Mojave Alternatives of the Pacific Pipeline Project, Los Angeles County, California.	Adjacent to proposed WS-line (E) and G-line (W) centerlines. Less than ¼ mile N of proposed T-line centerline. Less than 1 mile W of proposed plant site.
LA 3062	Campbell	1994	Cultural Resources Study of a 4.6 Acre Parcel Located on the Northwest Corner of Sierra Highway and Ave S in the City of Palmdale, Los Angeles County, California.	Less than ¼ mile W of proposed G-line centerline.
LA 3537	Dillon	1996	Archaeological Assessment of the Palmdale Water District 1996 Master Plan, Los Angeles County, California.	Adjacent (N) to proposed T-line centerline. Less than ¼ mile W of the proposed G-line centerline.

<b>Study #</b>	<b>Author</b>	<b>Date</b>	<b>Report Title</b>	<b>Location</b>
LA 3987	Shaver	1997	Cultural Resources Investigation for Air Force Plant 42, Los Angeles County.	Crosses proposed G-line centerline. Adjacent to proposed WS-line (E), T-line (S, N and W) and S-line (SE) centerlines. Adjacent (E and S) to proposed plant site.
LA 4008	Science Applications International Corporation	1996	Cultural Resources Investigation Pacific Pipeline Emidio Route.	Adjacent to proposed WS-line (E) and G-line (W) centerlines. Less than 1 mile W of proposed plant site.
LA 4069	Jones & Stokes, Associates, Inc.	1996	Avenues S Corridor Study Area, Final Environmental Constraints Analysis Report.	Crosses proposed G-line centerline.
LA 4070	Romani	1995	Letter Report: Phase I Cultural Resource Evaluation for the Los Angeles Air Route Traffic Control Center (ARTCC), Child Care Facility, Palmdale, California.	Less than ¼ mile W of proposed G-line centerline. Less than ¼ mile N of proposed WS-line centerline.
LA 4141	Love	1997	Cultural Resources Report Bakersfield-Rialto Fiberoptic Line Project Kern, Los Angeles, and San Bernardino Counties, California.	Crosses proposed T-line and G-line centerlines.
LA 4329	Trnka	1997	Historic Building Inventory and Evaluation Air Force Plant 42, Palmdale, California.	Crosses proposed T-line and G-line centerlines. Adjacent (S and E) to proposed plant site. Adjacent to proposed WS-line (E) and S-line (SE) centerlines.
LA 4393	Singer	1998	Cultural Resources Survey and Impact Assessment for a Commercial Property at the Intersection of Avenue M and Sierra Highway in the City of Lancaster, Los Angeles County, California.	Adjacent (NW) to proposed WS-line and G-line centerlines. Less than 1 mile W of proposed plant site.
LA 4464	Lerch	1998	Cultural Resources Inventory and Evaluation of the IXC Carrier, Inc. Fiberoptic Longhaul Project from Henderson, Nevada to Los Angeles, California.	Crosses proposed G-line and T-line centerlines.
LA 4727	Padon	1989b	Negative Archaeological Resource Survey – Avenue M.	Crosses proposed S-line centerline. Adjacent (N) to proposed plant site, and WS-line and G-line centerlines. Adjacent (S) to proposed T-line centerline.
LA 5152	Duke	1999	Cultural Resource Assessment for AT&T Wireless Service /s Facility Number C586.1, County of Los Angeles, CA.	Crosses proposed T-line centerline.

<b>Study #</b>	<b>Author</b>	<b>Date</b>	<b>Report Title</b>	<b>Location</b>
LA 5227	Ferraro	2000a	Archaeological Survey of the Proposed Locality of the Palmdale Sheriff's Station, Palmdale, Los Angeles County, CA.	Less than ¼ mile W of proposed G-line centerline.
LA 5228	Ferraro	2000b	Archaeological Survey of the Proposed Locality of the Palmdale Sheriff's Station, Palmdale, Los Angeles County, CA.	Less than ¼ mile W of proposed G-line centerline.
LA 6671	Marvin et al.	2002	Historic Resource Survey for the Courson Connection Project, City of Palmdale, Los Angeles County, California.	Adjacent (W) to proposed G-line centerline.
LA 6706	Weaver	1980	Archaeological Investigations Archaeological Survey of the Proposed Palmdale International Airport, Los Angeles County, California.	Crosses proposed T-line centerline.
LA 7160	Goodwin	2004a	Archaeological Survey and Historic Property Reports, Rancho Vista Boulevard Widening Project, City of Palmdale.	Crosses proposed WS-line and G-line centerlines.
LA 7177	Everson and Wetherbee	2004	Historical/Archaeological Resources Survey Report Sierra Gateway Project Tentative Trace No. 42991 City of Palmdale, Los Angeles County, California.	Adjacent (W) to proposed WS-line centerline. Within ¼ mile W of proposed G-line centerline.
LA 7198	Smallwood	2004	Historical/Archaeological Resources Survey Report, Assessor's Parcel Number 3053-006-028; Palmdale Tract, City of Palmdale, Los Angeles County, California.	Less than ¼ miles SE of proposed G-line centerline.
LA 7200	McKenna	2004a	A Phase I Cultural Resources Investigation of the Taft Corporation Property in the City of Palmdale (APNs 3012-024-032 and -033, Los Angeles County, California.	Adjacent (N) to proposed G-line centerline.
LA 7510	McKenna	2004b	A Phase I Cultural Resources Investigation of Assessor Parcels 3170-013-002 and -027, Approximately 40 Acres in the City of Lancaster, Los Angeles County, California.	Less than ¼ mile N of proposed T-line centerline.
LA 7519	McKenna	2006	A Phase I Cultural Resources Investigation of the Associated Ready Mix Concrete, Inc. Property (APN 3126-016-026), Approximately 2.11 Acres in the City of Lancaster, Los Angeles County, California.	Less than 1 mile (more than ¼ mi) N of proposed plant site.
LA 7967	Hudlow	2006	A Phase I Cultural Resource Survey for Property on Avenue M, APN 3128-013-015 and -016, City of Palmdale, California.	Less than 1 mile (more than ¼ mi) W of the plant site.

<b>Study #</b>	<b>Author</b>	<b>Date</b>	<b>Report Title</b>	<b>Location</b>
LA 7991	Tang et al.	2006	Cultural Resources Technical Report, City of Lancaster General Plan Update.	Adjacent (N) to proposed plant site. Adjacent (N) to proposed T-line, G-line, WS-line and S-line centerlines. Less than ¼ mile N of proposed laydown area
LA 8138	Jordan	2007a	Revised Archaeological Survey Report for the SCE Deteriorated Pole Replacement Program for H-Frame Poles 1927071E and 1927072E on the Pearblossom-Vincent 220kV Circuit (WO#4735-0301) and Pole 884941E on the Arboretum 16kV Circuit (WO#6027-4800, JI#6-4869) on Private Lands in Los Angeles County, California.	Adjacent (N) of proposed T-Line centerline.
LA 8179	Ahmet et al.	2006	Cultural Resources Survey Report for Antelope Transmission Project: Segments 2 & 3, Los Angeles and Kern Counties.	Less than ¼ mile S and W of proposed T-line centerline.
LA 8368	Merrill and Romani	2004	Results of Archaeological Monitoring for STC Netcom, Inc. at the SCE Oasis Substation in Palmdale, California.	Adjacent (N) to proposed T-line centerline. Less than 1 mile E of proposed plant site.
LA 8427	Cooley	2007	Archaeological Survey Report for Southern California Edison Company 66kV Antelope Bus Split Project, Los Angeles County, California.	Crosses proposed G-line, WS-line, T-line and S-line centerlines. Adjacent (N) to proposed plant site. Less than ¼ mile N of proposed laydown area
LA 8903	Jordan	2007b	Archaeological Survey Report for Southern California Edison Deteriorated Pole Replacement Program for Poles 1001506E and 1001507E on the Hanger 12kv Circuit (WO# 6036-4800, AI# 5-4842) on United States Air Force Plant 42 in Los Angeles County, California.	Less than ¼ mile S of proposed T-line centerline.
LA 8957	Lloyd and Price	2007a	Cultural Resources Survey for the Palmdale Water Reclamation Plant Project, Los Angeles County, California.	Crosses proposed T-line centerline. Adjacent (E) to proposed WS-line centerline.
LA 9011	Nixon and Taylor	2005	Cultural Resources Ground Disturbance Monitoring of Avenue S Corridor Improvement Project, City of Palmdale, Los Angeles County, California.	Less than ¼ mile E of proposed G-line centerline.

Sixty-seven of the studies were conducted within the ¼ mile radius of the Project area (LA 17; LA 162; LA 249; LA 410; LA 553; LA 680; LA 703; LA 1222; LA 1422; LA 1479; LA 1511; LA 1547; LA 1585; LA 1627; LA 1732; LA 1792; LA 1799; LA 1806; LA 1853; LA 1857; LA 1909; LA 1933; LA 1938; LA 1949; LA 1959; LA 1976; LA 1983; LA 2023; LA 2088; LA 2125; LA 2172; LA 2352; LA 2476; LA 2485; LA 2811;

LA 2837; LA 2869; LA 3017; LA 3062; LA 3537; LA 3987; LA 4008; LA 4069; LA 4070; LA 4141; LA 4329; LA 4393; LA 4464; LA 4727; LA 5152; LA 5227; LA 5228; LA 6671; LA 6706; LA 7160; LA 7177; LA 7198; LA 7200; LA 7510; LA 7991; LA 8138; LA 8179; LA 8368; LA 8427; LA 8903; LA 8957; LA 9011).

An additional seven were conducted outside of ¼ mile but within 1 mile of the main PHPP plant site (LA 116 ; LA 1717 ; LA 1851 ; LA 2323 ; LA 2634 ; LA 7519 ; LA 7967).

Of the 74 studies mentioned above, 46 of these overlapped portions of the survey areas for the plant site, laydown area, and linear facilities (reclaimed water supply pipeline, natural gas supply pipeline, sanitary wastewater pipeline, and electrical transmission line). They are important in characterizing the cultural potential of the PHPP area. These studies indicate that prehistoric resources are present in the Project vicinity, with sites located on the flat valley floor as well as the adjoining foothills. Historic-period resources relate primarily to the early settlement and agricultural development of the area, but also to the military occupation of sections of Palmdale.

**Table 3. Cultural Resources Studies Conducted Within or Adjacent to the Plant Site, Laydown Area and Linears (T-Line = Proposed Electrical Transmission Line; WS-Line = Reclaimed Water Supply Pipeline; G-line = Natural Gas Supply Pipeline; S-line = Sanitary Wastewater Pipeline)**

Study # / Reference	Project	Study Type	Findings within Survey Area	Site Evaluations
LA 0017 Eggers et al. 1973	Crosses proposed WS-line and T-line centerlines.	Survey, subsurface testing	No sites within PHPP survey area	
LA 0162 Love 1988	Crosses proposed G-line and WS-line centerlines. Adjacent (N) to proposed plant site. Less than ¼ mile N of proposed laydown area	Survey	Negative	
LA 0249 Love 1988	Adjacent (N) to proposed T-line centerline.	Survey	No sites within PHPP survey area	
LA 0410 Arthur D. Little, Inc. 1976	Crosses proposed WS-line and T-line centerlines.	Survey, subsurface testing	No sites within PHPP survey area	
LA 0703 Dosh and Weaver 1980	Crosses proposed T-line and WS-line centerlines.	Survey	No sites within PHPP survey area	

<b>Study # / Reference</b>	<b>Project</b>	<b>Study Type</b>	<b>Findings within Survey Area</b>	<b>Site Evaluations</b>
LA 1422 Talley 1984	Covers approx. 2/3 of proposed plant site. Adjacent to proposed WS-line (W) centerline and laydown area (E). Less than ¼ mile SW of proposed S-line centerline.	Survey	Negative, however a 'modern' trash deposit (1940-1950) within the main PHPP plant site is now historic (location not plotted).	
LA 1511 Scientific Resource Surveys 1985	Adjacent (N) of proposed WS-line centerline.	Survey	No sites recorded within the PHPP survey area	
LA 1547 Dillon 1986	Crosses proposed G-line and WS-line centerlines.	Survey	Negative	
LA 1585 Weil 1986	Adjacent (N and W) of proposed T-line centerline.	Survey	Negative	
LA 1627 Milburn 1987	Crosses proposed T-line centerline.	Survey	No sites recorded within the PHPP survey area	
LA 1732 Singer and Atwood 1988	Adjacent (W) of proposed WS-line centerline. Less than ¼ mile W of proposed G-line centerline.	Survey	No sites recorded within the PHPP survey area	
LA 1792 Love 1989	Adjacent (S) to proposed WS-line centerline. Crosses proposed G-line centerline.	Survey	No sites recorded within the PHPP survey area	
LA 1799 Padon 1989	Crosses proposed S-line centerline. Adjacent (N) to proposed plant site, and WS-line and G-line centerlines. Adjacent (S) to proposed T-line centerline.	Survey	Five properties inventoried along M Avenue , one or two may have been located within ¼ mi of T-line, however that portion of the block is now vacant and no record of these addresses currently exist on the Los Angeles County assessor's database.	All of the properties were determined ineligible
LA 1857 Norwood 1989	Adjacent (E) to proposed WS-line centerline. Crosses proposed G-line centerline.	Survey	No sites recorded within the PHPP survey area	
LA 1909 Greenwood and McIntyre 1981	Crosses proposed T-line centerline.	Survey	No sites recorded within the PHPP survey area	

<b>Study # / Reference</b>	<b>Project</b>	<b>Study Type</b>	<b>Findings within Survey Area</b>	<b>Site Evaluations</b>
LA 1933 McClelland Consultants (West), Inc. 1989	Crosses proposed WS-line and G-line centerlines.	Survey	Historic site mentioned in text but not considered significant and no information is supplied regarding the site.	
LA 1938 Padon et al. 1989	Crosses proposed G- line and T-line centerlines.	Survey	No sites recorded within the PHPP survey area	
LA 1949 Norwood 1990	Adjacent (W) to proposed G-line centerline. Less than ¼ mile W of proposed WS-line centerline.	Survey	Negative	
LA 1959 Norwood 1990	Adjacent (E) to proposed G-line centerline. Less than ¼ mile E of proposed S-line centerline.	Survey	No sites recorded within the PHPP survey area	
LA 2023 Norwood 1990	Adjacent (E) to proposed G-line centerline. Less than ¼ mile S of proposed WS-line centerline.	Survey	Negative	
LA 2088 Love and DeWitt 1990	Adjacent (N) to proposed T-line centerline.	Subsurface testing	No testing conducted within the PHPP survey area	
LA 2125 King 1968	Crosses proposed G- line centerline.	Survey?	No information	
LA 2172 Norwood 1990	Adjacent (E) to proposed G-line centerline.	Survey	No sites recorded within the PHPP survey area	
LA 2476 Drover 1991	Adjacent (W) to proposed WS-line centerline. Less than ¼ mile W of proposed G-line centerline. Less than 1 mile W of proposed plant site.	Survey	No sites within PHPP survey area	
LA 2837 McKenna 1993	Covers the entire proposed plant site and laydown area. Crosses the proposed G-line centerline. Adjacent to proposed WS-line (E and S) and S-line (SW) centerlines.	Survey	19-100024 & -100025 were located within the plant site survey area	19-100024 – isolate, collected by survey crew, not eligible 19-100025 – isolate, collected by survey crew, not eligible

<b>Study # / Reference</b>	<b>Project</b>	<b>Study Type</b>	<b>Findings within Survey Area</b>	<b>Site Evaluations</b>
LA 3017 Gibson 1994	Adjacent to proposed WS-line (E) and G-line (W) centerlines. Less than ¼ mile N of proposed T-line centerline. Less than 1 mile W of proposed plant site.	Records Search Review	No sites within PHPP survey area	
LA 3537 Dillon 1996	Adjacent (N) to proposed T-line centerline. Less than ¼ mile W of the proposed G-line centerline.	Survey	LAN-1534H revisited, no new sites recorded within the PHPP survey area	
LA 3987 Shaver 1997	Crosses proposed G-line centerline. Adjacent to proposed WS-line (E), T-line (S, N and W) and S-line (SE) centerlines. Adjacent (E and S) to proposed plant site.	Survey	LAN-2713, -2722, -2723, -2724, & -2726 are within the T-line survey corridor	All of the sites are recommended ineligible
LA 4008 Science Applications International Corporation 1996	Adjacent to proposed WS-line (E) and G-line (W) centerlines. Less than 1 mile W of proposed plant site.	Survey	No sites recorded within the PHPP survey area	
LA 4069 Jones & Stokes, Associates, Inc. 1996	Crosses proposed G-line centerline.	Survey	LAN-1534H revisited, no new sites recorded within the PHPP survey area	
LA 4141 Love 1997	Crosses proposed T-line and G-line centerlines.	Survey	No sites recorded within the PHPP survey area	
LA 4329 Trnka 1997	Crosses proposed T-line and G-line centerlines. Adjacent (S and E) to proposed plant site. Adjacent to proposed WS-line (E) and S-line (SE) centerlines.	Survey and building inventory	Historic buildings 145 and 150 (19-180680) are within the PHPP architectural survey area	Building 145 is recommended ineligible, Building 150 is recommended as eligible
LA 4393 Singer 1998	Adjacent (NW) to proposed WS-line and G-line centerlines. Less than 1 mile W of proposed plant site.	Survey	Negative	

<b>Study # / Reference</b>	<b>Project</b>	<b>Study Type</b>	<b>Findings within Survey Area</b>	<b>Site Evaluations</b>
LA 4464 Lerch 1998	Crosses proposed G-line and T-line centerlines.	Survey	LAN-1534H revisited, no new sites located within the PHPP survey area	
LA 4727 Padon 1989	Crosses proposed S-line centerline. Adjacent (N) to proposed plant site, and WS-line and G-line centerlines. Adjacent (S) to proposed T-line centerline.	Survey	Negative	
LA 5152 Duke 1999	Crosses proposed T-line centerline.	Survey	Negative	
LA 6671 Marvin et al. 2002	Adjacent (W) to proposed G-line centerline.	Survey	Recorded 19-186817, -186818, -186819, -186820, -186840, -186852, -186853, and -186854 within architectural survey area	19-186820 recommended eligible, remaining sites recommended ineligible
LA 6706 Weaver 1980	Crosses proposed T-line centerline.	Survey	No sites recorded within the PHPP survey area	
LA 7160 Goodwin 2004a	Crosses proposed WS-line and G-line centerlines.	Survey	Negative	
LA 7177 Everson and Wetherbee 2004	Adjacent (W) to proposed WS-line centerline. Within ¼ mile W of proposed G-line centerline.	Survey	No sites recorded within the PHPP survey area	
LA 7200 McKenna 2004a	Adjacent (N) to proposed G-line centerline.	Survey	Previously recorded site LAN-2774 was not located, surveyors noted disturbance to the area, no new sites recorded within the PHPP survey area	
LA 7991 Tang et al. 2006	Adjacent (N) to proposed plant site. Adjacent (N) to proposed T-line, G-line, WS-line and S-line centerlines. Less than ¼ mile N of proposed laydown area	Records Search Review, partial windshield survey	Documented previously recorded sites	
LA 8138 Jordan 2007	Adjacent (N) of proposed T-Line centerline.	Survey	Negative	
LA 8368 Merrill and Romani 2004	Adjacent (N) to proposed T-line centerline. Less than 1 mile E of proposed plant site.	Monitoring	Negative	

Study # / Reference	Project	Study Type	Findings within Survey Area	Site Evaluations
LA 8427 Cooley 2007	Crosses proposed G-line, WS-line, T-line and S-line centerlines. Adjacent (N) to proposed plant site. Less than ¼ mile N of proposed laydown area	Survey	Sites 19-3703, - 3704 and -3705 recorded within the WS- and G-line survey areas	Sites not evaluated, hence recommended by Cooley to treat all sites as potentially eligible for that project
LA 8957 Lloyd and Price 2007a	Crosses proposed T-line centerline. Adjacent (E) to proposed WS-line centerline.	Survey	No sites recorded within the PHPP survey area	

NB. There are no reports on file at the SCCIC relating to the original recordation of sites LAN-1534H, LAN-2774, 19-180638 and 19-187713.

The SCCIC record search indicated that 71 prehistoric and historic-period archaeological sites have been previously recorded within the 1-mile record search radius of the PHPP plant site and laydown area, and the ¼-mile record search radius of the linear facilities (Table 4). Nine sites are prehistoric, consisting of five artifact scatters (lithic reduction areas), three campsites and one bedrock mortar. Sixty-one sites are historic and include four homestead sites, five features (including linear features such as the SPRR and the Palmdale ditch), and 53 trash scatters/dumps.

**Table 4. Previously Recorded Sites Within 1 Mile of the Plant Site and Laydown Area, and ¼ Mile of the Linears**

Site #	Site Type/Constituents	Cultural/Temporal Affiliations	Reference
LAN-805	Artifact scatter/lithics	Prehistoric/indeterminate	Toren and Wessel 1978
LAN-878	Campsite/midden and lithic debris	Prehistoric/Indeterminate	Duran 1972
LAN-1332	Artifact scatter/lithics	Prehistoric/indeterminate	Milburn and McIntyre 1986
LAN-1367H	Historic residence/foundations with associated trash scatter	Historic/Euro-American, early to mid-20th century	Hemphill 1985; Jones & Stokes 2007
LAN-1419	Artifact scatter/lithics	Prehistoric/indeterminate	Howard and Raab 1988
LAN-1420	Feature/bedrock mortar	Prehistoric/Indeterminate	Howard and Edmondson 1988
LAN-1534H*	Feature/historic ditch	Historic/Euro-American, 1918-1919	Love 1989b
19-1709	Homesite/foundations with associated trash scatter	Historic/Euro-American, early to mid-20th century	Norwood 1990e
19-1999	Artifact trash scatter/mano and cores	Prehistoric/Indeterminate	Drover and Smith 1991
LAN-2194H	Historic trash scatter/cans, ceramics, bottles, and other debris	Historic/Euro-American, early to mid-20th century	Toren 1985

<b>Site #</b>	<b>Site Type/Constituents</b>	<b>Cultural/Temporal Affiliations</b>	<b>Reference</b>
19-2689	Historic homestead/cement foundation, well head, and associated residential debris	Historic/Euro-American, early to mid-20th century	Shaver 1996a
19-2690	Historic homestead/cement foundation and associated residential debris	Historic/Euro-American, early to mid-20th century	Shaver 1996b
19-2691	Historic trash scatter/cans, glass, ceramics and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996c
19-2692	Campsite/lithic scatter and associated hearth features	Prehistoric/Indeterminate	Shaver 1996d
19-2693	Historic trash scatter/cans, bottles and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996e
19-2694	Artifact scatter/lithics	Prehistoric/Indeterminate	Shaver 1996f
19-2695	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996g
19-2696	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996h
19-2697	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996i
19-2698	Campsite/groundstone, FAR, and quartz flake	Prehistoric/Indeterminate	Shaver 1996j
19-2699	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996k
19-2700	Historic trash scatter/paint cans, lumber, and concrete	Historic/Euro-American, early to mid-20th century	Shaver 1996l
19-2701	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996m
19-2702	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996n
19-2703	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996o
19-2704	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996p
19-2705	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996q
19-2706	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996r
19-2707	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996s
19-2708	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996t
19-2710	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996u
19-2711	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996v
19-2712	Historic trash scatter/cans, bottles, and metal debris [7 loci]	Historic/Euro-American, early to mid-20th century	Shaver 1996w
19-2713	Historic trash scatter/cans, bottles and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996x
19-2715	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996y
19-2716	Historic feature/gun range	Historic/Euro-American, WWII period	Shaver 1996z

<b>Site #</b>	<b>Site Type/Constituents</b>	<b>Cultural/Temporal Affiliations</b>	<b>Reference</b>
19-2717	Historic trash scatter/glass, cans, concrete, wood and metal	Historic/Euro-American, early to mid-20th century	Shaver 1996aa
19-2718	Historic trash scatter/cans, bottles and construction materials	Historic/Euro-American, early to mid-20th century.	Shaver 1996bb
19-2719	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996cc
19-2720	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996dd
19-2721	Historic trash scatter/cans, glass and clay pigeons	Historic/Euro-American, mid to late 20th century	Shaver 1996ee
19-2722	Historic trash scatter/cans, bottles, and metal debris	Historic/Euro-American, early to mid-20th century	Shaver 1996ff
19-2723	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996gg
19-2724	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996hh
19-2725	Historic and modern trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996ii
19-2726	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996jj
19-2727	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996kk
19-2728	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996ll
19-2729	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Shaver 1996mm
19-2730	Historic trash scatter/cans, bottles, ceramic and metal debris [8 loci]	Historic/Euro-American, early to mid-20th century	Shaver 1996nn
19-2755	Historic trash scatter/ceramics and bottles	Historic/Euro-American, early to mid-20th century	Lillard 1989a
19-2756	Historic trash scatter/cans, ceramics and bottles	Historic/Euro-American, early to mid-20th century	Lillard 1989b
LAN-2772	Historic trash scatter/cans, glass and building materials	Historic/Euro-American, early to mid-20th century	Ferraro and Maxon 1999a
LAN-2773	Historic trash scatter/cans, glass and building materials	Historic/Euro-American, early to mid-20th century	Ferraro and Maxon 1999b
LAN-2774	Historic trash scatter/cans, glass and building materials	Historic/Euro-American, early to mid-20th century	Ferraro and Maxon 1999c
19-3186	Historic trash scatter/cans, glass, and metal debris	Historic/Euro-American, early to mid-20th century	Everson 2004a
19-3187	Historic trash scatter/cans, glass, and metal debris	Historic/Euro-American, early to mid-20th century	Everson 2004b
19-3188	Historic trash scatter/cans, glass, and metal debris	Historic/Euro-American, early to mid-20th century	Everson 2004c
19-3189	Historic trash scatter/cans, glass, and metal debris	Historic/Euro-American, early to mid-20th century	Everson 2004d
19-3190	Historic trash scatter/cans, glass, and metal debris	Historic/Euro-American, early to mid-20th century	Everson 2004e
19-3258	Historic trash scatter/cans, glass, and metal debris	Historic/Euro-American, early to mid-20th century	Goodwin 2004b
19-3697	Historic trash scatter/cans, SCA glass	Historic/Euro-American, early 20th century	Tsunoda 2007a

Site #	Site Type/Constituents	Cultural/Temporal Affiliations	Reference
19-3698	Historic trash scatter/cans, SCA glass	Historic/Euro-American, early 20th century	Tsunoda 2007b
19-3699	Historic trash scatter/cans, SCA glass	Historic/Euro-American, early 20th century	Tsunoda 2007c
19-3703	Historic trash scatter/cans, glass, and metal debris	Historic/Euro-American, mid to late 20th century	Craft and Mustain 2007
19-3704	Historic trash scatter/cans and bottles	Historic/Euro-American, early to mid-20th century	Mustain 2007a
19-3705	Historic trash scatter/cans, ceramics, bottles, and other debris	Historic/Euro-American, early to mid-20th century	Craft et al. 2007
19-3709	Historic well/pump and tank	Historic/Euro-American, early to mid-20th century	Mustain 2007b
19-3761	Historic trash scatter/cans, bottles, metal, and other debris	Historic/Euro-American, early to mid-20th century	Lloyd and Price 2007b
19-180638	Linear/Southern Pacific RR	Historic/Euro-American, late 19th century	O'Brien 1998
19-187713	Linear/Angeles Forest Highway	Historic/1930-1940s	Sander 2003

\*LAN-1534H (the Palmdale Ditch) has been determined eligible for listing in the NRHP by consensus as a contributor and is listed in the CRHR.

Twelve of the sites were recorded as being within the Project survey area. One of the previously recorded sites (LAN-1534H) has been determined to be significant according to CEQA criteria. The remaining sites have been recommended by the recorder as ineligible, or have not been evaluated. A more detailed summary of these sites is provided in Table 5.

**Table 5. Previously Recorded Sites Within the Project Area**

Site #	Project Component	Type; Age	Description	CRHR/NRHP Eligibility?
LAN-1534H	T-Line	Historic ditch; 1918-1919	Irrigation ditch extending from Littlerock Dam to Palmdale Lake, still in use, excellent condition	Determined NRHR eligible as contributing element; listed in CRHR
19-2713	T-line	Historic trash scatter; early to mid-20th century	Cans, bottles and metal debris, possibly associated with historic homestead involved in agricultural pursuits, good condition	Not eligible
19-2722	Plant site	Historic trash scatter; early to mid-20th century	Light scatter of cans, bottles, and metal debris, associated with agricultural activity, good condition	Not eligible
19-2723	Plant site	Historic trash scatter; early to mid-20th century	Light scatter of cans, bottles, metal, English cherry bowl, associated with agricultural activity, good condition	Not eligible

Site #	Project Component	Type; Age	Description	CRHR/NRHP Eligibility?
19-2724	Plant site	Historic trash scatter; early to mid-20th century	Light scatter of cans, bottles and metal, associated with agricultural activity, good condition	Not eligible
19-2726	Plant site	Historic trash scatter; early to mid-20th century	Light scatter of cans, bottles, metal, and satchel frame, associated with agricultural activity, good condition	Not eligible
LAN-2774	G-line	Historic trash scatter; early to mid-20th century	Dense scatter of cans, glass containers and building materials, fair condition	Not evaluated
19-3703	WS- & G-lines	Historic trash scatter; mid to late 20th century	Dense scatter of cans, glass and ceramic	Not evaluated
19-3704	WS- & G-lines	Historic trash scatter; early to mid-20th century	Scatter of cans and bottles	Not evaluated
19-3705	WS- & G-lines	Historic trash scatter; early to mid-20th century	Light scatter of cans, ceramics, bottles, burned wood and brick	Not evaluated
19-180638	WS- & G-lines	Historic Railroad; late 19th century	Southern Pacific Railroad, standard gauge tracks, still in use and maintained, date of 1995 embossed on rails	Not evaluated
19-187713	T-line	Historic Road; 1930-1940s	Angeles Forest Highway, for most of its length the road is a two-lane paved road with tunnels, bridges and culverts	Not eligible CRHR

The SCCIC record search also indicated that there are 44 previously recorded historic structures within the 1-mile record search radius of the plant site and laydown area, and the ¼-mile record search radius of the linear facilities of the PHPP that have been recorded and evaluated regarding their eligibility for listing on the California Register of Historical Resources (CRHR) (Table 6). Of these only four were considered to be eligible for listing on the CRHR. Nine of the historic structures (19-180680, -186817, -186818, -186819, -186820, -186840, -186852, -186853 and -186854) are located within the architectural windshield survey area, and two of these (19-180680 and -186820) have been recommended or determined eligible to the CRHR and/or the NRHP. Site 19-186820 is recommended eligible under Criterion C, as the residence consists of “two of the few extant examples of the Craftsman architectural style in the community” (Marvin and Younger 2002h). Site 19-180680 has been determined eligible to the CRHR and NRHP under Criterion A as it is associated with the “Man-in-Space” historic theme and critical Cold War-era programs (Earth Tech 1997). The remaining historic structures within the architectural survey area have been recommended by the recorder as ineligible. A more detailed summary of the historic structures is provided in Table 6.

**Table 6. Previously Recorded and Evaluated Historic Structures Within 1 Mile of the Plant Site and Laydown Area, and ¼ Mile of the Linears**

Site #	Type	APN/Date	Eligibility	Reference
19-180680	Industrial Production/Aircraft Manufacturing Building	Air Force Plant 42, Palmdale/1958	Eligible	Earth Tech 1997
19-186813	One-story frame duplex	APN 3009-022-023/1955	Not eligible	Marvin and Younger 2002a
19-186814	One-story frame duplex	APN 3009-022-017/1957	Not eligible	Marvin and Younger 2002b
19-186815	One-story frame house	APN 3009-022-016/1957	Not eligible	Marvin and Younger 2002c
19-186816	One-story frame house with garage and rear unit	APN 3009-022-014/1952	Not eligible	Marvin and Younger 2002d
19-186817	One-story frame house	APN 3009-022-026/1953	Not eligible	Marvin and Younger 2002e
19-186818	One-story concrete block house	APN 3009-022-027/1952	Not eligible	Marvin and Younger 2002f
19-186819	One-story frame house	APN 3009-022-025/1950	Not eligible	Marvin and Younger 2002g
19-186820	Two Craftsman residences with barn or garage, and post-WWII rental unit	APN 3009-022-028/1928	Eligible (Craftsman residences) Not eligible (rental unit)	Marvin and Younger 2002h
19-186821	Modern 22 unit apartment house	APN 3009-022-006/1955	Not eligible	Marvin and Younger 2002i
19-186822	One-story frame house	APN 3009-022-003/1949	Not eligible	Marvin and Younger 2002j
19-186823	One-story frame house	APN 3009-022-002/1949	Not eligible	Marvin and Younger 2002k
19-186824	Two-story multiunit apartment complex	APN 3009-022-001/1954	Not eligible	Marvin and Younger 2002l
19-186825	One-story frame house	APN 3009-022-004/1952	Not eligible	Marvin and Younger 2002m
19-186826	One-story frame house	APN 3009-022-005/1951	Not eligible	Marvin and Younger 2002n
19-186827	One-story frame triplex	APN 3009-022-020/1952	Not eligible	Marvin and Younger 2002o
19-186828	One-story frame house	APN 3009-023-019/1953	Not eligible	Marvin and Younger 2002p
19-186829	One-story frame house	APN 3009-023-020/1928	Not eligible	Marvin and Younger 2002q
19-186830	Simple Craftsman house	APN 3009-023-021/1936	Not eligible	Marvin and Younger 2002r
19-186831	One-story frame house	APN 3009-023-022/1915	Not eligible	Marvin and Younger 2002s
19-186832	One-story frame house	APN 3009-023-023/1941	Not eligible	Marvin and Younger 2002t

Site #	Type	APN/Date	Eligibility	Reference
19-186833	One-story frame house	APN 3009-023-024/1920	Not eligible	Marvin and Younger 2002u
19-186834	Two-story apartment complex	APN 3009-023-026/1957	Not eligible	Marvin and Younger 2002v
19-186835	One-story frame house	APN 3009-023-025/1951	Not eligible	Marvin and Younger 2002w
19-186836	One-story frame house	APN 3009-023-001/1954	Not eligible	Marvin and Younger 2002x
19-186837	Two one-story frame houses and garage	APN 3009-023-005/1949, 1957	Not eligible	Marvin and Younger 2002y
19-186838	One-story Prairie Style house	APN 3009-023-007/1913	Eligible	Marvin and Younger 2002z
19-186839	One-story frame fourplex	APN 3009-023-008/1953	Not eligible	Marvin and Younger 2002aa
19-186840	Two one-story frame fourplexes	APN 3009-023-013/1957	Not eligible	Marvin and Younger 2002bb
19-186841	One-story frame triplex	APN 3009-024-016/1955	Not eligible	Marvin and Younger 2002cc
19-186842	One-story frame triplex	APN 3009-024-017/1955	Not eligible	Marvin and Younger 2002dd
19-186843	One-story frame triplex	APN 3009-024-018/1955	Not eligible	Marvin and Younger 2002ee
19-186844	One-story frame triplex	APN 3009-024-019/1955	Not eligible	Marvin and Younger 2002ff
19-186845	One-story concrete block house	APN 3009-024-020/1947	Not eligible	Marvin and Younger 2002gg
19-186846	One-story frame triplex	APN 3009-024-021/1955	Not eligible	Marvin and Younger 2002hh
19-186847	Spanish Eclectic building	APN 3009-023-001/1938	Eligible	Marvin and Younger 2002ii
19-186848	Spanish Eclectic house	APN 3009-024-003/1928	Not eligible	Marvin and Younger 2002jj
19-186849	Modern Minimal Traditional frame house	APN 3009-024-036/1913	Not eligible	Marvin and Younger 2002kk
19-186850	Modern Minimal Traditional frame house	APN 3009-024-006/1939	Not eligible	Marvin and Younger 2002ll
19-186851	Craftsman frame house	APN 3009-024-007/Unknown	Not eligible	Marvin and Younger 2002mm
19-186852	One-story frame house	APN 3009-024-033/Unknown	Not eligible	Marvin and Younger 2002nn

Site #	Type	APN/Date	Eligibility	Reference
19-186853	One-story frame house with rear duplex unit	APN 3009-024-034/1955	Not eligible	Marvin and Younger 2002oo
19-186854	One-story frame house	APN 3009-024-035/1950	Not eligible	Marvin and Younger 2002pp
19-186855	One-story frame triplex	APN 3009-022-022/Unknown	Not eligible	Marvin and Younger 2002qq

In addition to these, another 19 properties within the record search area are listed in the Directory of Properties in the Historic Property Data File for Los Angeles County of the California State Office of Historical Preservation (OHP). All of these properties have been evaluated with regard to their eligibility for listing in the National Register of Historic Places (NRHP). Two of the properties (#113394 and 135584) are within the architectural survey area, and #113394 was determined eligible. The following table (Table 7) lists the properties.

**Table 7. National Register Status (NRS) of Previously Evaluated Historic Properties Within 1 Mile of the Plant Site and Laydown Area, and ¼ Mile of the Linears**

OHP Prop #	Primary #	Address/Date	Type	NRS
066070	N/A	3217 East Ave M/Unknown	Residence	6Y*
066071	N/A	3347 East Ave M/Unknown	Residence	6Y
113394	18-180680 <sup>o</sup>	Air Force Plant 42, Building 15/1958	Structure	2S2 <sup>+</sup>
113395	N/A	Air Force Plant 42, Building 21/1954	Structure	2S2
135584	N/A	39302 10th Street E/1954	Residence	6Y
135595	N/A	39005 8th Street E/Unknown	Residence	6Y
135598	N/A	39029 8th Street E/1947	Residence	6Y
135599	N/A	39149 8th Street E/1943	Residence	6Y
135585	N/A	1014 Ave P-5/1954	Residence	6Y
135586	N/A	1018 Ave P-5/1954	Residence	6Y
135587	N/A	1024 Ave P-5/1954	Residence	6Y
135588	N/A	1028 Ave P-5/1954	Residence	6Y
135589	N/A	1034 Ave P-5/1954	Residence	6Y
135590	N/A	1038 Ave P-5/1954	Residence	6Y
135591	N/A	1044 Ave P-5/1954	Residence	6Y
135592	N/A	1048 Ave P-5/1954	Residence	6Y
135593	N/A	1054 Ave P-5/1954	Residence	6Y
135594	N/A	1161 Ave P-8/1941	Residence	6Y
068303	N/A	1020 Avenue Q/Unknown	Residence	6Y

\*NR status code 6Y indicates that the property has been determined ineligible for listing in the NR “by consensus.”

<sup>+</sup> NR status code 2S2 indicates that the property has been determined eligible for listing in the NR “by a consensus determination.”

<sup>o</sup> The primary number is not provided in the database, however based on the date of construction and eligibility determination, this is most likely the primary number associated with this property.

The City of Palmdale General Plan (City of Palmdale 1993) contains a list of potential historic structures. Thirteen of these structures are within the record search area, however two of the addresses (38211 10th Street East and 932 E Avenue R) are described as vacant lots by the Los Angeles County assessor’s database (Table 8). Three of the listed structures, 37352 Sierra Highway, and 38107 and 38147 10th Street East, as well as the address of the structure that was previously located at 38211 10th Street E, are located within the architectural survey area. These structures were not evaluated for eligibility to the NRHP or CRHR as part of the City of Palmdale General Plan, however two of the structures (942E Avenue Q9/19-186851 and 38147 10th Street E/19-186818) were recorded as part of a historic resource survey for the Courson Connection project and were recommended to be ineligible (Marvin et al. 2002).

**Table 8. Potential Historic Structures Within 1 Mile of the Plant Site and Laydown Area, and ¼ Mile of the Linears as Listed in the City of Palmdale General Plan, 1993**

Address	Primary #	Structure	Age
38414 8th Street E	N/A	Moore’s Hall	1918
NE Corner 8th Street E and E Palmdale Blvd	N/A	Bank of Italy (first bank in Palmdale)	pre-1918
816 E Avenue Q9	N/A	Single-family house	1910s
911 E Avenue Q9	N/A	Single-family house	1935
927 E Avenue Q9	N/A	Concrete block house	1920s
942E Avenue Q9	19-186851	Single-family house	1920s
38457 9th Street E	N/A	Single-family house	1920s
38107 10th Street E	N/A	Single-family house	1930s
38147 10th Street E	19-186818	Single-family house	1930s
38211 10th Street E	N/A	Single-family house	1930s
932 E Avenue R	N/A	Concrete block house	1918
37352 Sierra Highway	N/A	Two-story barn-like structure	1920s
38126 Sierra Highway	N/A	Metal building	1920s

The City of Palmdale General Plan also includes an archaeological sensitivity map classified into high sensitivity (foothills and rift zone), moderately high sensitivity (valley floor), and unknown (areas that were not surveyed for the General Plan). The plant site, laydown area, the reclaimed wastewater supply line, the natural gas supply pipeline, and the majority of the electrical transmission line are located on the valley floor, considered to have moderately high archaeological sensitivity. The southwestern portion of the electrical transmission line traverses the rift zone and the foothills, areas defined as having high archaeological sensitivity (Figure 6).

## 5.0 Native American Heritage Commission Correspondence

WSA contacted the Native American Heritage Commission (NAHC) in Sacramento, California, on June 17, 2008, by letter, with a description of the proposed Palmdale Hybrid Power Project. The letter included a request for a listing of local, interested Native American representatives and information on traditional or sacred lands within the

Project area and vicinity. NAHC program analyst, David Singleton, wrote in response to the WSA letter on June 20, 2008, stating that a record search of the sacred lands file "failed to indicate the presence of Native American cultural resources in the immediate project area." Included in the response was a list of Native American Contacts (See Attachment 2).

On June 23, 2008, WSA contacted the following Native American persons, and requested information from them regarding Traditional or Sacred Properties within the Project vicinity:

- Charles Cooke
- Ron Andrade, Director, Los Angeles City/County Native American Indian Commission
- Beverly Salazar Folkes
- Delia Dominguez, Kitanemuk and Yowlumne Tejon Indians
- James Ramos, Chairperson, San Manuel Band of Mission Indians
- John Valenzuela, Chairperson, San Fernando Band of Mission Indians
- William Gonzales, Cultural/ Environmental Department, Fernandeno Tataviam Band of Mission Indians
- Randy Guzman-Folkes

The above listed Native Americans were contacted by telephone on July 10, 2008. Charles Cooke stated that he had not received the letter and requested it be sent again; the letter was sent the same day. Beverly Salazar Folkes requested that a monitor be present, either on-site or on standby, during all ground disturbance activities through undisturbed soil, in both developed and undeveloped areas. She noted that on previous projects within the surrounding area, Native American burials had been uncovered in developed areas within native soil existing beneath layers of previously disturbed soil. Messages were left for the remaining contacts.

## **6.0 Consultation with Local Historical Societies and Other Interested Parties**

In addition to the record search conducted by SCCIC, WSA contacted the following planning departments and historical societies on June 17 and 18, 2008, by letter, requesting information regarding historic or other cultural resources within or adjacent to the Project area (see Attachment 3).

- Los Angeles County Department of Regional Planning (June 17, 2008)
- Palmdale Planning Department (June 17, 2008)
- Palmdale City Library (June 18, 2008)

- Antelope Valley Genealogical Society (June 17, 2008)
- The Antelope Valley Indian Museum (June 17, 2008)
- Hi-Desert Genealogical Society (June 17, 2008)
- West Antelope Valley Historical Society (June 17, 2008)
- Historical Society of Southern California (June 17, 2008)
- Southern California Edison (June 26-27, 2008)
- City of Lancaster Planning Department (July 21, 2008)

WSA received a response from the City of Palmdale Planning Department on June 25, 2008. Asoka Herath, Director of Planning, provided WSA with a copy of McKenna's (1993) study for the proposed Palmdale Business Park Center Specific Plan project. On June 27, 2008, the letter to the Historical Society of Southern California was returned as they were no longer located at the listed address.

On June 26 and 27, 2008, WSA contacted Tom Taylor and Adam Sriro of Southern California Edison to obtain the dates of construction of the Vincent Substation and H-frame transmission poles extending to the northeast of the Substation. Mr. Sriro informed WSA on July 10, 2008, that initial pre-construction geotechnical borings for the Vincent Substation were undertaken in 1963 and the substation began service in 1967. In addition, during WSA's field survey of the proposed transmission line, a date of 1971 was observed on the H-frame transmission poles, and the Substation appeared to have been built within the last 45 years.

Between July 8 and July 10, 2008, WSA made a series of agency contacts to clarify the eligibility status of the Palmdale ditch (LAN-1534H). Currently, the Palmdale ditch is listed in the CRHR as a "contributor to a district determined eligible" for the NRHP (California OHP 2007). WSA made the following contacts to obtain information regarding the historic district that includes the Palmdale ditch (LAN-1534H). WSA contacted Thomas Shackford of the SCCIC, who indicated that the information center had no records on file of a historic district that included the Palmdale ditch. WSA then contacted Darrell Vance of the U.S. Forest Service, Angeles National Forest, who provided copies of relevant correspondence which showed that the Palmdale ditch had originally been recommended eligible as part of a district that included the Littlerock Dam, the Palmdale ditch, and an associated historic campsite (Brock and Elliott 1990:31). However, the Angeles National Forest representative was unable to locate any records indicating that the district was ever formed. It appears that after repairs to the Littlerock Dam altered the dam's historical integrity its eligibility status was changed. The ditch, however, was recommended at that time as eligible on its own by the Angeles National Forest (Rogers1994a).

WSA also contacted Joseph McDole of the Office of Historic Preservation (OHP), who indicated that the OHP does not have any record that a district including the Palmdale ditch was ever formed. However, according to Mr. McDole, the fact that a district was never formed would not affect the eligibility of the Palmdale ditch, since it is currently listed in the CRHR.

## 7.0 Survey Results

### 7.1 Field Surveys

Field surveys of the Project components were performed by a 4-person crew from WSA between June 25 and June 29, 2008. The crews conducted intensive pedestrian surveys for archaeological resources on the proposed main PHPP plant site, laydown area, reclaimed water supply pipeline, natural gas supply pipeline, sanitary wastewater pipeline, and electrical transmission line (refer to Figure 4). The surveyed areas are listed below with the survey activities in each area summarized in Table 9.

1. The 377-acre main PHPP plant site
2. A 35.6-mile electrical transmission line
3. A 7.4-mile reclaimed water supply pipeline
4. An 8.7-mile primary natural gas supply pipeline
5. A 1-mile sanitary wastewater pipeline
6. A 50-acre laydown area, located immediately west of the main plant site.

**Table 9. Summary of Cultural Resource Survey Activities**

Project Area	Date Surveyed (2008)	Description	Size	Comments
1	June 26	Plant site	377 acres	Plant site plus 200-ft.-wide buffer around the entire plant site.
1	June 25-26	“Windshield” survey	1 mile radius around Project plant site	Visual reconnaissance to determine whether standing historic structures exist adjacent to the main Project plant site.
2	June 27-29	Electrical transmission line (35.6 miles total)	100 ft. ROW with 50 ft. buffer on each side	Corridor for Transmission line construction.
2	June 25	“Windshield” survey	1 parcel width in urban setting; ¼ mile width in rural setting.	Visual reconnaissance to determine whether standing historic structures exist adjacent to the transmission line corridor.
3	June 26	Reclaimed water supply pipeline (7.4 miles total)	50 ft. ROW with 50 ft. buffer on each side	Corridor for pipeline construction.

Project Area	Date Surveyed (2008)	Description	Size	Comments
3	June 26	“Windshield” survey	1 parcel width in urban setting; ¼ mile width in rural setting.	Visual reconnaissance to determine whether standing historic structures exist adjacent to the water supply line corridor.
4	June 26	Natural gas supply pipeline (8.7 miles total)	50 ft. ROW with 50 ft. buffer on each side	Corridor for pipeline construction.
4	June 26	“Windshield” survey	1 parcel width in urban setting; ¼ mile width in rural setting.	Visual reconnaissance to determine whether standing historic structures exist adjacent to the gas supply line corridor.
5	June 26	Sanitary wastewater pipeline (1 miles total)	50 ft. ROW with 50 ft. buffer on each side	Corridor for pipeline construction.
5	June 26	“Windshield” survey	¼ mile width; all in rural setting	Visual reconnaissance to determine whether standing historic structures exist adjacent to the water supply line corridor.
6	June 26	Laydown area	50 acres	Laydown area plus 200-ft.-wide buffer around the entire area.
6	June 26	“Windshield” survey	1 mile radius around laydown area	Visual reconnaissance to determine whether standing historic structures exist adjacent to the laydown area.

The survey strategy that was adopted for conducting the field reconnaissance of the survey areas consisted of the following components.

- The field survey strategy was to cover the entirety of each survey area to identify and record all visible historic and prehistoric resources within each survey area.
- No ground disturbance (i.e., shovel probes, test pits, etc.) was utilized in the survey, and there was no collection of cultural materials.
- The field survey consisted only of a pedestrian reconnaissance conducted at 20 m (60 ft) intervals (whenever possible).
- A Trimble GeoXT handheld GPS receiver, which provides submeter accuracy (+/-50 cm), was used to plot the location of sites, features and artifacts in each survey area, and to prepare GIS shapefiles for reporting purposes.
- Digital photographs were taken of all survey areas. Photographs include general views of the topography and vegetation density, historic or prehistoric site overviews, structures, features, artifacts, and other relevant images. Photographs are not included in this version of the technical report for reasons of confidentiality.

- Attempts were made to locate all previously recorded sites in the survey area and assess the integrity of the recorded site components. Previously unknown or unrecorded features or artifacts discovered within the site during the course of the survey were recorded.
- Any newly discovered historic (over 45 years of age) or prehistoric archaeological sites, and architectural resources over 45 years in age, were recorded in detail as required by Department of Parks and Recreation Primary Record (DPR 523) and associated (e.g., Building-Structure-Object) forms.

Obstacles to the survey included:

- Lack of ground visibility due to asphalt paving, concrete paving, landscaping, and dense vegetation,
- Restricted access to Air Force Plant 42 property and Lockheed Martin property, and
- Steep terrain (greater than 35 degree slopes) along the southern end of the transmission line route.

## 7.2 Survey Results

The records search indicated that 12 historic-period archaeological sites had been recorded in the survey areas; no prehistoric sites were recorded in the survey areas. These previously recorded sites included six sites that were not located during the current survey. During the current archaeological survey of the potential project impact areas and buffer zones, WSA identified six previously recorded sites and six new historic-period archaeological sites. Table 10 summarizes the sites recorded during the survey.

**Table 10. Sites Recorded in Current PHPP Project Archaeological Survey Area (T-Line = Proposed Electrical Transmission Line; WS-Line = Reclaimed Water Supply Pipeline; G-line = Natural Gas Supply Pipeline; S-line = Sanitary Wastewater Pipeline)**

Site #	Project Comp.	Previously Recorded?	Type; Age	Description and Current Condition	CRHR Eligible?
LAN-1534H	T-Line	Yes	Historic ditch; 1918-1919	Located. Ditch crosses T-line corridor; consists of a concrete channel. Channel is slightly degraded and partially filled with sediments. A concrete and rock bridge over channel is 30 ft. outside survey corridor.	Yes
19-2713	T-line	Yes	Historic trash scatter; early to mid-20th century	Not located. No site components observed during pedestrian survey. Site appears to no longer exist, destroyed through road widening.	No

Site #	Project Comp.	Previously Recorded?	Type; Age	Description and Current Condition	CRHR Eligible?
19-2722	Plant Site	Yes	Historic trash scatter; early to mid-20th century	Not located. Within 200-ft. buffer, but on restricted Air Force Plant 42 property.	No
19-2723	Plant Site	Yes	Historic trash scatter; early to mid-20th century	Not located. Within 200-ft. buffer, but on restricted Air Force Plant 42 property.	No
19-2724	Plant Site	Yes	Historic trash scatter; early to mid-20th century	No located. Within 200-ft. buffer, but on restricted Air Force Plant 42 property.	No
19-2726	Plant Site	Yes	Historic trash scatter; early to mid-20th century	Not located. Within 200-ft. buffer, but on restricted Air Force Plant 42 property.	No
LAN-2774	G-line	Yes	Historic trash scatter; early to mid-20th century	Not located. No site components observed. Site appears to no longer exist, destroyed through new housing development.	No
19-3703	WS- & G-lines	Yes	Historic trash scatter; 20th century	Located. Mostly modern road side trash with some mixed historic sanitary cans and glass, including bottles with Owens-Illinois maker's marks and soda bottles. Relatively unchanged since last recorded.	No
19-3704	WS- & G-lines	Yes	Historic trash scatter; early to mid-20th century	Located. Mostly modern road side trash with some mixed historic sanitary cans. Relatively unchanged since last recorded.	No
19-3705	WS- & G-lines	Yes	Historic trash scatter; 20th century	Located. Mostly modern road side trash with some mixed historic sanitary cans, ceramics, and glass, including Owens-Illinois maker's marks, sun-colored amethyst glass, and Duraglas. Relatively unchanged since last recorded.	No
19-180638	WS- & G-lines	Yes	Historic Railroad; late 19th century	Located. SPRR, standard gauge tracks, still in use and maintained, date of 1995 embossed on rails.	No (portions outside of Project area may be CRHR eligible)
19-187713	T-line	Yes	Historic Road; 1930-1940s	Located. Road crosses the T-line corridor. Still an active two-lane roadway that has been upgraded.	No

Site #	Project Comp.	Previously Recorded?	Type; Age	Description and Current Condition	CRHR Eligible?
PHP-1*	Plant Site	No	Trash scatter/mid-20th century	Newly recorded. Hole-in-top milk cans, sanitary cans, tobacco tins, and other dry food cans; ceramic and glass tableware fragments (Does not meet eligibility criteria.)	No
PHP-2	T-Line	No	Trash scatter/mid-20th century	Newly recorded. Hole-in-top milk cans, hole-in-top can, mixed with modern trash (Does not meet eligibility criteria.)	No
PHP-3	T-Line	No	Trash scatter/mid-20th century	Newly recorded. Hole-in-top milk cans, sanitary cans, church key opened beer cans, paint cans, meat tins, bottle glass and ceramic fragments, mixed with modern trash (Does not meet eligibility criteria.)	No
PHP-4	T-line	No	Trash scatter/mid-20th century	Newly recorded. Hole-in-top milk cans, sanitary cans, tobacco tins, church key opened beer cans, meat tins, mixed with modern trash (Does not meet eligibility criteria.)	No
PHP-5	T-Line	No	Trash scatter/mid-20th century	Newly recorded. Hole-in-top milk cans, sanitary cans, tobacco tins, church key opened beer cans, bottle glass, ceramic fragments and other debris, mixed with modern trash (Does not meet eligibility criteria.)	No
PHP-6	T-Line	No	Trash scatter/mid-20th century	Newly recorded. Hole-in-top milk cans, sanitary cans, church key opened beer cans, cone beer can, and glass fragments. (Does not meet eligibility criteria.)	No

\*PHP numbers are the field numbers used when WSA recorded the sites.

In addition to the archaeological sites recorded during the current survey within the PHPP Project area, two isolates have been recorded (19-100024 and 19-100025), both of which were collected by the previous survey crew in 1993 and are no longer present in the Project area. Table 11 lists all of the isolates that have been recorded to date in the PHPP survey area.

**Table 11. Isolates Recorded in PHPP Survey Area**

Isolate #	Project Area Location	Previously Recorded?	Type/Age	Description and Current Condition
19-100024	Plant Site	Yes	Projectile point/ prehistoric	Collected by survey crew in 1993
19-100025	Plant Site	Yes	Scraper/ prehistoric	Collected by survey crew in 1993

The historic-period archaeological resources are distributed across the Project areas as follows (Table 12).

**Table 12. Summary of Distribution of Archaeological Resources**

Project Area	No. of Previously Recorded/Located Sites	No. of Newly Recorded PHPP Sites	Total No. of Sites Recorded/Located
Plant Site	4/0	1	5/1
Laydown Area	0/0	0	0
Reclaimed Water Supply Pipeline	4*/4	0	4/4
Natural Gas Supply Pipeline	5*/4	0	5/4
Sanitary Wastewater Pipeline	0/0	0	0
Electrical Transmission Line	3/2	5	8/7

\*Four sites intersect both the reclaimed water supply pipeline and the natural gas supply pipeline, and are included in both totals.

### Plant Site

No prehistoric archaeological sites or isolates were identified during WSA's survey of the 377-acre plant site. One previously unknown historic-period archaeological site was recorded. The site (PHP-1), covering an area of approximately 140-x-250 ft., consists of a sparse scatter of historic trash that appears to be associated with a single dumping episode. Artifacts include sanitary cans, hole-in-top evaporated milk cans, two three-hinged tobacco tins with strikers and two double-hinged tobacco tins, some ceramic and glass tableware fragments and a few other random household items. The site appears to date to the mid-20th century, and does not appear to contain subsurface deposits. As discussed in Section 8.0 below, the site does not appear to be eligible for the CRHR because it does not have the potential to yield important historical information. Therefore, the plant site does not contain potentially significant archaeological resources that must be considered when evaluating impacts to cultural resources during the construction of the plant site.

There are four previously recorded historic-period archaeological sites that are not on the plant site, but are within the 200-ft. buffer of the plant site, and are on restricted Air Force Plant 42 property. The sites (19-2722, 19-2723, 19-2724, and 19-2726) are all historic trash scatters of similar materials and date. None of these sites could be revisited during the survey because of security restrictions associated with the Air Force Plant 42 facility.

All four of the sites have been recommended ineligible for the CRHR (Shaver 1996a, 1996b, 1996c, 1996d). Because of their location on the Air Force Plant 42 property, none of the four sites will be impacted by plant site construction.

### Laydown Area

No archaeological sites or isolates were identified during the survey of the 50-acre laydown area. Therefore, the laydown area does not contain potentially significant archaeological resources that must be considered when evaluating impacts to cultural resources during construction-related use of the laydown area.

### Reclaimed Water Supply Pipeline Corridor

No prehistoric archaeological sites or isolates were identified during the survey of the 7.4-mile-long reclaimed water supply pipeline corridor. Four previously recorded historic-period sites were located, and no new historic-period sites were recorded.

One of the previously recorded sites (19-180638) is a portion of the SPRR that consists of standard gauge tracks on a raised berm. The tracks are still in use, and were last replaced in 1995. The recorders concluded that this portion of the SPRR tracks did not meet criteria for CRHR. The tracks appear unchanged since they were last recorded. Project construction will parallel the tracks, and not cause any direct impacts to them.

Three other historic-period sites (19-3703, 19-3704, and 19-3705) are trash scatters that consist primarily of modern trash mixed with some historic trash. Site 19-3703 covers an area of approximately 150-x-60 ft., 19-3704 covers an area of approximately 20-x-10 ft., and 19-3705 measures approximately 1,200-x-140 ft. All three sites are most likely associated with each other, and are separated into distinct areas only by a meandering seasonal drainage. Recorded artifacts include historic sanitary cans and glass, including bottles with Owens-Illinois maker's marks, sun-colored amethyst glass, Duraglas, and soda bottles. All three sites are relatively unchanged since last recorded, and all three sites have been recommended ineligible for the CRHR (Craft et al. 2007; Craft and Mustain 2007; Mustain 2007).

Therefore, the reclaimed water supply pipeline corridor does not contain potentially significant archaeological resources that must be considered when evaluating impacts to cultural resources during construction of the reclaimed wastewater supply pipeline.

### Natural Gas Supply Pipeline Corridor

No prehistoric archaeological sites or isolates were identified during the survey of the 8.7-mile-long natural gas supply pipeline corridor. Four previously recorded historic-period sites were located where the natural gas supply pipeline parallels the reclaimed water supply pipeline (19-180638, 19-3703, 19-3704, and 19-3705). These are discussed above. Site LAN-2774 was not located, and it appears to have been destroyed by the construction of a new housing development. No new historic-period sites were recorded.

Therefore, the natural gas supply pipeline corridor does not contain potentially significant archaeological resources that must be considered when evaluating impacts to cultural resources during construction of the natural gas supply pipeline.

### Sanitary Wastewater Pipeline

No archaeological sites or isolates were identified during the survey of the 1-mile-long sanitary wastewater pipeline corridor. Therefore, the sanitary wastewater pipeline corridor does not contain potentially significant archaeological resources that must be considered when evaluating impacts to cultural resources during construction of the sanitary wastewater pipeline.

### Electrical Transmission Line Corridor

No prehistoric archaeological sites or isolates were identified during the survey of the 35.6-mile-long electrical transmission line corridor. Two previously recorded historic-period sites were located, and five new historic-period sites were recorded. One previously recorded historic-period site (19-2713) was not located during the survey. The site appears to have been destroyed or buried by road widening and improvements. This site was recommended as ineligible for the CRHR (Shaver 1996d).

One of the previously recorded sites (LAN-1534H) is the historic Palmdale ditch that runs from Littlerock Dam to Palmdale Lake. A portion of the linear site crosses the electrical transmission line corridor; it was located during the survey. When the ditch was recorded in 1989 it was still being used to convey water (Love 1989). Today the portion of the ditch that crosses the transmission line corridor may still function as a seasonal drainage. It consists of a concrete-lined channel that is slightly degraded and partially filled with sediments. A concrete and rock bridge over the channel stands just outside the survey corridor. The Palmdale ditch has been determined to be eligible as a contributor to a district for listing in the NRHP and is listed on the CRHR (California OHP 2007). The Palmdale ditch was originally recommended eligible under criteria A and C for its association with the Littlerock Dam (previously listed on the NRHP but removed from

the Register in 1994 due to a loss of integrity [Shackford 2008, pers. comm.]. On its own, the ditch is considered eligible solely under criterion A as it was important to the early development of the irrigation, agriculture and settlement in this area (Rogers 1994a, 1994b; Widell 1995).

Another previously recorded site (19-187713) is the Angeles Forest Highway that crosses the electrical transmission line corridor. The road was located during the survey. It consists of an active two-lane roadway that has been upgraded. The recorded portion of the roadway was recommended by the original recorders as not meeting the criteria for CRHR eligibility (Sander 2003).

In addition to the previously recorded sites, five historic-period archaeological sites were newly recorded during the survey. Site PHP-2 consists of a dense scatter of historic and modern trash, measuring approximately 490-x-150 ft., found along a rural road. Historic artifacts are primarily several dozen hole-in-top milk cans. The site appears to date to the mid-20th century. The site does not appear to contain subsurface deposits. The site does not appear to be eligible for the CRHR, because it does not have the potential to yield important historical information.

Site PHP-3 consists of a dense scatter of modern and historic trash, covering an area of approximately 1200-x-620 ft. Historic artifacts include sanitary cans, hole-in-top milk cans, church key opened beer cans, paint cans, and meat tins. Glass and bottle fragments include beer, Clorox, medicinal, liquor, beverage and other miscellaneous fragments. Ceramics present are plate, cup and bowl sherds. Approximately 90 percent of the site can be considered a modern deposit, while 10 percent is historic. Overall, approximately 5,000 cans are present throughout the site, along with 500 to 600 glass and bottle fragments. There are approximately six to seven dense concentrations of artifacts and debris, ranging from several hundred to a thousand cans, bottles, ceramic fragments and other modern and historic refuse and debris. The oldest artifacts present within the site are consistent with the 1950s date; however, most of the deposit dates to the late 20th century. The site does not appear to contain substantial subsurface deposits. As discussed in Section 8.0 below, the site does not appear to be eligible for the CRHR because it does not have the potential to yield important historical information.

Site PHP-4 consists of both modern and historic artifacts, scattered on both sides of 100th Street, and covering an area of approximately 500-x-290 ft. This site is a light to moderate scatter of sanitary cans, hole-in-top cans, meat tins, larger tobacco tins, and church key opened beer cans. Amber, green, and clear bottle glass fragments are also present. The site contains a large quantity of modern trash. The site appears to date to the mid-20th century. The site does not appear to contain subsurface deposits. As discussed

in Section 8.0 below, the site does not appear to be eligible for the CRHR because it does not have the potential to yield important historical information.

Site PHP-5 consists of a dense scatter of historic trash, mixed with modern trash along a dirt road. The site measures approximately 890-x-680 ft. The 1,500 plus artifacts include hole-in-top milk cans, sanitary cans, tobacco tins, church key opened beer cans, bottle glass, ceramic fragments and other debris. The site appears to date to the mid-20th century. The site does not appear to contain subsurface deposits. As discussed in Section 8.0 below, the site does not appear to be eligible for the CRHR because it does not have the potential to yield important historical information.

Site PHP-6 consists of a sparse scatter of historic trash mixed with modern trash along a dirt road. The site covers an area of approximately 320-x-210 ft. Artifacts include hole-in-top milk cans, sanitary cans, church key opened beer cans, a cone beer can, and glass fragments. The site appears to date to the mid-20th century. The site does not appear to contain subsurface deposits. As discussed in Section 8.0 below, the site does not appear to be eligible for the CRHR because it does not have the potential to yield important historical information.

The electrical transmission line corridor contains one significant archaeological resource – the Palmdale ditch (LAN-1534H) – that must be considered when evaluating impacts to cultural resources during construction of the electrical transmission line. Although the Palmdale ditch is listed in the CRHR, it is expected that the construction of new project transmission line structures would be able to avoid the resource, if the new structures are built within the current footprints.

### ***7.3 Findings: Historic Structures Identified and Evaluated for Historical Significance***

Thirteen previously recorded historic structures were identified in the records search as being within the Project survey area (19-180680 [OHP #113394], -186817, -186818 [38147 10th Street East], -186819, -186820, -186840, -186852, -186853 and -186854, 39302 10th Street East [OHP # 135584], 37352 Sierra Highway, 38107 Street East, and Bldg 145 [recorded in Trnka 1997]). One additional historic structure, a bridge associated with the Palmdale ditch (previously recorded site LAN-1534H), was also located during the survey. During the windshield surveys, nine of the previously recorded structures were determined to no longer exist (19-186817, 19-186818, 19-186819, 19-186820, 19-186840, 19-186852, 19-186853, 19-186854, and 37352 Sierra Hwy). A total of five potentially historic standing structures were identified within the Project area (Table 13). Of these, two are large buildings on Air Force Plant 42 property, two are single family residences along 10th Street, and one is a concrete-and-stone bridge spanning the historic

Palmdale ditch. Although the bridge was not mentioned in the records of the Palmdale ditch, it is built into the ditch feature and, therefore, is part of it.

**Table 13. Historic Standing Structures Identified during Architectural “Windshield” Survey (T-Line = Proposed Electrical Transmission Line; WS-Line = Reclaimed Water Supply Pipeline; G-line = Natural Gas Supply Pipeline; S-line = Sanitary Wastewater Pipeline)**

Structure	Project Area Location	Previously Recorded?	Site Type	Description and Current Condition	CRHR Status?
Bldg 145	E of plant site	Yes	Industrial Production/ Aircraft Manufacturing Building	Built 1954, concrete and metal structure, still standing and in use.	Not eligible
19-180680 (Bldg 150)	E of plant site	Yes	Industrial Production/ Aircraft Manufacturing Building	Built 1958, concrete and metal structure (Boeing), still standing and in use.	Eligible
38107 10th St E	Within G-line survey area	Yes	Residence	Built 1930s, single-family stucco house still standing on parcel. Appears to have been renovated/replastered.	Not evaluated
39302 10th St E	Within G-line survey area	Yes	Residence	Built 1954, single-family wood siding house still standing on parcel.	Not eligible
Bridge associated with LAN-1534H	N of T-line corridor	LAN-1534H is previously recorded, bridge is newly recorded	Bridge	Concrete and rock bridge spanning Palmdale ditch, good condition.	Ditch is listed

### Plant Site

Two historic structures were identified during the “windshield survey” of the 1-mile buffer surrounding the proposed main PHPP plant site. The two historic structures are on the Air Force Plant 42 property adjacent to the eastern boundary of the proposed main PHPP plant site. Buildings 145 and 150 were both inventoried and evaluated for the U.S. Department of the Air Force in 1997 (Trnka 1997). Building 145 is a large aircraft production building that was constructed in 1954, but was recommended to not meet the criteria for CRHR eligibility. Building 150 was constructed in 1958 and is another large aircraft production building. In 1974, an addition was made to the building to accommodate construction of the Space Shuttle. Because all six space shuttles constructed by the United States were built in this building, the building has been determined to be eligible for CRHR listing (Trnka 1997).

### Electrical Transmission Line Corridor

A historic bridge that is associated with the historic Palmdale ditch (LAN-1534H) was identified during the “windshield survey” of the ¼-mile buffer surrounding the proposed transmission line. The bridge is constructed of rock and concrete and spans the concrete-lined historic ditch. The bridge appears to be in good condition and accommodates a dirt road that crosses the ditch. The Palmdale ditch is listed on the CRHR, but the bridge is not mentioned on the site record.

### Reclaimed Wastewater Supply Pipeline Corridor

No historic structures were identified within the reclaimed wastewater supply pipeline corridor or within a ¼-mile (rural) or 1-parcel (urban) buffer of it.

### Natural Gas Supply Pipeline Corridor

Two historic residences were identified during the “windshield survey” of the 1-parcel buffer of the natural gas supply pipeline along 10th Street E. One structure is located at 38107 10th Street E. It was built in the 1930s, and is a single-family stucco house that is still standing on the parcel. The house appears to have been renovated or at least replastered since its construction. The house has been listed in the City of Palmdale General Plan as a potential historic structure, but was not evaluated with regard to CRHR eligibility. The other structure is located at 39302 10th Street E. It was constructed in 1954 and is a single-family wood-and-stucco sided frame house that is still standing on the parcel. The residence is listed in the OHP directory of properties, and it has been determined to be ineligible for CRHR listing (California OHP 2007).

### Sanitary Wastewater Pipeline

No historic structures were identified within the sanitary wastewater pipeline corridor or within the ¼-mile buffer of it.

### Laydown Area

No historic structures were identified within the laydown area or within a 1-mile buffer of it.

**7.4 Findings: Ethnographic Resources Identified and Evaluated for Historical Significance**

WSA contacted the NAHC on June 17, 2008 requesting information on any known properties within a ¼-mile radius of the Project area. The NAHC responded on June 20, 2008, stating that there were no known Native American cultural resources listed in their database within the area. WSA also contacted the eight Native American representatives, whose names were provided by the NAHC (refer to Section 5.0 Native American Heritage Commission Correspondence). Letters were sent to the eight representatives on June 23, 2008 and telephone calls were placed on July 10, 2008. Charles Cooke had not received the June 23rd letter. At his request, the letter was resent on July 10, 2008. Beverly Salazar Folkes did not identify any specific cultural resources or sensitive locations within the Project area. No responses had been received from the remaining six Native American representatives by July 16, 2008. No ethnographic resources have been identified within the Project area as a result of these contacts.

**8.0 Potential Impacts of the Proposed Palmdale Hybrid Power Project**

**8.1 Impact Evaluation Criteria (Laws, Ordinances, Regulation, and Standards)**

The proposed Project is being evaluated under the California Environmental Quality Act (CEQA). The following federal, state and local laws, ordinances, regulations, and standards apply (Table 14):

**Table 14. Applicable State and Local Laws, Ordinances, Regulations, and Standards**

Applicable Law	Regulation
FEDERAL:	
Antiquities Act of 1906, Title 16, United States Code, Sections 431, 432, and 433	Protects any historic or prehistoric ruin or monument, or any object of antiquity situated on lands owned or controlled by the Government of the United States.
National Historic Preservation Act (NHPA), Title 16, United States Code, Section 470	Establishes a national policy to preserve for public use historic sites, buildings, and objects of national significance.
Executive Order 11593, "Protection of the Cultural Environment," May 13, 1971, 36 Code of Federal Regulations, Section 8921 as incorporated into Title 16, United States Code, Section 470	Orders the protection and enhancement of the cultural environment through providing leadership, establishing state offices of historic preservation, and developing criteria for assessing resource values.

Applicable Law	Regulation
National Environmental Policy Act (NEPA): Title 42 United States Code, Sections 4321-4327	Requires federal agencies to consider potential environmental impacts of projects with federal involvement and requires application of appropriate mitigation measures.
American Indian Religious Freedom Act; Title 42 United States Code, Section 1996	Protects Native American religious practices, ethnic heritage sites, and land uses.
Native American Graves Protection and Repatriation Act (NAGPRA) (1990); Title 25, United States Code Section 3001, <i>et seq.</i>	Defines “cultural items”, “sacred objects”, and “objects of cultural patrimony”; establishes an ownership hierarchy; provides for review; allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for return of specified cultural items; applies only on Federal or Indian lands.
STATE	
CEQA: Public Resources Code (PRC) Sections 5020.1, 5024.1, 21083.2, 21084.1, <i>et seq.</i>	Requires analysis of potential environmental impacts of proposed projects and application of feasible mitigation measures.
Title 14, PRC, Section 5020.1	Defines several terms, including the following: (f) “DPR Form 523” means the Department of Parks and Recreation Historic Resources Inventory Form; (i) “historical resource” includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California; (j) “local register of historical resources” means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution; (l) “National Register of Historic Places” means the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture as authorized by the National Historic Preservation Act of 1966 (Title 16 United States Code Section 470 <i>et seq.</i> ); (q) “substantial adverse change” means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.
Title 14, PRC, Section 5024.1	Establishes a California Register of Historical Resources; sets forth criteria to determine significance; defines eligible properties; lists nomination procedures.
Title 14, PRC, Section 5097.5	Any unauthorized removal of archaeological resources on sites located on public lands is a misdemeanor. As used in this section, “public lands” means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority or public corporation, or any agency thereof.
Title 14, PRC, 5097.98	Prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn; sets penalties.
Title 14, PRC, Section 21083.2	The lead agency determines whether a project may have a significant effect on unique archaeological resources. If a potential for damage to unique archaeological resources can be demonstrated, such resources must be avoided; if they can’t be avoided, mitigation measures shall be required; discusses excavation as mitigation; discusses cost of mitigation for several types of projects; sets time frame for excavation; defines “unique and non-unique archaeological resources”; provides for mitigation of unexpected resources; sets limitation for this section.

<b>Applicable Law</b>	<b>Regulation</b>
Title 14, PRC, Section 21084.1	Indicates that a project may have a significant effect on the environment if it causes a substantial change in the significance of a historic resource; the section further describes what constitutes a historic resource and a significant historic resource.
Guidelines for the Implementation of CEQA.	Section 15064.5 specifically addresses effects on historic and prehistoric archaeological resources, in response to problems that have arisen in the application of CEQA to these resources.
Title 14, Penal Code, Section 622.5	Anyone who damages an item of archaeological or historic interest is guilty of a misdemeanor.
CEQA Guidelines: California Code of Regulations, Sections 15000, <i>et seq.</i> , Appendix G (j),	Specifically defines a potentially significant environment effect as occurring when the Proposed Project will "...disrupt or adversely affect ...an archaeological site, except as part of a scientific study."
LOCAL	
City of Palmdale General Plan (1993)	The Environmental Resources Element outlines policies relating to historical and culturally significant resources, and provides a list of potential historic structures and an archaeological sensitivity map.
Los Angeles County Draft Preliminary General Plan (2007), Section VII	Identifies goals and policies for the management and preservation of historical, cultural and paleontological resources within the County.

## **8.2 Definition and Use of Significance Criteria**

CEQA regulations contain provisions regarding the preservation of historic (and prehistoric) cultural sites. Section 15126.4 of CEQA directs public agencies to "avoid damaging effects" on an archaeological resource whenever feasible. If avoidance is not feasible, the importance of the site shall be evaluated to determine impact and develop mitigation measures.

In considering impact significance under CEQA, the significance of the resource is determined first. CEQA Section 15064.5 states: Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the following criteria for listing on the California Register of Historical Resources (PRC Section 5024.1, Section 4852):

- (A) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- (B) is associated with the lives of persons important in our past;
- (C) 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
- (D) has yielded, or may be likely to yield, information important in prehistory or history.

The historical integrity of the resource must also be considered. According to CEQA guidelines, the significance of an historical resource is materially impaired when it has been destroyed or materially altered so that its physical characteristics no longer convey the historical significance, which justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources.

CEQA Section 15064.5 also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC Section 5097.98.

Impacts on “unique archaeological resources” are considered under CEQA, as detailed under PRC 21083.2. A unique archaeological resource implies that an archaeological artifact, object or site meets one of the following criteria:

- (A) Contains information needed to answer important scientific questions, and there is demonstrable public interest in that information;
- (B) Has a special and particular quality, such as being the oldest of its type or the best example of its type; or
- (C) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

A nonunique archaeological artifact, object, or site is one that does not meet any of the above criteria. Impacts on nonunique archaeological artifacts, objects or sites receive no further consideration under CEQA.

Archaeological site evaluation assesses the potential of each site to meet one or more of the criteria for “significance” or “uniqueness” based upon visual surface and subsurface evidence (if available) at each site location, information gathered during the literature and record searches, and the researcher’s knowledge of and familiarity with the historic or prehistoric context associated with each site. Potential impacts on identified cultural resources need only be considered if the resource is “significant” or “unique” under the provisions of CEQA cited above.

### ***8.3 Assessment of Archaeological Sites with regard to CRHR Eligibility***

During the course of the survey, WSA archaeologists recorded six previously undocumented historic-era sites and six previously recorded historic sites (LAN-1534H, 19-3703, 19-3704, 19-3705, 19-180638, and 19-187713). Six previously recorded sites (19-2713, 19-2722, 19-2723, 19-2724, 19-2726, and LAN-2774) could not be located during the survey. Only one of the recorded resources (LAN-1534H) is considered a significant resource. This is the historic Palmdale ditch, which crosses the transmission line corridor. Any Project impacts to this resource would potentially be considered a

significant impact in terms of CEQA significance criteria. A site by site assessment of significance presented below is followed by Table 15, which provides a summary of the assessment of the Project's impacts on these sites.

#### PHP-1

*Site Type:* Artifact scatter (historic trash dump).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* This newly identified site is only marginally related to the historic context. The site appears to represent a single dumping event. WSA did not identify the source property or properties of the dumped materials. The site lacks integrity of location and materials, and the archaeological information potential of the deposit for addressing historic themes related to commerce or consumer behavior is considered minimal. The site does not appear to have the potential for buried historic features and deposits that could cause it to be considered a significant resource. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criterion D; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

#### PHP-2

*Site Type:* Artifact scatter (historic trash dump).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* This newly identified site is only marginally related to the historic context. The site appears to represent random roadside dumping. The site lacks integrity of location and materials, and the archaeological information potential of the deposit for addressing historic themes related to commerce or consumer behavior is considered minimal. The site does not appear to have the potential for buried historic features and deposits that could cause it to be considered as a significant resource. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criterion D; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

#### PHP-3

*Site Type:* Artifact scatter (historic trash dump).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* This newly identified site is only marginally related to the historic context. The site appears to represent numerous dumping events from the mid-20th century on. Approximately 90 percent of the artifacts are modern. WSA did not identify the source property or properties of the dumped materials. The site lacks integrity of location and materials, and the archaeological information potential of the deposit for

addressing historic themes related to commerce or consumer behavior is considered minimal. The site does not appear to have the potential for buried historic features and deposits that could cause it to be considered as a significant resource. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criterion D; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

#### PHP-4

*Site Type:* Artifact scatter (historic trash dump).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* This newly identified site is only marginally related to the historic context. The site appears to represent numerous dumping events from the mid-20th century on. Approximately 70 percent of the artifacts are modern. WSA did not identify the source property or properties of the dumped materials. The site lacks integrity of location and materials, and the archaeological information potential of the deposit for addressing historic themes related to commerce or consumer behavior is considered minimal. The site does not appear to have the potential for buried historic features and deposits that could cause it to be considered as a significant resource. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criterion D; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

#### PHP-5

*Site Type:* Artifact scatter (historic trash dump).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* This newly identified site is only marginally related to the historic context. The site appears to represent numerous dumping events from the mid-20th century on. Approximately 25 percent of the artifacts are modern. WSA did not identify the source property or properties of the dumped materials. The site lacks integrity of location and materials, and the archaeological information potential of the deposit for addressing historic themes related to commerce or consumer behavior is considered minimal. The site does not appear to have the potential for buried historic features and deposits that could cause it to be considered as a significant resource. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criterion D; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

#### PHP-6

*Site Type:* Artifact scatter (historic trash dump).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* This newly identified site is only marginally related to the historic context. The site appears to represent multiple dumping events. WSA did not identify the source property or properties of the dumped materials. The site lacks integrity of location and materials, and the archaeological information potential of the deposit for addressing historic themes related to commerce or consumer behavior is considered minimal. The site does not appear to have the potential for buried historic features and deposits that could cause it to be considered as a significant resource. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criterion D; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

#### LAN-1534H

*Site Type:* Linear feature (historic concrete-lined canal).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley and early agriculture in the Palmdale area.

*Significance Evaluation:* The Palmdale ditch has been determined to be eligible as a contributor to a district for listing in the NRHP and is listed on the CRHR (California OHP 2007). The Palmdale ditch was originally recommended eligible under Criteria A and C for its association with the Littlerock Dam (previously listed on the NRHP but removed from the Register in 1994 due to a loss of integrity [Shackford 2008, pers. comm.]). On its own, the ditch is considered eligible solely under Criterion A as it was important to the early development of the irrigation, agriculture and settlement in this area (Rogers 1994a, 1994b; Widell 1995).

*Effect of Proposed Project:* Potentially significant impact.

*Recommended Treatment:* Avoidance.

#### 19-3703

*Site Type:* Artifact scatter (historic trash dump).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* This previously identified site is only marginally related to the historic context. The site appears to represent numerous dumping events from the mid-20th century on. Approximately 90 percent of the artifacts are modern. WSA did not identify the source property or properties of the dumped materials. The site lacks integrity of location and materials, and the archaeological information potential of the deposit for addressing historic themes related to commerce or consumer behavior is considered minimal. The site does not appear to have the potential for buried historic features and deposits that could cause it to be considered as a significant resource. Therefore, the site

does not appear to be significant under CEQA Section 15064.5, Criterion D; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

#### 19-3704

*Site Type:* Artifact scatter (historic trash dump).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* This previously identified site is only marginally related to the historic context. The site appears to represent numerous dumping events from the mid-20th century on. Approximately 90 percent of the artifacts are modern. WSA did not identify the source property or properties of the dumped materials. The site lacks integrity of location and materials, and the archaeological information potential of the deposit for addressing historic themes related to commerce or consumer behavior is considered minimal. The site does not appear to have the potential for buried historic features and deposits that could cause it to be considered as a significant resource. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criterion D; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

#### 19-3705

*Site Type:* Artifact scatter (historic trash dump).

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* This previously identified site is only marginally related to the historic context. The site appears to represent numerous dumping events from the mid-20th century on. Approximately 90 percent of the artifacts are modern. WSA did not identify the source property or properties of the dumped materials. The site lacks integrity of location and materials, and the archaeological information potential of the deposit for addressing historic themes related to commerce or consumer behavior is considered minimal. The site does not appear to have the potential for buried historic features and deposits that could cause it to be considered as a significant resource. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criterion D; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

#### 19-180638

*Site Type:* Linear feature (railroad segment).

*Historic Context:* Transportation and Commerce in Palmdale/Antelope Valley.

*Significance Evaluation:* This previously identified linear site has been recommended as not eligible for the CRHR (O'Brien 1998). The site lacks integrity of location and materials, because the tracks were modernized in the late 1990s when an adjacent commuter rail system was installed.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

19-187713

*Site Type:* Linear feature (historic road).

*Historic Context:* Transportation in Palmdale/Antelope Valley.

*Significance Evaluation:* This previously identified linear site has been recommended as not eligible for the CRHR (Sander 2003). The highway has been repaved in recent years, and portions have been widened, so that it lacks historic integrity. The highway also does not appear to have significant associations (Criteria A and B) or distinctive engineering characteristics (Criterion C) that would make it eligible for the CRHR. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criteria A, B or C; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

**Table 15. Summary of PHPP Archaeological Site Data and Assessment**

Site No.	Site Type/Historic Context	Date	Significance Potential	Effect of Proposed Project
PHP-1	Dump site/Late historic occupation of Palmdale/ Antelope Valley	Mid to late-20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact
PHP-2	Dump site/Late historic occupation of Palmdale/ Antelope Valley	Mid to late-20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact
PHP-3	Dump site/Late historic occupation of Palmdale/ Antelope Valley	Mid to late-20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact
PHP-4	Dump site/Late historic occupation of Palmdale/ Antelope Valley	Mid to late-20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact
PHP-5	Dump site/Late historic occupation of Palmdale/ Antelope Valley	Mid to late-20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact
PHP-6	Dump site/Late historic occupation of Palmdale/ Antelope Valley	Mid to late-20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact

Site No.	Site Type/Historic Context	Date	Significance Potential	Effect of Proposed Project
LAN-1534H	Historic Ditch/historic occupation and agricultural in Palmdale/ Antelope Valley	Early 20th century	Significant: listed in CRHR, meets Criterion A.	Potential significant impact
19-187713	Historic Road	1930-1940s	Not significant: does not meet CRHR criteria and lacks historic integrity.	Not a significant impact
19-3703	Dump site/Late historic occupation of Palmdale/ Antelope Valley	Mid to late-20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact
19-3704	Dump site/Late historic occupation of Palmdale/ Antelope Valley	Mid to late-20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact
19-3705	Dump site/Late historic occupation of Palmdale/ Antelope Valley	Mid to late-20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact
19-180638	Railroad	20 <sup>th</sup> century	Not significant: segment does not meet CRHR criteria and lacks historic integrity.	Not a significant impact

#### **8.4 Assessment of Historic Structures with regard to CRHR Eligibility**

##### 19-180680 (Building 150 on Air Force Plant 42)

*Site Type:* Historic Structure.

*Historic Context:* 20th-century aircraft production and Space Shuttle program.

*Significance Evaluation:* The building has been determined eligible for listing in the CRHR under CEQA Section 15064.5, Criterion A, because of its connection to the U.S. Space Shuttle program. The first six space shuttles were constructed here. The building maintains its integrity of location and materials.

*Effect of Proposed Project:* Less than significant impact (approximately 350 yards outside of construction ROW).

*Recommended Treatment:* None.

##### Building 145 on Air Force Plant 42

*Site Type:* Historic Structure.

*Historic Context:* 20th-century aircraft production.

*Significance Evaluation:* Although the building maintains its integrity of location and materials, it has been determined ineligible for listing in the CRHR under CEQA Section 15064.5, Criteria A, B and C.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

### 38107 10th Street E

*Site Type:* Historic Residence.

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation.* The residence has no known significant associations (Criteria A and B) nor does it exhibit any distinctive characteristics of a type, period, region, or method of construction, nor does it represent the work of an important creative individual that would make it eligible for the CRHR. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criteria A, B or C; no other criteria apply.

The residence appears to have been replastered and may lack historic integrity.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

### 39302 10th Street E

*Site Type:* Historic Residence.

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley.

*Significance Evaluation:* The building has been determined ineligible for listing in the NRHP (California OHP 2007). The residence has no known significant associations (Criteria A and B) nor does it exhibit any distinctive characteristics of a type, period, region, or method of construction, nor does it represent the work of an important creative individual that would make it eligible for the CRHR. Therefore, the site does not appear to be significant under CEQA Section 15064.5, Criteria A, B or C; no other criteria apply.

*Effect of Proposed Project:* Less than significant impact.

*Recommended Treatment:* None.

### Bridge associated with LAN 1534H

*Site Type:* Historic Structure.

*Historic Context:* 20th-century occupation of Palmdale/Antelope Valley and early agriculture in the Palmdale area.

*Significance Evaluation:* The bridge is a previously unrecorded component of the Palmdale ditch (LAN-1534H). The Palmdale ditch has been determined to be eligible as a contributor to a district for listing in the NRHP and is listed on the CRHR (California OHP 2007). The Palmdale ditch was originally recommended eligible under criteria A and C for its association with the Littlerock Dam (previously listed on the NRHP but removed from the Register in 1994 due to a loss of integrity [Shackford 2008, pers. comm.]). On its own, the ditch is considered eligible solely under criterion A as it was important to the early development of the irrigation, agriculture and settlement in this area (Rogers 1994a, 1994b; Widell 1995). The bridge is outside of the proposed construction corridor and should not be impacted by the project.

*Effect of Proposed Project:* Less than significant impact (outside of construction ROW).  
*Recommended Treatment:* None.

**Table 16. Summary of PHPP Historic Structure Data and Assessment**

Site No.	Site Type/Historic Context	Date	Significance Potential	Effect of Proposed Project
19-18680 (Bldg 150 of Air Force Plant 42)	Building/Space Shuttle Production	Mid to late 20th century	Significant under Criterion A	Not a significant impact (well outside of construction ROW).
Bldg 145 of Air Force Plant 42	Building/Aircraft Production	Mid to late 20th century	Not significant: does not meet CRHR criteria or criteria for uniqueness	Not a significant impact.
38107 10th St. E	Residence/ Historic Occupation of Palmdale	Mid to late 20th century	Not significant: does not meet CRHR criteria	Not a significant impact.
39302 10th St. E	Residence/ Historic Occupation of Palmdale	Mid to late 20th century	Not significant: does not meet CRHR	Not a significant impact.
Bridge on Palmdale ditch (LAN-1534H)	Bridge/Historic Agriculture in Palmdale/ Antelope Valley	Early 20th century	Significant: listed in CRHR, meets Criterion A.	Not a significant impact (outside of construction ROW).

## **8.5 Assessment of Project Impacts on Archaeological and Historical Resources**

### Direct/Indirect Impacts and Mitigation

Direct impacts to cultural resources are those that are associated with project development, construction, and co-existence. Ground disturbing construction activities, such as vegetation removal, demolition of overlying structures, grading, excavation, may result in direct impacts to archaeological resources by damaging or destroying intact deposits. Construction may have direct impacts on standing historic structures when project plans require their removal or when vibration from construction activities impairs the structural integrity of nearby historic structures. New structures can have direct impacts on nearby historic structures when the new structures are stylistically incompatible with the historic structures and their setting, or when new structures produce byproducts, such as emissions or vibrations, which are damaging to the structural integrity of historic structures. Ground disturbance from plant site and linear component construction has the potential to directly impact archaeological resources that remain unidentified at this time.

The project produces indirect impacts to cultural resources that are not directly related to project construction or co-existence. Such impacts include increased erosion from vegetation clearing, damage or vandalism to archaeological sites due to increased

accessibility. Similar impacts can result to standing historic structures, such as vandalism or increased exposure to weathering.

### Identification and Assessment of Direct Impacts on Cultural Resources

#### PLANT SITE

Construction-related activities that could potentially have direct impacts to cultural resources include the following:

- Surface ground disturbances related to vegetation removal, grading and leveling, preparation of drainage features would destroy all known cultural resources on the plant site and have the potential for impacting buried archaeological resources not identified at this time.
- Excavations for foundations, footings, and trenches for pipelines and linear connections have the potential for impacting buried archaeological resources not identified at this time.
- Installation of security fencing around the plant site has the potential for impacting buried archaeological resources not identified at this time.

During the course of the survey of the plant site, one historic-period archaeological site was identified (PHP-1, a historic-period trash scatter). No prehistoric archaeological sites or ethnographic resources were identified. Site PHP-1 will be destroyed during site preparation for the construction of the plant site. This site does not meet the CEQA criteria for CRHR eligibility, so its destruction would not be a significant adverse impact requiring mitigation. The extent of the proposed ground disturbance during plant site construction could potentially lead to the discovery of additional archaeological resources that would require identification, assessment, and mitigation to reduce Project impacts to them to a less than significant level.

#### LAYDOWN AREA

Mass grading and vegetation removal to prepare the laydown area for use during project construction could have direct impacts on cultural resources. Leveling could cut into portions of the area that are buried at present and potentially lead to the discovery of additional archaeological resources that would require identification, assessment, and mitigation to reduce the impacts of the project to them to a less than significant level.

During the course of the survey of the laydown area, no prehistoric or historic-era archaeological sites or ethnographic resources were identified. The extent of the proposed ground disturbance during laydown area preparation could potentially lead to the

discovery of additional archaeological resources that would require identification, assessment, and mitigation to reduce the Project impacts to them to a less than significant level.

#### RECLAIMED WATER SUPPLY PIPELINE CORRIDOR

Excavation of a trench for a new 7.4-mile-long reclaimed water supply pipeline could potentially impact archaeological resources to the extent of the area and depth of the trench in the native soils of the route.

During the course of the survey of the reclaimed water supply pipeline corridor, four previously recorded historic-period archaeological sites were identified (19-180638, 19-3703, 19-3704, and 19-3705). Site 19-180638 is a portion of the SPRR that will not be directly impacted by construction of the reclaimed water supply pipeline. The other three historic-period sites (19-3703, 19-3704, and 19-3705) are trash scatters. Excavation of a trench through these sites would destroy those excavated portions. None of these three sites have been determined to meet the CEQA criteria for CRHR eligibility (Craft and Mustain 2007; Mustain 2007a; Craft et al. 2007), so destruction of site components would not be a significant adverse impact requiring mitigation.

During the course of the survey of the reclaimed water supply pipeline corridor, no prehistoric or ethnographic resources were identified. The extent of the proposed excavation could potentially lead to the discovery of additional buried archaeological resources that would require identification, assessment, and mitigation to reduce the Project impacts to them to a less than significant level.

#### NATURAL GAS SUPPLY PIPELINE CORRIDOR

Excavation of a trench for a new 8.7-mile-long natural gas supply pipeline could potentially impact archaeological resources to the extent of the area and depth of the trench in the native soils of the route.

During the course of the survey of the natural gas supply pipeline corridor, four previously recorded historic-period archaeological sites were identified (19-180638, 19-3703, 19-3704, and 19-3705). Site 19-180638 is a portion of the SPRR that will not be directly impacted by construction of the natural gas supply pipeline. The other three historic-period sites (19-3703, 19-3704, and 19-3705) are trash scatters. Excavation of a trench through these sites would destroy those excavated portions. These three sites do not meet the CEQA criteria for CRHR eligibility, so destruction of site components would not be a significant adverse impact requiring mitigation.

During the course of the survey of the natural gas supply pipeline corridor, no prehistoric or ethnographic resources were identified. The extent of the proposed excavation could potentially lead to the discovery of additional buried archaeological resources that would require identification, assessment, and mitigation to reduce Project impacts to them to a less than significant level.

#### SANITARY WASTEWATER PIPELINE

Excavation of a trench for a new 1-mile-long sanitary wastewater pipeline could potentially impact buried archaeological resources, unidentified at this time, to the extent of the area and depth of the trench in the native soils of the route. During the course of the survey of the sanitary wastewater pipeline corridor, no prehistoric or historic-era archaeological sites or ethnographic resources were identified. The extent of the proposed ground disturbance during sanitary wastewater pipeline construction could potentially lead to the discovery of additional archaeological resources that would require identification, assessment, and mitigation to reduce Project impacts to them to a less than significant level.

#### ELECTRICAL TRANSMISSION LINE CORRIDOR

Construction-related activities that could potentially have direct impacts to cultural resources include the following:

- Surface ground disturbances related to vegetation removal, grading and leveling, in preparation for transmission structure construction have the potential for impacting buried archaeological resources not identified at this time.
- Excavations for foundations of footings for construction of transmission structures have the potential for impacting buried archaeological resources not identified at this time.
- Ground disturbances by heavy equipment at any pulling sites have the potential for impacting buried archaeological resources not identified at this time.

During the course of the survey of the electrical transmission line corridor, seven previously recorded historic-period archaeological sites were identified (LAN-1534H [the Palmdale ditch], 19-187713 [Angeles Forest Highway], PHP-2, PHP-3, PHP-4, PHP-5, and PHP-6 [all historic-period trash scatters]). No prehistoric archaeological sites or ethnographic resources were identified. None of the resources will be impacted by tower construction, but impacts from surface ground disturbances for site preparation and in pulling areas are not known at present. Surface grading would destroy sites PHP-2, PHP-3, PHP-4, PHP-5, and PHP-6. These sites do not appear to meet the CEQA criteria for CRHR eligibility, so their destruction would not be a significant adverse impact requiring

mitigation. Site 19-187713 will not be impacted by electrical transmission line construction. Site LAN 1534H is listed in the CRHR, so any destruction of site components would be viewed as an adverse impact. The site can be easily avoided during electrical transmission line construction, and avoidance of the resource would reduce Project impact to a less than significant level.

The extent of the proposed ground disturbance during electrical transmission line construction could potentially lead to the discovery of additional archaeological resources that would require identification, assessment, and mitigation to reduce Project impacts to them to a less than significant level.

#### Summary of Direct and Indirect Impacts on Significant Cultural Resources, All Project Areas

Only one significant historical-period site, previously recorded LAN-1534H, could be impacted by the construction of the proposed transmission line. Direct impacts could include damage or destruction to portions of the historic concrete-lined ditch; indirect impacts could include damage from vibration or erosion which could result from proposed construction and the movements of heavy equipment within the corridor. Mitigation should be provided to avoid this resource, or to protect this resource if it cannot be avoided during project construction. No other significant impacts to archaeological resources are anticipated by project construction.

Two potentially significant standing structures were identified during the survey. The site 19-180680 (Building 150 on Air Force Plant 42) would not be directly impacted by the proposed project. The concrete and stone bridge, which is part of site LAN-1534H, will not be directly impacted by project construction, but could be indirectly impacted by vibration or erosion, which could result from proposed construction and the movements of heavy equipment along the corridor. Mitigation should be provided to avoid this resource, or to protect this resource if it cannot be avoided during project construction.

No significant ethnographic resources, either previously recorded or newly disclosed in communications with Native Americans, were identified in the vicinity of the project. Consequently, the project would have no direct significant impacts on ethnographic resources.

#### **8.6 *Recommended Mitigation Measures***

Following are proposed mitigation measures that would ensure that impacts to potentially significant cultural resources are reduced to less-than-significant levels.

- CUL-1: To avoid impacts to significant historic-period archaeological site LAN-1534H (the Palmdale ditch, including the associated concrete and stone bridge), this cultural feature should be protected from damage by avoidance. The project owner's construction manager, or a person designated by the construction manager, will cordon off the resource at a distance of at least 100 ft. to either side of the resource to insure that the site is not impacted by construction activities.
- CUL-2: If Project construction cannot avoid LAN-1534H (the Palmdale ditch), an archaeologist meeting the Secretary of the Interior's Standards will be retained to develop and implement a data recovery program for the site. This program might include at least a level of recordation that meets the minimum Historic American Engineering Record requirements for this type of resource.
- CUL-3: The project owner will provide Worker Cultural Awareness training prior to construction to assist in worker compliance with cultural resource identification and protection procedures. The training will consist of illustrations and/or photographs of common types of historic and prehistoric artifacts that may be encountered during construction activities, and provide a protocol to be followed in the event of an unanticipated discovery of archaeological materials and/or human remains.
- CUL-4: Should any previously unknown historic or prehistoric resources be discovered during grading, trenching, or other on-site excavation(s), ground-disturbing construction activities within 100 ft. of these resources shall be stopped until a professional archaeologist meeting the Secretary of the Interior's Standards has had an opportunity to evaluate the significance of the find.
- CUL-5: If a find is determined to not be potentially significant by the consulting archaeologist, construction activities within the area can continue.
- CUL-6: If a find is determined to be potentially significant by the consulting archaeologist, a mitigation plan meeting State requirements will be developed and implemented in consultation with the California Energy Commission. If the resource cannot be avoided, a data recovery plan, aimed at collecting sufficient data to address prehistoric or historic research questions, will be prepared and carried out.
- CUL-7: A professional technical report detailing the data recovery methods and results, and a discussion of the findings in terms of the research questions provided in the data recovery plan, will be prepared by the consulting archaeologist. Copies

of the report will be provided to ENSR, the California Energy Commission, the South Central Coastal Information Center, and the curation facility for the artifacts.

CUL-8: All collected prehistoric and historic artifactual material will be curated at a qualified curation facility. Copies of field notes, and other relevant documentation, will also be provided with the artifact collection.

CUL-9: All prehistoric and historic discoveries will be documented on appropriate Department of Parks and Recreation forms (Form DPR 523) and filed with the South Central Coastal Information Center in Fullerton.

CUL-10: In the event that Native American human remains or funerary objects are discovered, the provisions of the California Health and Safety Code should be followed. Section 7050.5(b) of the California Health and Safety Code states that all excavation or disturbance of the site or nearby area cease, and that the coroner of the county in which the human remains are discovered be contacted. If the remains are determined by the coroner to be Native American, the coroner must contact the Native American Heritage Commission. The Native American Heritage Commission will assign a Most Likely Descendant, who will make recommendations regarding the treatment of the remains.

No additional mitigation measures are required for PHPP operations.

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- 1986 City of Los Angeles Department of Water and Power Vincent Substation Loop-in Project Cultural Resource Records Check and Field Survey Results. (IC ID# LA 1585.) Report on file at the South Central Coastal Information Center, California State University, Fullerton, CA.

Widell, Cherilyn

- 1995 Letter to Michael J. Rogers, Forest Supervisor, Angeles National Forest, June 21. On file at the Angeles National Forest, Arcadia, CA.

Workers of the Writers' Program of the Work Projects Administration in Southern California (Writers' Program)

- 1941 *Los Angeles, A Guide to the City and its Environs*. American Guide Series. Hastings House, New York, NY.

# **ATTACHMENT 1:**

## **Figures**

### List of Figures

Figure 1: Regional Map

Figure 2: Project Vicinity Map

Figure 3: Project Site Map

Figure 4: Survey Area Map

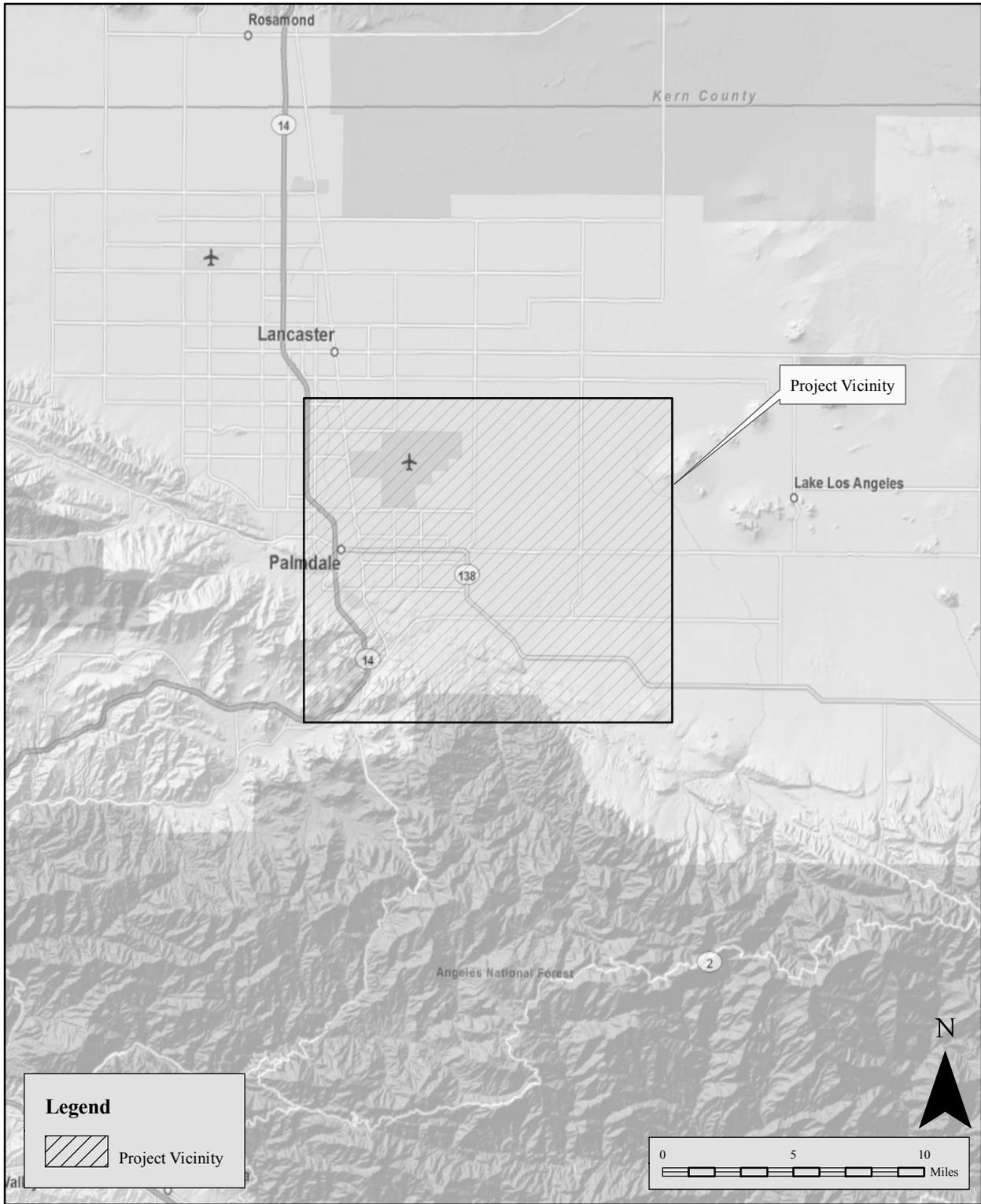
Figure 5: Traditional Ethnographic Territories within the Project Area

Figure 6: Archaeological Sensitivity Zones Developed in the City of Palmdale General Plan



**Regional Map**

Figure 1  
 Draft Cultural Resources Technical Report  
 PHPP  
 Palmdale, California



**Legend**

 Project Vicinity



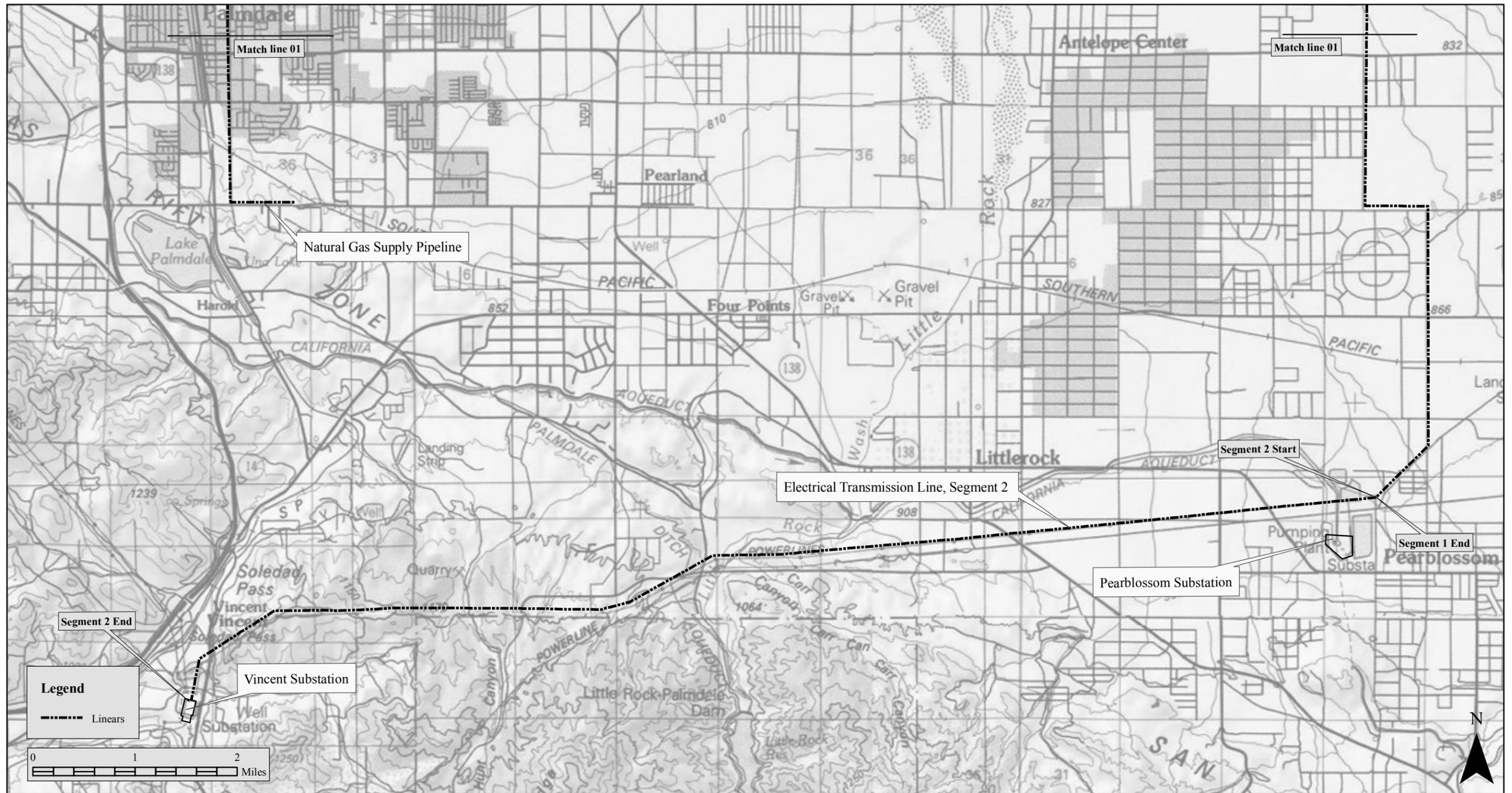
**Project Vicinity Map**

Figure 2  
 Draft Cultural Resources Technical Report  
 PHPP  
 Palmdale, California



**Project Site Map**

Figure 3 Map 1/2  
 Draft Cultural Resources Technical Report  
 PHPP  
 Palmdale, California



**Project Site Map**

Figure 3 Map 2/2  
 Draft Cultural Resources Technical Report  
 PHPP  
 Palmdale, California

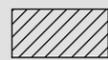


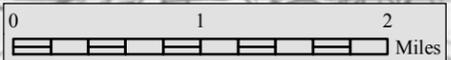
Survey Area Map

Figure 4 Map 1/2  
 Draft Cultural Resources Technical Report  
 PHPP  
 Palmdale, California



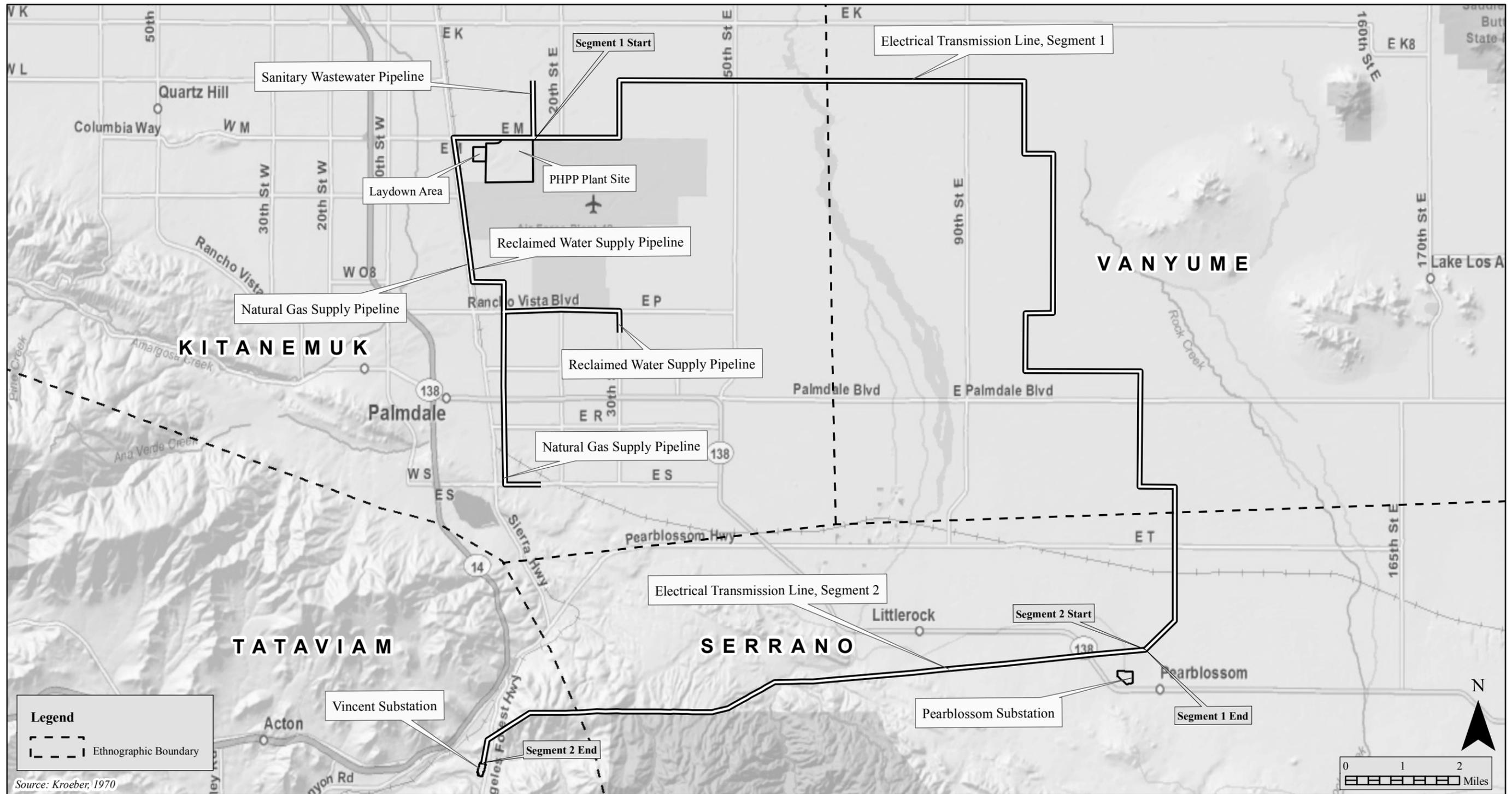
**Legend**

 Survey Area



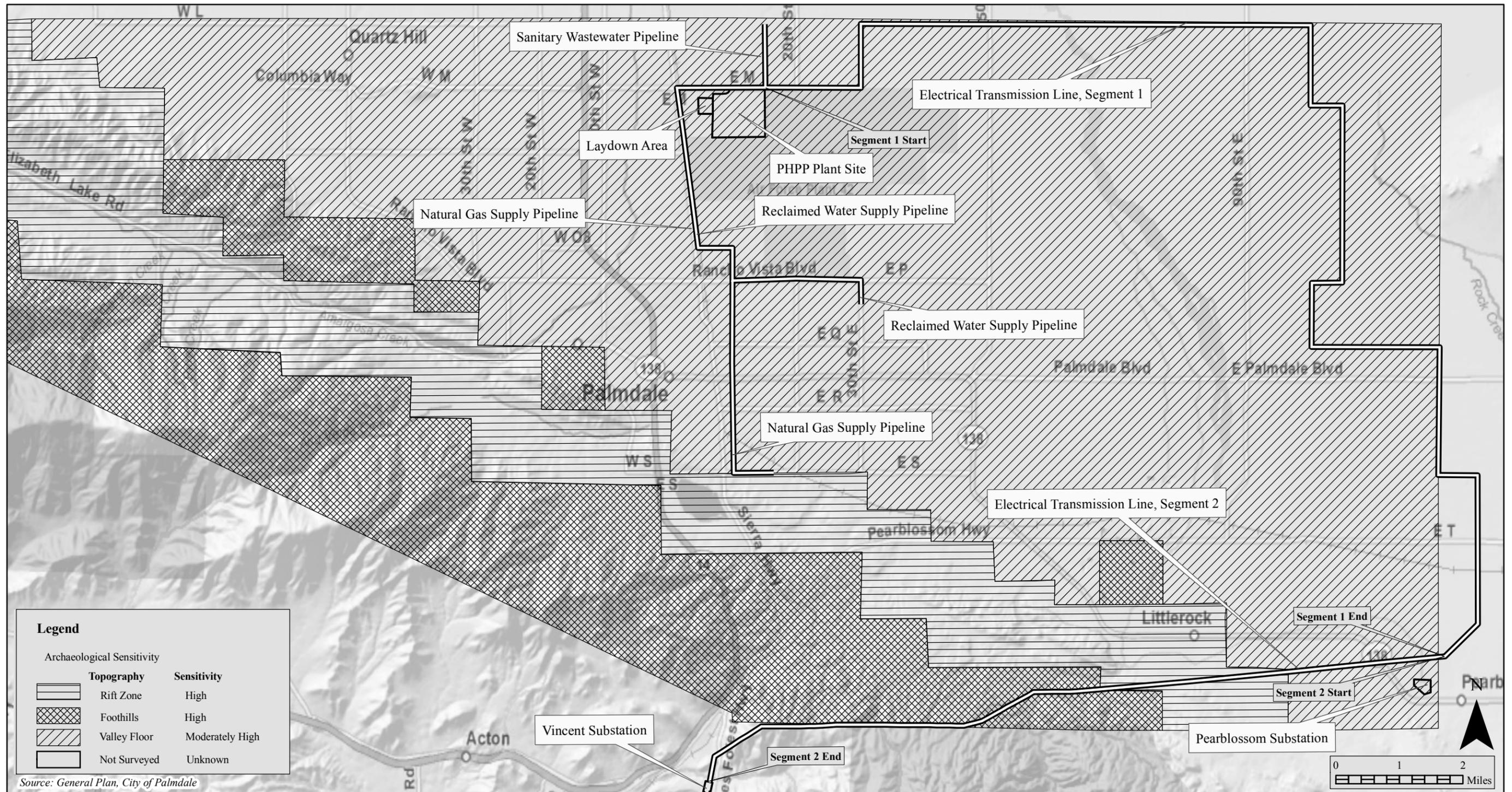
**Survey Area Map**

Figure 4 Map 2/2  
 Draft Cultural Resources Technical Report  
 PHPP  
 Palmdale, California



**Traditional Ethnographic Territories within the Project Site Vicinity**

Figure 5  
Draft Cultural Resources Technical Report  
PHPP  
Palmdale, California



**Archaeological Sensitivity Zones Developed in the City of Palmdale General Plan**

Figure 6  
Draft Cultural Resources Technical Report  
PHPP  
Palmdale, California

**ATTACHMENT 2:**  
**Native American Heritage Commission Correspondence**



www.williamself.com



Consultants in Archaeology and Historic Preservation

June 17, 2008

Native American Heritage Commission  
915 Capitol Mall, Room 364  
Sacramento, CA 95814

RE: *PALMDALE HYBRID POWER PLANT PROJECT, LOS ANGELES COUNTY*

Dear Native American Heritage Commission:

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Palmdale Hybrid Power Plant Project. The proposed project will involve construction of a new hybrid power plant along with associated transmission, gas and water lines. The project area is located within, and to the north, east and south of Palmdale, within Los Angeles County. The project area is within Township 7 North, Range 10 West, Sections 28, 29, 30 and 33 (Alpine Butte USGS Quad); Township 7 North, Range 11 West, Sections 25, 26, 27, 28, 29, 31 and 32 (Alpine Butte and Lancaster East USGS Quads); Township 7 North, Range 12 West, Sections 35 and 36 (Lancaster East and Lancaster West USGS Quads); Township 6 North, Range 10 West, Sections 4, 9, 16, 21, 22, 23, 26 and 35 (Alpine Butte and Littlerock USGS Quads); Township 6 North, Range 11 West, Sections 19, 20 and 24 (Palmdale USGS Quad); Township 6 North, Range 12 West, Sections 1, 2, 11, 14, 22, 23, 24, 26, 27 and 35 (Lancaster East, Lancaster West, Palmdale, Ritter Ridge and Pacifico Mountain USGS Quads); Township 5 North, Range 11 West, Sections 19, 20, 21, 22, 23 and 24 (Palmdale and Littlerock USGS Quads); and an unsectioned portion of Township 5 North, Range 10 West (Littlerock USGS Quad). The location of the project area is illustrated in the attached figure.

We bring this project to the attention of the Native American Heritage Commission with the desire to obtain pertinent information regarding prehistoric, historic and/or ethnographic land use and sites of Native American traditional or cultural value that might be known to exist in the project area or at least within a one-quarter mile radius of the project vicinity, as depicted in the Sacred Lands database or other files under your jurisdiction. We would also appreciate obtaining a list of interested Native American tribal members or entities for the project area. We have made contact with the California Historical Resources Information System, South Central Coastal Information Center (SCCIC) at California State University, Fullerton, to review their files as part of the background research on the project.

We would appreciate a response, at your earliest convenience, should you have information relative to this request. Should you have any questions, I can be reached at (925) 253-9070.

Thanks again for your assistance.

Sincerely,

**WILLIAM SELF ASSOCIATES, INC.**

James M. Allan, Ph.D., RPA  
Vice President

Attachment

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William Self Associates, Inc.

E-mail: [wself@williamself.com](mailto:wself@williamself.com)

**CORPORATE OFFICE: San Francisco Bay Area**  
PO Box 2192, 61 Avenida de Orinda  
Orinda CA 94563  
Phone: 925-253-9070/ 925-254-3553 fax

STATE OF CALIFORNIA

Arnold Schwarzenegger, Governor

**NATIVE AMERICAN HERITAGE COMMISSION**

915 CAPITOL MALL, ROOM 364  
SACRAMENTO, CA 95814  
(916) 653-6251  
Fax (916) 657-5390  
Web Site [www.nahc.ca.gov](http://www.nahc.ca.gov)  
e-mail: [ds\\_nahc@pacbell.net](mailto:ds_nahc@pacbell.net)



June 20, 2008

James M. Allan, Ph.D., RPA  
Vice President  
WILLIAM SELF ASSOCIATES, INC.  
P.O. Box 2192, 61 Avenida de Orinda  
Orinda, CA 94563

Sent by Fax: 925-254-3553  
Number of Pages: 2

Re: Proposed: Palmdale Hybrid Power Plant Project, Los Angeles County.

Dear Dr. Allen:

The Native American Heritage Commission was able to perform a record search of its Sacred Lands File (SLF) for the affected project area. The SLF failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the Sacred Lands File does not guarantee the absence of cultural resources in any 'area of potential effect (APE).'

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the nearest tribes that may have knowledge of cultural resources in the project area. A List of Native American contacts are attached to assist you. The Commission makes no recommendation of a single individual or group over another. It is advisable to contact the person listed; if they cannot supply you with specific information about the impact on cultural resources, they may be able to refer you to another tribe or person knowledgeable of the cultural resources in or near the affected project area (APE).

Lack of surface evidence of archeological resources does not preclude the existence of archeological resources. Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

A handwritten signature in black ink, appearing to read "Dave Singleton".

Dave Singleton  
Program Analyst

Attachment: Native American Contact List

**Native American Contacts**  
**Los Angeles County**  
**June 19, 2008**

Charles Cooke  
 32835 Santiago Road  
 Acton , CA 93510

(661) 733-1812 - cell  
 suscol@intox.net

Chumash  
 Fernandeno  
 Tataviam  
 Kitanemuk

LA City/County Native American Indian Comm  
 Ron Andrade, Director  
 3175 West 6th Street, Rm. 403  
 Los Angeles , CA 90020  
 (213) 351-5324  
 (213) 386-3995 FAX

Beverly Salazar Folkes  
 1931 Shadybrook Drive  
 Thousand Oaks , CA 91362  
 805 492-7255  
 (805) 558-1154 - cell

Chumash  
 Tataviam  
 Fernandeno

Kitanemuk & Yowlumne Tejon Indians  
 Delia Dominguez  
 981 N. Virginia  
 Covina , CA 91722  
 (626) 339-6785  
 Yowlumne  
 Kitanemuk

San Manuel Band of Mission Indians  
 James Ramos, Chairperson  
 26569 Community Center Drive  
 Highland , CA 92346  
 (909) 864-8933  
 (909) 864-3724 - FAX  
 (909) 864-3370 Fax

Serrano

San Fernando Band of Mission Indians  
 John Valenzuela, Chairperson  
 P.O. Box 221838  
 Newhall , CA 91322  
 tsen2u@msn.com  
 (661) 753-9833 Office  
 (760) 885-0955 Cell  
 (760) 949-1604 Fax  
 Fernandeno  
 Tataviam  
 Serrano  
 Vanyurme  
 Kitanemuk

Fernandeno Tataviam Band of Mission Indians  
 William Gonzales, Cultural/Environ Depart  
 601 South Brand Boulevard, Suite 102  
 San Fernando , CA 91340  
 ced@tataviam.org  
 (818) 837-0794 Office  
 (818) 581-9293 Cell  
 (818) 837-0796 Fax

Fernandeno  
 Tataviam

Randy Guzman - Folkes  
 1931 Shadybrook Drive  
 Thousand Oaks , CA 91362  
 ndnrandy@hotmail.com  
 (805) 905-1675 - cell

Chumash  
 Fernandeno  
 Tataviam  
 Shoshone Paiute  
 Yaqui

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Palmdale Hybrid Power Plant Project located in the Palmdale area of northeastern Los Angeles County, California for which a Sacred Lands File search and Native American Contacts list were requested.



www.williamself.com

June 23, 2008

Mr. Charles Cooke  
32835 Santiago Road  
Acton, CA 93510

RE: PALMDALE HYBRID POWER PLANT PROJECT, LOS ANGELES COUNTY

Dear Mr. Cooke

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Palmdale Hybrid Power Plant Project. The proposed project will involve construction of a new hybrid power plant along with associated transmission, gas and water lines. The project area is located within, and to the north, east and south of Palmdale, within Los Angeles County. The location of the project area is illustrated in the attached figure.

We have contacted the Native American Heritage Commission (NAHC) in Sacramento requesting information regarding prehistoric, historic and/or ethnographic land use and sites of Native American traditional or cultural value that might be known to exist within the project vicinity, as depicted in the Sacred Lands database or other files. The NAHC provided your name as a contact person who may have additional information regarding Traditional or Sacred Properties within or immediately adjacent to the project area. We would appreciate receiving any comments you may have regarding this matter. We have contacted the South Central Coastal Information Center for information on previously recorded archaeological and historical resources, but would appreciate any additional information you may have.

Due to time restrictions relating to this project, we would appreciate a response by July 3, 2008, should you have information relative to this request.

Thanks again for your assistance.

Sincerely,

WILLIAM SELF ASSOCIATES, INC.

A handwritten signature in black ink that reads "James M. Allan".

James M. Allan, Ph.D., RPA  
Vice President

Attachment

---

**William Self Associates, Inc.**

E-mail: [wself@williamself.com](mailto:wself@williamself.com)

**CORPORATE OFFICE: San Francisco Bay Area**  
PO Box 2192, 61 Avenida de Orinda  
Orinda CA 94563  
Phone: 925-253-9070/ 925-254-3553 fax

## Native Americans Contacted for the Palmdale Hybrid Power Plant Project

Contact	Date of Letter	Response	Date of Phone Contact	Response
Charles Cooke	June 23, 2008	No response	July 10, 2008	Did not receive letter, resent letter July 10
Ron Andrade, Director LA City/County Native American Indian Commission	June 23, 2008	No response	July 10, 2008	Left message
Beverly Salazar Folkes	June 23, 2008	No response	July 10, 2008	Recommends having a monitor either on-site or on standby for all trenching and ground disturbance of undisturbed soil, regardless of whether is in developed or undeveloped areas, noted other projects where burials have been found in developed areas.
Delia Dominguez Kitanemuk & Yowlumne Tejon Indians	June 23, 2008	No response	July 10, 2008	Left message
James Ramos, Chairperson San Manuel Band of Mission Indians	June 23, 2008	No response	July 10, 2008	Left message
John Valenzuela, Chairperson San Fernando Band of Mission Indians	June 23, 2008	No response	July 10, 2008	Left message
William Gonzalaes Cultural/ Environmental Department Fernandeno Tataviam Band of Mission Indians	June 23, 2008	No response	July 10, 2008	Left message
Randy Guzman-Folkes	June 23, 2008	No response	July 10, 2008	Left message

**ATTACHMENT 3:  
Consultation with Local Historical Societies  
and Other Interested Parties**



www.williamself.com

Consultants in Archaeology and Historic Preservation

June 17, 2008

Los Angeles County Department of Regional Planning  
320 West Temple Street  
Los Angeles, CA 90012

*RE: PALMDALE HYBRID POWER PLANT PROJECT, LOS ANGELES COUNTY*

Dear Sir or Madam:

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Palmdale Hybrid Power Plant Project. The proposed project will involve construction of a new hybrid power plant along with associated transmission, gas and water lines. The project area is located within, and to the north, east and south of Palmdale, within Los Angeles County. The project area is within Township 7 North, Range 10 West, Sections 28, 29, 30 and 33 (Alpine Butte USGS Quad); Township 7 North, Range 11 West, Sections 25, 26, 27, 28, 29, 31 and 32 (Alpine Butte and Lancaster East USGS Quads); Township 7 North, Range 12 West, Sections 35 and 36 (Lancaster East and Lancaster West USGS Quads); Township 6 North, Range 10 West, Sections 4, 9, 16, 21, 22, 23, 26 and 35 (Alpine Butte and Littlerock USGS Quads); Township 6 North, Range 11 West, Sections 19, 20 and 24 (Palmdale USGS Quad); Township 6 North, Range 12 West, Sections 1, 2, 11, 14, 22, 23, 24, 26, 27 and 35 (Lancaster East, Lancaster West, Palmdale, Ritter Ridge and Pacifico Mountain USGS Quads); Township 5 North, Range 11 West, Sections 19, 20, 21, 22, 23 and 24 (Palmdale and Littlerock USGS Quads); and an unsectioned portion of Township 5 North, Range 10 West (Littlerock USGS Quad). The location of the project area is illustrated in the attached figure.

We would appreciate receiving any comments you may have regarding historical or other cultural resources under local ordinance within or adjacent to the project area. We have contacted the South Central Coast Information Center for information on previously recorded archaeological and historical resources, but would appreciate any additional information you may have in your files. If you could provide your comments in writing to the address below, we will make sure the comments are provided to our client as part of the cultural resources assessment of the project.

Due to time restrictions relating to this project, we would appreciate a response by June 26, 2008, should you have information relative to this request.

Thanks again for your assistance.

Sincerely,

**WILLIAM SELF ASSOCIATES**

James M. Allan, Ph.D., RPA  
Principal

Attachment

---

**William Self Associates, Inc.**

E-mail: [wself@williamself.com](mailto:wself@williamself.com)

**CORPORATE OFFICE: San Francisco Bay Area**  
PO Box 2192, 61 Avenida de Orinda  
Orinda CA 94563  
Phone: 925-253-9070/ 925-254-3553 fax

### Planning Departments and Historical Societies Contacted for the PHP Project

Contact	Date of Letter	Response
Los Angeles County Department of Regional Planning	June 17, 2008	No response
Palmdale Planning Department	June 17, 2008	June 25, 2008. Asoka Herath, Director of Planning, provided WSA with a copy of McKenna et al.'s (1993) study for the proposed Palmdale Business Park Center Specific Plan project
City of Lancaster Planning Department	July 21, 2008	No response
Palmdale City Library	June 18, 2008	No response
Antelope Valley Genealogical Society	June 17, 2008	No response
The Antelope Valley Indian Museum	June 17, 2008	No response
Hi-Desert Genealogical Society	June 17, 2008	No response
West Antelope Valley Historical Society	June 17, 2008	No response
Historical Society of Southern California	June 17, 2008	Returned to sender, not at the listed address