APPENDIX D – CULTURAL RESOURCE REPORTS

CULTURAL RESOURCE SURVEY
FOR A PORTION OF THE
CENTINELA SOLAR ENERGY, LLC PROJECT AREA
IMPERIAL COUNTY, CALIFORNIA

Prepared for:

Ms. Trish Mitchell
kp environmental, LLC
2387 Montgomery Avenue
Cardiff, California 92007

Submitted to:

Ms. Carrie Simmons
Bureau of Land Management
El Centro Field Office
1661 S. 4th Street
El Centro, California 92243

Prepared by:

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Carol Serr, BA
Jose "Pepe" Aguilar, MA
Frank Dittmer, BS

June 2011

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National Archaeological Data Base Information
Type of Study: Cultural Resource Survey
Sites: P-13-008983, P-13-013073, P-13-013074, P-13-013075, P-13-013076, P-13-013077, P-13-013078, P-13-013079, P-13-013080, P-13-013081, P-13-013082. P-13-013083, P-13-013084, P-13-013085
USGS Quadrangle: Mount Signal 7.5'
Area: approximately 2,165 acres
Key Words: Imperial County, Colorado Desert, Mt. Signal, Wormwood Canal (P-13-008983), Woodbine Canal (P-13-013073), Woodbine Lateral 7 (P-13-013074), Woodbine Lateral 7A (P-13-013075), Woodbine Lateral 2 (P-13-013076), Woodbine Lateral 8 (P-13-013077), Brockman Drain (P-13-013078), Mt. Signal Drain (P-13-013079), Mt. Signal Drain 1 (P-13-013080), Carpenter Drain (P-13-013081), Wells Drain (P-13-013082), historic irrigation system structures, historic residential structures (P-13-013083, P-13-013084), isolate historic glass (P-13-013085), Centinela Solar Energy, LLC Project, ancient Lake Cahuilla

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ABSTRACT

Laguna Mountain Environmental, Inc. (Laguna Mountain) conducted an archaeological survey of 21 parcels (approximately 2,165 acres) of agricultural land located approximately 8 miles southwest of the City of El Centro in the southwestern portion of Imperial County. The proposed project consists of two primary components: (i) generation and associated facilities on privately-owned land (the "CSE Facility") and (ii) an approximately seven-mile, 230 kilovolt (kV) aboveground, electrical line (the "Gen-tie Line") that will connect the generation facilities with the Imperial Valley Substation. The CSE Facility and Gen-tie Line are referred to collectively as the "Project." The area encompassing the CSE Facility and the Gen-tie Line is referred to as the "CSE Project Area." The survey documented in this report covers the CSE Facility and portions of the Gen-tie Line located on private land. The investigation included archaeological and historical research involving a records search, literature review, and examination of historic maps, in addition to the archaeological field inventory of the property.

Cultural resource work was conducted in accordance with the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA). The Bureau of Land Management (BLM) will serve as the lead agency for the NEPA process, and the County of Imperial will serve as the lead agency for the CEQA process.

Records searches at the South Coastal Information Center indicated that small portions of the current Project area had been previously surveyed for cultural resources. Ten archaeological investigations have been documented in the vicinity of the Project. Nine cultural resources had been identified through previous research within a one-mile radius of the Project. Only two of these occur within the survey area. These sites include a prehistoric lithic and ceramic scatter (CA-IMP-6641) and a segment of a historic agricultural irrigation canal (P-13-008983). Site CA-IMP-6641 is plotted within the survey area but the surface artifacts were collected in 1956, and this resource was not relocated during the current survey of the area. An additional lithic scatter (CA-IMP-1239) was recorded in 1977 plotted just outside the southern boundary of the southwestern extent (Brundy property) of the current survey.

The survey area inventory was conducted between April 19 and December 20, 2010 under the supervision of Principal Investigator Mr. Andrew R. Pigniolo, RPA. Field crew included Mr. Jose "Pepe" Aguilar, Mr. Frank Dittmer, Ms. Alette van den Hazelkamp, Ms. Sarah Farmer, Mr. Douglas La Rose, Mr. Nate Yerka, Ms. Nara Cox, and Ms. Bekah Loveless. Mr. Gabe Kitchen and Mr. Larry Sutton, of Red Tail Monitoring & Research, served as Native American monitors during the survey. The Project area consisted of leveled and tilled agricultural fields, which were surveyed on foot in 10- to 15-meter transect intervals. Most of the fields were planted in grass and alfalfa that had been recently mowed. However, while surface visibility varied from 10 to 70 percent throughout the survey area, due to dense turf and duff in many portions the visibility averaged approximately 25 percent. Because the area consists of Holocene alluvium that has been previously disturbed by decades of tilling, the potential for intact cultural resources is low. However, the potential for unanticipated buried archaeological resources is still present because of this alluvium from ancient Lake Cahuilla that may conceal subsurface shoreline deposits.

The pedestrian examination of 11 separate properties identified 13 previously unrecorded historic-age cultural resources within the survey area. These include segments of the Woodbine Canal (P-13-013073), portions of the Woodbine Lateral 7 (P-13-013074), Woodbine Lateral 7A (P-13-013075), Woodbine Lateral 2 (P-13-013076), Woodbine Lateral 8 (P-13-013077), portions of the Brockman Drain (P-13-013078), Mt. Signal Drain (P-13-013079), and Mt. Signal Drain 1 (P-13-013080), the Carpenter Drain (P-13-013081), the Wells Drain (P-13-013082), along with two historic residential structures (P-13-013083, P-13-013084), and an isolated resource (P-13-013085) consisting of a sun-colored amethyst glass vessel handle.

None of the irrigation or residential structures has been evaluated for nomination to the California Register of Historical Resources (California Register). The South Coastal Information Center has indicated that the irrigation system in the Imperial Valley area makes up an eligible historic district as part of the largest gravity flow irrigation system in the United States. Most of the irrigation system segments within the survey area are associated with 1950s-era improvements to the original irrigation system and their significance is uncertain.

If possible, impacts to irrigation structures should be avoided and these resources should be incorporated into open space easements. If the irrigation structures cannot be avoided, then additional documentation and recording is recommended to evaluate and mitigate impacts to these resources. Due to the alluvium soils, archaeological monitoring is recommended during grading/construction activities.

I. INTRODUCTION

A. Project Description

The proposed project includes development of an approximately 2,165-acre area as part of a larger solar electric power plant. The project consists of two primary components: (i) generation and associated facilities on privately-owned land (the "CSE Facility") and (ii) an approximately seven-mile, 230 kilovolt (kV) aboveground, electrical line (the "Gen-tie Line") that will connect the generation facilities with the Imperial Valley Substation. The CSE Facility and Gen-tie Line are referred to collectively as the "Project." The area encompassing the CSE Facility and the Gen-tie Line is referred to as the "CSE Project Area."

The survey documented in this report covers the CSE Facility and portions of the Gen-tie Line located on private land. The area of potential effect (APE) is located in Imperial County, approximately 8 miles southwest of the City of El Centro (Figure 1). The APE is located approximately 6 miles south-southeast of the community of Seeley, adjacent to and mostly north of the community of Mount Signal. The survey area is west of Greeson Wash, straddling State Route (SR) 98 (Yuha Cutoff) at the southern end, and just over 1 mile north of the international border. The APE is primarily located within Township 17 South, Range 13 East, in sections 4, 5, 7, 9, 10, 16, 17, and 18 with a small northern portion in Section 31 within Township 16 South, Range 13 East, as shown on the Mount Signal 7.5' USGS Quadrangle (Figure 2).

The survey area consists of 11 private properties located between Lyons Road to the north, Bureau of Land Management (BLM) on the west, Rockwood Road at the east, and Anza Road to the south. These properties, from the north to south, include Simmons (northern), LeCrivain, Iliff, Wilson, Diaz, Simmons (eastern), Bishop, Yang, Chen, Dessert, West-Gro, and Brundy (Figure 3).

Cultural resource work was conducted in accordance with National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA). The archaeological survey was conducted to determine if any cultural resources eligible for inclusion in the National Register of Historic Places (National Register) or the California Register of Historical Resources (California Register) or significant under CEQA would be affected by this Project.

B. Project Personnel

The cultural resource inventory was conducted by Laguna Mountain Environmental, Inc. (Laguna Mountain), whose cultural resources staff meets federal, state, and local requirements. Mr. Andrew R. Pigniolo served as Principal Investigator for the Project. Mr. Pigniolo is a member of the Register of Professional Archaeologists (RPA; previously called SOPA) and meets the Secretary of the Interior's standards for qualified archaeologists. Mr. Pigniolo has an MA in Anthropology from San Diego State University and has more than 30 years of experience in the San Diego and southern California region. The resume of the Principal Investigator is included in Appendix A.

Figure 1 Regional Location Map

Figure 2 Survey Area

Figure 3 Survey Area Properties

The survey crew was comprised of Mr. Jose “Pepe” Aguilar, Mr. Frank Dittmer, and Ms. Alette van den Hazelkamp, Ms. Sarah Farmer, Mr. Douglas La Rose, Mr. Nate Yerka, Ms. Nara Cox, and Ms. Bekah Loveless. Ms. Alette van den Hazelkamp prepared the graphics for this technical report. Ms. Carol Serr assisted with final report production.

Native American monitoring was conducted by Red Tail Monitoring & Research, Inc. (Red Tail) under the direction of Mr. Clinton Linton. Mr. Gabe Kitchen and Mr. Larry Sutton served as Native American Monitors during the survey. Mr. Kitchen is a Kumeyaay Indian from the Mesa Grande Reservation with more than four years experience in archaeological fieldwork and Native American Monitoring. Mr. Larry Sutton is a Kumeyaay Indian from the Viejas Reservation with more than two years experience in archaeological fieldwork and Native American Monitoring.

C. Structure of the Report

This report follows the State Historic Preservation Office=s guidelines for Archaeological Resource Management Reports (ARMR). The report introduction provides a description of the project and associated personnel. Section II provides background on the project area and previous research. Section III describes the research design and survey methods, while Section IV describes the survey results. Section V presents a summary and recommendations. Section VI includes the references cited in the technical report.

II. NATURAL AND CULTURAL SETTING

The following environmental and cultural background provides a context for the cultural resource inventory.

A. Natural Setting

The Project APE is located in the southwestern portion of Imperial County, southwest of the New River. The parcels are currently being used for agriculture, as is much of the surrounding area. The Imperial Valley has been in agricultural use since the early 1900s and consists of Holocene-age lake alluvium and sand. The elevation varies between 11 feet below sea level at the southern portion to approximately 26 feet below sea level at the northern end.

The geomorphology of the Project area is largely a product of the region's geologic history. During the Jurassic and late Cretaceous (>100 million years ago) a series of volcanic islands paralleled the current coastline in the southern California region. The remnants of these islands stand as Mount Helix, Black Mountain, and the Jamul Mountains among others. This island arc of volcanoes spewed out vast layers of tuff (volcanic ash) and breccia that have since been metamorphosed into hard rock of the Santiago Peak Volcanic formation. These fine-grained rocks provided a regionally important resource for Native American flaked stone tools.

At about the same time, a granitic and gabbroic batholith was being formed under and east of these volcanoes. This batholith was uplifted and forms the granitic rocks and outcrops of the Peninsular Range and the foothills that comprise the mountains west of the Project area. In San Diego County the large and varied crystals of these granitic rocks provided particularly good abrasive surfaces for Native American seed processing. These outcrops were frequently used for bedrock milling of seeds. The batholith contains numerous pegmatite dikes. This was a good source of quartz, a material used by Native Americans for flaked stone tools and ceremonial purposes.

As the Peninsular Batholith rose, it warped and metamorphosed the overlying sediments, forming the Julian Schist (Remeika and Lindsay 1992). This formation contains quartzite, a material also used for Native American flaked stone tools. Its relatively poor flaking qualities made this quartzite less popular for tool making than the quartz and Santiago Peak materials.

The Imperial Valley between the East and West Mesas consists of Quaternary lake deposits from ancient Lake Cahuilla. These lake deposits extend to 40 feet below sea level and are underlain by clay and silt deposits. Shoreline deposits a few hundred feet wide surround the Salton Basin and are unconsolidated sand and fine gravel. Towards the basin, these soils grade into silt and clay. The Lake Cahuilla deposits are less than 100 feet thick (Morton 1977).

The geology of the APE includes areas mapped as lakebeds and includes sediments of ancient Lake Cahuilla (Morton 1977). Soils mapped in the APE include the Imperial Series and Meloland soils. The Imperial Series consists of well- and moderately well-drained soils which include silty clay to depths of 60 inches or more. Typically, Imperial soils are located on nearly

level to gently sloping terrain on flood plains and in old lakebeds below and above sea level. The typical soil type in this series is Imperial silty clay, which is mostly uncultivated (USDA 1973). This soil is generally used for irrigated agriculture and non-irrigated native desert plants. Additional soils in the APE include the Imperial-Glenbar silty clay loam, which occurs on 0-2 percent slopes and is primarily used for farmland, and the Meloland very fine sandy loam, which is more than 60 inches deep and occurs on 0-2 percent slopes (NRCS 1976). The Meloland Series is prime farmland if properly irrigated.

Lake Cahuilla originated from periodic overflows and diversions of the Colorado River into the Salton Basin. This lake was in existence as recently as several hundred years ago, but the main stage of its existence is likely older, dating to the Wisconsin or early postglacial periods.

The climate of the region can generally be described as arid, with cool, dry winters and hot, dry summers. Rainfall limits vegetation growth. The Project area was probably dominated by desert scrub prior to replacement by agricultural crops. Components of this community provided important resources to Native Americans in the region. Seeds, mesquite, and native grasses formed important food resources to Late Prehistoric Native Americans.

The proposed Project is located within an area of active agriculture lands with very limited native vegetation remaining. This agricultural development has taken place in the past century and included the construction of a substantial system of gravity-flow irrigation canals along with drains to facilitate the farmland. Most of the farm fields are bordered by a series of these concrete canals and earthen drains. Patches of wetland vegetation occur along some portions of earthen berms, comprised of a mixture of native and non-native species that include at least arrow weed (*Pluchea serricea*), cattails (*Typha* sp.), tamarisk (*Tamarix ramosissima*), bitter dock (*Rumex obtusifolius*), and sprangletop (*Leptochloa* sp.).

Animal resources in the region include deer, fox, raccoon, skunk, bobcats, coyotes, rabbits, and various rodent, reptile, and bird species. Small game, dominated by rabbits, is relatively abundant.

B. Cultural Setting

Paleoindian Period

The earliest well documented prehistoric sites in southern California are identified as belonging to the Paleoindian period, which has locally been termed the San Dieguito complex/tradition. The Paleoindian period is thought to have occurred between 9,000 years ago, or earlier, and 8,000 years ago in this region. Although varying from the well-defined fluted point complexes such as Clovis, the San Dieguito complex is still seen as a hunting focused economy with limited use of seed grinding technology. The economy is generally seen to focus on highly ranked resources such as large mammals and relatively high mobility which may be related to following large game. Archaeological evidence associated with this period has been found around inland dry lakes, on old terrace deposits of the California desert, and also near the coast where it was first documented at the Harris Site.

Early Archaic Period

Native Americans during the Archaic period had a generalized economy that focused on hunting and gathering. Along the Colorado River, Native Americans chose to replace this economy with types based on horticulture and agriculture. California desert economies remained largely based on wild resource use until European contact (Willey and Phillips 1958). Changes in hunting technology and other important elements of material culture have created two distinct subdivisions within the Archaic period in southern California.

The Early Archaic period is differentiated from the earlier Paleoindian period by a shift to a more generalized economy and an increased focus on the use of grinding and seed processing technology. At sites dated between approximately 8,000 and 1,500 years before present (B.P.), the increased use of groundstone artifacts and atlatl dart points, along with a mixed core-based tool assemblage, identify a range of adaptations to a more diversified set of plant and animal resources. Variations of the Pinto and Elko series projectile points, large bifaces, manos and portable metates, core tools, and heavy use of marine invertebrates in coastal areas are characteristic of this period, but many coastal sites show limited use of diagnostic atlatl points. Major changes in technology within this relatively long chronological unit appear limited. Several scientists have considered changes in projectile point styles and artifact frequencies within the Early Archaic period to be indicative of population movements or units of cultural change (Moratto 1984), but these units are poorly defined locally due to poor site preservation.

Late Archaic or Late Prehistoric Period

Around 2,000 B.P., Yuman-speaking people from the eastern Colorado River region began migrating into southern California, representing what is called the Late Prehistoric Period. The Late Prehistoric Period in San Diego County is recognized archaeologically by smaller projectile points, the replacement of flexed inhumations with cremation, the introduction of ceramics, and an emphasis on inland plant food collection and processing, especially acorns (True 1966). Inland semi-sedentary villages were established along major watercourses, and montane areas were seasonally occupied to exploit acorns and piñon nuts, resulting in permanent milling features on bedrock outcrops. Mortars for acorn processing increased in frequency relative to seed grinding basins. This period is known archaeologically in southern San Diego County as the Yuman (Rogers 1945) or the Cuyamaca Complex (True 1970).

The Kumeyaay (formerly referred to as Diegueño) who inhabited the southern region of San Diego County, western and central Imperial County, and northern Baja California (Almstedt 1982; Gifford 1931; Hedges 1975; Luomala 1976; Shipek 1982; Spier 1923) are the direct descendants of the early Yuman hunter-gatherers. Kumeyaay territory encompassed a large and diverse environment, which included marine, foothill, mountain, and desert resource zones. Their language is a dialect of the Yuman language, which is related to the large Hokan super family.

There seems to have been considerable variability in the level of social organization and settlement variance. The Kumeyaay were organized by patrilineal, patrilocal lineages that claimed prescribed territories, but did not own the resources except for some minor plants and eagle aeries (Luomala 1976; Spier 1923). Some lineages occupied procurement ranges that required considerable residential mobility, such as those in the deserts (Hicks 1963). In the mountains, some of the larger groups occupied a few large residential bases that would be occupied biannually, such as those occupied in Cuyamaca in the summer and fall, and in Guatay or Descanso during the rest of the year (Almstedt 1982; Rensch 1975). According to Spier (1923), many Eastern Kumeyaay spent the period of time from spring through autumn in larger residential bases in the upland procurement ranges, and wintered in mixed groups in residential bases along the eastern foothills on the edge of the desert (i.e., Jacumba and Mountain Springs). This variability in mobility and organization reflects the range of environments in the territory.

In the deserts of southern California, Lake Cahuilla formed a large oasis with lush natural resources in the Colorado Desert. Storable resources such as mesquite or agave were valuable to groups inhabiting desert areas, at least during certain seasons (Hicks 1963; Shackley 1984). Seeds from grasses, manzanita, sage, sunflowers, lemonade berry, chia and other plants were also used along with various wild greens and fruits. Deer, small game and birds were hunted and fish and marine foods were eaten. Houses were arranged in the village without apparent pattern. The houses in primary villages were conical structures covered with tule bundles, having excavated floors and central hearths. Houses constructed at the mountain camps generally lacked any excavation, probably due to the summer occupation. Other structures included sweathouses, ceremonial enclosures, ramadas and acorn granaries. The material culture included ceramic cooking and storage vessels, baskets, flaked lithic and ground stone tools, arrow shaft straighteners, stone, bone, and shell ornaments.

Hunting implements included the bow and arrow, curved throwing sticks, nets and snares. Shell and bone fishhooks, as well as nets, were used for fishing. Lithic materials including quartz and metavolcanics were commonly available throughout much of the Kumeyaay territory. Other lithic resources, such as obsidian, chert, chalcedony and steatite, occur in more localized areas and were acquired through direct procurement or exchange. Projectile points including the Cottonwood Series points and Desert Side-notched points were commonly produced.

Kumeyaay culture and society remained stable until the advent of missionization and displacement by Hispanic populations during the eighteenth century. The effects of missionization, along with the introduction of European diseases, greatly reduced the native population of southern California. By the early 1820s, California was under Mexico's rule. The establishment of ranchos under the Mexican land grant program further disrupted the way of life of the native inhabitants.

Ethnohistoric Period

The Ethnohistoric period refers to a brief period when Native American culture was initially being affected by Euroamerican culture and historical records on Native American activities were limited. When the Spanish colonists began to settle California, the project area was within

the territory of a loosely integrated cultural group historically known as the Kumeyaay or Northern and Southern Diegueño because of their association with the San Diego Mission. The Kumeyaay as a whole speak a Yuman language that differentiates them from the Luiseño to the north, who speak a Takic language (Kroeber 1925). Both of these groups were hunter-gatherers with highly developed social systems. European contact introduced diseases that dramatically reduced the Native American population and helped to break down cultural institutions. The transition to a largely Euroamerican lifestyle occurred relatively rapidly in the nineteenth century.

Historic Period

Cultural activities within San Diego County between the late 1700s and the present provide a record of Native American, Spanish, Mexican, and American control, occupation, and land use. An abbreviated history is presented for the purpose of providing a background on the presence, chronological significance, and historical relationship of cultural resources within the county.

Native American control of the southern California region ended in the political views of western nations with Spanish colonization of the area beginning in 1769. De facto Native American control of the majority of the population of California did not end until several decades later. In southern California, Euroamerican control was firmly established by the end of the Garra uprising in the early 1850s (Phillips 1975).

The Spanish Period (1769-1821) represents a period of Euroamerican exploration and settlement. Dual military and religious contingents established the San Diego Presidio and the San Diego and San Luis Rey Missions. The Mission system used Native Americans to build a footing for greater European settlement. The Mission system also introduced horses, cattle, other agricultural goods and implements; and provided construction methods and new architectural styles. The cultural and institutional systems established by the Spanish continued beyond the year 1821, when California came under Mexican rule.

The Mexican Period (1821-1848) includes the retention of many Spanish institutions and laws. The mission system was secularized in 1834, which dispossessed many Native Americans and increased Mexican settlement. After secularization, large tracts of land were granted to individuals and families and the rancho system was established. Cattle ranching dominated other agricultural activities and the development of the hide and tallow trade with the United States increased during the early part of this period. The Pueblo of San Diego was established during this period and Native American influence and control greatly declined. The Mexican Period ended when Mexico was forced to cede California to the United States after the Mexican-American War of 1846-48.

Soon after American control was established (1848-present), gold was discovered in California. The tremendous influx of American and Europeans that resulted quickly drowned out much of the Spanish and Mexican cultural influences and eliminated the last vestiges of de facto Native American control. Few Mexican ranchos remained intact because of land claim disputes and the homestead system increased American settlement beyond the coastal plain.

The modern history of the Imperial Valley began in the early 1900s with the first permanent settlers in the valley. The towns of Seeley, El Centro, Calexico, Brawley, Niland, Holtville, and Imperial have a detailed history. The town of Seeley, originally named Silsbee after a San Diego cattle rancher, began as an immense ramada consisting of arrow weed in 1900 (Henderson 1968). Money was collected to build a school, but the plans were put on hold when a big flood washed through the valley during 1905-1906. The current location of Seeley was plotted and constructed west of the original location by 1911, building a hotel, schoolhouse, and a bank (Henderson 1968). The boom of prosperity in Seeley with the completion of the San Diego and Arizona railroad and later paved roads was relatively short lived. The town never prospered as its founders anticipated and today remains as a small unincorporated area on the west side of the valley (Henderson 1968).

C. Prior Research

The archaeological inventory included archival and other background studies prior to conducting the field survey of the Project area. The archival research consisted of literature and record searches at local archaeological repositories, in addition to an examination of historic maps, and historic site inventories. This information was used to identify previous recorded resources and determine the types of resources that might be expected to occur in the survey area. The methods and results of the archival research are described below.

The records and literature search for the Project was conducted at the South Coastal Information Center at San Diego State University (Appendix B). The record search was supplemented with recent studies conducted in the area. The records search included a one-mile radius of the Project area to provide background on the types of sites that would be expected in the region. Copies of historic maps were provided by the South Coastal Information Center.

Ten previous archaeological investigations have been documented in the vicinity of the Project; four cross through the survey area along the SR 98 alignment. Most of these studies are surveys for prisons, road improvements, or transmission lines associated with the growth and development of this area. Table 1 summarizes the investigations conducted within a one-mile radius.

The recorded cultural resources within a one-mile radius are summarized on Table 2. A review of previously recorded sites in a region provides an idea of the types of cultural resources that might be expected within the APE. Nine cultural resources have been identified within a one-mile radius of the survey area; two of these are within the survey area and another is just outside the currently surveyed area. These sites include an agricultural irrigation canal segment (P-13-008983), a prehistoric lithic and ceramic scatter (CA-IMP-6641), and a prehistoric lithic scatter (CA-IMP-1239). CA-IMP-1239 consists of 20-50 pieces of core reduction debitage of volcanic and quartz material. An examination of the plotting of CA-IMP-1239 indicates that this site was discovered among stabilized dunes in undeveloped land just south of the Brundy property within BLM land. Site CA-IMP-6641 was plotted within the southwest Bishop parcel, however the artifacts were collected in 1956 and no surface evidence was relocated during the current survey of the area.

Additional historic research included an examination of a variety of resources. The current listings of the National Register of Historic Places were checked, as well as the National Register of Historic Places website. The California Inventory of Historic Resources (State of California 1976) and the California Historical Landmarks (State of California 1992) were also checked for historic resources.

Table 1. Archaeological Investigations within a One-mile Radius of the Survey Area

NADB #	Author	Report Title	Date
1101045	Caltrans	Supplemental Historic Property Survey Report	1999
1100207	Davis	Class II Cultural Resource Inventory East Mesa and West Mesa Regions, Imperial County, California	1980
1100708	Haney	First Addendum Archaeological Survey Report for a Proposed Pavement Rehabilitation and Shoulder/Bridge Widening Project Along State Route 98 in Imperial County, California	1999
1100698	Hupp	Historical Architectural Survey Report Pavement Rehabilitation and Shoulder, Bridge, Culvert Widening Project, Imperial County, California	1999
1100408	Pigniolo	Cultural Resource Study of the Imperial County Prison Alternatives, Imperial County, California	1988
1101057	Pigniolo, Phillips, & Gallegos	Cultural Resource Study of the Mount Signal and Dixie Ranch Imperial County Prison Alternatives, Imperial County, California	1990
1100252	Schaefer	Volume I, Phase II, Archaeological Survey of the La Rosita 230 kV Interconnection Project	1981
1100766	Schaefer, Pallette, O'Neill, & Eighmey	Extended Phase I Study of Eight Archaeological Sites (CA-IMP-1427, -3969, -6914, -6915, -6916, -6918, -6920, -6923) on State Route 98, Imperial County, California	1999
1100311	Townsend	SWPL Cultural Resources Management Plan - Vol. II	1984
1100301	Welch	Asset Management Parcels Cultural Resource Inventory	1983

Table 2. Recorded Cultural Resources within a One-mile Radius of the Survey Area

Resource	Resource Type	Comment
CA-IMP-913	Prehistoric isolate stone knife	Not in survey APE
CA-IMP-1239	Prehistoric lithic scatter	Not in survey APE
CA-IMP-3413H	Historic crossed wagon road	Not in survey APE
CA-IMP-4499	Prehistoric ceramic scatter	Not in survey APE
CA-IMP-6641	Prehistoric lithic/ceramic scatter	Not relocated in survey APE (collected in 1956)
CA-IMP-7638	Prehistoric linear features ("spirit breaks")	Not in survey APE
CA-IMP-7642	Prehistoric habitation site	Not in survey APE
CA-IMP-8334	Prehistoric ceramic scatter	Not in survey APE
P-13-008983	Historic Wormwood Canal	Portions within survey APE

Historic maps of the area were also examined. The township plat map of the area, based upon surveys in the 1850s and 1880s, shows no structures in the township, but does indicate the San Diego to Yuma road near the Project area (Government Land Office 1907). The 1908 edition of the El Centro 15'USGS Quadrangle reprinted in 1915 shows the Project area had been developed for agriculture at that time, but does not show individual structures. The Westside Main Canal and Wormwood Canal are labeled on this map. Blue lines indicating the locations of the current Woodbine Canal, Laterals 2, 7, and 8, and the Mt. Signal Drain are also shown within the Project APE but are not labeled as such.

The Soils Bureau El Centro Sheet, dated 1918, shows 11 structures within the survey area. Three structures are shown within the southern portion of the Simmons property, one in the southeast end of the LeCrivain parcel, one is at the northwest corner of the Iliff parcel, and one at the southeast corner of the Wilson parcel. Another structure is located diagonally across from the Wilson parcel in the northwest corner of the Bishop property at the intersection of Kubler Road and Pulliam Road. One structure is located on the eastern edge of the Bishop property along Brockman Road, while another is at the southeast corner of the Simmons northern parcel along Brockman Road. Two structures are shown south of SR 98 within the Dessert property.

These were probably early farmhouses in the area. The 1947 edition of the Heber 15' USGS Quadrangle shows roughly the same structures as those in 1918 at the same locations. The 1957 edition of the Mount Signal 7.5' USGS Quadrangle shows the same structures within the Project area in the same pattern. At the present time only the two structures along Pulliam Road remain in these locations today, the rest being eliminated in the process of increasing agricultural fields.

III. RESEARCH DESIGN AND METHODS

A. Survey Research Design

The goal of this study is to identify any cultural resources located within the Project area so that the effects of the Project on these resources can be assessed. To accomplish this goal, background information was examined and assessed, and a field survey was conducted to identify cultural remains. Based on the records search and historic map check, most of the cultural resources within the Project are likely to be historic resources, including canals and irrigation features associated with the early development of the area, or sparse prehistoric sites.

B. Survey Methods

The inventory of the Project area was conducted in phases between April 19 and December 20, 2010 under the supervision of Principal Investigator Mr. Andrew R. Pigniolo, RPA. Field crew included Mr. Jose "Pepe" Aguilar, Mr. Frank Dittmer, Ms. Alette van den Hazelkamp, Ms. Sarah Farmer, Mr. Douglas La Rose, Mr. Nate Yerka, Ms. Nara Cox, and Ms. Bekah Loveless. Mr. Gabe Kitchen and Mr. Larry Sutton, of Red Tail Monitoring & Research, served as Native American monitors during the survey.

The survey area consisted of leveled and tilled agricultural fields, which were surveyed on foot in 10- to 15-meter transect intervals as the fields became fallow. Most of the fields were planted in grass or alfalfa that had been recently mowed, although some fields were still planted in alfalfa or were freshly disked at the time of the survey (Figure 4). However, while surface visibility varied from 10 to 70 percent throughout the survey area, due to dense turf and duff in many portions the visibility averaged approximately 25 percent. Because the area consists of Holocene alluvium that has been previously disturbed by tilling, the potential for intact cultural resources is low. The cultural resources survey of the area served to identify cultural resources although surface visibility served as a constraint.

Cultural resources identified during the survey were recorded on State of California, Department of Parks and Recreation forms and are included in Appendix C. Photographs and project records for this inventory will be temporarily curated at Laguna Mountain until final curation arrangements can be made at an appropriate regional repository.

Figure 4 Survey Conditions

IV. SURVEY RESULTS

The field investigations identified 13 historic cultural resources within the survey area and added to a portion of a previously recorded resource (Figure 5). These include two additional portions of the previously recorded Wormwood Canal (P-13-008983) along with segments of the Woodbine Canal (P-13-013073), the Woodbine Lateral 7 (P-13-013074), Woodbine Lateral 7A (P-13-013075), Woodbine Lateral 2 (P-13-013076), Woodbine Lateral 8 (P-13-013077), a portion of the Brockman Drain (P-13-013078), portions of the Mt. Signal Drain (P-13-013079), a southern portion of Mt. Signal Drain 1 (P-13-013080), the Carpenter Drain (P-13-013081), and Wells Drain (P-13-013082), as well as two historic residences (P-13-013083 and P-13-013084), and an isolated historic glass artifact (P-13-013085). The resources are summarized in Table 3 and described in more detail below. The previously recorded prehistoric site was not relocated. No evidence of nine of the structures shown on historic maps within the survey area was identified. The structures on the 1918 soils map were probably short-lived farm houses that were removed after agricultural consolidation prior to the Great Depression.

Table 3. Summary of Cultural Resources within the Survey Area

Resource	Resource Type	Resource Name/Description (Comment)
Prehistoric		
CA-IMP-6641	Lithic/ceramic scatter	not relocated (collected in 1956)
Historic		
P-13-008983	Irrigation canal	Wormwood Canal (2 portions)
P-13-013073	Irrigation canal	Woodbine Canal (2 portions)
P-13-013074	Irrigation canal	Woodbine Lateral 7 (partial)
P-13-013075	Irrigation canal	Woodbine Lateral 7A
P-13-013076	Irrigation canal	Woodbine Lateral 2 (partial)
P-13-013077	Irrigation canal	Woodbine Lateral 8
P-13-013078	Agricultural drain	Brockman Drain (partial)
P-13-013079	Agricultural drain	Mt. Signal Drain (2 portions)
P-13-013080	Agricultural drain	Mt. Signal Drain 1 (partial)
P-13-013081	Agricultural drain	Carpenter Drain
P-13-013082	Agricultural drain	Wells Drain (partial)
P-13-013083	Historic-age structure	601 Pulliam Rd. residence
P-13-013084	Historic-age structure	598 Pulliam Rd. residence
P-13-013085	Historic glass isolate	Sun-colored amethyst glass vessel handle fragment

CA-IMP-6641

This site was originally recorded in 1956 during the Archaeological Survey Association (ASA) volunteer research program studying Lake Cahuilla shorelines. Material from the site was collected during that survey. This included 5 Tizon Brown Ware rim sherds and 4 body sherds, 1 drilled buffware sherd and 35 additional body sherds, 1 quartzite hammerstone, 1 fine-grained volcanic hammerstone, 1 fine-grained volcanic core, 2 fine-grained volcanic scrapers, 2 chert flakes, 4 quartz flakes, 1 petrified wood flake, 3 fine-grained volcanic flakes, 1 porphyritic volcanic flake, and 1 quartzite flake. It is unclear if this was a sample surface collection or a

Figure 5

Survey Area and Associated Cultural Resources

(Confidential)

(Located in Appendix D)

complete surface collection. The site form mentions a receding Lake Cahuilla shore line at the site, which is at an elevation of 17 ft. below sea level. It is of interest that this site was collected as part of this survey as most of the ASA work was along the higher 40-foot elevation shoreline. Surface visibility in this portion of the Project area was approximately 90 percent and no surface evidence of the site was relocated within the Project area.

Wormwood Canal (P-13-008983)

The survey recorded two additional segments of the previously recorded Wormwood Canal, roughly 1.4 mi. apart. The northern portion is a north-south aligned 0.75 mi. long segment that parallels the east side of Wormwood Road on the western border of the Simmons property, north of Fisher Road (Figure 6). This segment continues northward out of the survey area for several miles towards the town of Seeley. An east-west aligned segment heads west south of Fisher Road but outside the current survey area.

The southern portion within the current survey area is an irregular alignment roughly 2.3 mi. long situated east of the major Westside Main Canal. The segment was recorded at the north end of the Brundy property, starting approximately 117 ft. west of the western end of Kubler Road, heading south paralleling Mandrapa Road then crossing SR 98 some 1.5 mi. south of Kubler Road, and extending south-southeast another 0.8 mi. along the western edge of the West-Gro parcel.

A "1964" date stamp was noted on a flow gate along the northern portion, but no other date stamps were observed (see Figure 6b). The canal varies in width from roughly 11 to 15 ft. across at the top (depth is unknown since the canal was full of water). The canal segments appear to be well-maintained and the integrity is good in spite of the recent earthquake activity in the area.

Woodbine Canal (P-13-013073)

Two portions of the western portion of the Woodbine irrigation canal were recorded during the survey. The east-west aligned 0.5 mi. long western-most segment parallels the north side of Kubler Road on the southern border of Section 5, below the Iliff and Wilson parcels (Figure 7a). Another 0.5 mi. east-west aligned portion was recorded along the southern boundary of the Simmons northern property. The north-south oriented segment runs from the southwest of the intersection of Kubler Road and Brockman Road down the west side of Brockman Road along the eastern border of the Bishop property. At SR 98, the canal heads east paralleling the north side of the highway along the southern boundary of the Yang and Chen parcels ending just west of Rockwood Road. The canal continues eastward for over 7 mi. to Anza Road.

The unlabeled Woodbine Canal is shown on the 1908 El Centro 15' USGS quadrangle map, however, the canal channel was lined with concrete at a later date, sometime in the late 1950s/early1960s. There is a "1957" date stamp on a small elevation drop at the northwestern corner of Brockman Road and SR 98, and two gates along the north-south segment have "1979" date stamps. The segment of the canal between the two 1979 dated gates has concrete of a different appearance indicating an even more recent replacement.

Figure 6 Wormwood Canal

Figure 7 Irrigation Canal Resources

The segment of the canal is roughly 13 ft. across at the top, but depth is unknown since the canal was full of water. Features associated with the canal include a small elevation drop, gate openings to the lateral canals, a gate along the canal itself, and the Brockman Road undercrossing. The canal segments appear to be well-maintained and the integrity of the features is good.

Woodbine Lateral 7 (P-13-013074)

This east-west aligned 1 mi. long lateral canal, coming off the main Woodbine Canal to the east, is situated on the north side of SR 98 along the southern border of the Bishop property, between Pulliam Road on the west and Brockman Road at the east (Figure 7b). The canal continues to the north for 0.5 mi. but in the next parcel to the west, outside of the current survey boundary.

This canal system was lined with concrete sometime in the late 1950s/early1960s. There is a "1957" date stamp in the concrete of a flow gate at the northeastern corner of Pulliam Road and SR 98; a second gate to the east appears contemporaneous, but is unmarked. A "1979" date stamp is present where the lateral connects to the main Woodbine Canal to the east. The canal is roughly 11.5 ft. across at the top. Depth is unknown since the canal was full of water. The elevation varies from approximately 14 ft. below sea level at the main canal, dropping to 17 ft. below sea level at the west end. The integrity of the canal is good in spite of the earthquake activity that has been occurring in the area.

Woodbine Lateral 7A (P-13-013075)

This approximately 2,785 ft. long supplemental earthen canal extends west from the main Woodbine Canal at Brockman Road, situated along the southern border of Bishop parcels -077 and -034 and ending just south of the Brockman Drain channel (Figure 7c). This lateral canal appears to be occasionally maintained by excavation and removal of sediment although it is currently overgrown in some areas. The top of the canal maintains an average width of 10 ft. Just over 0.25 mi. west of Brockman Road are two concrete control gates. One of these has a date stamp of "1954" but the other gate is unmarked. The integrity of the canal is fair.

Woodbine Lateral 2 (P-13-013076)

The northern approximately 1,948 ft. long portion of the Woodbine Lateral 2 irrigation canal was recorded during the current survey. This north-south aligned lateral canal bisects the main Woodbine Canal as well as SR 98; the southern portion extends south into Section 15 (not a part of this study). The elevation is approximately 12 ft. below sea level just north of SR 98 and deepens to approximately 18 ft. below sea level at the northern termination.

This lateral is identified as the "Woodbine Lateral 2" on the 1957 edition of the Mount Signal 7.5' USGS Quadrangle, but this portion is lined with relatively recent cement, likely reflecting a 1970s-era canal improvement program. No date stamps were observed along the concrete-lined canal to indicate age. The canal appears to be well-maintained and the integrity is good.

Woodbine Lateral 8 (P-13-013077)

The north-south aligned Woodbine Lateral 8 irrigation canal begins approximately 100 ft. north of the centerline of Kubler Road (see Figure 7d) and extends approximately 2,600 ft. north to just south of Fisher Road. This canal is present on the 1918 soils map, but is not labeled; but is labeled on the 1957 edition of the Mount Signal 7.5' USGS quadrangle. It is lined with relatively recent cement, likely reflecting a 1970s-era canal improvement program. No date marks are present along the channel lining. The segment appears to be well-maintained and the integrity is good.

Brockman Drain (P-13-013078)

Two segments of the Brockman Drain earthen drainage channel were recorded beginning at the center of the Bishop property, extending north for approximately 2,740 ft. From here, a second channel flows west for approximately 2,410 ft. and then goes under Pulliam Road and outside of the study area. Observed on USGS and aerial maps, this drainage channel continues to the west of Pulliam Road for approximately 1,327 ft., draining into the larger Mt. Signal Drain.

The channel appears to be occasionally maintained by excavation and removal of sediment although it is currently overgrown in some areas. The top of the channel maintains an average width of 10 ft. Concrete culverts are present at road undercrossings and where the channel changes directions. None of the concrete gates have a date stamp, so construction period of these is uncertain. The integrity of the drain is fair.

Mt. Signal Drain (P-13-013079)

The Mt. Signal Drain is shown on the USGS quadrangle to meander for nearly 4 mi. beginning 1 mi. south of SR 98 (at -6 ft. elevation) and ultimately emptying into Greeson Wash about 0.6 mi. south of Lyons Road (at -45 ft. elevation). Only two portions of this earthen irrigation drainage channel occur within the current survey area however. The southern portion within the APE occurs south of SR 98 (between Drew and Pulliam roads) along the east side of the West-Gro parcel to where it continues outside the APE (Figure 8a).

The northern portion continues on a north-south alignment from Section 8 entering the survey area on the north side of Kubler Road. This segment extends approximately 2,390 ft. along the boundary between the Iliff and Wilson parcels averaging about 55 ft. across, and then heads east just south of Fisher Road for approximately 1,190 ft. to the west side of Pulliam Road. The top width of this segment varies from 60-75 ft. across. The longest segment has a northeasterly alignment for 2,500 ft., starting on the north side of Fisher Road extending along the southeastern border of the northern Simmons property. This portion of the drain is 70-80 ft. across from bank to bank.

No historic-age features were observed within these portions of the drain, but it is part of the larger historic-age agricultural system. The drain appears to retain good integrity and is probably maintained by regular clearing with a backhoe.

Figure 8 Drain Channels and Residence Structure Resources

Mt. Signal Drain 1 (P-13-013080)

The Mt. Signal Drain 1 is a drainage branch beginning south of SR 98 that feeds into the "main" Mt. Signal Drain, merging at the center of Section 8. Only a small segment of this earthen irrigation drainage channel is within the southwestern portion of the current survey area. This southeasterly aligned 0.25 mi. segment lies about 100 ft. northeast of the Westside Main Canal. It parallels the eastern side of Mandrapa Road along the western border of the West-Gro parcel.

No historic-age features were within this portion of the drain, but it is part of the larger historic-age agricultural system. The drain is currently overgrown with vegetation but it is probably cleared at regular intervals.

Carpenter Drain (P-13-013081)

The Carpenter Drain is an east/west aligned earthen drainage channel beginning 0.5 mi. west of Brockman Road extending westward to 0.5 mi. east of Drew Road, paralleling the south side of St Route 98 along the northern border of the Dessert property (see Figure 8b). The approximately 1 mi. long channel empties into the north-south aligned Mt. Signal Drain.

It appears to be occasionally maintained by excavation and removal of sediment although it is currently overgrown in many areas with native plants and non-native grasses. The top of the channel maintains an average width of about 25 ft. The integrity of the drain is fair.

Concrete culverts and road "under-crossings" are present but no date stamps were observed, but it is part of the larger historic-age agricultural system and appears to probably reflect the 1950s construction/improvement period.

Wells Drain (P-13-013082)

The northern portion of this earthen drainage channel was recorded along the western border of the Yang property. The north/south segment, starting on the north side of SR 98, extends approximately 1,840 ft. to where it turns eastward (see Figure 8c). The east/west aligned segment runs approximately 1,044 ft. at a slight northerly angle, before it exits the northern parcel boundary. The top of the channel maintains an average width of 10 ft.

No historic-age features were within this portion of the drain, but it is part of the larger historic-age agricultural system and appears to probably reflect the 1950s construction/improvement period. It appears to be occasionally maintained by excavation and removal of sediment although it is currently overgrown in many areas with native plants and non-native grasses. The integrity of the drain is fair.

601 Pulliam Road (P-13-013083)

This resource is a residential structure located at the southeast corner of the LeCrivain property (at approximately 601 Pulliam Road). The Soils Bureau El Centro Sheet, dated 1918, shows a

structure at this location. The current structure appears to date to the late 1940s and is consistent with the World War II-era agricultural boom in the area. This locale contains a residence and associated older trees and landscaping within an approximately 270 feet north/south by 120 feet east/west area at the corner of the tilled fields (see Figure 5).

Because this area has probably been excluded from agricultural tilling disturbance, the potential for subsurface features related to the earlier structure in this location remains. Although not well-maintained, the current structure retains its context and integrity. The east-west Woodbine Canal is approximately 130 ft. south of the house on the north side of Kubler Road.

598 Pulliam Road (P-13-013084)

This resource is a residential structure located at the northwest corner of the Bishop property (at approximately 598 Pulliam Road). The 1918 Soils Bureau El Centro Sheet shows a structure at this location. However, the current structure is made from concrete block (set on block pilings) suggesting post-World War II construction (see Figure 8d). The residence is located in a triangular area excluded from agriculture at the southeast corner of Pulliam Road and Kubler Road. The triangular area is approximately 265 feet north/south by 270 feet east/west on the shortest axes.

In addition to the structure the area also includes a cluster of large tamarisk trees and what appears to be a concrete-capped well. The structure appears to date to the late 1940s based on architectural style and materials. Buried refuse that does not appear to be historic in age was observed south of the structure and appeared to have been burned prior to deposition.

Because this area has probably been excluded from tilling disturbance, the potential for subsurface features related to the earlier structure in this location remains. Although not well-maintained, the current structure retains its context and integrity. The east-west Brockman Drain channel borders the property immediately on the north and the east-west Woodbine Canal is approximately 130 ft. north of the house, across Kubler Road.

Historic Isolate (P-13-013085)

This historic isolate glass item was discovered on a dirt road approximately 270 ft. west-northwest of the east end of a metal foot-bridge that crosses the Westside Main Canal (1,065 ft. from the canal's intersection with SR 98). The item was found near a heavily disturbed area containing recent trash disposal. The area just south of the isolate is currently used an illegal refuse disposal site for trash and green waste. The recent trash consisted of rubber tires, cement, wood pallets, grubbed vegetation, beer/soda cans and glass bottles, window glass, and paint cans.

The 4-5 inch long handle portion is probably from a pitcher or similar vessel. The amethyst color is due to the use of the element manganese, which was phased out of glass production by 1930 for such glassware. The surface is pitted and abraded by wind-blown sand. No other items of historic age were observed in the area, but there is a possibility of additional historic material in this area.

V. EVALUATION CRITERIA, SIGNIFICANCE, AND RECOMMENDATIONS

A. Evaluation Criteria

The evaluation criteria used to determine site significance are provided below.

Cultural resource investigations must comply with a variety of laws, regulations, and ordinances. Many of these laws are complementary and provide similar protection for cultural resources at various jurisdictional levels.

The importance of cultural resources under State law as defined in CEQA has been refined to coincide with those of the California Register. Section 15064.5 of the CEQA guidelines provides for closer consistency with the National Register criteria. "Historical resources" as defined by Section 15064.5 of CEQA include:

> A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4850 et seq.).
>
> A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
>
> Any object, building, structure, site, area, place, record or manuscript which a lead agency determines to be historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically" significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4852) including the following Criteria for Designation:
>
> > (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
> >
> > (2) Is associated with the lives of persons important in our past;
> >
> > (3) 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

> (4) Has yielded, or may be likely to yield, information important in prehistory or history.
>
> The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resource Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resource Code sections 5020.1(j) or 5024.1.

The Federal criteria used to evaluate cultural resources are specified by the National Register criteria within NHPA. The National Register Criteria for Evaluation are presented in 36 CFR 60 as follows:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and
>
> (A) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (B) That are associated with the lives of persons significant in our past; or
>
> (C) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (D) That have yielded, or may be likely to yield, information important in prehistory or history.

B. Significance

The goal of the investigation was to identify resources that may be impacted by the proposed Project, and to assess any potential impacts to archaeological cultural material. The cultural resources investigation of the survey area APE identified 13 historic-age cultural resources and supplemented 1 previously recorded resource. These include historic-age segments of the Wormwood Canal, Woodbine Canal and four Woodbine Canal laterals, portions of five drainage channels (Brockman, Mt. Signal, Mt. Signal 1, Carpenter, and Wells drains), as well as two historic residential structures, and the isolated historic-age glass vessel fragment.

None of the structures has been evaluated for nomination to the California Register of Historical Resources (California Register). The South Coastal Information Center has indicated that the irrigation system in the Imperial Valley area makes up an eligible historic district as part of the

largest gravity flow irrigation system in the United States. Most of the irrigation system segments within the APE are associated with 1950s-era improvements to the original irrigation system and their significance is uncertain.

C. Management Recommendations

The potential for unanticipated buried historic or prehistoric archaeological resources is present based on the description of CA-IMP-6641 recorded within the APE as being associated with a past shoreline of ancient Lake Cahuilla. The survey area also contains Holocene-age alluvium from ancient Lake Cahuilla that may conceal subsurface shoreline deposits. Archaeological monitoring is recommended during all grading/construction activities.

If possible, impacts to all irrigational and drainage structures should be avoided and these resources should be incorporated into open space easements. If these structures cannot be avoided, then additional documentation and recording is recommended to evaluate and mitigate impacts to these resources.

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APPENDICES

A. Resume of Principal Personnel
B. Records Search Confirmations
C. Site Forms (Confidential – bound separately)
D. Confidential Figure (Confidential – bound separately)

APPENDIX A

RESUME OF PRINCIPAL PERSONNEL

APPENDIX B

RECORDS SEARCH CONFIRMATIONS

APPENDIX C

SITE FORMS

(Bound Separately in Confidential Appendices)

APPENDIX D

CONFIDENTIAL FIGURE

(Bound Separately in Confidential Appendices)

INVENTORY, EVALUATION, AND ANALYSIS OF EFFECTS ON HISTORIC RESOURCES WITHIN THE AREA OF POTENTIAL EFFECT OF THE CENTINELA SOLAR ENERGY, LLC IMPERIAL COUNTY, CALIFORNIA

Prepared for:

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August 2011
PN 17980

USGS 7.5-minute Quadrangles: Mount Signal, Heber
Acres: approximately 2151 acres

Keywords: NEPA, Section 106, NHPA, CEQA, built-environment inventory, visual effects, auditory effects, atmospheric effects, Westside Main Canal

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Consulting Firm: ASM Affiliates, Inc.
2034 Corte del Nogal
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Report Date: August 4, 2011

Report Title: Inventory, Evaluation, and Analysis of Effects on Historic Built Environment Properties within the Area of Potential Effect of the Centinela Solar Energy, LLC, Imperial County, California

Submitted by: ASM Affiliates, Inc.

Submitted to: David Wilson, P.E.

Prepared for: Centinela Solar Energy, LLC
5000 Hopyard Road, Suite 480
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Project Number: ASM PN 17980

USGS Quadrangle: 7.5-minute Mount Signal and Heber

Acres: approximately 2,151 acres (Project 2,067)

Keywords: NEPA, Section 106, NHPA, CEQA, built-environment inventory, visual effects, auditory effects, atmospheric effects, Westside Main Canal

MANAGEMENT SUMMARY

This report summarizes the results of a survey for historic resources within the Area of Potential Effect (APE) of the Project proposed by Centinela Solar Energy, LLC (CSE) in Imperial County, California. The report also addresses the potential for indirect effects resulting from the introduction of visual, auditory, or atmospheric elements into the historic setting of historic resources situated within the APE. The proposed Project consists of two primary components: (i) a solar power generation plant and associated facilities on privately owned land (the "CSE Facility") and (ii) an approximately seven-mile, 230-kilovolt (kV) aboveground, transmission line (the "Gen-tie Line") that will connect the CSE Facility on private land with the Imperial Valley Substation located on federal land located within the California Desert Conservation Area under the jurisdiction of the Bureau of Land Management (BLM). The CSE Facility and Gen-tie Line are referred to collectively as the "Project." The area encompassing the CSE Facility and the Gen-tie Line is referred to as the "CSE Project Area."

This report identifies and evaluates historic resources within the Project APE for eligibility for inclusion in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). The NHPA defines an historic resource as "a district, site, building, structure, or object significant in American history, architecture, engineering, archaeology and culture." Historical resources studies for the Project were carried out in compliance with Section 106 of the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), the California Environmental Quality Act (CEQA), and other applicable federal, state, and/or local laws, ordinances, rules, regulations, and policies. Section 106 is applicable to federal undertakings, including Projects financed or permitted by federal agencies, regardless of whether the activities occur on land that is managed by federal agencies, other governmental agencies, or private landowners.

To assess indirect effects to historic resources, ASM completed an inventory and field documentation of built-environment properties (i.e., buildings and structures) more than 50 years old within the APE where indirect effects to the historic setting could occur, or 0.5 miles (mi.) around the Project footprint, including the solar field and transmission line. Historic resources constructed prior to 1961 were identified through an analysis of historical maps, Imperial County Assessor's property records, and a records search at the South Coastal Information Center provided by KP Environmental, LLC. A field survey was then conducted, and all historic resources visible from the public right-of-way (ROW) were documented. The buildings and structures identified as a result of archival research and field survey were then evaluated using NRHP and CRHR eligibility. An analysis of effects was completed for all buildings and structures recommended eligible to the NRHP and CRHR.

This report is divided into seven chapters. Following an introduction to the undertaking in Chapter 1, Chapter 2 provides an historical overview for the Project area. Chapter 3 summarizes previous surveys conducted within the APE for indirect effects and previously

recorded historic resources. Chapter 4 discusses the research and field methods guiding the identification and evaluation of historic resources. Chapter 5 summarizes the survey results, and provides details on the limitations of the field survey. Chapter 6 provides evaluation of historic resources for their eligibility for listing in the NRHP and/or CRHR, and Chapter 7 is an assessment of visual, auditory, or atmospheric effects to eligible historic resource.

As a result of the inventory, 16 historic resources were identified within the areas of the Project APE that were surveyed. Due to inaccessibility, the western portion of the APE was not surveyed; however, a review of current aerial photographs and historic United States Geological Survey (USGS) maps indicate an absence of historic resources in that portion of the APE. One NRHP-eligible historic resource was identified, the Westside Main Canal (CA-IMP-7834). No significant visual, auditory, or atmospheric effects were identified as a result of the evaluation of indirect effects on the Westside Main Canal. The canal would not be subject to a visual intrusion by the Project but would be subject to temporary auditory and atmospheric intrusions during Project construction. However, neither intrusion would affect the qualities or values that would qualify these properties for listing in the NRHP and would not result in an adverse effect under 36 Code of Federal Regulations (CFR) 800 or a significant impact under CEQA. Similarly, since the only effects to NRHP and/or CRHR-eligible resources would be temporary (limited to the construction period), it is not expected that the Project would create a substantial adverse effect with respect to NEPA.

Documentation of historic resources complied with the reporting specifications in the BLM 8110 Manual, *Identifying Cultural Resources* guidelines and with the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740), and the California Office of Historic Preservation Planning Bulletin Number 4(a), December 1989, *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format (ARMR Guidelines) for the Preparation and Review of Archaeological Reports*. All historic buildings and structures identified during this inventory were recorded on California Department of Parks and Recreation (DPR) Form DPR 523 (Series 1/95), using the *Instructions for Recording Historical Resources* (Office of Historic Preservation 1995). These forms are included a confidential appendix (Appendix A) to this report.

1. INTRODUCTION

The APE is the geographic area or areas, regardless of land ownership, within which an undertaking may directly or indirectly cause alterations in the character or use of historic resources, if any such properties exist. The APE for this assessment of indirect effects was defined as encompassing a corridor extending 0.5 mile (mi.) from the centerline of the proposed transmission line and a radius of 0.5 mi. surrounding the solar field in order to assess indirect visual, auditory, or atmospheric effects on significant historic resources. ASM Affiliates, Inc. (ASM) conducted field surveys of the APE and, in several areas, exceeded the 0.5-mile survey buffer where they deemed additional areas required study

PROJECT DESCRIPTION

The CSE Facility property is located on private lands in southern Imperial County, comprising 2,067 acres of private land, of which approximately 1,861 acres are in active agricultural production (predominantly forage crops such as Bermuda grass and alfalfa). The Project will use proven solar photovoltaic (PV) technology and electronic direct current to alternating current (DC-to-AC) power conditioning equipment (inverters) to produce three-phase, 60 Hertz (Hz), utility-grade electric power directly from sunlight (Centinela Solar Energy 2011). The generation capacity of the CSE Facility is expected to be rated up to a nominal 275 megavolts (MV) alternating current. The solar field is located approximately 8 mi. southwest of the City of El Centro, east of the Yuha Basin and Yuha Desert, west of the Greeson Wash and Rookwood Road, south of Lyons Road, and north of the United States (U.S.) -Mexico border (Figure 2).

The CSE Facility site would interconnect to the utility grid at the Imperial Valley Substation via the Gen-tie Line, a severn-mi.-long overhead transmission line. For most of its length along the proposed route, the Gen-tie Line would run adjacent to existing 230 kV transmission lines. Upon exiting the CSE Facility, the Gen-tie Line will cross approximately 1.25 mi. of private property and up to approximately 4.25 mi. of land managed by the BLM within Utility Corridor “N” of the California Desert Conservation Area. Additionally, the northernmost (approximately two mi.) area of the proposed Gen-tie Line route is within Westwide Energy Corridor Segment 115-238, which is designated as a multi-modal transmission corridor. The proposed right-of-way for the transmission line corridor is 125 ft. wide. The support structures for the Gen-tie Line would consist of tower structures with foundations, three-phase electric conductors, and shield wires. Transmission line tower options include steel lattice; single-pole tubular steel, concrete, or a combination of tubular steel and concrete; three-pole tubular steel; and single-pole and/or three-pole angle structures (self-supporting or guyed). The towers would be spaced approximately 1,000 to 1,200 ft. apart and will range in height from approximately 100 to 150 ft. (dependent on final Project options) (Centinela Solar Energy 2011).

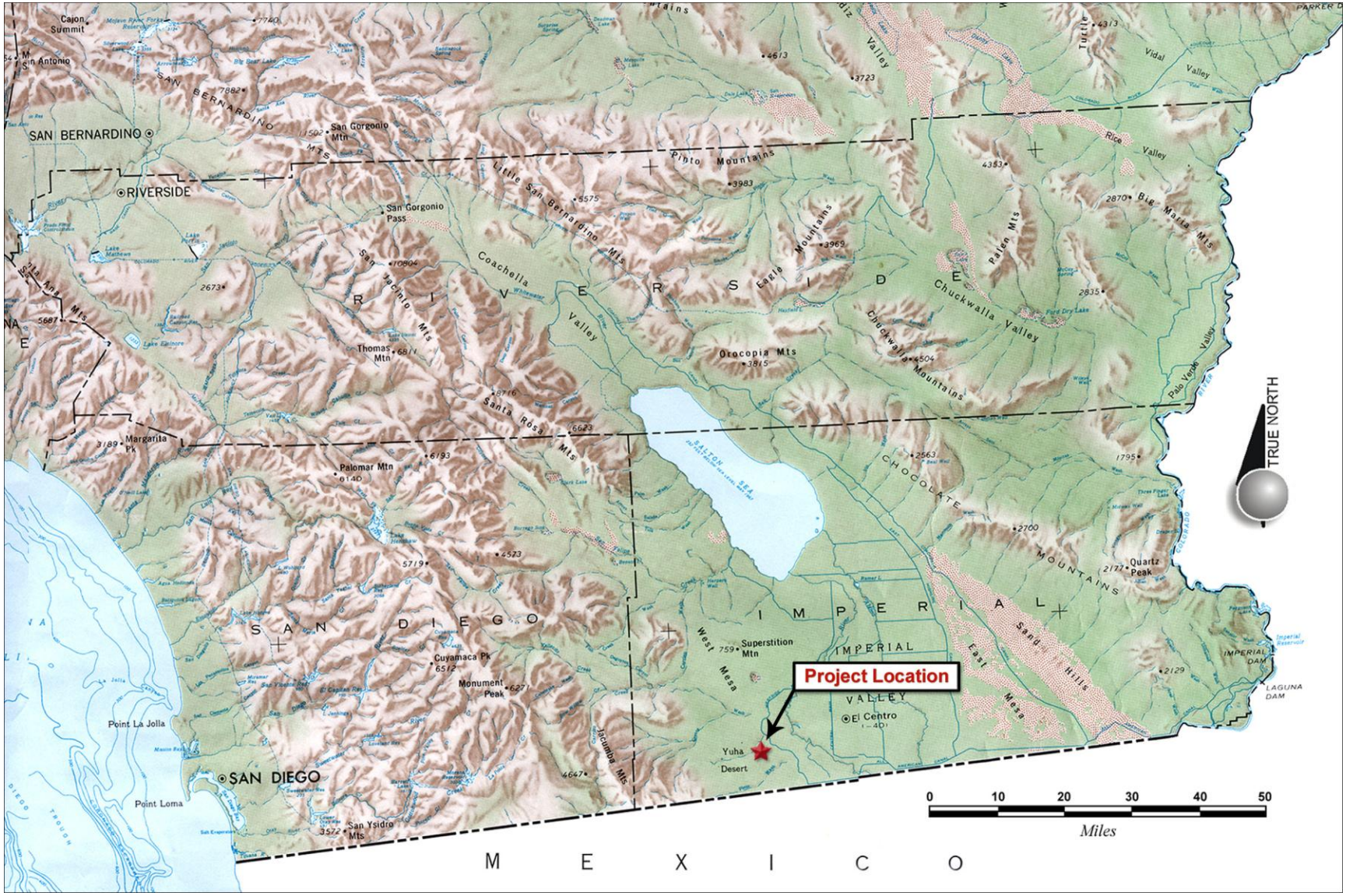

Figure 1. Project vicinity map.

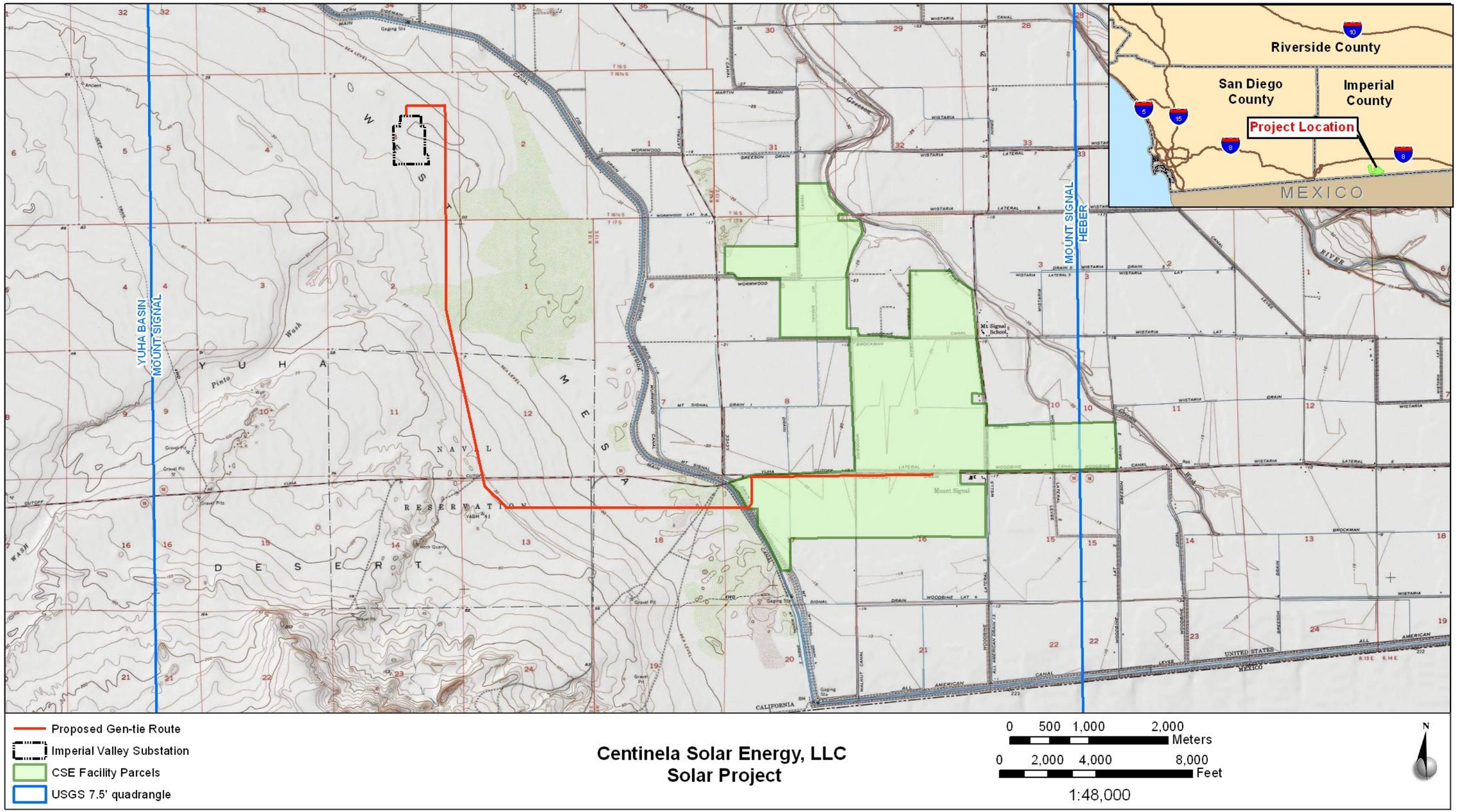

Figure 2. Project area map.

REGULATORY FRAMEWORK

The BLM is the federal lead agency under NEPA and for compliance with Section 106 of the NHPA. Section 106 regulations (36 CFR 800) define an adverse effect as one that occurs when an undertaking directly or indirectly alters the characteristics of an historic resource that make it eligible for listing in the NRHP. Public Resources Code (PRC) Section 5020.1 and CEQA Guidelines Section 15064.5(b)(1) define a significant effect as one that would materially impair the significance of an historical resource. An adverse visual, auditory, or atmospheric effect to a historic resource is one that negatively affects the integrity of setting or feeling of the resource to the extent that the characteristics that would qualify the resource for listing in the NRHP or the CRHR are compromised. Accordingly, this report addresses indirect adverse effects under Section 106 and significant effects under CEQA to historic buildings and structures.

A phased approach to evaluating potential indirect effects on historic resources was implemented. First, an inventory of known historic resources within the CSE Project APE was compiled and historic maps were examined. Second, a field survey was conducted within the APE for indirect effects, to evaluate the presence and eligibility of historic structures (Figure 3). This information was then analyzed to determine the age, integrity, and historic context of the resources present. Third, visual, auditory, and atmospheric effects were evaluated for those historic structures considered eligible for the NRHP and/or CRHR within the areas of the APE where indirect effects could occur.

PROJECT PERSONNEL

Table 1. ASM Project Personnel

Role	Individual
Principal in Charge / Contract Administration	John R. Cook, B.A., RPA
Project Manager	Sinéad Ní Ghabhláin, Ph.D., RPA
Senior Architectural Historian	Shannon Davis, M.A.
Associate Architectural Historian	Jennifer Krintz, M.H.P.
Associate Archeologist	Shelby Gunderman, M.A., RPA

ASM's team of cultural resource professionals included Dr. Sinéad Ní Ghabhláin, as Project Manager. Dr. Ní Ghabhláin has 25 years of professional and academic experience in historical archaeology, history, and architectural history. Shannon Davis, M.A., has 13 years experience in historic preservation, 10 of which were spent as a Historian with the NRHP, and is qualified as Architectural Historian and Historian under the SOI's qualifications standards. Jennifer Krintz, M.H.P., has six years of experience in cultural resources and historic preservation planning, evaluation, and documentation, and is qualified as Architectural Historian under the

SOI's qualifications standards. Both Ms. Davis and Ms. Krintz are well-versed in all aspects of evaluating buildings and structures for listing in federal and state registers, and in applying the aspects of integrity to a given property. Shelby Gunderman, M.A., RPA, has six years experience in cultural resources management and historical archaeology, and is qualified as an Archaeologist under the Secretary of the Interior's (SOI's) qualifications standards.

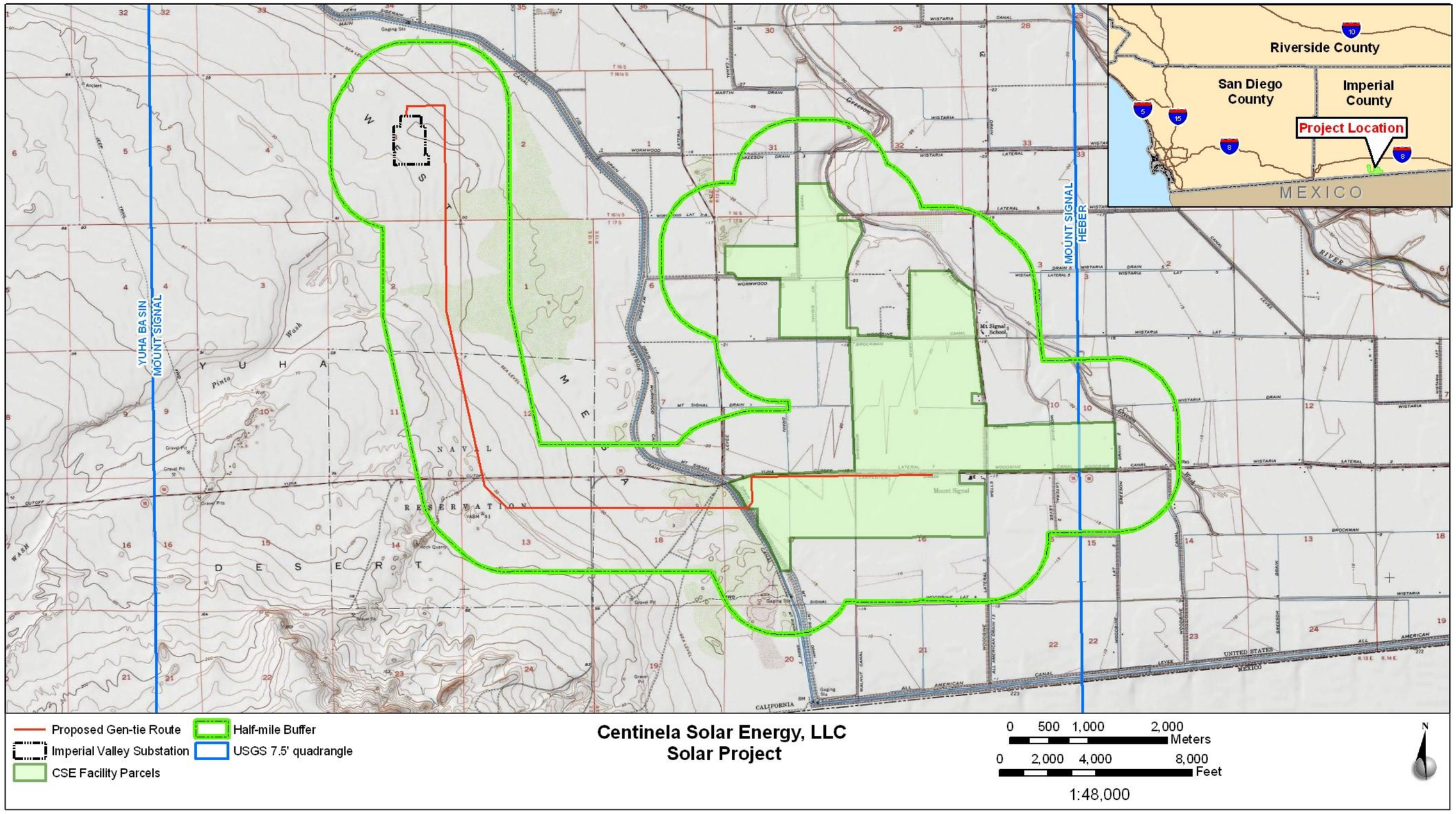

Figure 3. Centinela Solar Project area with .5-mile APE.

2. NATURAL AND HISTORICAL SETTING

NATURAL SETTING

The CSE Project APE is roughly bordered on the west by the Yuha Basin and Yuha Desert; on the east by Greeson Wash and Rookwood Road; on the north by Lyons Road; and on the south by the All-American Canal and the U.S.-Mexico international border. It is mostly comprised of agricultural land and open space considered part of the Imperial Valley. Nearby communities and landmarks include Mount Signal within the eastern portion of the APE for indirect effects and Seeley (outside that APE) to the north. Imperial Valley is part of the Colorado Desert.

The Colorado Desert in California is a low-lying area east of the Peninsular Ranges, with its southern end extending through Mexico to the head of the Gulf of Mexico. Elevations in the Colorado Desert range between 70 meters (m) (230 ft.) below mean sea level to 670 m (2,200 ft.) above mean sea level (Miles and Goudey 1998). A hot and dry climate characterizes the Colorado Desert. Average annual temperatures range between 20° and 24° Celsius (C) (68° and 75° Farenheit (F)), with only 76 to 152 mm of mean annual precipitation. The Colorado Desert represents an arid region, with episodic freshwater lakes formed by the infilling of Lake Cahuilla throughout the Holocene. Vegetation communities in the Colorado Desert include desert scrublands, riparian woodland and scrublands, and wetlands in moist areas (Miles and Goudey 1998). Mammals that have typically resided in the Colorado Desert include desert bighorn sheep, mule deer, pronghorn antelope (now extirpated), desert kit fox, coyote, spotted skunk, spotted bat, black-tailed jackrabbit, cottontail rabbit, ground squirrels, kangaroo rats, and mice. Common birds include eagles, hawks, owls, quail, doves, warblers, blackbirds, and finches. The Salton Sea provides habitat for a wide variety of waterfowl and shorebirds. Reptiles include numerous species of lizards and snakes.

HISTORICAL CONTEXT

Reclamation and Early Settlement in the West

In the mid-1800s, available federal land lured pioneering settlers to the West. Patenting that land under the Homestead Act of 1862, Timber Culture Act 1873, and the Desert Land Act 1877 gave settlers the opportunity to secure and improve land for themselves and for their families. Combating the rough mountainous terrain, traversing canyons and valleys, and crossing arid deserts, settlers had no guarantees that they could improve or sustain themselves on the land. Although land was readily available, water was not. Early land acts attempted to give settlers incentives to create their own irrigation features, but most settlers lacked the knowledge and resources (Robinson 1948). They often pooled their individual irrigation efforts and started water users' associations and private water companies, but the vast majority of those collective efforts were not long-term solutions. Many settlers had difficulty accumulating enough finances, manpower, and engineering knowledge to build and sustain reliable delivery

systems. Raging floods often wreaked havoc on settler-built wooden headgates and earthen ditches. Even if settlers were able to obtain water from artesian wells and to afford pumping water, the water tables often fluctuated.

While Western farmers realized the need for consistent and reliable irrigation systems in the late nineteenth century, it was water shortages and not "resource planning" or "scientific farming" that prompted the initial interest in irrigation systems (Pisani 1984:95). Sparse settlement and sporadic irrigation in the arid West (primarily in California, but also Colorado and Utah) meant Congress was not initially interested in spending the time or funds surveying the feasibility of harnessing water resources in the West. In 1873, Senator William Morris Stewart of Nevada introduced a bill for the survey of California, which Congress approved. The Alexander Commission report (1874) advocated irrigation in the Central Valley and prompted some congressman to push for a coordinated irrigation program. The report fell short of advocating a national reclamation program, but instead supported a "mixed enterprise" of public (state) and private water works (Pisani 1984). At that time, the greater populace was reluctant to take on the financial responsibility of a federal Project and was generally unwilling to accept the federal government's authority for such a Project (Rowley 2006). However, shortly thereafter the combined effects of droughts, a depression in the 1890s, and the U.S. Geological Survey (USGS) expedition led by John Wesley Powell (1888-1892) created the necessary backdrop for Congressional support of the National Reclamation Act in 1902 (Pisani 2002).

Early Irrigation Efforts in the Imperial Valley

In 1853, William P. Blake conducted a preliminary survey that showed that overflows of the Colorado River emptied into the low-lying Salton Trough through the New and Alamo rivers. This process had begun thousands of years earlier, on several occasions forming ancient Lake Cahuilla. Observing the rich harvests of the Colorado River Yumans, Blake (1853) remarked on the fertility of the river-deposited clay soils, for which only the application of irrigation was needed to produce abundant crop yields. His barometric readings showed that Imperial Valley lay below sea level, and his investigations paved the way for the conception of a gravity flow irrigation system. Early solicitation by Dr. O. M. Wozencraft for federal support for such a system between 1849 and 1887 did not produce results, but Wozencraft's efforts laid the groundwork for later endeavors by Charles R. Rockwood (Steere 1953).

The first irrigation system in Imperial Valley was built by the California Development Company (CDC) under the direction of Charles Rockwood and George Chaffey, first operated in August 1900 (Frisby 1992; JRP Consulting 2000; Rockwood 1930; Starr 1990; Tout 1931). The Alamo or Imperial Canal delivered Colorado River flow to the Alamo River Channel just north of the Mexican Border. Available water offered settlers an opportunity to establish farms on the government-owned lands of Imperial Valley under the Homestead Act of 1862, the Desert Land Act of 1877, and the Carey Land Act of 1894. While settlers could purchase up to 320 acres at $1.25 an acre, they also had to purchase water stock from George Chaffey's Imperial Land Company. Thirteen mutual water companies were eventually formed to disperse water in the valley. Cash-short settlers financed these costs by conveying to the Imperial Land

Company either the land mortgage or water company stock as security for a 6 percent note on the cost of the water stock (Starr 1990). By 1904, the early channel had silted up, and a second bypass suffered the same fate. Both the CDC's operation and the potential for its exploitation of the homesteading pioneers in the Imperial Valley alarmed the federal government (Ní Ghabhláin and Schaefer 2005). Theodore Roosevelt's signature on the Reclamation Act of 1902 (Newlands Act) gave the federal government the authority to allocate funding to aid settlement in the West by helping establish sustainable water sources through water works Projects. This act profoundly affected the development of the Arid West and "laid the foundation for a powerful new federal presence in western water matters" (Rowley 2006:100). It also created the Reclamation Service as part of the USGS, which provided the engineering expertise and directed the Projects (Armstrong 1976).

Almost as soon as it was formed, the Reclamation Service took measures to challenge the way the CDC operated in the Imperial Valley and how it used public water from the Colorado River and public lands of Imperial Valley to make a profit. The Reclamation Service attacked the claims of the CDC concerning the fertility of the alkaline soils in Imperial Valley and the economics of developing that land. As the federal entity charged with water development, the Reclamation Service also began to explore much more ambitious and reliable approaches to controlling the Colorado River (Starr 1990). In 1903, the federal declaration of the Colorado River as a navigable waterway undermined the CDC's right to tap the water. These actions led to a period of extreme conflict between the CDC and the Reclamation Service.

The CDC, then under the control of Anthony Heber, pursued an alternate route outside the U.S., since it would be impossible to obtain a water diversion permit from the Reclamation Service. A new intake south of the U.S.-Mexico border was also expected to solve the problem of the silted Alamo Canal (Starr 1990). Efforts in 1905 to open this diversion without a permanent concrete headgate coincided with an unusually rainy year for the Southwest that caused the Colorado River to redirect itself westward, destroying the partially completed headgate and pouring 360 million ft^3 of water per hour into the Imperial Valley. The flood ironically renewed the ecological balance in the Imperial Valley by recreating Lake Cahuilla in the form of the Salton Sea. This balance, however, was at the cost of destroying the Imperial Valley's irrigation system. The series of floods in the spring of 1905 forced the CDC to try to close the Mexican cut with a series of dams, but money and limited engineering capabilities were spent. In June 1905, the Southern Pacific Railroad acquired the failed CDC and fought the disastrous floods during 1905-1907. Despite the Southern Pacific's requests for help from the federal government in 1906, President Roosevelt offered no sympathy for the CDC, even though the Southern Pacific now controlled the company, because the CDC caused the problem. Only monumental and extremely expensive efforts by the Southern Pacific Railroad finally diverted the river back to the Gulf of California (Corey 1915; Starr 1990).

The Imperial Irrigation District

Dissatisfied Imperial Valley settlers ultimately opted for an alternative to the CDC and supported the Reclamation Service efforts for more ambitious and reliable approaches to controlling the Colorado River. In 1904, the concerned settlers first organized their own

Imperial Water Users Association as a prerequisite for the federal government's assistance (Dowd 1956; Starr 1990). Efforts to convince the federal government to buy out the CDC and to strengthen local support for the Reclamation Service resulted in threats by the CDC to cut off the water supply. Some fearful farmers turned against Reclamation and literally tarred and feathered a pro-Reclamation advocate after a public debate. Eventually, the cost of controlling the 1905-1907 floods, damage suits by the New Liverpool Salt Company resulting from the floods, and other litigation forced the CDC into bankruptcy and receivership (Starr 1990).

The Imperial Irrigation District (IID) was founded in 1911 in response to the logistical, legal, and economic problems caused by the CDC bankruptcy and the aftereffects of more floods. Over the next 11 years, the IID acquired all 13 Imperial Valley mutual water companies. They also joined the efforts to deliver water from a politically secure location north of the Mexican border and through a system that would not be threatened by Colorado River floods. As early as 1904, the Reclamation Service proposed several routes (Dowd 1956). The original concept was to divert water at Laguna Dam (1908) to irrigate lands at the Colorado-Gila River confluence. Imperial Valley farmers formed the Imperial Laguna Water Company in 1914 as a mutual water company to develop East Mesa lands. By 1918, they had come to an agreement with the IID to build a canal to service all of Imperial Valley. In 1919, the two parties supported the construction of an All-American Canal and a Colorado River storage reservoir. This new All-American canal would solve the previous problems of dependence on a Mexican right-of-way. A large dam would eliminate issues of siltation and threats of destruction during spring floods. First, legislation was necessary for the distribution of Colorado River water among the seven states that bordered the river (Fradkin 1981). The 1922 Colorado River Compact authorized the allocation of the water supply between upper and lower basin states. Secretary of Commerce Herbert Hoover persuaded all seven states to sign, but the Arizona legislature failed to ratify because the Compact did not specify water allotments to each state. California pushed for the All-American Canal, while the possibility of its effects on Arizona's water rights prompted opposition from Arizona representatives (Reisner 1993).

Growing Congressional support for water development Projects on the Colorado River rallied around protecting the precarious position of the successful agricultural community in the Imperial Valley. The valley produced crops valued between $40 and $50 million in 1927, but had already lost millions of dollars in 1924 due to water shortage. Fluctuations in the water supply from either floods or shortages consistently threatened Imperial Valley farmers (Brown 1927; James 1928). The valley became a representative example of the potential for agricultural development hindered by an inability to control the Colorado River as a consistent water source.

All-American Canal

Construction of the All-American Canal was authorized under the Boulder Canyon Project Act of 1928, one of the most monumental public reclamation Projects ever undertaken in the western United States. Along the Colorado River, the Imperial Dam (built in 1935-1938) became the diversion point for the All-American Canal, where three enormous desilting basins

cleansed the muddy Colorado River waters. The All-American Canal, excavated between 1934 and 1940, carried water 82 mi. to Imperial Valley (Schaefer and O'Neill 2001).

Although portions of the canal, including the Coachella Canal and all of the Imperial Valley mains, were not complete until 1948, the All-American Canal was supplying approximately 50 percent of Imperial Valley's water by 1941. Construction required removing 57.5 million yard (yd.)^3 of soil and sand, and 1.05 million yd.^{3} of rock. Canal structures required an additional 2.7 million yd.^{3} of excavation and backfill. The 82-mi.-long canal has the capacity of 15,155 ft.^{3} per second (cfs) at the initial diversion, reducing gradually as water is drawn for irrigation. It has a maximum width of 200 ft. at water level, 134 ft. at the bottom, and a water depth of 22 ft. Beyond the Pilot Knob Wasteway, the canal dimensions diminish to 130 ft. wide, 16.6 ft. water depth, and a capacity of 10,155 cfs. The canal now delivers 3.1 million acre-ft. annually to nine cities and half a million acres of agricultural lands throughout the Imperial and Coachella valleys. In 2001, the Bureau of Reclamation (BOR) and the California State Historic Preservation Officer (SHPO) determined that the All-American Canal was eligible for the NRHP (Burkard et al. 2007).

Westside Main Canal

One of the principal canals branching off the All-American Canal is the Westside Main Canal. Built circa (ca.) 1907, the Westside Main Canal was later integrated into the All-American Canal system in the mid- to late 1930s (Burkard et al. 2007). This canal runs north from the All-American Canal just west of El Centro, and through the community of Dixieland. The canal remains in use today as an integral component of the Imperial Irrigation District (IID) irrigation system. As referenced in previously prepared DPR Form 523a forms, the BOR and SHPO determined in 2001 that the All-American Canal is eligible for listing in the NRHP/CRHR, and by extension the Westside Main canal is eligible for listing in the NRHP/CRHR for its significance in association with the development of the Imperial Valley (Appendix B).

3. PREVIOUS RESEARCH

PREVIOUS STUDIES

As a result of a historic resources records search conducted by KP Environmental, LLC, 26 cultural resource studies were identified that address cultural resources within one mi. of the CSE Project (Mitchell 2010). All previous studies are summarized in Table 2. The majority of these studies focused on archaeological resources. Those that evaluated the built environment include an evaluation of the All-American Canal (Schaefer and O'Neill 2001) and the Wormwood and Westside Main canals by Caltrans (Hupp 1999).

Table 2. Cultural Resource Investigations within a One-Mile Radius of the Project

Author	Title	Company/Agency	Year
Davis	East & West Mesa Class II Cultural Resource Inventory	Westec Services	1980
Bull	Proposed Imperial Valley Substation Cultural Resource Survey	RECON	1980
Schaefer	La Rosita to Imperial Valley Interconnection Project 230 kV TL Archaeological Survey Vol. I, Phase II	Cultural Systems Research	1981
Schaefer	La Rosita to Imperial Valley Interconnection Project 230 kV TL Archaeological Survey Vol. II Appendix, Phase II	Cultural Systems Research	1981
CSRI	Proposed Imperial Valley Substation Overview & Assessment	Cultural Systems Research,	1982
Foster & Greenwood	La Rosita to Imperial Valley Interconnection Project 230 kV TL Cultural Resource Inventory	Greenwood & Associates	1983
Welch	Asset Management Parcels Cultural Resource Inventory		1983
Townsend	SWPL Cultural Resources Management Plan – Vol. II	Wirth Environmental Services	1984
Gallegos	West Mesa Cultural Resource Survey & Site Evaluation	Westec Services	1984
Pigniolo	Imperial County Prison Alternatives Cultural Resource Study	Westec Services	1988
Pigniolo, Phillips, & Gallegos	Mt. Signal & Dixie Ranch Imperial County Prison Alternatives Cultural Resource Study	ERC Environmental & Energy Services	1990
Hupp	Historical Architectural Survey Report for Pavement Rehabilitation and Shoulder, Bridge, Culvert Widening Project	Caltrans	1999
Haney	1st Addendum – Archaeological Survey Report for Pavement Rehabilitation and Shoulder/Bridge Widening Project along SR 98	Caltrans	1999
Schaefer, Pallette, O'Neill, & Eighmey	Extended Phase I Study of 8 Archaeological Sites on SR 98 (CA-IMP-1427, -3969, -6914, -6915, -6916, -6918, -6920, -6923)	ASM Affiliates, Inc.	1999
Caltrans	Supplemental Historic resource Survey Report	Caltrans	1999
Hangan	Hunter's Alien Waters Cultural Resources Inventory Report		2001
Schaefer	The All-American Canal: An Historic resources Inventory and Evaluation	ASM Affiliates, Inc.	2001
BLM	Hunter's Alien Waters Cultural Resources Inventory Report	BLM	2001a
BLM	EA for Presidential Permit Applications for Baja CA Power, Inc & Sempra Energy Resources	BLM	2001b
Buysse & Smith	Border Remote Video Surveillance Project, El Centro Sector Archaeological Survey Results	Brian F. Smith & Associates	2002
BLM	DEIS Imperial-Mexicali 230 kV TLs	BLM	2004
Berryman	230 kV Electric Corridor from Imperial Valley Substation to the International Border with Mexico Cultural Resource Survey	RECON	2001a

Author	Title	Company/Agency	Year
BLM	Mesquite Mine Expansion Overview & Assessment	BLM	2002
Berryman	Cultural Resource Treatment Plan: Two 230 kV Electric Lines from Imperial Valley Substation to the International Border with Mexico	RECON	2001b
Noah & Gallegos	Sunrise Powerlink Class III Inventory	Gallegos & Associates	2008
	1100972 BLANK FORM		n.d.

PREVIOUSLY DOCUMENTED RESOURCES

Previous studies have identified three historic resources within the CSE Project APE. These are described below and summarized in Table 3. The following resource descriptions detail the resources as documented by previous studies. Updates concerning the current condition of resources are provided in Chapter 5.

Table 3. Previously Documented Built-Environment Resources

Resource	Trinomial/Primary Number
Westside Main Canal	CA-IMP-7834
Wormwood Canal	CA-IMP-8983
Woodbine Canal	P-13-013073

Westside Main Canal (CA-IMP-7834)

In 2007, J. Burkard, H. Thompson, and J. Covert of SWCA Environmental Consultants evaluated a segment of the Westside Main Canal, built in 1907 and later integrated into the larger Imperial Valley irrigation system. Rendering a professional, independent recommendation, SWCA concurred with the previous 2001 determination by the Bureau of Reclamation and the California SHPO that the Westside Main Canal was eligible for the NRHP and CRHR as a contributor to a larger historic district that includes the All-American Canal, which was is also eligible for listing in the NRHP.

Wormwood Canal (CA-IMP-8983)

In 1999, Jill Hupp of Caltrans evaluated a section of the Wormwood Canal, first built in 1911 and later integrated into the larger Imperial Valley irrigation system by connection to the Westside Main Canal. Hupp recommended that the canal was not eligible for listing in the NRHP because it was realigned and lined with concrete, replacing its original earthen lining, thereby affecting the resource's integrity.

Woodbine Canal (P-13-013073)

Andrew Pigniolo of Laguna Mountain Environmental documented the Woodbine Canal in 2010. According to Pigniolo, the Woodbine Canal was one of the earliest irrigation canals in

the Imperial Valley, shown on the 1915 El Centro 15-minute (') USGS topographic quad map. The portion of the canal documented by Pigniolo was later lined with concrete in the 1950s and 1960s. The canal was not evaluated in that study.

4. RESEARCH AND FIELD METHODS

INTRODUCTION

All known historic resources located within 0.5 mi. of the CSE Project were identified and subjected to analysis to assess which NRHP/CRHR-eligible resources would be subject to potential indirect visual, auditory, and atmospheric effects resulting from the Project. As stated above, due to inaccessibility, the western portion of the APE was not surveyed; however, a review of current aerial photographs and historic United States Geological Survey (USGS) maps indicate an absence of historic resources in that portion of the APE.

SECRETARY OF THE INTERIOR'S GUIDELINES

The SOI has issued the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* [48 FR 44720–44726]), as guidance to ensure that the procedures for the identification and evaluation of historic resources are adequate and appropriate. The National Park Service has also produced a series of bulletins that provide guidance on historic preservation. The current study was conducted in compliance with the guidelines provided in Bulletin 24, *Guidelines for Local Surveys: A Basis for Preservation Planning* (Derry et al. 1985).

The five property types are defined as follows:

District: A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Site: A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historical, cultural, or archeological value regardless of the value of any existing structure.

Building: A building, such as a house, barn, church, hotel, or similar construction, is created to shelter any form of human activity. Building may also be used to refer to an historically and functionally related unit, such as a courthouse and jail or a house and barn.

Structure: The term structure is used to distinguish from buildings those functional constructions made usually for purposes other than creating shelter.

Object: The term object is used to distinguish from buildings and structures those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment, such as statuary in a designed landscape.

The objective of this study is the assessment of visual, auditory, and atmospheric intrusions on historic resources resulting from the construction of the CSE Project. The term "built environment" is a relatively new term used in its broadest sense to designate "the part of the environment formed and shaped by humans, including buildings, structures, landscaping, roads, signs, trails, and utilities" (www.co.tompkins.ny.us/planning/vct/glossary.html). For the purposes of this study, historic resources include historic districts, buildings, structures, and objects that are listed in, or eligible for listing in, the NRHP. Ruined buildings and fragmentary structures (such as sections of stone walls) are classified as ruins and are therefore assumed to be addressed in the cultural resources report for this project. Likewise, historic trails, unimproved roads and minor historic structures and objects such as stone wells, cisterns, claim markers, stone cairns, survey makers, and isolated mining prospecting pits are also excluded from consideration in this study, because they are not considered part of the built environment.

As noted in the BLM Manual Section 8100, Subsection .02, "managing cultural resources is viewed as an integrated system of identifying and evaluating cultural resources, deciding on their appropriate uses, and administering them accordingly." As stated in Subsection .06A, this system recognizes that cultural resources are "fragile, irreplaceable resources with potential public and scientific uses, representing an important and integral part of our Nation's heritage" (BLM 2004). This survey design takes such considerations into account.

Several avenues of research were included in this built-environment inventory and assessment, including: an inventory of all known historic resources within the CSE Project APE, an evaluation of identified resources' eligibility for listing in the NRHP and/or CRHR; and an analysis of indirect effects for all built-environment properties eligible for listing in the NRHP and/or CRHP. Although the area west of the transmission line was inaccessible for field survey, historic maps and current aerial photographs indicate that no historic resources are located in that area. The methodology developed to identify, document, and evaluate NRHP and/or CRHR-eligible historic resources is described below.

METHODOLOGY

Archival Research

ASM conducted archival research to develop a regional historical context and resource-specific contexts for resources within the APE (see Chapter 2). Decisions about the identification, evaluation, designation, and treatment of historic resources are most reliably made when the relationship of individual properties to other similar properties is understood. Information about historic resources representing aspects of history, architecture, archaeology, engineering and culture must be collected and organized to define these relationships. This organizational framework is called a "historic context." The historic context organizes information based on a cultural theme and its geographical and chronological limits. Contexts describe the significant broad patterns of development in an area that may be represented by historic resources. The

development of historic contexts is the foundation for decisions about identification, evaluation, designation, and treatment of historic resources.

Records Search and Data Analysis

As a first step in identifying historic resources listed- or eligible for listing in the NRHP and/or the CRHR within the CSE Project APE, ASM consulted historic maps to help identify the locations of potential historic resources. ASM consulted Imperial County Assessor Parcel data for evidence of built-environment structures; however, dates of construction were not recorded for all resources. ASM obtained the results of a cultural resources records search, conducted by KP Environmental at the South Coastal Information Center of the California Historical Resources Information System to identify all previously-recorded historic resources in the Project APE (Appendix B). ASM also consulted with the Imperial Valley Pioneers Museum and museum archives in an effort to identify buildings and structures of local significance with the assistance of museum archivist, Lynn Housouer. Information resources consulted included newspaper clippings, historic maps, and general manuscript histories of the area. Previous studies in and adjacent to the Project area, many of which were conducted by ASM, were also consulted (Davis et al. 2011).

Field Survey

ASM conducted a historic resource field survey on May 5, 2011, to document historic resources within the Project APE. The reconnaissance-level field survey, historic building and structure evaluations, and assessment of visual impacts were conducted by ASM's Associate Architectural Historian Jennifer Krintz and Associate Archaeologist Shelby Gunderman by means of windshield and pedestrian methodology. The reconnaissance-level, or "windshield survey," was conducted from a vehicle, guided by the project area and historical maps. During the survey, descriptive information about buildings within the project area was notes and the buildings were analyzed through visual observation. GIS data points were taken of all potential historic resources. No permits were required for the survey. The field survey began at the northwestern section of the Project area and continued east and south. The buildings and structures, and their viewsheds, were photographed from public roads and the access road for the Westside Main Canal. The addresses of the buildings, when available, were recorded. For those that were not available, the location was verified and noted on USGS topographic quad maps.

During the field survey, careful attention was paid to the appropriateness of the APE for the Project. In several areas, the survey area buffer was expanded to one mi. to assess the adequacy of the APE. Access was not available to the area west of the transmission line.

As a result of the field survey, 16 historic resources identified and documented within the Project APE (Figure 4).

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Figure 4. Resources evaluated within Project APE.

5. REPORT OF FINDINGS

HISTORIC SITES AND STRUCTURES

Sixteen historic resources were identified within the APE that are more than 45 years old: the Westside Main, Wormwood and Woodbine canals, the town of Mount Signal, three farm complexes, an agricultural building, and eight residential buildings (Table 4).

Table 4. Historic resources More Than 45 Years Old

Resource	Date Built	Resource Type
Westside Main Canal	ca. 1907	Canal
Wormwood Canal	1911	Canal
Woodbine Canal	ca. 1915	Canal
Mount Signal	ca. 1940-1965	District
Brockman Ranch	ca. 1920	Farm complex
1249 Anza Road	ca. 1950	Residence
640 Brockman Road	ca. 1965	Residence
644 Brockman Road	ca. 1940	Residence
405 Drew Road	1940	Residence
695 Drew Road	ca. 1900 and ca.1960	Farm complex
706 Drew Road	ca. 1960	Residence
1160 Kubler Road	ca. 1920	Agricultural building
1596 Fisher Road	ca. 1940	Farm complex
596 Pulliam Road	ca. 1950	Residence
605 Pulliam Road	ca. 1950	Residence
904 State Highway 98	ca. 1920	Residence

Westside Main Canal

Westside Main Canal was constructed ca. 1907 as part of the earliest irrigation system in the Imperial Valley. It was later connected to the All-American Canal which runs east-west north of the U.S.-Mexico border, as one of three main canals that receive water from the All-American Canal. The segment of the Westside Main Canal within the Project APE is approximately two mi. long, with 0.75 mi. of canal extending north from its intersection with Hwy. 98, and 1.25 mi. of canal extending south of the highway (Figure 5). The canal is approximately eight ft. deep and approximately 40 ft. wide. Numerous laterals extend from the canal into the Project area.

Figure 5. Westside Main Canal.

Wormwood Canal

The Wormwood Canal is a concrete-lined irrigation canal constructed in 1911 and modified in the 1960s. It is located east of the Westside Main Canal and flows east and south for approximately six miles, terminating at the northern end at the Wormwood Drain and at the southern end at the intersection of a Drew Road and State Route 98 (Figure 6). The canal is approximately 10 ft. wide and about six ft. deep and is accessible from Old Highway 80, State Route 98, and Interstate 8.

Woodbine Canal

The Woodbine Canal is an irrigation canal constructed ca. 1915 and modified in the 1950s and 1960s. It is located east of the Westside Main Canal and flows east and south for approximately three miles in total length (Figure 7). The canal is approximately10 ft. wide and six ft. deep and is accessible from Old Highway 80, State Route 98, and Interstate 8.

Figure 6. Wormwood Canal.

Figure 7. Woodbine Canal.

Mount Signal

Mt. Signal is a small town and now abandoned roadside stop located on the southeast side of the intersection of W. State Highway 98 and Brockman Road. The town is comprised of eight buildings in close proximity: two commercial buildings, including the Mt. Signal Café; an industrial building complex of two buildings; and four residential buildings. A 1957 USGS topographic map indicates that this area has been historically referred to as (the town of) "Mt. Signal," likely named after the nearby Signal Mountain (Cerro Centinela) located to the south of the district in Mexico. It is defined by its grouping of buildings and its most recognizable landmark, the Mt. Signal Café (now abandoned). The buildings are surrounded by dirt yards and nondescript parking areas. There is only one property which has a walled-in yard to delineate its property line.

Building 1

The building at 1201 W. State Highway 98 was constructed as a commercial building ca. 1965. It is a one-story vernacular building located on the southeast side of the intersection of State Highway 98 and Brockman Road. The commercial building is wooden frame and rectangular in plan, with a concrete foundation. The exterior is clad in brick siding. The roof is a low-pitched shed roof with wide eaves and clad in asphalt shingles and red clay tiles. On the north elevation, a concrete ramp leads to a full-width porch with a flat roof. The porch is supported by brick columns. The primary entrance is located within the porch and consists of two doors. The windows consist of aluminum sash windows. There appear to be no modifications to the building. Some features include a sign that reads, "Mt. Signal Café" on the west side of the restaurant and a neon-light star is situated on the northeast corner of the building. Landscape features include a gravel parking lot surrounding the property (Figure 8).

Buildings 2a and 2b

Buildings 2a and 2b were constructed as single family residences ca. 1965 and 1950, respectively. Both are single-family residences located to the west of Mt. Signal Café and south of State Highway 98. Both residences are situated behind walled complexes. Building 2a is a stucco residence with a one-room second story, a red clay tile roof, and one aluminum sliding window. The wall around the complex of Building 2a is adobe or plaster. Building 2b is a wood-clad building with a gable roof clad in asphalt shingles. The complex of Building 2b is surrounded by a wood fence. No other features of either building could be seen at the time of the survey (Figure 9).

Building 3

Building 3 was constructed as a single family residence ca. 1965. It is a one-story vernacular building located on the west side of Brockman Road. The building is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in brick siding. The roof is a low-pitched hipped roof with moderate eaves and clad in red clay tiles. On the east elevation, a concrete pathway leads to a full-width porch with a shed roof. The porch is supported by brick columns. The primary entrance is located within the porch and consists of a partially glazed wood door. The windows consist of vinyl casement windows obscured by metal security

bars. Modifications to the building include the replacement door. Landscape features include a dirt yard (Figure 10).

Building 4

Building 4 was constructed as a single family residence ca. 1948. It is a one-story vernacular building located on the west side of Brockman Road. The residence is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in stucco siding. The roof is a low-pitched side gable roof. The recessed porch is supported by wood posts. A low concrete block wall is located on either side of the porch. The primary entrance is located within the porch. The windows are primarily aluminum sliders. There appear to be no additions to the building. Modifications to the building include a boarded-over door on the south elevation. Landscape features include a dirt yard (Figure 11).

Building 5

Building 5 was constructed as a commercial building ca. 1940. It is a one-story building exhibiting elements of the Western False Front style and located on the south side of W. State Highway 98. The commercial building has two components, both of which are wooden-framed and rectangular in plan, with concrete foundation. The exteriors are clad in concrete block and wood clapboard siding. The component on the east side has a Western False Front parapet made of wood boards. The roof of this component is flat. It also has wood sash windows and a primary door located on the north elevation. The second component to the east has a shed roof, wood sash windows, and a door located on the north elevation. Modifications to the building include the change in fenestration on the shed-roof building and door replacements (Figure 12).

Buildings 6a and 6b

Buildings 6a and 6b were constructed as a two-building industrial complex ca. 1940. The vernacular buildings are located on the south side of State Highway 98. The buildings are similar in shape and size, wooden-framed and rectangular in plan with concrete foundations. The exteriors are clad in asbestos shingle siding. The roofs are moderately pitched front gable roofs with asphalt sheets. The windows are primarily casements or boarded over. Modifications to the building include the boarding over of windows and doors. Landscape features include a dirt-and-gravel drive (Figure 13).

Brockman Ranch

The location of 513 Brockman Road was one of the first ranches in this area, constructed ca. 1920. Built by the Brockman family, the ranch includes eight vernacular buildings and a few smaller storage sheds that could not be seen from the road at the time of the survey. Modifications to the complex include the demolition of Building 5. Landscape features include mature trees along the road and plowed farm land surrounding the property.

Figure 8. Mount Signal, Building 1.

Figure 9. Mount Signal, Buildings 2a and 2b.

Figure 10. Mount Signal, Building 3.

Figure 11. Mount Signal, Building 4.

Figure 12. Mount Signal, Building 5.

Figure 13. Mount Signal, Building 6a and 6b.

Building 1 & Granary:

Building 1 and the granary silos are located on the south side of the property. They appear to be the oldest structures constructed on the property, constructed circa 1920. The building is a two-story barn building with a wood frame and metal sheet siding. The roof is clad in metal sheets as well (Figure 14).

Building 2:

Building 2 is located on the south side of the property lot north of Building 1 and the granary. It is a two-story barn building with a wood frame and clad in corrugated metal sheet siding. Corrugated metal sheets also clad the side gable roof. An attached carport structure is located on the north elevation (Figure 15).

Building 3:

Building 3 is located on the south side of the property lot west of Brockman Road and east of Building 2. The building has one story and appears to be a secondary residence. It has a flat roof and concrete block siding. There is a porch on the east elevation, with a shed roof and latticework. No other details could be seen from the road (Figure 16).

Building 4:

Building 4 is located on the west side of the property lot. It has a front gable roof clad in corrugated metal sheets. The windows are triple hung sash aluminum windows. The building is a single family residence and has concrete block siding and wood siding underneath the gable ends. There is also a shed-roofed, enclosed porch on the north elevation (Figure 17).

Building 5:

Building 5 was located east of Building 4 and north of Buildings 2 and 3. Today this building has been demolished. Aerials from 2010 (Courtesy of Google Earth) indicate that the building was a one-story side gable single family residence with two front-gable dormer windows.

Building 6:

Building 6 is a one-story shed-roof ancillary building. It has a door made of corrugated metal sheet siding. The building is clad in flat metal sheet siding (Figures 18 and 19).

Building 7:

Building 7 is a one-story front-gable storage shed with no walls. The roof is supported by wood beams (see Figures 17 and 18).

Building 8:

Building 8 is a one-story concrete block ancillary building. No other features could be seen from the road at the time of the survey.

Figure 14. Brockman Ranch, Building 1 & Granary.

Figure 15. Brockman Ranch, Building 2.

Figure 16. Brockman Ranch, Building 3.

Figure 17. Brockman Ranch, Building 4 (background) and Building 7 (foreground).

Figure 18. Brockman Ranch, Building 6 (background) and Building 7 (foreground).

Figure 19. Brockman Ranch, Building 4 (background) and Building 6 (foreground).

1249 Anza Road

The building at 1249 Anza Road was constructed as a single family residence ca. 1950. The one-and-one-half-story vernacular building is located on the south side of Anza Road. The building is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in stucco siding. The roof is a moderately pitched front-gable roof with shallow eaves and clad in wood shingles. The main entryway could not be seen from the street at the time of the survey. The windows consist of double hung wood sash windows. There is a chimney located within the roofline. Additions could not be seen at the time of the survey. There is a garage located to the south of the main building. Landscape features include a chain-link fence, mature trees, and a lawn (Figure 20).

Figure 20. 1249 Anza Road, view looking west

640 Brockman Road

The building at 640 Brockman Road was constructed as a single-family residence ca. 1965. The one-story vernacular building is located on the east side of Brockman Road. The building is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in stucco and brick siding. The roof is a low-pitched side-gable roof with moderate eaves and clad in an asphalt roll. On the west elevation, a gravel driveway leads to the primary entrance and consists of a single door that is obscured by a metal security door. The windows consist of aluminum sliding windows. Additions include a shed roof extension on the north elevation. There appear to be no modifications to the building. Landscape features include trees, bushes, and a grass lawn (Figure 21).

Figure 21. 640 Brockman Road.

644 Brockman Road

The building at 644 Brockman Road was constructed as a single-family residence ca. 1940. The one-story vernacular building is located on the east side of Brockman Road. The building is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in vinyl siding. The roof is a moderately pitched front-gable roof with shallow eaves and clad in asphalt. On the west elevation, a short concrete walkway leads to the primary entrance, which consists of a vinyl door. The windows consist of double hung vinyl sliding windows. Additions include a shed-roof extension on the north elevation. Modifications to the building include the replacement windows, doors, and siding. Landscape features include a chain-link fence and a dirt yard (Figure 22).

405 Drew Road

The building at 405 Drew Road was constructed as a single-family residence in 1940. The one-and-one-half-story, Craftsman-style building is located on the south side of Drew Road. The building is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in stucco siding. The roof is a moderately pitched side-gable roof with wide eaves and clad in an asphalt roll. On the north elevation, wood steps lead to a full-width porch with a shed roof extension. The porch is partially enclosed by a low wall with wood columns. The primary entrance is located within the porch and could not be seen from the street at the time of the survey. The windows also could not be seen from the street at the time of the survey.

There is a shed roof dormer window that has two vent openings. Additions include two shed roof extensions on either side of the main facade. Modifications to the building include the non-original siding, as well as the attached garage extension. Landscape features include the chain-link fence that surrounds the perimeter of the property (Figure 23).

695 Drew Road

An agricultural complex at 695 Drew Road consists of two buildings located on the southeast side of the intersection of Drew and Fisher roads. The buildings include a main residence (Building 1) and a shop building (Building 2). Landscape features include mature trees, shrubbery, and a dirt yard with a chain-link fence surrounding the property.

Building 1

Building 1 was constructed as a single-family residence ca. 1960. The one-story building is wooden-framed and rests on a concrete foundation. The roof has a widely pitched cross gable. The siding is stucco with wood siding underneath the gable ends. The primary entrance is located on the east elevation. The windows are primarily vinyl. There is a chimney on the north elevation. No other features of the building could be seen from the road at the time of the survey (Figure 24).

Building 2

Building 2 is a shop building and was constructed ca. 1900. It is likely that it was originally constructed as a commercial building because of its small setback from the intersection of the road. The wood frame building has a front-gable roof. The primary entrance is located within the porch on the east elevation and is flanked by two large double hung sash windows. The extended front-gable porch roof is supported by two wood posts. There is also a large porch on the north elevation of the building that is enclosed by screens. No other features could be seen from the road at the time of the survey (Figure 25).

706 Drew Road

The building at 706 Drew Road was constructed as a single-family residence ca. 1958. The two-story Colonial Revival-style building is located on the east side of Drew Road. The building is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in wood siding. The roof is a gambrel roof with split wood shingles and has two dormer windows. On the west elevation, a walkway and steps lead to a full-width porch with a shed roof and lined with latticework. The primary entrance is located within the porch and consists of a glazed door. The windows consist of vinyl sliders and vinyl fixed windows. Additions could not be seen from the street at the time of the survey. Modifications to the building include the carport extension on the north elevation. Landscape features include mature trees surrounding the property (Figure 26).

Figure 22. 644 Brockman Road.

Figure 23. 405 Drew Road.

Figure 24. 695 Drew Road, Building 1.

Figure 25. 695 Drew Road, Building 2.

Figure 26. 705 Drew Road.

1160 Kubler Road

The building at 1160 Kubler Road was constructed as an ancillary agricultural building ca. 1920. The two-story vernacular building is located on the north side of Kubler Road and is part of a larger agricultural ranch complex. The barn is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in corrugated metal sheet siding. The roof is a low-pitched front-gable roof with exposed rafter tails and clad in standing seam metal. Additions include a shed-roof extension located on the east side of the building. There appear to be no modifications to the building. Other buildings within this complex include a mobile home, a modern barn, and shed and storage buildings (Figure 27).

1596 Fisher Road

1596 Fisher Road is an agricultural farm complex constructed ca. 1940, located at the northeast corner of the intersection of Drew and Fisher roads. The complex consists of several vernacular buildings, including a single family residence (Building 1), a large barrel-roof shop building (Building 2), and three storage sheds (Buildings 3a, 3b, and 3c.) A gazebo is also located on the property. Landscape features include a grass lawn surrounding the main residence and a chain-link fence around the building complex, as well as trees and other vegetation.

Figure 27. 1160 Kubler Road

Building 1:

Building 1 is a single-family residence constructed ca. 1940. It is a one-story vernacular building with a concrete pier foundation. The building has a low-pitched hipped roof with wide eaves. The siding is a wood composite sheet siding with decorative wood strips. The windows are primarily vinyl sash and sliders. The main entrance is located on the south elevation and could not be seen at the time of the survey. There is an addition on the north elevation of the building. Modifications include the replacement windows and additions. There is also a gazebo located southwest of the main residence on the southwest corner of the property lot (Figure 28).

Building 2:

Building 2 is an ancillary building located on the northeastern section of the property lot. The building is comprised of metal siding and has a barrel-shaped roof. The windows are primarily aluminum sliding windows. There is a primary entrance on the west elevation that consists of two metal-hinged doors. There is also a metal carport extension located on the south side of this building (Figure 29).

Figure 28. 1596 Fisher Road, Buildings 1 and 3c.

Figure 29. 1596 Fisher Road, Building 2.

Building 3a:

Building 3a is one of three connected sheds located to the rear of the main residence. Building 3a is located at the northwestern part of the property lot. It is a front-gable, wood-sided building with a hinged awning garage door located on the west elevation. The building has a standing seam metal roof. To the south of this building is a flat roof extension that connects it to Building 3b (Figure 30).

Building 3b:

Building 3b is located to the south of Building 3a and is also a front-gable shed with wood siding and an asphalt roof. There is one paneled door located on the west elevation. A flat roof extension is located on the south elevation of the building which connects the building to a covered walkway/shop area that is not enclosed and is north of Building 3c (see Figure 30 and Figure 31).

Building 3c:

Building 3c is located to the south of Building 3b and is a front-gable ancillary building with wood siding and a corrugated metal sheet roof. There is a hipped porch roof extension that wraps around the north and west elevations of the building. This porch area is enclosed by screens and wood posts. No other features could be seen of this building from the street at the time of the survey (Figure 31.

596 Pulliam Road

The building at 596 Pulliam Road was constructed as a single-family residence ca. 1950. It is a one-story vernacular building located on the southeastern side of Pulliam and Kubler roads. The building is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in a concrete block siding and vertical wood siding underneath the gable ends. The roof is a low-pitched side-gable roof with shallow eaves and clad in standing seam metal. On the west elevation, the main entrance is situated within a nearly full-width porch with a shed roof. Squared wooden posts support the porch roof. The windows consist of 9-light windows. There appear to be no modifications to the building. Landscape features include mature trees and a dirt yard (Figure 32).

605 Pulliam Road

The building at 605 Pulliam Road was constructed as a single-family residence ca. 1950. It is a one-story vernacular building located on the northwest side of Pulliam and Kubler roads. The building is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in concrete block siding. The roof is a low-pitched side-gable roof with shallow eaves and clad in asphalt sheets. The primary entrance is located on the south elevation and consists of a wood door obscured by a metal security door. The windows consist of wood sash and casement windows. Modifications to the building include the screen awnings. Landscape features include mature trees and a dirt yard (Figure 33).

Figure 30. 1596 Fisher Road, Building 3a and 3b.

Figure 31. 1596 Fisher Road, Buildings 3b, 3c and 1.

Figure 32. 596 Pulliam Road.

Figure 33. 605 Pulliam Road.

904 State Highway 98

The building at 904 State Hwy 98 was constructed as single-family residence ca. 1920. It is a one-and-one-half-story Craftsman-influenced building located on the north side of State Highway 98. The building is wood-framed and rectangular in plan, with a concrete foundation. The exterior is clad in wood clapboard siding. The roof is a low-pitched side-gable roof with exposed rafter tails and clad in corrugated metal sheets. On the south elevation, the primary entrance is located within the partial-width porch. The porch is covered by a shed roof extension of the main roof surface that is supported by wood posts. The windows could not be seen from the street at the time of the survey. Additions include a shed roof extension of the west elevation. Modifications to the building include replacement patch siding. Landscape features include trees and a wood and chain-link fence surrounding the property. There are other ancillary buildings on the property located to the rear of the main building that could not be seen from the street at the time of the survey (Figure 34).

Figure 34. 904 State Highway 98.

6. EVALUATION OF BUILT-ENVIRONMENT RESOURCES

This historic built-environment evaluation and assessment of indirect visual, auditory, and atmospheric effects and impacts was carried out in compliance with Section 106 of the NHPA, NEPA, CEQA, and other applicable federal, state, or local laws, ordinances, rules, regulations, and policies as discussed under the Regulatory Framework in Chapter 1. Section 106 is applicable to federal undertakings, including Projects financed or permitted by federal agencies, regardless of whether the activities occur on land that is managed by federal agencies, other governmental agencies, or private landowners. In practice, the NRHP criteria for eligibility applied under Section 106 are generally (although not precisely) concordant with CRHR criteria. Therefore, all cultural resources within the APE were evaluated for NRHP eligibility, with equal applicability to CRHR. Compliance with CEQA requires consideration of impacts to cultural resources as historical resources or those resources potentially eligible for listing on the CRHR. The procedures for assessing archaeological and historical resources are addressed in CEQA Guidelines Section 15064.5(a) and 15064.5(c).

All known historic resources located within 0.5 mi. of the CSE Project APE were inventoried and analyzed to assess which eligible resources would be subject to potential indirect visual, auditory and/or atmospheric impacts or intrusions resulting from the Project.

NATIONAL REGISTER CRITERIA FOR EVALUATION

The NRHP criteria for evaluation are designed to guide federal agencies and others in evaluating whether a property is eligible for inclusion in the NRHP. The criteria for evaluation are as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

A. are associated with events that have made a significant contribution to the broad patterns of our history; or
B. are associated with the lives of persons significant in our past; or
C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. have yielded or may be likely to yield, information important in prehistory or history [36 CFR 60.4].

Generally, properties eligible for NRHP listing are at least 50 years old. Properties less than 50 years of age must be exceptionally important to be considered eligible for listing.

CEQA AND THE CALIFORNIA REGISTER CRITERIA FOR EVALUATION

CEQA requires that all private and public activities not specifically exempted be evaluated against the potential for environmental damage, including effects to historical resources. Historical resources are recognized as part of the environment under CEQA. It defines historical resources as "any object, building, structure, site, area, or place which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California," as cited in Division I, Public Resources Code, Section 5021.1[b].

Lead agencies have a responsibility to evaluate historical resources against the CRHR criteria prior to making a finding as to a proposed Project's impacts to historical resources. Mitigation of adverse impacts is required if the proposed Project will cause substantial adverse change to a historic resource. Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired. While demolition and destruction are fairly obvious significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. The CEQA Guidelines provide that a Project that demolishes or alters those physical characteristics of an historical resource that convey its historical significance (i.e., its character-defining features) can be considered to materially impair the resource's significance. The CRHR is used in the consideration of historic resources relative to significance for purposes of CEQA. The CRHR includes resources listed in, or formally determined eligible for listing in, the NRHP, as well as some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts), or that have been identified in a local historical resources inventory, may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise.

Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR, cited as PRC Section 5024.1, Title 14 CCR, Section 4852, consisting of the following:

1. it is associated with events that have made a significant contribution to the broad patters of local or regional history, or the cultural heritage of California or the United States; or
2. it is associated with the lives of persons important to local, California, or national history; or
3. it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or

4. it has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

INTEGRITY

In order to be eligible for listing in the NRHP or the CRHR, a property must also retain sufficient integrity to convey its significance. The seven elements of integrity defined by the NRHP are: location, design, setting, materials, workmanship, feeling and association (National Park Service 1991). To retain historic integrity, a property must possess several, and usually most, aspects of integrity.

> **Location**: "the place where the historic resource was constructed or the place where the historic event occurred" (National Park Service 1991:44)
>
> **Design**: "the combination of elements that create the form, plan, space, structure, and style of a property" (National Park Service 1991:44)
>
> **Setting**: the "physical environment of a historic resource" (National Park Service 1991:45)
>
> **Materials**: the "physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic resource" (National Park Service 1991:45)
>
> **Workmanship**: the "physical evidence of the crafts of a particular culture or people during any given period in history or prehistory" (National Park Service 1991:45)
>
> **Feeling**: "a property's expression of the aesthetic or historic sense of a particular time" (National Park Service 1991:45)
>
> **Association**: "the direct link between an important event or person and a historic resource" (National Park Service 1991:45)

BUREAU OF LAND MANAGEMENT MANUAL SECTION 8110

Section 8110 of the BLM Manual offers specific guidance for identifying and evaluating cultural resources, including historic resources. In Subsection,

> The same criteria and integrity standards are applied to all cultural properties, whether archaeological, historical, architectural, or traditional. In order to be listed in or found eligible for listing in the National Register, a property must have integrity and must meet one or more of the four criteria. No type of property is automatically eligible for listing in the National Register (BLM 2004: Subsection 31B).

Further,

> In determining the National Register eligibility of a cultural property, an appropriately qualified cultural resource specialist must apply each of the four National Register of Historic Places criteria for evaluation (36 CFR Part 60.4; see .32E). If a cultural property has integrity, meets one or more of the criteria, and is not ruled out by a criterion exception, the specialist should recommend to the responsible manager that it be considered an eligible 'historic property' as defined in the National Historic Preservation Act and related regulations. The National Park Service's National Register Bulletins provide guidance on applying the evaluation criteria and assessing integrity (BLM 2004: Subsection 32A).

HISTORIC BUILT-ENVIRONMENT EVALUATION

Recommended Eligible

Of the 16 historic resources within the APE that are more than 50 years old, one resource, the Westside Main Canal, has been determined eligible for listing in the NRHP. No other historic resources within the APE have been previously recommended as eligible for listing in the NRHP.

Westside Main Canal

The canal, including the segments in the Project APE, is eligible for listing in the NRHP and CRHR under Criterion A/1 for its significance in the development of the Imperial Valley. The earthen canal was integral to the development of irrigated commercial agriculture since its construction in the early 1900s. Under the themes of agriculture and economic development, ASM's professional, independent recommendation is that this section of the Westside Main Canal is eligible for the NRHP and CRHR on the local and state levels.

Character-defining features of the canal include:

- original canal alignment
- earthen walls
- earthen levees
- agricultural setting
- structures such as bridges, siphons, drops, and gates

As an irrigation system, the viewshed, or historic setting, is not a character-defining feature of this type of historic resource.

Recommended Ineligible

Of the 16 historic resources within the APE that are more than 50 years old, 15 are recommended as ineligible for listing in the NRHP and the CRHR (Table 5).

Table 5. Ineligible Resources More Than 45 Years Old

Resource	Date Built	Resource Type
Wormwood Canal	1911	Canal
Woodbine Canal	ca. 1915	Canal
Mount Signal	ca. 1940-1965	District
Brockman Ranch	ca. 1920	Farm complex
1249 Anza Road	ca. 1950	Residence
640 Brockman Road	ca. 1965	Residence
644 Brockman Road	ca. 1940	Residence
405 Drew Road	1940	Residence
695 Drew Road	ca. 1900 and ca.1960	Farm complex
706 Drew Road	ca. 1960	Residence
1160 Kubler Road	ca. 1920	Agricultural building
1596 Fisher Road	ca. 1940	Farm complex
596 Pulliam Road	ca. 1950	Residence
605 Pulliam Road	ca. 1950	Residence
904 State Highway 98	ca. 1920	Residence

Wormwood Canal

In 1999, Jill Hupp of Caltrans recommended the Wormwood Canal as not eligible for listing in the NRHP because the canal was realigned and lined with concrete from its original earthen materials. Therefore the canal does not retain enough integrity to convey its significance as one of the original irrigation canals for the Imperial Valley. ASM concurs with this finding and recommends the Wormwood Canal as not eligible for listing in the NRHP and the CRHR. Although the canal is associated with the early irrigation system of the Imperial Valley and the important local theme of agricultural development, this particular canal does not convey that theme as well as other similar resources such as the Westside Main and the All-American canals. Therefore, the Wormwood Canal is recommended not eligible for the NRHP and the CRHR.

Woodbine Canal

The Woodbine Canal was one of the earliest irrigation canals in the Imperial Valley. According to a previous inventory record by Andrew Pigniolo of Laguna Mountain Environmental, the Woodbine Canal was shown on the 1915 El Centro 15' USGS topographic quad map. However, later date stamps from the 1950s and 1960s were marked on the canal and laterals when they were lined with concrete. Although the canal is associated with the early irrigation system of the Imperial Valley and the important local theme of agricultural

development, this particular canal does not convey that theme as well as other similar resources such as the Westside Main and the All-American canals. Additionally, the integrity of the original materials and craftsmanship of the 1915 canal system was not retained and therefore the Woodbine Canal is recommended not eligible for listing in the NRHR and the CRHR.

Mount Signal

Although historic maps indicate that Mt. Signal was an early small town and landmark along State Route 98, no other information could be found about why and how it was settled. It was likely a typical small hamlet that supported the scattered farmers in this area of southern Imperial County. Mt. Signal is believed to have been established in the early twentieth century, prior to the development of the state highway. A 1919 *Blackburn's Map of Imperial County* shows that the Mt. Signal School was located at the area of the current Mt. Signal town site. The school was moved, and appeared one mi. north of this site and on the east side of Brockman Road on a USGS topographic quad map in 1957. By 1964, the town contained the Mt. Signal Store and Post Office, as evidenced on a map of the area from that year.

Direct access from Mt. Signal to Seeley to the north was established as early as 1934, along what is now County Highway 29. Access to the west and east was along the route that would eventually become State Route 98. However, as late as 1953, the portion of the highway from Mt. Signal to its westernmost terminus at Coyote Wells was still unpaved. That segment provided access originally to U.S. Route 80, and later Interstate 8.

Surrounding Mt. Signal are the canals and adjoining laterals of the All-American Canal system, as well as the Westside Main Canal system. Through these canals and laterals, water was provided for agriculture in this area. To the north, towns such as Dixieland and Seeley were formed from the influx of farmers and others who came to the Imperial Valley to acquire and farm the land. In the case of Dixieland, this little roadside town ended almost as soon as it began when promoters incorrectly estimated the popularity of Dixieland. Today, much like Mt. Signal, it is an abandoned group of buildings. Because of the close proximity to each other, the shared history of the surrounding area, and the comparable condition of both places, this history of Dixieland could be similar to that of Mt. Signal.

According to the historic USGS Mount Signal topographic quad, the only buildings that were extant in 1957 at Mt. Signal were the commercial buildings and the walled-in property both located west of the current Mount Signal Café building. Most of those extant original buildings have lost integrity in feeling, materials, design, and craftsmanship. According to historic maps, approximately half of the original buildings appear to have been replaced or are gone, and consequently the district as a whole does not retain enough integrity to convey its association as one of the earliest agricultural towns in the southern Imperial Valley. Therefore, the Mt. Signal historic district is recommended not eligible for listing in the NRHP and the CRHR.

Brockman Ranch

The property at 513 Brockman Road is recommended not eligible for listing in the NRHP and CRHR. Specifically, under Criterion A/1, research failed to tie these buildings to events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S., including the agricultural complexes in Imperial Valley. Although the Brockman Ranch was likely one of the earlier homesteads in the Imperial Valley, the majority of buildings extant on the property are not the original buildings. Additionally, the only original buildings of the early ranch that remains today are the barn and granary. Based on Google Earth aerial photographs, the main residence was demolished sometime between 2010 and May 2011. Because the majority of the original buildings of the homestead are not the original buildings of the early homestead, the overall ranch does not retain its integrity to convey its significance as an early homestead under criterion A/1. Under Criterion B/2, research failed to link the buildings with the lives of persons important to local, California, or national history. The Brockman family name was identified in archival research, such as early Imperial Valley newspaper clippings about the local sewing club; however, no information could be found to identify any of the Brockman family members as locally, regionally or nationally significant individuals. Under Criterion C/3, none of these buildings embody significant characteristics of a type, period, region, or method of construction; nor do they represent the work of a master, or possess high artistic values that would qualify them for listing. Finally, because this resource is a common property type it does not have the potential to provide information about history or prehistory that is not available through historic research. Therefore, the Brockman Ranch was not evaluated for the NRHP or the CRHR under Criterion D/4.

695 Drew Road

The property at 695 Drew Road is recommended not eligible for listing in the NRHP and CRHR. Specifically, under Criterion A/1, research failed to tie these buildings to events that have made a significant contribution to the broad patterns of local or regional history, or to the cultural heritage of California or the U.S., including agricultural homesteads in Imperial Valley. Although the ancillary building at Drew Road appears to be the earliest building on the property, no information could be found to indicate its original function. The residence was constructed ca. 1960, and was not the original residence of the homestead. No other information could be found to identify this property as an early homestead in the valley. Under Criterion B/2, research failed to link the buildings with the lives of persons important to local, California, or national history. Under Criterion C/3, none of these buildings embody significant characteristics of a type, period, region, or method of construction; nor do they represent the work of a master, or possess high artistic values that would qualify them for listing. Finally, because this resource is a common property type it does not have the potential to provide information about history or prehistory that is not available through historic research. Therefore, the 695 Drew Road was not evaluated for the NRHP or the CRHR under Criterion D/4.

1160 Kubler Road

The property at 1160 Kubler Road is recommended not eligible for listing in the NRHP and CRHR. Specifically, under Criterion A/1, research failed to tie these buildings to events that have made a significant contribution to the broad patterns of local or regional history, or to the cultural heritage of California or the U.S., including agricultural complexes in Imperial Valley. Although the barn building appears to be remnants of an earlier homestead on this property, the other buildings are not the original buildings of this homestead. Therefore, the overall property has not retained its integrity to convey association as an early agricultural complex of the Imperial Valley. Under Criterion B/2, research failed to link the buildings with the lives of persons important to local, California, or national history. Under Criterion C/3, none of these buildings embody significant characteristics of a type, period, region, or method of construction; nor do they represent the work of a master, or possess high artistic values that would qualify them for listing. Finally, because this resource is a common property type it does not have the potential to provide information about history or prehistory that is not available through historic research. Therefore, the 1160 Kubler Road was not evaluated for the NRHP or the CRHR under Criterion D/4.

1596 Fisher Road

The property at 1596 Fisher Road is recommended not eligible for listing in the NRHP and CRHR. Specifically, under Criterion A/1, research failed to tie these buildings to events that have made a significant contribution to the broad patterns of local or regional history, or to the cultural heritage of California or the U.S., including agricultural complexes in Imperial Valley. Although it appears the buildings were constructed in the 1940s and 1950s, this homestead is not one of the earliest or best representations of an early homestead in the Imperial Valley. Under Criterion B/2, research failed to link the buildings with the lives of persons important to local, California, or national history. Under Criterion C/3, none of these buildings embody significant characteristics of a type, period, region, or method of construction; nor do they represent the work of a master, or possess high artistic values that would qualify them for listing. Finally, because this resource is a common property type it does not have the potential to provide information about history or prehistory that is not available through historic research. Therefore, the 1596 Fisher Road was not evaluated for the NRHP or the CRHR under Criterion D/4.

Residential Buildings within the APE

The remaining eight historic resources within the APE that are recommended ineligible for listing in the NRHP and CRHR are all single-family residential buildings:

- 1249 Anza Road
- 640 Brockman Road
- 644 Brockman Road
- 405 Drew Road
- 706 Drew Road
- 596 Pulliam Road

- 605 Pulliam Road
- 904 State Highway 98

None of these buildings are recommended as eligible for listing in the NRHP and CRHR. Specifically, under Criterion A/1, research failed to tie these buildings to events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S. Under Criterion B/2, research failed to link the buildings with the lives of persons important to local, California, or national history. Under Criterion C/3, none of these buildings embody significant characteristics of a type, period, region, or method of construction; nor do they represent the work of a master, or possess high artistic values that would qualify them for listing. Finally, because these resources are a common property type they do not have the potential to provide information about history or prehistory that is not available through historic research. Therefore, none of these buildings were evaluated for the NRHP or the CRHR under Criterion D/4.

7. ASSESSMENT OF EFFECTS ON THE HISTORIC BUILT ENVIRONMENT

VISUAL EFFECTS

Under Section 106, 36 CFR 800, an adverse effect is defined as one that occurs when an undertaking carries the potential to directly or indirectly alter the characteristics of an historic resource that make it eligible for listing in the NRHP. An undertaking can therefore only have an adverse effect if it impacts an historic built-environment resource that is eligible for listing in the NRHP. This section provides an assessment of visual intrusions that may affect the Westside Main Canal, which has been determined eligible for listing in the NRHP/CRHR. This property will not be subject to a visual intrusion by the CSE Project.

In evaluating visual effects on historic resources, and for purposes of this report, the following definitions have been employed (Delaware SHPO 2003):

Adverse Visual Effect: Section 106 regulations in 36 CFR 800 define an adverse effect as one that occurs when an undertaking carries the potential to directly or indirectly alter the characteristics of an historic resource that make it eligible for listing in the NRHP. Accordingly, an adverse visual effect is one that negatively affects the integrity of the setting or feeling of an historic built-environment resource, to the extent that significance and eligibility for listing in the NRHP are compromised. In particular, adverse visual effects can be seen as negatively affecting the following characteristics of integrity: setting, feeling, or association.

Historic Built Environment Resource: a historic site, district, building, structure, or object that is either eligible for inclusion in the NRHP, or listed therein.

Obstructive Visual Effects: any visual effect that carries the potential to obstruct any part of the view of an historic built-environment resource, or the scenic view from such a resource. Adverse obstructive effects can obstruct all or a portion of an historic built-environment resource and/or its viewshed, in turn negatively affecting the property's historic character.

Scenic Views: any scenic resources or resources that are visually and aesthetically important and that contribute to an historic built-environment resource's significance.

Viewsheds: those areas visible from a specified location or locations.

Visual Effects: any aspect of a proposed undertaking that will be seen from or will be in the view of an historic built-environment resource. A visual effect may be beneficial or adverse and may affect the historic resource in an aesthetic or obstructive manner. The determination that a visual effect exists does not automatically imply that the effect is adverse.

Issues of Visual Effects and Historic Built Environment Resources

Because there is no universally accepted yardstick for measuring visual effects, and because those effects do not always damage the defining characteristics of an historic built-environment resource in any physical manner, assessing them can be difficult and complicated, and is almost always subjective. If we are to consider that an historic built-environment resource is affected when its historic significance and integrity have been diminished, determining how a Project harms a resource's historical significance and integrity is essential to any assessment. In assessing the visual effects for historic resources, the criteria for significance and the aspects of integrity are factors that require careful evaluation and can provide a defensible qualitative method for determining visual effects on historic resources.

Adverse Visual Effects. Adverse visual effects may be created when an undertaking is visible within the viewshed of the historic resource, when it blocks a view toward the historic resource, or when it introduces an element that is incompatible with the criteria under which the property is eligible.

Simply because an undertaking will be visible from an historic built-environment resource does not mean it automatically will create an adverse visual effect. Therefore, notwithstanding whether the undertaking is or is not an historic built-environment resource, it is necessary to evaluate the visual changes and alterations the undertaking will introduce to the resource. In assessing adverse visual effects on a built-environment resource it is necessary to identify the criterion or criteria under which the resource is eligible and what qualities or characteristics of the resource contribute to its significance or eligibility. For example, if a resource is eligible for its innovative engineering qualities, visual effects on the property may not be adverse, whereas if the property is eligible on the basis of its architectural significance, an adverse effect very well may be created.

An adverse effect may be obstructive, which is to say it may block the view to or from an historic resource; it may also not be obstructive and still create an adverse effect in that it introduces elements so incompatible with the criterion or criteria under which the property is eligible for listing that it diminishes the property's significance to a substantial degree. A highway proposed to run alongside an historic rural church, while it would not directly obstruct the view to or from the building, might still introduce an element so incompatible with the rural setting of the property that it would have a diminishing effect upon the integrity of the property's setting.

Adverse aesthetic effects should be determined on a case-by-case basis, weighing the following factors:

- Significance. An historic built-environment resource's historical significance and its key aspects of integrity must be taken into account in order to evaluate the Project's effects on the property's eligibility for listing in the NRHP/CRHR.

- Character-Defining Features. The alteration of character-defining features at the Project location (including open space) can affect the view from the historic built-environment resource and possibly the location, feeling, setting, and association of that resource.
- Compatibility. Whether in an open space or a developed area, the compatibility of the Project with the character of the Project's location and surrounding area, including historic resources, is important. The character of the historic built-environment resource's site and architectural features should be the basis for determining the appropriate characteristics of the proposed Project. The compatibility of the Project is determined by:
    - mass – the arrangement of the Project's spaces;
    - scale and proportion – the size and the proportion of the Project to the surrounding structures and features;
    - height – sometimes it may be necessary that a Project height extend beyond that of the surrounding buildings and other features within view of the Project; it is important that the height of the Project not cause the line of sight to move so far up that the surrounding features are out of view, thereby detracting from the original view;
    - shadows;
    - color;
    - the degree to which the Project would contribute to the area's aesthetic value;
    - the degree of contrast, or lack thereof, between the Project and the background, surrounding scenery, or neighborhood; and,
    - the amount of open space.

- Obstructive Effects. Whether a Project is on or near an historic built-environment resource, it can block the resource from being viewed, or block a view seen from that resource, thereby possibly diminishing its integrity. Determination of adverse obstructive effects should be made on a case-by-case basis, considering the following factors:
    - The historic built-environment resource's significance. It is necessary to understand the resource's historic significance and its key aspects of integrity in order to evaluate the Project's effects on the resource's eligibility for listing in the NRHP/CRHR.
    - Nature and quality of the view from the historic built-environment resource. This includes such features as natural topography, settings, man-made or natural features of visual interest, and other historic resources seen from the historic built-environment resource, any of which would contribute to its significance and integrity.
    - Extent of obstruction. This includes total blockage, partial interruption, or interference with a person's enjoyment and appreciation of a scenic view or

historic resource viewed from the historic built-environment resource, to the extent it affects the integrity of the historic built-environment resource.

- Obstruction of an historic built-environment Resource. The Project might obstruct the historic built-environment resource from being viewed from the Project site or other area. If the historic built-environment resource is visually appreciated from surrounding viewpoints, obstructing its view may affect its feeling, setting, location, or association.

Assessment of Visual Effects

Westside Main Canal

Both the solar field and electric line of the CSE Project will be visible from the segments of the Westside Main Canal located within the Project APE (Figures 35 and 36). Those segments of the canal are recommended as eligible for listing in the NRHP and CRHR under Criterion A/1 for their significance in the development of the Imperial Valley. Character-defining features of the canal include original canal alignment, earthen walls, earthen levees, agricultural setting, and structures such as bridges, siphons, drops, and gates. Viewshed from the canal is not a character-defining feature of this historic resource, nor a quality that contributes to its NRHP eligibility. A small portion of the overall setting will be altered by the solar field, but not to a level that would significantly compromise the integrity of its setting. Neither the solar field nor the electric lines significantly diminish the integrity of the setting and feeling of this historic built-environment resource and therefore do not constitute an adverse effect under 36 CFR 800 or a significant visual impact under CEQA.

Figure 35. View east of the Project area from the Westside Main Canal.

Figure 36. View southeast of the Project area from the Westside Main Canal.

AUDITORY EFFECTS

In consideration of auditory effects from the CSE Project, the effect of the noise generated by the solar field and electric line must be considered in relationship to the current ambient noise levels location of the historic built-environment resource within the CSE Project APE. The solar field and electric line will produce a cumulative noise level of 44.8 decibels (dbA Leq) (LS Power Development, LLC 2011, Table 3-3). This is slightly less than Imperial County's allowable noise level of 45 decibels for residential properties, which is the zoning for those properties closest to the Project (LS Power Development, LLC 2011, Table 3-3). Accordingly, the operation of the solar field and electric line will not exceed the current noise levels allowed for the setting of the Westside Main Canal. Therefore the Project will not constitute an adverse auditory effect under 36 CFR 800 or a significant auditory impact under CEQA.

Auditory effects during construction of the solar field and electric line will constitute a temporary auditory intrusion to the Westside Main Canal due to the proximity of the Project to this historic resource. Construction equipment will include off-highway trucks, graders, rollers, tractors/loaders/backhoes, water trucks, rubber-tired bulldozers, and rough terrain forklifts (LS Power Development, LLC 2011). The cumulative noise level of the combined operation of such equipment would result in noise levels of 88.5 decibels at a distance of 50 ft. from the construction, with a reduction of noise due to distance to the closest property lines than reduces that level to 75 decibels (LS Power Development, LLC 2011, Table 4-1). The cumulative noise level of the installation of the solar panels would result in noise levels of 87.5 decibels at a distance of 50 ft. from the construction, with a reduction of noise due to distance to the closest property lines than reduces that level to 75 decibels (LS Power Development,

LLC 2011, Table 4-1). These levels are at the threshold established by Imperial County for allowable noise level of 75 decibels for construction noise (LS Power Development, LLC 2011). The construction solar field and electric line will exceed the ambient sound levels typical for the setting of the Westside Main Canal. However, because the impact of these auditory effects is temporary, the impact does not rise to the level of an adverse auditory effect under 36 CFR 800 or a significant auditory impact under CEQA.

ATMOSPHERIC EFFECTS

In consideration of atmospheric effects from the CSE Project, the effect of atmospheric intrusions generated by the solar field and electric line must be considered in relationship to the current levels at the location of the historic built-environment resource within the CSE Project APE. Potential atmospheric intrusions can include elements such as dust, emissions, and chemical residue from dust abatement. Air emissions are generated during construction activities associated with the development of a Project, including grading, clearing, hauling, underground utility construction, and paving activities. During site clearing and remedial grading, diesel exhaust emissions are generated by construction-related vehicles such as bulldozers, loaders, dump/haul trucks, and scrapers. Emissions are also generated in the form of dust and PM10 as a result of soil disturbance (Davis 2011).

The initial analysis of the mitigated impact on air quality as a result of the construction of CSE Project determined that emissions would only exceed the current ambient air quality threshold for nitrogen oxide (NOx) (Centinela Solar Energy, LLC 2011). That elevation in NOx constitutes a temporary atmospheric intrusion during the construction of the CSE Project. Elevated levels of NOx limited to the construction period will not adversely affect the materials of the Westside Main Canal, nor the significant qualities or values that qualify it for listing on the NRHP. Therefore, the intrusion does not rise to the level of a significant adverse atmospheric effect under 36 CFR 800 or a significant atmospheric impact under CEQA.

Based on our understanding of the project, emissions during operation would be less than those during construction, and the Project will be required to comply with all applicable air quality regulations for operating facilities. Operation of the Project will therefore likely not be an adverse effect under 36 CFR 800 or a significant impact under CEQA.

SUMMARY

No significant visual, auditory, or atmospheric effects were identified as a result of the evaluation of indirect effects on the Westside Main Canal, the only built-environment resource within the CSE Project APE determined eligible for listing in the NRHP/CRGR. The canal will not be subject to a visual intrusion by the CSE Project. The canal will be subject to temporary auditory and atmospheric intrusions during the construction of the CSE Project.

However, neither intrusion rises to the level of an adverse effect under 36 CFR 800 or a significant impact under CEQA.

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APPENDICES

APPENDIX A

DPR Forms

APPENDIX B

Records Search – Built Environment Resources

APPENDIX C

Confidential Figure 4

NATIVE AMERICAN HERITAGE COMMISSION
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April 10, 2019

Robert Rowe
Burns & McDonnell

VIA Email to: rarowe@burnsmcd.com

RE: Le Conte Battery Energy Storage Project, Imperial County

Dear Mr. Rowe:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please also contact the Ewiiaapaayp Tribe on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Imperial County
4/10/2019

Barona Group of the Capitan Grande
Edwin Romero, Chairperson
1095 Barona Road — Diegueno
Lakeside, CA, 92040
Phone: (619) 443 - 6612
Fax: (619) 443-0681
cloyd@barona-nsn.gov

Campo Band of Diegueno Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Diegueno
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Cocopah Indian Reservation
Jill McCormick, Cultural Resources Manager
14515 S. Veterans Drive — Cocopah
Sommerton, AZ, 85350
Phone: (928) 722 - 7521
mccormickj@cocopah.com

Ewiiaapaayp Tribe
Michael Garcia, Vice Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Ewiiaapaayp Tribe
Robert Pinto, Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
wmicklin@leaningrock.net

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 765 - 0845
Fax: (760) 765-0320

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 803 - 5694
cjlinton73@aol.com

Inaja-Cosmit Band of Indians
Rebecca Osuna, Chairperson
2005 S. Escondido Blvd. — Diegueno
Escondido, CA, 92025
Phone: (760) 737 - 7628
Fax: (760) 747-8568

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Diegueno
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817
epinto@jiv-nsn.gov

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas,
P.O. Box 775 — Kwaaymii
Pine Valley, CA, 91962 — Diegueno
Phone: (619) 709 - 4207

La Posta Band of Diegueno Mission Indians
Gwendolyn Parada, Chairperson
P. O. Box 1120 — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

La Posta Band of Diegueno Mission Indians
Javaughn Miller, Tribal Administrator
P. O. Box 1120 — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

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 Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Le Conte Battery Energy Storage Project, Imperial County.

Native American Heritage Commission
Native American Contact List
Imperial County
4/10/2019

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 Diegueno
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Mesa Grande Band of Diegueno Mission Indians
Michael Linton, Chairperson
P.O Box 270 Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

San Pasqual Band of Diegueno Mission Indians
Allen Lawson, Chairperson
P.O. Box 365 Diegueno
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

San Pasqual Band of Diegueno Mission Indians
John Flores, Environmental Coordinator
P. O. Box 365 Diegueno
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court Kumeyaay
El Cajon, CA, 92019
Phone: (619) 312 - 1935
lhaws@sycuan-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Viejas Band of Kumeyaay Indians
Robert Welch, Chairperson
1 Viejas Grade Road Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

Viejas Band of Kumeyaay Indians
Julie Hagen,
1 Viejas Grade Road Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

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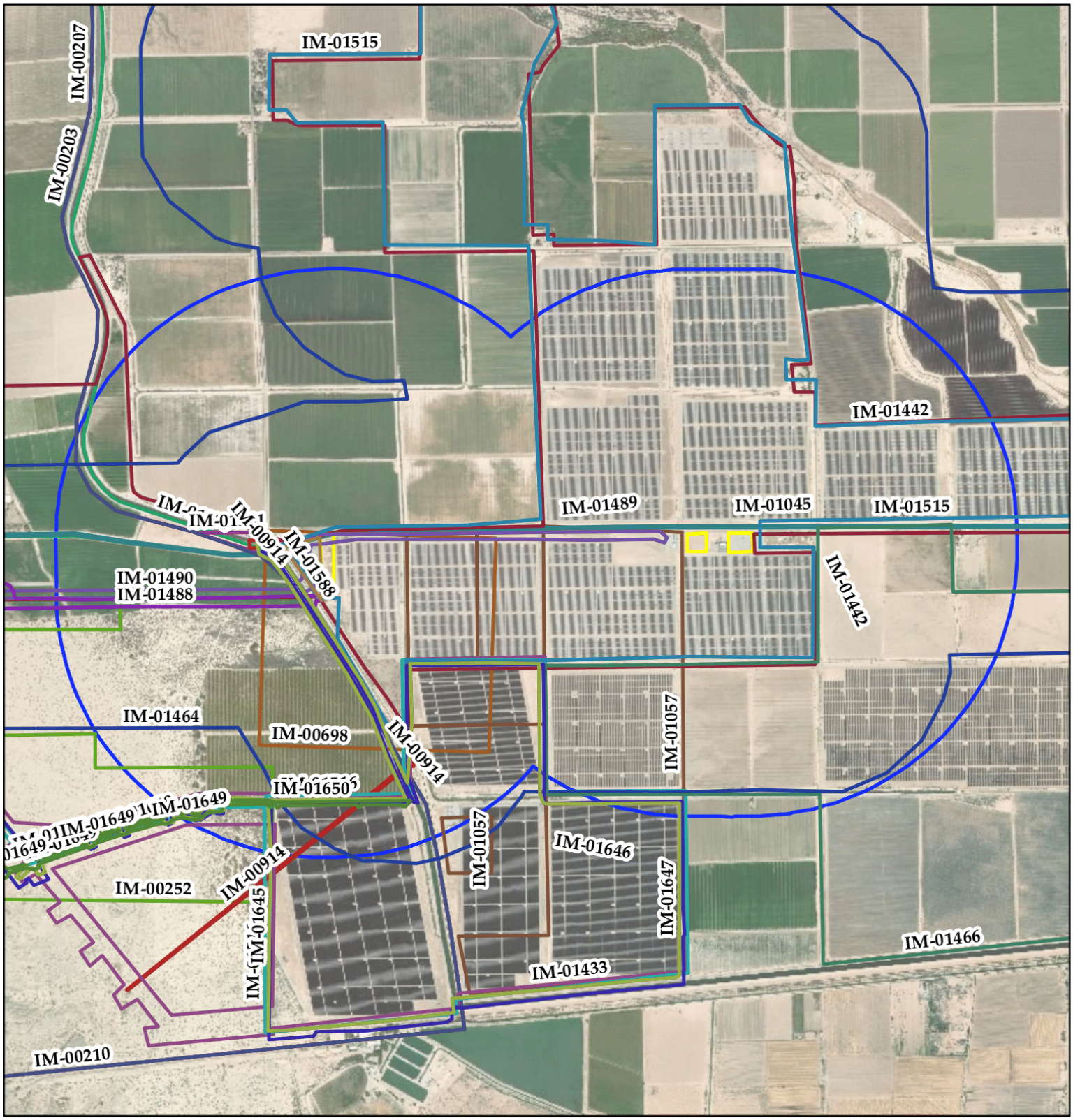
This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Le Conte Battery Energy Storage Project, Imperial County.

South Coastal Information Center
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-5320
(619) 594-5682
nick@scic.org



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Reports

Nick Doose, May 12, 2019

Aerial © ESRI 2017

Report Number	Name of Project	Reference
IM-00203	West and East Mesa	Gallegos, 1979
IM-00207	East and West Mesa	Davis, 1980
IM-00210	Republic Geothermal Field	Von Werlhof and McNitt, 1980
IM-00252	La Rosita 230kV	Schaefer, 1981
IM-00698	Bridge, Culvert Widening	Hupp, 1999
IM-00914	Border Remove surveillance	Buysse and Smith, 2002
IM-01045	Historic Property Survey	CALTRANS
IM-01057	Mt. Signal and Dixie Ranch Prison Alternatives	Pigniolo et al. 1990
IM-01141	Negative Declaration for Cingular Wireless	Imperial County Planning Department
IM-01275	Yuha Desert Off Road Vehicle Courses	Ritter 1975
IM-01433	Imperial Solar Energy Center South	Zepeda-Herman, 2011
IM-01442	Centinela Solar Energy Project	Pigniolo, et al. 2011
IM-01464	Centinela Solar Energy Gen-Tie	Mitchell 2011
IM-01466	Calexico and Mt. Signal Solar Farms	Bray and Strauss, 2011
IM-01489	Addendum Centinela Solar Energy Gen-Tie	Mitchell 2012a
IM-01490	Evaluation Letter Centinela Solar Energy Gen-Tie	Mitchell 2012b
IM-01515	Centinela Solar Energy Area of Potential Effect	Davis, et al, 2011
IM-01516	Imperial Solar Energy Center	Davis, 2011
IM-01588	New Access at Drew Switchyard	Crawford, 2015
IM-01645	Paleontology Assessment Imperial Solar Energy Center	Quinn and Encarnacion, 2011a
IM-01646	Paleontology Monitoring Imperial Solar Energy Center	Quinn and Encarnacion, 2011b
IM-01647	Monitoring Program Imperial Soalr Energy Center	No data
IM-01649	Paleontology Monitoring East-West Transmission line Dismantling	Hogan, 2014
IM-01650	Archaeological Monitoring East-West Transmission line Dismantling	Hogan, et al. 2014

References

Bray, M. and M. Strauss
2011 Calexico and Mount Signal Solar Farms, Calexico, Imperial County, California. ESA

Buysses, J., and B. Smith
2002 Results of an Archaeological Survey for the Border Remote Video surveillance project, El Centro Sector, Imperial County, California. Brian F. Smith and Associates

CALTRANS
1999 Supplemental Historic Property Survey Report. CALTRANS

Crawford, K.
2015 Letter Report: eTS 28774-Cultural Resources Monitoring for New Access Road and Culverts at Drew Switchyard, Imperial County, California, ICF International.

Davis, E
1980 Class II Cultural Resource Inventory, East Mesa and West Mesa Regions, Imperial Valley, California. Westec Services, Inc.

Davis, S.
2011 Final Inventory, Evaluation, and Analysis of Effects of Historic Build Environment Properties with the Area of Potential Effect of the Imperial Solar Energy Center, South Imperial County, California. ASM Affiliates, Inc.

Davis, S., J. Krintz, S. Gunderman, and S Ni Ghablain
2011 Inventory, Evaluation, and Analysis of Effects on Historic Resources within the Area of Potential Effect of the Centinela Solar Energy, LLC., Imperial County, California. ASM Affiliates, Inc.

Gallegos, D.
1979 Class II Cultural Resources Inventory, East Mesa and West Mesa Regions, Imperial County, California. Westec Services, Inc.

Hogan, M.
2014 Paleontological Monitoring Program letter Report San Diego Gas & Electric East-West Transmission Line Dismantling Project, Mount Signal Area, Imperial County, California. CRM Tech.

Hogan, M., B Tank, D. Encarnacion, and D. Ballester
2014 Archaeological Monitoring Report San Diego Gas & Electric ISEC South Transmission Line Dismantling Project Near the Community of Mount Signal, Imperial County, California. CRM Tech, UltraSystems Environmental, Inc.

Hupp, J.
1999 Historical Architectural survey Report Pavement Rehabilitation and Shoulder, Bridge, Culver Widening Project, Imperial County, California. California Department of Transportation.

Imperial County Planning Department
2003 Public Notice of Proposed Negative Declaration for Cingular Wireless #CUP#03-0032/VA#03-0010.

Mitchell, P.
2011 Testing Letter Report for the Centinela Solar Energy Gen-Tie Line Project, Imperial County, California. KP Environmental, LLC.

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2012b Evaluation Letter Report for the Centinela Solar Energy Gen-Tie Line Project, Imperial County, California. KP Environmental, LLC.

No data
2013 Archaeological Resources Monitoring Program Results, Imperial Solar Energy Center-South, near the Community of Mount Signal, Imperial County, California. CRM Tech, UltraSystems.

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1990 Cultural Resources Study of the Mount Signal and Dixie Ranch Imperial County Prison Alternatives, Imperial County, California, ENC Environmental and Energy Services Company, Inc.

Pigniolo, A., C. Serr, J. Aguilar, and F. Dittmer
2011 Cultural Resources Survey for a Poriton of the Centinela Solar Energy, LLC, Project Ara, Imperial County, California. Laguna Mountain Environmental, Inc.

Quinn, H. and D. Encarnacion
2011a Paleontological Resources Assessment Report Imperial Solar Energy Center-South, Near the Community of Mount Signal, Imperial County, California, CRM Tech, Ultrasystems

2011b Paleontological Resources Monitoring Report Imperial Solar Energy Center-South, Near the Community of Mount Signal, Imperial County, California, CRM Tech, Ultrasystems

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Von Welholf, J. and K. McNitt
1980 Archaeological Examinations of the Republic Geothermal Field, East Mesa, Imperial County, California. Imperial Valley College Museum.

Zepeda-Herman, C.
2011 Class III Cultural Resources Survey for the Imperial Solar Energy Center South Project, Imperial County, California. RECON.

South Coastal Information Center
San Diego State University
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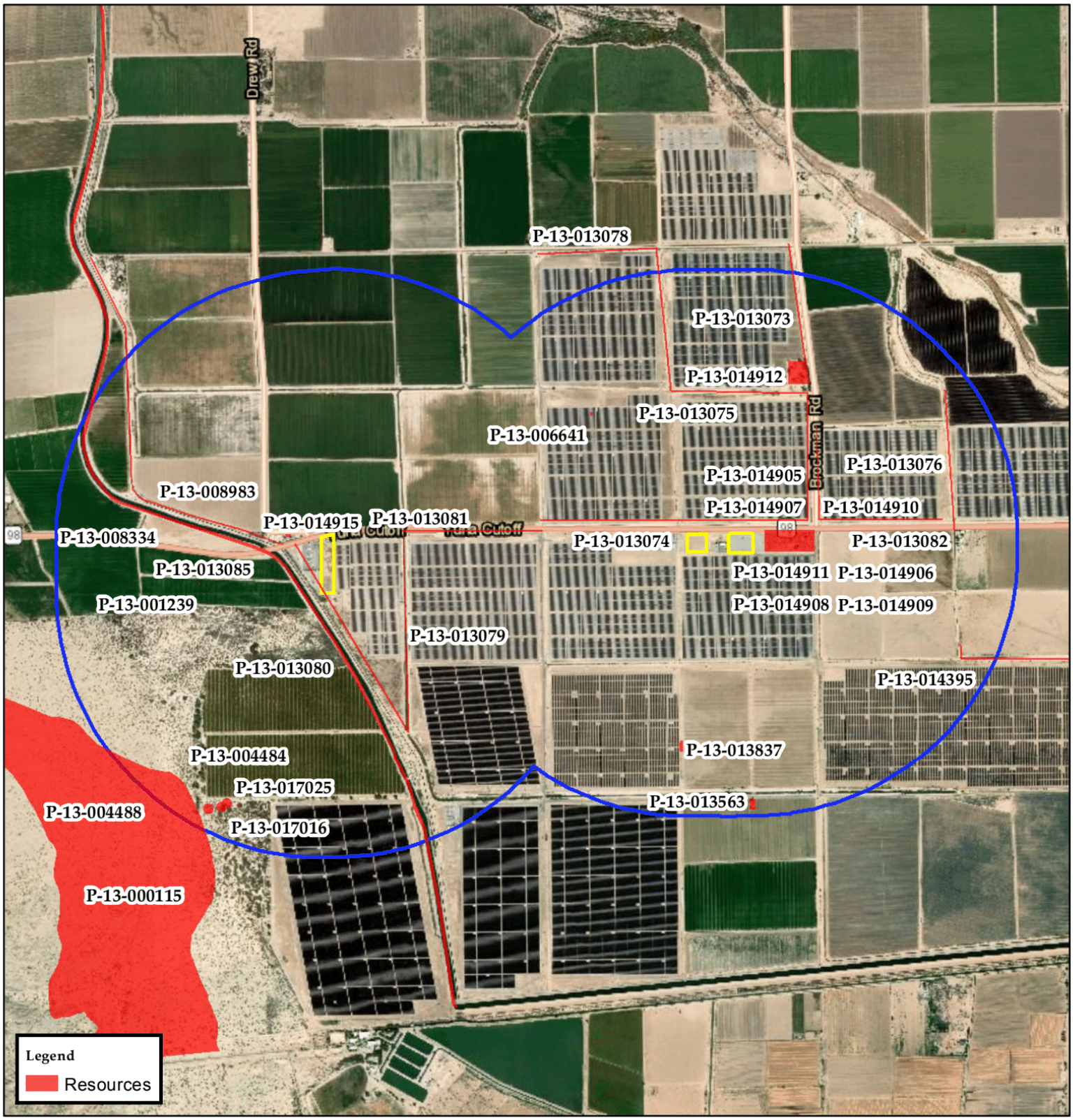

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Historical Resources with Primary and Trinomial Designations

Nick Doose, May 12, 2019

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Site Number	Site Type	Eligibility	Notes
4IMP115	Artifact scatter with house depressions	None given	Recorded in the 1920s
4IMP1473	Artifact scatter	Potentially Eligible	
4IMP4484	Historic isolate	Not Eligible	
4IMP4488	Precontact ceramics	None given	
4IMP6641	Ceramic/lithic scatter	None given	
4IMP7834	Irrigation Feature	Eligible	Westside Main Canal
P-13-008993	Irrigation Feature	Not Eligible	Wormwood Canal
P-13-013073	Irrigation Feature	Not Eligible	Woodbine Canal
P-13-013074	Irrigation Feature	Not Eligible	Woodbine Lateral 7
P-13-013075	Irrigation Feature	Not Eligible	Woodbine Lateral 7a
P-13-013076	Irrigation Feature	Not Eligible	Woodbine Lateral 2
P-13-013078	Irrigation Feature	Not Eligible	Brockman Drain
P-13-013079	Irrigation Feature	Not Eligible	Mt. Signal Dam
P-13-013080	Irrigation Feature	Not Eligible	Mt. Signal Drain 1
P-13-013081	Irrigation Feature	Not Eligible	Carpenter Dam
P-13-013082	Irrigation Feature	Not Eligible	Wells Drain
P-13-013085	Historic-age Isolate	Not Eligible	1249 Anza Road
P-13-013563	Historic-age Structure	Not Eligible	
P-13-013837	Historic-age Scatter	Not Eligible	
P-13-014395	Irrigation Feature	Not Eligible	Unnamed Drain
P-13-014905	Town	Not Eligible	Mt. Signal
P-13-014906	Historic-age Structure	Not Eligible	Mt. Signal Cafe
P-13-014907	Historic-age Structures	Not Eligible	Buildings 2a and 2b
P-13-014908	Historic-age Structure	Not Eligible	Building 3
P-13-014909	Historic-age Structure	Not Eligible	Building 4
P-13-014910	Historic-age Structure	Not Eligible	Building 5
P-13-014911	Historic-age Structures	Not Eligible	Buildings 6a and 6b
P-13-014912	Historic-age Structures	Not Eligible	Brockman Ranch
P-13-014915	Historic-age Structure	Not Eligible	405 Drew Road
P-13-017016	Prehistoric Isolate	Not Eligible	Chopper
P-13-017017	Prehistoric Isolate	Not Eligible	5 Lithic Flakes
P-13-017025	Prehistoric Isolate	Not Eligible	Mano