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**Palen Solar Electric Generating System
Ethnographic Report Informing the Final Staff Assessment**

This Report is subject to the confidentiality restrictions and informed consent provisions
provided at

Section 304 of the National Historic Preservation Act (16 U.S.C. 470w-3[a-c]),
Section 6254.10 of the California Public Records Act,
46 CFR 101 Use of Human Subjects, and
Section 1798.24 of California Civil Code.



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Executive Summary

This report, prepared by California Energy Commission staff, provides documentation concerning Native American ethnographic resources that could have their integrity diminished by the visual impacts from construction and operation of the Palen Solar Electric Generating System (PSEGS). This project is proposed to be developed on 3,794 acres of land in eastern Riverside County, California. This report provides: 1) a brief description of the project; 2) an explanation of ethnography and the types of resources that ethnographic methods can explain; 3) a review of the ethnographic methods employed for this study; 4) background information on the tribal governments and other Native Americans that participated in the study; 5) a description of the ethnographic resources identified by Energy Commission staff; and 6) descriptions of periods of significance, determinations of eligibility and integrity of these ethnographic resources.

This report highlights only some of the Mohave, Chemehuevi, Quechan, Cahuilla, and Serrano lifeways, and how those lifeways are entangled with the surrounding landscape and ethnographic resources. This report is intended as a background technical report supporting the Final Staff Assessment (FSA) prepared for the PSEGS.

The final analysis leads staff to suggest that there are at least 11 ethnographic resources in varying proximity to the project vicinity that could be adversely impacted by the construction, operation, and decommissioning of the PSEGS facility:

1. Palen Dunes/Palen Lake
2. Ford Dry Lake
3. McCoy Spring (CA-Riv-0132) National Register District
4. Chuckwalla Spring (CA-Riv-0262)
5. North Chuckwalla Mountains Petroglyph District (CA-Riv-01383)
6. North Chuckwalla Mountains Prehistoric Quarry District (CA-Riv-01814)
7. Corn Spring (CA-Riv-032)
8. Long Tank
9. Alligator Rock
10. Dragon Wash (CA-Riv-049)
11. San Pascual Well

In addition to these known ethnographic resources there is a very high likelihood that additional ethnographic resources exist in areas that have not been subjected to ethnographic survey, particularly in the southern extent of the Coxcomb Mountains and in and along the western side and southeastern extent of the Palen Mountains, the northern side of the Chuckwalla Mountains, the eastern flanks of the Eagle Mountains and the valley floor that rests between the above mentioned mountains. As this report was finalized staff received substantive information on the prehistoric and proto-historic trails within the Chuckwalla Valley providing greater predictability of ethnographic

resource locations. However, the predictive power of the trails data was not verified on the ground. Despite lack of verification, staff notes that the trails data depicts a high connectivity of the ethnographic resources to one another and to the larger trail network that is known to run from the Pacific coast to the inland basins of the larger Southwest.

This report presents the themes, boundaries, defining characteristics, and connected values and understandings for Native Americans based on published sources and Native American input. Descriptions of periods of significance, determinations of eligibility and integrity of these ethnographic resources are included in this report and the FSA.

Staff has focused on the above listed ethnographic resources as Traditional Cultural Properties, otherwise known as places. However, staff concludes that the ethnographic resources are contributing elements to the Prehistoric Trails Network Cultural Landscape, otherwise known as an area.

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INTRODUCTION

This report provides documentation concerning Native American ethnographic resources that will have their integrity diminished by the visual impacts from construction of the Palen Solar Electric Generating System (PSEGS). The proposed project is located on 3,794 acres of Bureau of Land Management (BLM) land in eastern Riverside County, California. This report provides: 1) a brief description of the project; 2) an explanation of ethnography and the types of resources that ethnographic methods can explain; 3) a review of the ethnographic methods employed for this study; 4) background information on the tribal governments and other Native Americans that participated in the study; and 5) a description of the ethnographic resources identified as a result of this study. Staff concludes that there are at least 11 ethnographic resources in varying proximity to the project vicinity that could be adversely impacted by the construction, operations, and decommissioning of the PSEGS facility:

1. Palen Dunes/Palen Lake
2. Ford Dry Lake
3. McCoy Spring (CA-Riv-0132) National Register District
4. Chuckwalla Spring (CA-Riv-262)
5. Corn Spring (CA-Riv-032)
6. North Chuckwalla Mountains Petroglyph District (CA-Riv-01383)
7. North Chuckwalla Mountains Prehistoric Quarry District (CA-Riv-01814)
8. Long Tank
9. Alligator Rock
10. Dragon Wash (CA-Riv-049)
11. San Pascual Well

The purpose of this draft report is to inform the analysis for the Final Staff Assessment (FSA) published by the California Energy Commission staff. The Energy Commission has authority to certify the construction, modification, and operation of thermal electric power plants 50 megawatts (MW) or larger. The Energy Commission certification is in lieu of any permit required by state, regional, or local agencies and by federal agencies to the extent permitted by federal law (Pub. Resources Code, § 25500). In the case of the PSEGS, the BLM will be submitting a Final Environmental Impact Statement and Record of Decision independent of the Energy Commission's analyses and decision. The Energy Commission must review power plant Applications for Certification (AFCs) to assess potential environmental impacts including potential impacts to public health and safety, potential measures to mitigate those impacts (Pub. Resources Code, § 25519), and to ensure compliance with applicable governmental laws, ordinances, regulations, and standards (Pub. Resources Code, § 25523).

The Palen Solar Power Project (PSPP) was certified by the Energy Commission in December 2010 to construct and operate a 500 MW concentrated solar thermal trough electric generating facility. On June 26, 2012 a petition was filed for a transfer of ownership of the certificate from Palen Solar 1, LLC, to Palen SEGS, a wholly owned, indirect subsidiary of BrightSource Energy, Inc. The current project owner, Palen SEGS,

filed a Petition for Amendment on December 18, 2012 in which the owner proposes to construct two 250 MW solar power towers with associated heliostat fields and ancillary facilities within the footprint of the Palen Solar Power Project. Therefore, the focus of this analysis is on the changes between the originally permitted facility and the newly proposed facility. The primary difference between these facilities is the height of the solar power tower, 750 feet (plus a ten foot antennae) versus 150 feet for the highest component of the concentrated solar thermal trough facility, the air cooled condenser. Therefore, the primary difference between the impacts of these facilities is in the direct visual impacts. In particular, the solar power tower technology causes elevated levels of glint and glare from the thermal flux at the top of the 750 foot tall towers.

The Energy Commission is the lead state agency under the California Environmental Quality Act (CEQA), and the process by which the Energy Commission conducts analyses is functionally equivalent to the preparation of an Environmental Impact Report. CEQA guidelines are followed when evaluating a cultural resource, which is, evaluating the historical significance of cultural resources by determining whether the resource meets several sets of specified criteria. Under CEQA, the definition of a historically significant cultural resource is that it is eligible for listing in the California Register of Historical Resources (CRHR), and such a cultural resource is referred to as a “historical resource,” which is a “resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR,” or “a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirement of section 5024.1 (g) of the Public Resources Code,” or “any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided that the agency’s determination is supported by substantial evidence in light of the whole record” (Cal. Code Regs., tit. 14, § 15064.5 (a)). The ethnographic resources documented in this draft report consist of sites, areas, or places, or some combination thereof.

To be historically significant a cultural resource must meet the criteria for listing in the CRHR. In addition to being at least 50 years old, a resource must meet at least one (and may meet more than one) of the following criteria (Pub. Resources Code, § 5024.1):

- Criterion 1, is associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion 2, is associated with the lives of persons important in our past;
- Criterion 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
- Criterion 4, has yielded, or may be likely to yield, information important in history or prehistory.

Historical resources must also possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance (Cal. Code Regs., tit. 14, § 4852(c)). Various state and federal historic preservation guidelines are used to identify, document and determine eligibility. As such, the primary analysis in this report focuses on how the change in direct visual impacts between the originally licensed PESP and the amended project (PSEGS) will adversely impact the integrity of ethnographic resources.

Description of Project

The PSEGS is being proposed for development by Palen Solar Holdings, LLC (PSH), a joint venture between BrightSource Energy, Inc. (BrightSource) and Abengoa Solar, Inc. (Abengoa).

The proposed project will consist of two adjacent solar fields and associated facilities with a total combined nominal output of approximately 500 MW, situated in the Chuckwalla Valley in Riverside County, California approximately 10 miles east of the town of Desert Center (see **Figure 1** and **Figure 2** in the back of this report). The project facilities will be located entirely on land leased from the BLM. Each unit will consist of a dedicated 750 foot tall (plus ten foot antennae) solar receiver steam tower, surrounded by a solar field array of approximately 85,000 heliostats which focus solar energy on the solar receiver (see Figure 3). Auxiliary boilers will be used to operate in parallel with the solar field during partial load conditions and when additional power is needed. A non-reheat Rankine-cycle steam turbine generator/power block would also be located at each unit (Petition to Amend (PTA) 2012: 2-3 – 2-5).

Each 250 MW plant requires about 1,850 acres (or 2.9 square miles) of land to operate. A 15 acre common facilities area will include administration, warehouse, evaporation ponds, and maintenance facilities. The total area required for both plants, including the shared facilities and gen-tie line, is approximately 3,794 acres. The project owner proposes to use on-site groundwater for use during construction and operation of the PSEGS. The owner estimates that during construction of the facility, approximately 1,130 acre feet would be needed. For annual operation, the project owner estimates 201 acre feet per year would be used (PTA 2012:2-4 – 2-5).

What is Ethnography?

Ethnography is a discipline, a method, and a type of document. As a discipline, ethnography is the prime focus of cultural anthropology. As a method, ethnography is an endeavor to understand other cultural groups from their point of view, or insider's perspective. To gain this perspective an ethnographer tries to understand their own cultural assumptions, biases, and ways of understanding the world. The opposite of the insider perspective is the ethnocentric perspective, wherein the uninformed assesses another culture via the perspective and outlook of what is known from one's own culturally informed experiences and knowledge base. As a type of document, ethnography provides readers with a written account that presents an understanding of

another culture as the ethnographer came to understand that other culture from its people's perspective or world view. Ethnology is the comparison of multiple ethnographies either of disparate cultures located throughout the world or located in geographic proximity to one another.

Ethnographers employ some of the following methods to understand other cultures:

- **Ethnographic research:** a review of previous ethnographies concerning the culture to be understood.
- **Historic research:** a review of historic literature about the people, events, and places of cultural importance.
- **Kinship charts:** a method for charting human relations among a culture, clan, community, or family.
- **Extended interviews:** representative individual and group interviews that seek responses to a number of research questions concerning the culture as a whole or sub-areas of the culture.
- **Life history interviews:** documentation of the events that chronicle a person's life story as that person presents their personal history within a broader cultural context.
- **Participant observation:** participating in and observing cultural events as if one were from the culture that one is studying.
- **Journalistic witnessing:** witnessing and documenting a cultural event at face value in descriptive terms without interpretation.

Ethnography fulfills a supporting role for other anthropological disciplines as well as contributing on its own merits. Ethnography provides a supporting role to the discipline of archaeology by providing a cultural and historic context for understanding the people that are associated with the material remains of the past. By understanding the cultural milieu in which archaeological sites and artifacts were and still are remanufactured, utilized, or cherished, this additional information provides greater understanding for identification efforts, making significance determinations per the National Historic Preservation Act (NHPA) or CEQA; eligibility determinations for the National Register of Historic Places (NRHP) or the CRHR; and for assessing if and how artifacts are subject to other cultural resource laws, such as the Native American Graves Protection and Repatriation Act (NAGPRA) and the Archaeological Resources Protection Act (ARPA).

In addition, ethnography has merits of its own by providing information concerning ethnographic resources that encompass physical sites, places, areas, or elements of a site, place or area. Historic property types with overlap and affinity with ethnographic resources are referred to as cultural landscapes, traditional cultural properties, Sacred Sites, and heritage resources, or historical resources that are areas, places, or sites. There is notable overlap in terminology when referring to ethnographic resources. Studies that focus on specific ethnographic resource types also take on names such as ethno-geography, ethno-botany, ethno-zoology, ethno-semantics, ethno-musicology, etc. In general, the ethnographic endeavor attempts to minimize human conflict by

facilitating iterative cross cultural understandings and, by extension, self-awareness and informed consideration of others.

Ethnographic Present Problem

Ethnography draws upon a variety of sources; published literature, archaeology, and oral histories and testimonies of living people. Each of these sources presents the information in different tenses because sometimes cultural practices and ideas are expressed as things that *have* happened, and sometimes as things which *are* happening. In addition, ethnographies, including this report, become fixed to the time of completion, publication, or adoption. Consequently, the ethnographer is presented with an “ethnographic present” problem, wherein cultural practices are current, yet they are referenced in the text as happening in the past; or conversely, the ethnographic report represents the world as it was at the time of research yet years after publication the cultural world described has changed. Therefore, in order to provide a clear understanding of the ethnography, staff has used the tense as it is presented in the available sources.

Ethnographic Resources

While several definitions of ethnographic resources can be found in historic preservation literature, the National Park Service provides the most succinct and commonly used definition (NPS 2007: Chapter 10):

Ethnographic resources are variations of natural resources and standard cultural resource types. They are subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes assigned cultural significance by traditional users. The decision to call resources “ethnographic” depends on whether associated peoples perceive them as traditionally meaningful to their identity as a group and the survival of their life-ways.

The term ethnographic resources can include resources that are also referred to as traditional cultural properties, sacred sites, cultural or ethnographic landscapes, heritage resources, historic properties, or historical resources that are sites, areas or places.

What are Traditional Cultural Properties?

Traditional Cultural Properties (TCPs) were defined in order to provide a layer of meaning, relevancy, or significance from a communal or localized perspective to the cultural resources profession that is otherwise dominated by archaeology and the knowledge and perspectives that archaeologists promote (King 2003: 21-33). Thomas King and Patricia Parker authored an innovative and influential National Park Service Bulletin (NPS Bulletin 38) that defined what TCPs are, how to understand, locate and document TCPs, and how to ethnographically interact with communities that wish to participate in the protection of their special places. An explanation of “traditional cultural significance” is provided in the following quote from NPS Bulletin 38 (Parker and King 1998: 1):

“One kind of cultural significance a property may possess, and that may make it eligible for inclusion in the Register, is traditional cultural significance.

“Traditional” in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community’s historically rooted beliefs, customs, and practices.”

Such places of traditional cultural significance can include: a location that a Native American group associates with their traditional beliefs concerning their origins, cultural history, or nature of the world; the buildings, structures, or patterns of land use that reflect the cultural tradition valued by the long-term residents of a rural community; a cultural group’s traditional home in an urban environment that reflects its beliefs and practices; a location where ceremonial activities conducted by Native American practitioners have historically, or are known or thought to have occurred; or, a location where the economic, artistic, or other cultural practices that are important in maintaining a community’s historic identity have traditionally been carried out (Parker and King 1998: 1).

Thus, a property that is eligible for inclusion in the National or California registers because of its association with cultural practices or beliefs of a living community that “(a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community is a traditional cultural property” (Parker and King 1998: 1).

While the TCP definition provided in NPS Bulletin 38 addresses many types of special places, some confusion exists with language added during the 1992 amendments to the NHPA at Section 101(d)6. This section says that “properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined eligible for inclusion on the National Register.” The section further extols agencies to consult with Indian tribes and Native Hawaiians concerning the values that their communities may attach to special places. This has led some to erroneously interpret the Act’s Section 101 language to limit TCPs to only Native Americans and Native Hawaiians. However, the specific language of the act does not prohibit diversity beyond the two specific ethnicities called out; but rather affirms that Native Americans asserting TCPs during the Section 106 process must be considered.

What are Sacred Sites?

Staff considers the term “Sacred Site” to be different than the term “Traditional Cultural Property”, although they are often used interchangeably, even when it is erroneous to do so. The term Sacred Site comes from the American Indian Religious Freedom Act (AIRFA), the Religious Freedom Restoration Act (RFRA), and Executive Order 13007. Without elaborating further on information concerning the history and resulting inter-relation of the acts and the order, suffice to say that Executive Order 13007 provides the best guidance and definition of the term “Sacred Site”. Executive Order 13007 calls for the federal government to accommodate access to, and ceremonial use of, Sacred

Sites by Indian religious practitioners and to avoid adversely affecting the integrity of Sacred Sites through federal land manager actions (ACHP 2002). The definition is as follows:

“...any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, an Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.”

Therefore, these two terms are not interchangeable because Sacred Sites can only be located on federal lands and the definition calls out the limited geographic extent of Sacred Sites as “specific, discrete [and] narrowly delineated.” However, TCPs are often identified as a result of federal undertakings and tend to be geographically more expansive than “specific, discrete and narrowly delineated Sacred Sites.” TCPs tend to be larger because aspects such as view-shed and changes through time need to be considered when defining the boundaries of a TCP (Parker and King 1998: 20).

For the purposes of this study, the research focus is with Native American sites, places, and areas otherwise referred to as ethnographic resources, located in and around the proposed project area. Having said this, and based upon the discussion provided above, the reader should be aware that there are multiple overlaps of terminology. Staff will primarily use the term “places” or “areas” in reference to the type of historical resources discussed in this report; however, where applicable staff will use the term that a source document or tribal participant uses.

Present Tribal Governments

Tribes were invited to participate in the ethnographic study, based upon a list of 16 affiliated tribes, organizations, and individuals provided by the Native American Heritage Commission and the Bureau of Land Management (BLM). The 16 invited entities represent nine different cultural affiliations. From north to south, these affiliations are: Chemehuevi (Southern Paiute), Mohave¹, Serrano, Cahuilla, Cupeño, Luiseño, Kumeyaay, Quechan, and Cocopah (Bean 1978: 575, Figure 1; Bean and Smith 1978: 570, Figure 1; Bee 1983: 86, Figure 1; Heizer and Whipple 1971: Map 1; Kelly and Fowler 1986: 368, Figure 1; Stewart 1983a: 55, Figure 1; Williams 1983: 99, Figure 1).

Of the 16 entities, 7 are participating in consultation for the project and/or this study (Table 1).

Table 1 Summary of Tribal Participation for this Study

Entity	Cultural Affiliation	Study Participation
Chemehuevi Indian Tribe	Chemehuevi (Southern Paiute)	Yes
Colorado River Indian Tribes	Mohave, Chemehuevi (Southern Paiute), Hopi, and Navajo	Yes
Fort Mojave Indian Tribe	Mojave	Yes
Fort Yuma Quechan Indian Nation	Quechan	Yes
Cocopah Indian Tribe	Cocopah	Yes
San Manuel Band of Mission Indians	Serrano	Yes
Twenty-Nine Palms Band of Mission Indians	Chemehuevi (Southern Paiute)	No
Agua Caliente Band of Cahuilla Indians	Cahuilla	Yes
Cabazon Band of Mission Indians	Cahuilla	No
Morongo Band of Mission Indians	Serrano, Cahuilla, Cupeño	Yes

¹‘Mojave’ is routinely spelled with a ‘j’ when referencing the “Mojave” desert. In addition the Fort Mojave Tribe also retains the ‘j’ spelling. However, the Mohave contingency of the Colorado River Indian Tribes (CRIT) prefer to spell ‘Mohave’ with an ‘h.’

Augustine Band of Cahuilla Indians	Cahuilla, Chemehuevi	No
Ramona Band of Cahuilla Indians	Cahuilla	No
Cahuilla Band of Mission Indians	Cahuilla	No
Soboba Band of Luiseño Indians	Cahuilla, Luiseño	Yes
Torres-Martinez Desert Cahuilla Indians	Cahuilla, Chemehuevi	No

Southern Paiute

The Southern Paiute are an Indian population that resided within an expansive portion of the Great Basin. Their territory formed a crescent extending northwest from the vicinity of present-day Blythe, California along the Colorado River to the Amargosa Range. From the Amargosa Range, Southern Paiute territory extended northeast into southern Nevada, between the White River and Virgin River watersheds. The northern edge of Southern Paiute territory reached the southwestern part of present-day Utah. This group also held land in northern Arizona, north of and including the northern band of the Colorado River. The eastern boundary was marked by the southeastern flank of the Rocky Mountains, just east of the Colorado-San Juan River confluence. The Chemehuevi are the only subgroup of Southern Paiute that resided in the project vicinity, along the lower Colorado River between Needles and Blythe (Kelly and Fowler 1986: Figure 1). Today there are several groups of Chemehuevi, those who live at the Chemehuevi Indian Reservation near Parker, those who live at the Colorado River Indian Reservation, and those who reside at the reservations of the Twenty-Nine Palms Band of Mission Indians, Augustine Band of Mission Indians, and Torres Martinez Mission Band of Indians.

Chemehuevi Indian Tribe

The Chemehuevi Tribe is a federally recognized tribe and the official name is the Chemehuevi Indian Tribe of the Chemehuevi Indian Reservation (BIA 2012: 133). Rather than remain on the Fort Mojave Reservation near Needles, California where they had been forced to live with some of the Mojave, the Chemehuevi requested that the federal government establish their home in their traditional area, the Chemehuevi Valley. They remained there and at Beaver Lake and Cottonwood Island until dam construction forced them out in 1929. The Chemehuevi Reservation was founded on the Colorado River in Chemehuevi Valley north of Parker, Arizona (Kelly and Fowler 1986: 388-389).

In 1935, Congress authorized the Metropolitan Water District to obtain as much reservation land as needed to create Parker Dam, which ultimately caused the inundation of 8,000 acres of tribal lands in 1940. In the 1960s, some Chemehuevi members from the Colorado River Indian Reservation joined with off-reservation tribal members in reorganizing the Chemehuevi Tribe and reactivating the Chemehuevi

Reservation. The date of election of the Chemehuevi Indian Tribe's constitution was February 14, 1970 (Rusco and Rusco 1978: 565, Table 1).

The current reservation encompasses 32,000 acres of trust land with 30 miles of Colorado River frontage (Chemehuevi Indian Tribe 2013a). The tribe is based in Havasu Lake, California (BIA 2012: 123). An Executive Committee comprising a chairperson, vice chairpersons, and secretary treasurer oversees daily tribal operations and enterprises. The tribe also has a nine-person tribal council and a tribal court (active since 1996). The tribe's Cultural Center seeks to educate its younger generations about contemporary and traditional Chemehuevi life. The tribe operates the Havasu Landing Resort & Casino (Chemehuevi Indian Tribe 2013b, 2013c, 2013d, 2013e).

Twenty-Nine Palms Band of Mission Indians

The Twenty-Nine Palms Band of Mission Indians reservation has two pieces: one south of the Oasis of Mara in the city of Twentynine Palms, and one adjacent to the Cabazon Reservation in Indio (TNPBMI 2013a). The Oasis of Mara was a Serrano residence as early as 1852, although groups were undoubtedly living at the oasis prior to the mid-nineteenth century. The Chemehuevi moved to the oasis after a war with the Mohave on the Colorado River in 1867. The water from the oasis provided sufficient water for horticulture, and hunting and gathering around the oasis was productive until the late 19th century when Euro-Americans settled in the area and began depleting the resources upon which the Chemehuevi were dependent. Eventually, the families who lived there, the Ramirez, Pine and Mike families spent part of their time following their traditional patterns, and the other working wage labor jobs in the Coachella Valley. The Chemehuevi received a patent in 1895 for a reservation near the oasis, but the 160 acre reservation was located southwest of the oasis in an area with no surface water and no Native Americans established any residences. Most of those Chemehuevi who lived in the Twentynine Palms area in 1908 moved to the Morongo Reservation in Banning when Indian children were forced to attend the St. Boniface Indian School in Banning. The Twenty-Nine Palms band retained an identity separate from those Chemehuevi at the reservation on the Colorado River and on other reservations in the Coachella Valley, but in 1910 they were encouraged to live at the Cabazon Reservation in Indio. Conflict between the Cahuilla and Chemehuevi at Cabazon led most of them to leave. They either moved to the Twenty-Nine Palms reservation, with the Paiutes in Nevada, the Chemehuevi near Parker, the Luiseno and Cahuilla at Soboba reservation, the Agua Caliente Reservation or one of the other reservations in California. In the 1970s a 240 acre parcel of the Cabazon Reservation was allotted to the Twenty-Nine Palms band.

Currently, the reservation maintains a total of 400 acres, 160 acres in Twentynine Palms and 240 acres in Indio (TNPBMI 2013a). The tribe is based in Coachella, California (BIA 2012:110). The Tribal Council consists of all adults 18 years of age or older, and among the Tribal Council; a chairperson and secretary/treasurer is elected. The tribe employs a Tribal Historic Preservation Officer who administers the tribe's cultural and heritage programs. The tribe also maintains the Spotlight 29 Casino in Coachella, and will be opening the Tortoise Rock Casino in Twentynine Palms in the fall of 2013 (TNPBMI 2013a, 2013b, 2013c).

Mohave

Currently, the Mohave Indians are members of one of two tribes, 1) former residents of the Fort Mojave Reservation in Arizona, now residing in Needles, and 2) Mohave of the Colorado River Reservation, part of the Colorado River Indian Tribes (Stewart 1983a: 55).

Colorado River Indian Tribes

The Colorado River Indian Tribes of the Colorado River Indian Reservation is a federally recognized tribe, headquartered in Parker, Arizona and members of the Mohave, Chemehuevi, Hopi, and Navajo tribes live here (BIA 2012:123; CRIR 2009a). The Colorado River Reservation was originally established in 1865 for the Mohave. Additional land was added in 1874 to settle Chemehuevi Indians on the reservation (Kelly and Fowler 1986: 388-389; Stewart 1983a: 55). Hopi and Navajo were later settled on the reservation as well (CRIR 2009a).

The Colorado River Reservation encompasses 300,000 acres on the Colorado River. The mainstay of the Colorado River Indian Tribes' economy has historically been agriculture and the tribe grew cotton, sorghum, and alfalfa. The Colorado River Indian Tribes run businesses in sand and gravel quarrying, real estate development and retail. Additionally, they operate the Blue Water Resort and Casino in Parker (CRIR 2009a). The tribal government is administered by a nine-person Tribal Council, which consists of a chairperson, vice chairperson, treasurer, secretary, and five council members (CRIR 2009b).

Fort Mojave Indian Tribe

The Fort Mojave Indian Tribe of Arizona, California, and Nevada is a federally recognized tribe with its governmental seat in Needles, California (BIA 2012: 123). The Fort Mojave Reservation covers almost 42,000 acres in Arizona, California, and Nevada. The land is divided into three major segments: 23,669 acres in Mojave County, Arizona; 12,633 acres in San Bernardino County, California; and 5,582 acres in Clark County, Nevada (Fort Mojave Indian Tribe n.d.).

The Fort Mojave tribal government consists of a chairperson, vice-chairperson, secretary, and four council members. The tribe operates the Avi Resort and Casino, which contains a casino, hotel, restaurants, and a movie theater. The tribe also hosts an annual Pow Wow every February (Fort Mojave Indian Tribe n.d.).

Quechan

Quechan Tribe of the Fort Yuma Indian Reservation (Quechan Tribe)

The Quechan Tribe is a federally recognized tribe with its governmental office in Yuma, Arizona (BIA 2012: 125). The U.S. government established the Fort Yuma-Quechan Reservation on the California side of the Colorado River in 1884, although much of the

land was appropriated by Euro-Americans settlers. Reservation lands were further broken up by allotment to individual Quechan members in 1912. The tribe ratified a constitution and elected a seven-person tribal council in 1936. In 1978, the tribe had 25,000 acres of land restored to them (Bee 1983: 94-96). Today, the Quechan Tribe's reservation spans the Arizona-California border at the Colorado River near the confluence with the Gila River, and encompasses 45,000 acres of land.

The tribal government is headed by a president and vice president, as well as five council members. Business enterprises include a 700 acre agricultural lease to a non-tribal farmer and a sand-and-gravel lease to a private company. The tribe also manages trailer and RV parks, a museum, a casino, a utility company, and a fish and game department (Inter-Tribal Council of Arizona 2011). The tribe employs a Tribal Historic Preservation Officer and maintains the Quechan Cultural Committee.

Cocopah

Cocopah Indian Tribe

The Cocopah Indian Tribe is a federally recognized tribe with its seat in Somerton, Arizona (BIA 2012:125). The Cocopah originally resided north of their historically documented territory and are believed to have been displaced by the Mohave and Quechan ca. A.D. 1400-1500 (Williams 1983:99-100).

Today there are two branches of Cocopah, one in the United States ("American Cocopah") and one in Mexico ("Mexican Cocopah"). This division resulted from the actions of the United States and Mexican governments concerning Indians residing within the boundaries of these two dominant nations. For instance, in 1917, the United States gave the "American Cocopah" title to three small land areas under the jurisdiction of the Yuma agency (Williams 1983:102). Increased border enforcement in 1930 exacerbated the separation of the two groups (Kelly 1977: 13).

The Cocopah in Arizona began to organize in 1961, beginning with a revision of the tribal constitution and bringing electricity to tribal lands. The Cocopah have three reservations: Cocopah West Reservation, Cocopah East Reservation, and Cocopah Lots 5 and 6. These lands total 1,800 acres (Williams 1983:102). In 1964, the Cocopah Indian Tribe formed its first constitution and a five-person tribal council. In 1985, the Cocopah obtained an additional 4,200 acres of reservation land, including the North Reservation, via the Cocopah Land Acquisition Bill. The tribe is currently led by a chairperson, vice chairperson, and three council members (Cocopah Indian Tribe n.d.). A Tribal Historic Preservation Officer is employed by the tribe to facilitate cultural resource issues for them.

Cahuilla

Cahuilla leaders Juan Antonio and Cabeson, among others, acted as negotiators for the treaties between the Cahuilla and the U.S. Government in 1851. Reservations were

established for the Cahuilla in 1875 and they were able to maintain their traditional patterns in combination with wage labor until about 1891, when federal supervision of the 10 Cahuilla reservations increased. This supervision included enrollment in government schools and cultural suppression of traditional Cahuilla lifeways (Bean 1978:584, Table 3). Today, Cahuilla reside on eight different reservations in and around the San Jacinto Mountains and Coachella Valley.

Agua Caliente Band of Cahuilla Indians

The federally recognized Agua Caliente Band of Cahuilla Indians was granted land at Tahquitz Canyon, Riverside County, in 1876 (ACBCI 2013a; Bean et al. 1978: 5-14, 5-16). From 1891 until the 1930s, Indian Service (Bureau of Indian Affairs) personnel lived on-reservation and closely controlled tribal politics. The Indian Reorganization Act of 1934 gave more political autonomy to the Cahuilla, permitting, among other rights, the authority to reestablish tribal governments (Bean 1978: 584; Castillo 1978: 121).

Currently, the tribe is based out of Palm Springs, California, and its members constitute the largest single landowner in Palm Springs (BIA 2012: 106). The Agua Caliente Band is governed by a tribal council consisting of a chairperson, vice-chairperson, secretary/treasurer, and two council members. The council members are elected by the tribe, and elected members appoint four proxy members (ACBCI 2013b). The tribe maintains a cultural resources department directed by a Tribal Historic Preservation Officer. The tribe has numerous business ventures including the Agua Caliente Casino, Resort and Spa in Rancho Mirage; the Spa Resort Casino in Palm Springs; a golf resort, and real estate (ACBCI 2013).

Augustine Band of Cahuilla Indians

The Augustine Tribe and their Reservation are both named after Captain Vee-Vee Augustine, a Cahuilla leader born in 1820. There were at least 22 village sites noted by early explorers in the Coachella Valley, one of which ended up being the Augustine Reservation. The Reservation was established by Congress in 1891 at the *Temal Wakhish* village site near Thermal, California. In 1972 there was only one last surviving member of the tribe, Roberta Augustine the great-granddaughter of Captain Augustine. Roberta had three children who, along with their descendants, constitute the official tribal membership today.

This federally recognized tribe is based out of Coachella, California, and is governed by a tribally elected chairperson (BIA 2012: 106). Economic ventures for the tribe include the Augustine Casino, and the Augustine Solar Energy Park, a 1.1 MW solar photovoltaic (PV) plant at the Augustine Solar Energy Park built on reservation land (ABC 2010a, 2010b, 2010c).

Cabazon Band of Mission Indians

The Cabazon Reservation was established in 1876 and is a federally recognized tribe based in Indio, California (BIA 2012:105). The primary economic resource on the 1,153-

acre reservation is agriculture. As Mission Indians, the Cabazon Reservation associates and interacts closely with the network of other reservations of Mission Indians in the region (Bean 1978: 584-585, Table 3).

The tribal government of the Cabazon Band of Mission Indians consists of five tribally elected officials; a chairperson, a vice chairperson, a secretary/treasurer, a liaison/general counsel, and a member at large. Elections are held every four years for these positions. The tribe employs a cultural resources director to handle cultural resource issues. The Fantasy Springs Casino and Resort in Palm Springs is operated by the tribe.

Cahuilla Band of Mission Indians

The Cahuilla Indian Reservation is located about 25 miles east of Temecula and 35 miles west of Coachella Valley, based out of Anza (BIA 2012:107). The federally recognized reservation was established in 1875 and today consists of about 60 homes on 18,884 acres of land. There are currently 325 enrolled Cahuilla members (Cahuilla Band of Indians 2013a).

The Cahuilla tribal government consists of a five-member tribal council elected by the general membership. The Council consists of a tribal chairperson, a vice chairperson, a secretary, and two council members. In addition, various tribal committees are appointed to address specific government functions within the tribe. Major sources of income for the tribe include the Cahuilla Casino, the Cahuilla Travel Website, and the Cahuilla Smoke Shop. In addition, the tribe has recently allocated 2,000 acres for future economic development, including renewable energy development, commercial warehousing, and a gas station/convenience store (Cahuilla Band of Indians 2013a).

Morongo Band of Mission Indians

The Morongo Reservation was established in 1876, and is located in Banning, California (BIA 2012:108). Members of the reservation are of the Serrano, Cupeño, and Cahuilla groups. In terms of area, at 35,000 acres, the Morongo Reservation is the largest of the Cahuilla reservations (Bean 1978: 584-585, Table 3).

The Morongo Band of Mission Indians is a federally recognized group governed by a tribal council consisting of a chairperson and vice chairperson, as well as five council members. The tribe is the largest private-sector employer in the Banning region, and its economic resources include agriculture, cattle, recreation, the Four Diamonds Resort, the Morongo Casino Resort and Spa, restaurants, and a golf course, among other businesses. The tribe maintains a cultural heritage program to promote the tribe's history, language, and connection to the land (Bean 1978: 585, Table3; MBMI 2013a, 2013b).

Ramona Band of Cahuilla Indians

The Ramona Indian Reservation was established in 1893 at the base of Thomas Mountain, in Anza, California. In 1970, there were only two members of the tribe, neither

of whom lived on the 560 acre reservation (Bean 1978: 585, Table 3). The members of the Ramona Tribe are direct descendants of the *Apapatchem* clan, known as the “Medicine People”. The reservation is located in the area where historically this clan gathered food, water, and medicine, and held spiritual ceremonies and celebrations.

The tribal government of the federally recognized Ramona Band of Cahuilla Indians consists of a tribally elected tribal chairperson and vice chairperson. One of the major economic vehicles for the tribe is the Ramona ecotourism project. This is a Department of Energy funded project to develop renewable energy projects in remote locations. The tribe will be one of the first “off-grid” reservations, using wind, solar photovoltaic/propane generator hybrid systems to generate between 65-80 kWh/day to power the reservation’s housing, offices, and business ventures (RBCI 2005a, 2005b).

Soboba Band of Luiseño Indians

The federally recognized Soboba Indian Reservation was established in 1883 on a 3,172-acre parcel that included the village of Soboba. A non-Indian individual also claimed ownership of some of this land. After several legal battles, the private land was purchased by the federal government and was then held in trust for the people of the Soboba band by the Department of the Interior. Today the reservation encompasses almost 7,000 acres and there are about 1,200 enrolled tribal members (SBLI 2013a).

The Soboba Indian Reservation is located in San Jacinto, California (BIA 2012:110). The Tribal Council consists of a tribally elected chairperson, and a vice chairperson, a secretary, a treasurer, and a sergeant-at-arms who are elected by the Tribal Council (Soboba Band of Luiseño Indians 2013b, 2013c).

Torres-Martinez Desert Cahuilla Indians

The Torres and Martinez Reservations were established independently in 1876. Later, under the Relief of Mission Indians Act of 1891, these two reservations were combined. The federally recognized reservation encompasses about 18,223 acres near Thermal, California (Bean 1978: 585, Table 3; TMDCI 2013a).

The tribal government of the Torres Martinez Tribe consists of eight tribal council members who are elected by the general membership. The council members consist of a chairperson, a vice chairperson, a secretary, a treasurer, and four non-office holding members (TMDCI 2013a, 2013b). The tribe employs over 150 people in positions within various tribal departments (e.g., accounting and finance, environmental protection, planning, security), and owns and operates the Red Earth Casino (TMDCI 2013c).

Serrano

The Serrano were historically located in the San Bernardino Mountains, east of Cajon Pass. When an *asistencia*, an outpost of the San Bernardino mission, was established at Redlands in 1819 the Spanish forced most of the Western Serrano into the missions away from their homeland. Those who were located in the area north of San Geronimo

Pass, near Banning, California were able to preserve what remains of Serrano culture today (Bean 1978: 573).

San Manuel Band of Mission Indians

The San Manuel reservation was established in 1891 near Highland, California (BIA 2012:109). The federally recognized reservation is the home of the *Yuhaviatam* Clan of Serrano Indians, and is named after tribal leader Santos Manuel. The reservation consists of 800 acres of mostly mountainous land in the San Bernardino highlands.

The San Manuel Tribal Council consists of a seven-member tribal council who serve as the Business Committee. The Tribal Council has a chairman, a vice chairman, a secretary, a treasurer and three business committee members who are elected by the General Council. The General Council consist of all adults 21 years or older. The San Manuel Band of Mission Indians is one of the largest employers in the Inland Empire. Their economic ventures include the San Manuel Indian Bingo and Casino; the Four Fires hotel in Washington, D.C.; the Three Fires hotel in Sacramento, California; and, commercial real estate (San Manuel 2013a, 2013b).

Other Groups with Native American Interests

La Cuna de Atzlan Sacred Sites Protection Circle

La Cuna de Atzlan Sacred Sites Protection Circle are a group of concerned citizens and Native Americans dedicated to the preservation of earth figures and other Sacred Sites in and around the vicinity of Blythe, California. The group has filed a petition, and currently are interveners for the PSEGS project. Two letters and a report have been submitted on behalf of the group (Figueroa 2013a, 2013b, 2013c).

METHODS

General Description of Ethnographic Methods and “REAP”

Ethnography at its best takes years to complete. Ethnographers can spend a lifetime studying another culture and still find that their cross-cultural knowledge of their “second” culture is incomplete. Ethnography is generally a long-term endeavor lasting from several months to years. Ideally, one would spend one year studying another culture so that one can learn about the various seasonal variations and adaptations. Academic and self-funded anthropologists may have such luxury. However, the merits of ethnography, when employed to understand project impacts to ethnographic resources, often require less than optimal study durations. One method, called “Rapid Cultural Assessment” was developed in the 1930s to assist sociologists’ understanding of American rural agricultural community responses to socioeconomic impacts ensuring from evolving environmental conditions (NPS 2007, Chapter 10:8, <http://www.iisd.org/casl/caslguide/rapidruralappraisal.htm>).

The National Park Service (NPS) has developed similar methods for understanding ethnographic resources within shortened time frames related to project review. The NPS method, called Rapid Ethnographic Assessment Procedures (REAP), was generally followed for this project-related ethnographic study.

REAP consists of a selection of ethnographic methods that relies on interview, observation, and research techniques to describe a way of life common to a group of people. This way of life can include their knowledge, customs, beliefs, social habitats, technology, arts, values, and institutions; characteristics that contribute to the identification of TCPs (King 2003:134). REAP involves active participation of the people in a cultural group to render representations of a way of life from their point of view. Unlike traditional ethnography, REAP focuses investigations and resultant descriptions on solving specific problems or issues that may arise as a result of proceeding with a development project.

REAP’s truncated methods include but are not limited to (<http://www.nps.gov/ethnography/training/elcamino/phase1.htm#reap>):

1. Group meetings/interviews where the ethnographer explains the project to the group, answers general questions and solicits immediate responses, fears and apprehensions, benefits, or other general perceptions from the participants concerning the project, the area where the project is being proposed, and the general connections of traditional people to the project area. Often issues of confidentiality are discussed. Surmounting the issues of confidentiality, the ethnographer may be successful in scheduling follow-up activities with specific individuals to increase ethnographic understanding.
2. Areas worth further ethnographic inquiry are identified; a research design, including research/interview questions, is developed; and specific people are scheduled by the ethnographer and the group for follow-up interviews. Follow-up

interviews should be conducted according to the protocols of documentation and confidentiality identified during the group meeting/interview. Interview notes, however recorded, should be vetted with source individuals to verify accuracy and to gather additional nuanced information.

3. Follow-up interviews with the same or additional people often occur while both the ethnographer and the community begin to further think about the project, the project effects, and additional information that is necessary for fully identifying, evaluating, assessing effects, or otherwise considering impacts to ethnographic resources.
4. As Steps 1 through 3 are being conducted, a parallel archival “search, retrieve, and assess” process is undertaken to provide supporting or conflicting information to what is being discovered through the interview process. In addition to archive, book store, and other informational repositories (e.g., the Internet), the people themselves or other ethnographers with previous experiences with the same people may provide source materials.
5. Field visits will help the ethnographer triangulate between what people currently say, what people have written in the past, and what is actually or perceived by the ethnographer as a potential ethnographic resource in the project area.

Guidelines issued by state and federal agencies serve to direct the identification and evaluation of historical resources. The California Office of Historic Preservation (OHP) issued Technical Assistance Series #6 comparing the criteria and process for listing historic resources in the CRHR and NRHP. OHP acknowledged “the two programs are very similar” because the NRHP was used as the model for the CRHR. There are however no state level guidelines for the identification and evaluation of TCPs; therefore, practitioners in California defer to the federal guidelines found in National Register Bulletin 38 (Parker and King 1998).

PSEGS Ethnographic Study – Meetings

Energy Commission staff held meetings with affiliated tribes to exchange general information and to gauge tribal interest in participating in further project-related ethnographic studies. Staff based their invitations to tribal government representatives and individual traditional Native American practitioners upon a February 13, 2013 list provided by the NAHC and a separate March 12, 2013 list provided by the BLM.

On March 22, 2013 a general meeting was held at the BLM Corn Springs campground and the PSEGS project site. Energy Commission staff, BLM staff, and cultural resources staff from the Colorado River Indian Tribes, Agua Caliente Band of Mission Indians, Morongo Band of Mission Indians, San Manuel Band of Mission Indians and the Soboba Band of Luiseño Indians attended. Topics discussed at this meeting included project details, interest in further project participation, and sharing contact information.

On May 20, 2013 a meeting was held at the Agua Caliente Band of Cahuilla Indians office in Palms Springs. Energy Commission staff, BLM staff, and cultural resources staff from the Agua Caliente tribe attended. Topics discussed at this meeting included project schedule, the draft ethnographic report, and tribal concerns.

On May 21, 2013 a meeting was held at the Soboba Band of Luiseño Indians office in San Jacinto. Energy Commission staff, BLM staff, and cultural resources staff from the Soboba band were present. Topics discussed at this meeting included project schedule, the draft ethnographic report, and tribal concerns.

On May 23, 2013 a meeting was held at the PSEGS project site near Desert Center. Energy Commission staff and cultural resources staff from the Fort Mojave Tribe attended. Topics discussed at this meeting included project details, project schedule, the draft ethnographic report, and tribal concerns particularly regarding the need for holistic landscape evaluations and why standard visual analysis is not adequate for understanding tribal landscapes.

On May 24, 2013 a meeting was held at the Quechan Indian Tribe office in Winterhaven, California. Energy Commission staff, the Quechan THPO, and the Quechan Cultural Committee were present. Topics discussed at this meeting included project details, interest in further project participation, the draft ethnographic report and tribal concerns. A Quechan Culture Committee member offered to provide expert witness testimony during the hearings for the PSEGS project should the need arise.

On June 20, 2013 a meeting was held at the Morongo Reservation. This meeting was a routine “all-Cahuilla” meeting. The PSEGS was one of several items on the meeting agenda. In addition to Energy Commission staff, cultural resources staff from the Morongo Band of Mission Indians, Torres-Martinez Desert Cahuilla Indians, San Manuel Band of Mission Indians, Soboba Band of Luiseno Indians and the Agua Caliente Band of Cahuilla Indians were in attendance. Staff’s preliminary findings were discussed and it was announced that the Preliminary Staff Assessment was soon to be released.

On July 10, 2013 a meeting was held between the Quechan Tribal Council, Quechan Culture Committee and Energy Commission staff to explain the Energy Commission regulatory process in general and as it relates to the PSEGS. Specific cultural topics discussed were tribal “natural settings” and tribal methods for desert navigation and travel. The desire for the Quechan Culture Committee to provide an expert witness to support staff’s testimony was further discussed.

The week of July 15th was spent in the Chuckwalla Valley conducting ethnographic resources assessments. All tribes were invited to participate and the Mojave Tribe and Quechan Tribe cultural resources staff participated in some of these field activities. Known sites were visited and several previously unknown sites were discovered. Ethnographic information was gathered concerning petroglyphs, natural settings and traditional methods for desert travel and navigation.

The week of August 12 was spent meeting with various tribes concerning multiple renewable energy projects, including the PSEGS. Meetings were held with the Colorado River Indian Tribes, the Quechan Tribe, the Fort Mojave Tribe and the Chemehuevi Tribe.

Research Strategies

Energy Commission staff developed research strategies based upon the results of early meetings with tribes and previous ethnographic studies conducted by staff in the region. Staff identified the ethnographic project area of analysis to be the same as the viewshed delineation area identified by the project owner (Fleming 2013). This figure (**Figure 4** in the back of this report) describes an area within an approximately 15 mile radius of the PSEGS facility.

The Prehistoric Trail Network Cultural Landscape (PTNCL) passes through the project area. This trail corridor was identified in the Staff Assessment written for the PSPP, and Condition of Certification **CUL-1** in the Commission Decision on the PSPP was applied to reduce the cumulative effects of four utility-scale solar energy facilities located in Chuckwalla Valley and the Palo Verde Mesa. Staff's knowledge of the PTNCL helped to inform the data requests and research strategies by providing a context upon which these requests and questions could be asked. For example, knowing that the PTNCL passes through the project area suggests that several tributary trails passed within close proximity to the PSEGS project area connecting to the larger trail network and also potential places of ethnographic significance. By understanding these trail networks, staff realized that it had a unique opportunity to make likely assumptions as to where potential resources or trails could be. As staff consulted with tribes and considered the PTNCL concept in relation to the Chuckwalla Valley, it became apparent that the trails network was much larger than the originally cast landscape concept that only placed emphasis on an era when the Halchidoma were in primary control and usage of the trail and that the boundaries of the PTNCL were arbitrarily cut off at Chiraco Summit to the west of Chuckwalla Valley and arbitrarily cut off to the east of Chuckwalla Valley at the eastern bluff of Palo Verde Mesa (See **Figure 5**). Staff realized that a larger trail landscape more appropriately provided an avenue for understanding human migration and settlement of the Americas. Staff has named this landscape, somewhat consistent with other anthropologists who worked in the region, as the Pacific to Rio Grande Trails Landscape (PRGTL) (Bean et al. 1978:5-1; Davis 1961, Erlandson 2012, Singer 1984:38, Sample 1950) (**Figure 6**). The larger trails landscape accommodates three trail corridors from the Southern Pacific Coast of California, across the desert regions of Southern California, across the Colorado Plateau of the Southwest to the Northern Rio Grande Valley in what is now New Mexico. Along these three trail corridors other trail networks linked to provide travelers with access to California's Central Valley, Baja California, the Owens Valley and Eastern side of the rugged Sierras; the Southern Great Basin, mainland Mexico, the Rocky Mountain regions, the High and Great Plains and ultimately the Mississippi River Valley.

Staff, while realizing the vastness that such a trail system provides and the predictive power that such landscape research can yield for some of the most vexing problems of North American Anthropology, including understanding indigenous settlement and migration, remained focused on the middle corridor that generally, in braided fashion, runs through the Chuckwalla Valley.

The research strategies provided general guidance for preliminary archival research and allowed for the preparation of interviews. Because this analysis is focused on the changes from the originally licensed project to the currently proposed PSEGS facility, the primary focus of this research design is on the direct visual effects to the setting, feeling and association of ethnographic resources collectively understood within the context of the Chuckwalla Valley portion of the PRGTL.

Research questions and directives developed included, but are not limited to:

- Research specific Chuckwalla Valley and neighboring regions (Lower Colorado River Valley, Coachella Valley) Native American history and culture to establish potential places of ethnographic significance that are located within the ethnographic project area of analysis (PAA). Such places can be, but are not limited to; springs and other sources of water, rock art panels, habitation sites, and ceremonial sites.
- Research contributing elements to TCPs. This list of elements is based on previous research Energy Commission staff conducted in the region, and includes but is not limited to:
 - Amity/Enmity Relationships between tribes
 - Trails
 - Water
 - Totemic Clan names
 - Subsistence
 - Plants and Animals
 - Ceremonies
- Research the role of medicine men and rock art to better understand the relationships among rock art sites in the Chuckwalla Valley.
- Research how the various identified ethnographic resources can be synthesized into the PTNCL.
- Inquire as to the relationships between the Mohave, Chemehuevi, Quechan, Cahuilla, and Serrano cultures and the potential places of ethnographic significance.
- Inquire as to the extent that the PSEGS solar power towers negatively impact the integrity of these ethnographic resources.

Interviews

Staff conducted limited ethnographic interviews after completion of most of the archival research. The abbreviated nature and fast-paced schedule of the amendment process did not afford the opportunity to establish full and complete interview sessions with designated tribal representatives prior to publication of the FSA. However the interviews that were completed occurred in the field and were extremely productive and pertinent to the Native American values related to the Chuckwalla Valley and surrounding environs.

Archival Research

Staff made efforts to seek, obtain, and assess culturally relevant information from various archival and other sources. These sources include:

- Documents were obtained via various internet searches and subsequent downloads
- Books were obtained from online book stores
- Books and manuscripts from the California State Library
- Books and manuscripts from the Sacramento State University Library
- Books and manuscripts from the University of California Davis Peter Shields Library
- Books and manuscripts from the University of California Berkeley George and Mary Foster Anthropology Library
- Books and manuscripts from the University of California Bancroft Library
- Archaeological site records and reports from the Eastern Information Center at the University of California Riverside
- Archaeological site records and field notes collected by Malcolm Rogers, housed at the Museum of Man in San Diego
- Archaeological field notes collected by Alan Koloseike, housed at the Fowler Museum at the University of California Los Angeles

Ethnographic Method Constraints

It is important to acknowledge several constraints staff has identified to the ethnographic methods. The purpose of acknowledging these constraints is to allow the reader and decision-makers to understand how this ethnographic effort may fall short of a more complete ethnographic analysis. By identifying constraints early in the process staff is also able to strategically surmount some constraints. These consist of issues of confidentiality, time, language, access to private land, and missing data. Constraints were categorized as *surmountable*, *partially surmountable*, or *insurmountable* as described below.

Tribal answers to research questions can be sensitive, and tribes attach a high degree of confidentiality to such information. As such, these confidentiality concerns require more coordination and a lengthier schedule for completing the ethnographic study and

subsequent report than other technical studies. Some tribes, particularly the CRIT require an application for all ethnographers who desire to interview CRIT tribal members. Staff is currently drafting a CRIT Permit Application that, upon signature of CRIT and Energy Commission staff, would allow staff to conduct ethnographic interviews with tribal members on an on-going basis. However, because the cultures represented within the CRIT tribal membership are also represented by other tribes consulted for this project, some cultural information was still obtained. In addition the Soboba Tribe also has concerns about confidentiality and any Soboba interviewees would require tribal council designation. Limited document review and comment was provided by the Soboba Cultural Department. *Constraint partially surmounted.*

Time limits imposed by the Energy Commission amendment process are another constraint. The Mohave, Chemehuevi, Quechan, and Cahuilla cultures, and traditional cultural practices related to epistemology, world view, and religion, are too complex to understand within the limits of a six month study. The Rapid Ethnographic Assessment Procedures were adapted to this ethnographic study. While REAP cannot replace the quality that comes from full indigenous knowledge gathered in long-term ethnographic endeavors, REAP does provide some ability to include ethnographic resources in the Energy Commission amendment process; a process that only affords Energy Commission staff with a few to several months to conduct independent research. *Constraint partially surmounted.*

Language barriers and differences in world view can make ethnography challenging. Some cultural practices and understandings are foreign to the English language and scientific way of knowing, and can only be articulated in the traditional languages of Native Americans. Staff does not speak or understand any of the languages traditionally spoken by the Mohave, Chemehuevi, Quechan, Cahuilla, or Serrano. Additionally, in past ethnographic studies conducted by Energy Commission staff with some of these tribes, concerns were expressed about the ability of new forms of language (i.e., English and Western-based science) to express the tribes' deep seeded understanding of their cultural places. Staff did work, where invited, to go through intermediaries that made proper introductions to knowledgeable tribal people. However, information conveyed in this report is provided in the English language only. *Constraint partially surmountable.*

The San Pascual well is located on private land. The dominant feature of this area is a large wash emanating from the Pinto Basin and fed by washes emanating from the Coxcomb and Eagle Mountains. The well was likely constructed within or in very close proximity to the wash because water is more likely to be closer to the surface in a wash. However, the wash itself and the area around the wash are privately owned. Therefore, staff was unable to examine what is extant of the well, compromising staff's ability to assess the site. *Constraint not surmounted.*

Due to time constraints the trail study requested of the project owner (Data Requests 29, 30, 31) was provided to staff on August 12, 2013, a few weeks prior to document deadlines and therefore was not fully utilized. However, a discussion of trails is included in this assessment based on the archival research conducted thus far for other area projects, from what has been produced for the PTNCL, and tribal knowledge of trails.

However, the trail data received as fulfillment of data requests 29, 30, and 31 confirmed what staff had independently assessed from other data sets. *Constraint partially surmounted.*

Also due to time constraints, a reconnaissance archaeological/ethnographic survey requested of the owner (Data Request 27), which would have required BLM and NPS permitting, to be conducted along the flanks of the Palen and Coxcomb Mountains in those portions of the mountains in the view-shed of the proposed project facilities did not occur. Staff did conduct a limited reconnaissance of one location in the Coxcomb Mountains and two locations in the Palen Mountains. Additional ethnographic and archaeological sites were located. The limited reconnaissance did confirm that staff's Data Request 27 was warranted. *Constraint not surmounted.*

ETHNOGRAPHIC OVERVIEW

This overview section provides background information providing context for the ethnographic and archaeological resources listed in the introduction of this report. The Mohave, Chemehuevi, Quechan, and Cahuilla are the primary groups who have traditional ties to the PSEGS project area (see **Figure 7, Figure 8, Figure 9, and Figure 10**). There is a limited amount of ethno-historic and archaeological evidence that suggests sustained occupation of locations by Native Americans in the Chuckwalla Valley. Most of the evidence indicates that groups primarily regarded the Chuckwalla Valley as a resource procurement area, a travel corridor, and a place of ceremonial/religious significance. However, there are some locations in the valley with reliable sources of potable water and food resources that likely sustained some smaller groups for longer occupations (e.g., Corn Springs, Chuckwalla Springs, Dragon Wash, and the dune mesquite areas to the southwest and east of the Palen lake) (Gunther 1984:132).

There are a number of resource-rich locations in the Chuckwalla Valley which were the focus of ancient Indian peoples. Two ephemeral lakes are present in the valley, Palen Lake approximately 2 miles north of the proposed project area, and Ford Dry Lake approximately 7 miles east of the proposed project area. Two recent geo-archaeological studies (Kenny 2010; Nials 2013) indicate that since the Early Holocene, water in the lake beds was ephemerally present after significant rainfall events. Because these lakes were only ephemerally filled, the occupation of the area was on a non-permanent basis. Archaeological sites of many types (e.g., habitation sites, burials, petroglyphs) are considered to be culturally important resources for Native American tribes (Bean et al. 1978:6-10, 6-12, 6-22, 6-50, 6-64). The archaeological sites in the sand dunes on the margins of Palen Lake (Ritter 1981), and those on the margins of Ford Dry Lake (Farmer et al. 2009, Tennyson and Apple 2009) are likely important ethnographic resources for tribes.

The Chuckwalla Valley was a major travel corridor, and an extensive network of trails connected groups from as far west as the Pacific coast, and east to the inland desert groups and the Colorado River, stretching into Nevada, Arizona and beyond. Often referred to as the Pacific to Inland trail, or more narrowly defined as the Halchidoma or Coco-Maricopa trail, groups travelled along this trail network in efforts to trade, visit other tribes, collect resources, conduct warfare, and/or to perform ceremonial or religious duties (Bean and Toenjes 2012; Johnston and Johnston 1957; McCarthy 1993; Norris and Carrico 1978: 5-7; Singer 1984:38). Trails will be discussed in more detail in a later section.

General Cultural Background

What follows is a general cultural background of the five cultures represented by the tribes affiliated with the PSEGS project area. This section covers aspects of the cultural background that affect all or most of the tribes, or characteristics that are generally shared between some or all of these tribes.

Language Groups

Understanding linguistic affiliations can offer the opportunity to recognize the creative capacity of the human mind. Differences in vocabulary can reflect differences in the natural world or in the cultural development of a group (Mithun 1999:10). Similarities in language often positively correlate with similarities in worldview and cultural understandings (Kearney 1984: 31-36). The Native American tribes with traditional ties to the project area belong to two broad but distinct language groups, the Yuman and the Uto-Aztecan. The Yuman language is classified into four branches, the Pai, the River, the Delta-California, and the Kiliwa (Kendall 1978:4). The Yuman speakers of concern for the PSEGS project include the Mohave and Quechan who are considered part of the River branch. In addition to sharing the same basic language, these groups share a cultural understanding of their origins, traditional agricultural techniques, allies in the Lower Colorado River Valley and beyond, among other similarities.

The Uto-Aztecan speakers include the Chemehuevi, Cahuilla, and Serrano tribes. The languages of the Serrano and Cahuilla both belong to the Takic family, with the Cahuilla language affiliated with the Cupa subgroup of this family (Bean 1978:575; Lewis et al. 2013). These groups inhabited very different environmental zones, although they lived in relatively close proximity to each other. However, the degree to which they have shared cultural understandings and practices is less than the Mohave and Quechan. The Chemehuevi language is classified under the southern branch of the Numic subgroup in the Uto-Aztecan language, and the Chemehuevi are the most southerly speakers of this dialect (Lewis et al. 2013).

Ancestral Territory

Knowledge of the traditional territory of a cultural group can help an ethnographer to establish the likelihood of encountering specific resources and who the people most likely to have ethnographic information concerning specific places and areas. It is useful to distinguish among tribal lands, ancestral territories and aboriginal territories. Tribal lands, formerly defined in federal law, are lands associated with reservations.

Regardless of the unique chain of historic events by which specific tribal groups became associated with specific reservations, often the tribal lands are either removed or distant from a tribal group's ancestral lands or are vestiges of larger ancestral territories.

Ancestral territories are the areas where a common cultural group was known to occupy as an internally recognized right. Ancestral territories should be distinguished from aboriginal territories. Aboriginal territories are the areas that differing tribal people used as joint use areas, or where there were transgressions of one tribal group upon another tribal group, or where one tribe allowed another tribal group to enter or use for some specific function or duration of time.

It is also important to understand that concepts of land are culturally relative. For those people that are more sedentary, rely to a great deal on cultivation of crops, or that exist in current times, land is more precisely segmented, demarcated and reflective of ownership rights and claims. For nomadic peoples or for those whom cultivation is present but less important than subsistence hunting and gathering, land and territory is

defined through trail networks, and the relationship of these subsistence locales to the trail network. Often one knows whose trail one is on, and whose territory one is in by noticing wayside shrines that demarcate where one has passed into another territory. Therefore, while ancestral territories are generally known they are not precisely bounded on all sides. A problem in the ethnographic and archaeological literature is that many of those who fabricate ancestral territory maps are doing so by imposing their own cultural biases onto others' cultures (Ingold 1986:153, Wilson 1988:ix). Consider the following:

The hunter/gatherer pins ideas and emotions onto the world as it exists...
A construction is put upon the landscape rather than the landscape
undergoing reconstruction, as is the case among sedentary people, who
impose houses, villages, and gardens on the landscape, often in the place
of natural landmarks. (Wilson 1988:50)

That being said, assigning specific, delineated territories to indigenous groups in the vicinity of the PSEGS project area can be problematic. The boundaries between tribes were often blurry and fluid, especially in such areas as the Chuckwalla Valley which was on the periphery of several groups' ancestral territories. While aboriginal occupation of the valley most definitely occurred, it appears that ancestral territory in this valley is relatively ambiguous (Singer 1984: 36-39). The availability of water, the impact of European and American influences, and amity/enmity relationships among these tribes influenced, and at times determined, where groups lived. In addition, the valley served as an aboriginal travel corridor for one of the most predominate trail networks in all of North America. **Figures 7, 8, 9, and 10** show the general locations of tribal ancestral territories in relation to the PSEGS project area over the last several hundred years.

The Mohave and Quechan traditionally reside along the Lower Colorado River and its floodplain. The Mohave live in the area between Needles, California and Parker, Arizona, with the densest population located in the Mohave Valley. At times the Mohave lived farther south towards Blythe and ventured north of Needles near Lake Mohave (Stewart 1983a:55). The Quechan, on the other hand, primarily live in the area around Yuma, Arizona and the confluence of the Colorado and Gila rivers (Bee 1983:86), but also ventured west and north as far as Chuckwalla Valley and the Cibola and Palo Verde valleys. In addition to these two tribes, another Yuman speaking group, the Halchidoma, lived along the Colorado River near the confluence with the Gila and up into the Palo Verde Valley in the vicinity of Blythe, California until the late 1820s. It was at this time the Mohave and Quechan fought the Halchidoma, forcing the latter group to flee (Dobyns et al. 1963: 135). According to the oral history of the Halchidoma, they travelled south to Mexico where they lived adjacent to a Yaqui settlement until around 1838 when most died of an epidemic. At that point the remaining Halchidoma moved northeast and eventually settled down with the Maricopa tribe, another Yuman speaking group living along the Gila River (Dobyns et al. 1963:136). Contrary to some understandings, the Halchidoma are still extant, residing on the Salt River Pima Reservation. They refer to themselves as the *Xalychidom Piipaash*, (SRPIC 2013).

The Chemehuevi also lived along the Lower Colorado River, although only within the last few hundred years. Their traditional territory was the largest in California of any tribe speaking the same dialect (Kroeber 1976:595). They occupied a huge portion of the Eastern Mojave Desert, ranging from the Old Woman Mountains in eastern San Bernardino County, west to some undefined point in the middle of the Mojave Desert where Serrano territory began, and as far south as the Riverside/Imperial County line (Kroeber 1976: 594; Bandy et al 2011:9). Based on the account of the Spanish missionary explorer Fr. Graces in 1775-1776, Kroeber (1959:294-295) suggests that the northern Chuckwalla Valley was in the territory of the Chemehuevi. Singer (1984:38) places the Chemehuevi throughout the Chuckwalla Valley and particularly in the western portion. At this point in history, the Chemehuevi were a relatively nomadic group until they moved to the Colorado River floodplain in the 1820s and occupied more permanent settlements. This is one of the reasons Kroeber (1976:595) cites as the major factor in the large area traditionally claimed by the Chemehuevi. Because resources were so scarce, the Chemehuevi had to occupy a vast area in order to obtain enough resources to sustain themselves. Before moving to the River, the Chemehuevi practiced limited agriculture around springs, but their agricultural efforts increased once they lived closer to the influence of the Mohave and Quechan agricultural practices (Kroeber 1976:595). Chemehuevi are also known to have hand-dug wells (Grover 1919:78). The Chemehuevi moved east to the Colorado River area at the invitation of the Mohave, or possibly the Halchidoma, occupying the area which came to be known as the Chemehuevi Valley, and around Cottonwood Island in the Colorado River (Kroeber 1976:594). In 1867 the Mohave attacked the Chemehuevi living along the Colorado River, and as a result the latter group fled back into the interior California desert. At this time some Chemehuevi families moved to the Mara Oasis, near what now is the city of Twenty-nine Palms (Kroeber 1976:594-595).

The Cahuilla tribe occupied several distinct environmental and topographical zones (Bean 1978:576, Table 1). Generally, Cahuilla territory ranged from the summit of the San Bernardino Mountains south to the Chocolate Mountains and Borrego Springs, and from about Riverside, California in the west to the western portion of the Colorado Desert east of the Orocochia Mountains (Bean 1978:575). Anthropologists organized these factions based on their geographic location into the Pass Cahuilla, the Mountain Cahuilla, and the Desert Cahuilla. Some scholars (James 1960:36; Strong 1929:36) suggest there were also some dialectical and cultural differences. The Pass Cahuilla lived in the valley and foothills east of San Geronimo Pass, the Mountain Cahuilla lived primarily in the canyons and mountains of the San Jacinto and Santa Rosa Mountains, and the Desert Cahuilla lived along the margins of Lake Cahuilla (today referred to as the Salton Sea) (James 1960:26). When the lake did not have water, the Desert Cahuilla groups lived at springs, tanks, or dug wells in the Coachella Valley and areas south and east (Bean 1978:575).

The Serrano were primarily a mountain-dwelling tribe. Traditional Serrano territory stretched east from Cajon Pass in the San Bernardino Mountains, north to Victorville, east to the area around Twenty-nine Palms, and south to Yucaipa Valley (Bean and Smith 1978:570, Figure 1).

All of the tribes mentioned above, at various times, used the trail corridor that runs east and west through the Chuckwalla Valley, as main thoroughfare for commerce and communications.

Amity/Enmity Relationships

During the 19th century, explorers, settlers, and military men documented frequent warfare along the Lower Colorado River. This may be a major reason for the transitive nature of occupation in parts of the Colorado Desert during this time. Some researchers suggest (Stone 1981:37) that frequent warfare was not typical throughout the ancient Indian past, but was exacerbated by the desiccation of Lake Cahuilla in the 18th century (Laylander 1997:61), and the presence of the Europeans and Americans. Events precipitated a demand for slaves by the Spanish and Americans and increased competition for already scarce resources between tribal groups as newcomers settled on vital tribal subsistence and agricultural lands. The Southern California and Lower Colorado River tribes were involved in a complex amity/enmity relationship that served to facilitate long-range trading relationships between the Pacific coast and Great Plains via the Northern Rio Grande Valley (Bean et al. 1978:5-3). The protection that some groups received based on these alliances allowed the transmission of goods, cultural ideas, and people, basically serving as a complex communication network. Groups strategically developed these alliances to improve and establish economic relationships. As mentioned above, the Mohave and Quechan were closely aligned culturally, but were also allied in the overall amity/enmity system. Also belonging to this alliance were the Chemehuevi, the Serrano, the Chumash (Santa Barbara area), a branch of the Kumeyaay (northern San Diego area, also known as the Ipai or Kamia), and the Yavapai (Western Arizona). Allied against this group were the Cahuilla, the Cocopah (Colorado Delta area), the Gabrielino (Los Angeles area), a different branch of the Kumeyaay (Tipai or Diegueño, southern San Diego area), the Walapai and Havasupai (northwestern Arizona), the Papago (Northern Mexico), and the Manso and Suma (southern New Mexico and Northern Mexico) (Bean et al. 1978:5-7, Table 5-II).

Trails

Staff requested the project owner to conduct a trails inventory for the PSEGS PAA (see Data Requests 29, 30, and 31). Staff issued requests in April 2013 and the owner provided request results in August 2013. The trail data requests and subsequent response results consist of: 1) a collection of site records that indicate trail segments within an approximate 15 mile radius of the project sit, 2) a review of archived maps that depict trails within an approximate 15 mile radius of the project site, 3) a review of the historic and ethno-historic accounts of trail locations within an approximate 15 mile radius of the project site, and 4) a mapping of these various “lines of evidence” onto one map (**Figure 11**). Staff analyzed trail location data in order to assess project effects to remnant segments. Trail data also depicts the connective associations of the traditional cultural properties identified in the Chuckwalla Valley thus far. Additionally, trail data allowed staff to derive a sense for the possible locations of ethnographic sites, places, and areas, which are as of yet unknown due to a dearth of survey data, particularly as relates to Data Request 27, but for which resources are assumed to be present and for

which project effects are also assumed. Finally, staff found the subsequent trail mapping to visually support staff's emphasis on an east-west trail network that provided one of three desert corridors between the Pacific coast and the interior Southwest and beyond.

Well-preserved remnants of aboriginal trails have been identified in many locations across the North American continent. The Southern California Desert – Central Colorado Desert area features a significant network of trails that supported a complex of trade relations (Davis 1961: 2-3), and religious relations (Johnson 2003: 159). There are actually three braided trail corridors that are generally traversed today by Interstate Highway I-15/40 in the northern desert, Interstate Highway I-8 in the south and Interstate Highway I-10 in the central section of the desert. The central trail corridor runs through the Chuckwalla Valley.

Perusing **Figure 11** it is clear that the trail corridor runs directly through the project area. However, due to the natural and human caused disturbances in the project site, recent archaeological surveys did not identify any actual trail segments within project boundaries. Trail research did show that there are many known trail segments within the PAA.

Figure 11 also shows that while less is known concerning extant trail features on the ground, that the ethnographic and historic annals are replete with references to trails that trend east-west, trails that interconnect and intersect to the north and south across the Eagle Mountains, into the Pinto Wash, towards Granite Pass, towards Palen Pass, towards Graham Pass, and cross through the Chuckwalla Mountains in several areas. **Figure 12** clearly shows that most of the 11 TCPs identified in this report are close to, if not directly on, the central station for trails.

While **Figure 11** clearly supports staff's contention for the value of being attentive to trail locations on the ground and on maps, staff also is aware that the data requires some geographic adjustments, that several mapped trails may be referencing the same trail, that some mapped trails may be difficult to attribute to prehistoric travel. Finally, it should be noted that for areas of the Chuckwalla Valley that **Figure 11** indicates are devoid of trails, may indeed contain trails. For example, a staff excursion to attempt to understand something of the areas that was not surveyed (as requested in Data Request 27), resulted in the locating of a significant trail segment that appears to trend north-south along the western flanks of the Palen Mountains. A review of Google Earth satellite imagery has lead staff to believe that there are other areas of the Chuckwalla Valley and surrounding mountains that contain significant prehistoric trail segments worth further exploration that would likely support staff's attempts to further understand transportation, trading, and communication between people of the Pacific coast with people of the Gila and Colorado River basin, but also local travel. Unknown prehistoric trail segments in the Chuckwalla Valley are assumed to be contributors to the Chuckwalla portion of the PRGTL and would therefore be impacted by the project.

Trade between the Southern California Desert groups and the Lower Colorado River groups and Great Basin groups was extensive. Trading was an important aspect to

groups' culture as it provided an opportunity for the communication of cultural ideas and allowed groups to obtain non-local items. Various ethnographic and archaeological sources document evidence of trade between the Pacific coast and groups in the Southwest (e.g., Sample 1950:4-5; Davis 1961: 2; Schaefer and Laylander 2007: 254-255; Fowler 2009:87-88; Fitzgerald et al. 2005:2). These five cultures, the Mohave, Chemehuevi, Quechan, Cahuilla, and Serrano, all played an important role in this trade process. Several of the routes that extend from the coast to the Southwest pass through the Colorado Desert (Davis 1961: 70 Map 1), and tribes were able to take advantage of their primary position as trade facilitators (Westec 1980:284). As an important middleman to the trade process, groups were able to acquire a suite of resources and finished objects with which to incorporate into their cultural milieu. Items of equal value were the most prevalent type of trade to occur between neighboring groups (Davis 1961: 8-9). Table A1 in the appendix to this report displays those items traded between the Southern California Desert tribes and beyond taken from Davis (1961: 17-45).

There is physical and epistemological² overlap of trails on and through the landscape regardless of the intent and psychological disposition of the traveler. That is to say, that a trail, a traveler, and the knowledge of the trail (usually encapsulated in a song or dream) are not separate and distinct realities. Or, that one method of travel (i.e., walking or running) is more real or supersedes another method of travel (singing or dreaming) (Lincoln 2003:189-206; Johnson 2003). This is difficult to articulate in English (See method constraints section).

What is documented as a single linear path, more often in desert environs are several parallel trails (Johnston and Johnston 1957: 23). Parallel tracks may be explained by attributing each linear trail to a specific ethnic group (Apple 2005:107, Laird 1976:136, Laylander and Schaefer 2011:64). These were thoroughfares for intercultural travel as contrasted with intra-cultural travel, similar to how modern freeways often are paralleled by frontage roads for local traffic. These separate trails allowed antagonistic groups to avoid each other while travelling along the trails (Laird 1976:136).

Trails were not only used for secular purposes such as trade, warfare, and communication, but also played a critical role in the ceremonial lives of several of the Native American groups of concern. In particular, the role of dreaming and the trails upon which dreamers travel are especially important resources to Native Americans. Dreaming, the knowledge and methods for proper dreaming, and the revelations resulting from dreaming are thought to be the basis of Lower Colorado Native American lifeways (Forde 1931:201-204; Gifford 1926:58-69; Kroeber 1976:754-755, 783-784; Wallace 1947:252-258). In the vicinity of the PSEGS project area there are two major sacred trail systems, the Keruk/Xam Kwatcan Trail and the Salt Song Trail, both of which are described below. These trails are not located directly in the ethnographic PAA, but they are important cultural aspects to some of the tribes of concern.

²Epistemology: the branch of philosophy that studies the origin, nature, methods, validity, and limits of human knowledge.

The Keruk/Xam Kwatcan/Dream Trail runs the length of the Colorado River between Spirit Mountain (Newberry Mountains) in the north and Pilot Knob (Cargo Muchacho Mountains) in the south, with the closest point of the trail approximately 30 miles east of the PSEGS project area. The trail follows the river along the various mesas that align the river and, where possible, avoids the river's various floodplains. In some places, particularly along the southern extent, the trail is located on both sides of the river. The trail on the eastern side that stops in Parker Valley is considered part of plant medicinal journeys. Three "Big Houses", Spirit Mountain in the North, Pilot Knob in the south, and Palo Verde Peak in the middle, are abodes of ancestor spirits (relatives who have passed away)(Johnson 2003:163). Family members travel near to the big houses and utilize the various earth figures along the trail in an effort to address the ancestor spirits and ask that they move on to the next world. The Mule Mountains, located about 25 miles southeast of the PSEGS project area, are understood to be a place of wandering ancestral spirits waiting to depart. The area reserved for beseeching ancestral spirits to depart this world, are often marked with earth figures, cairns, and trails. Campsites are usually located at a comfortable distance away from the earth figures. Hence, the earth figure sites, approximately 300 in the Colorado Desert, are major foci for intense activity between the living and deceased. The larger earth figure sites (e.g., the Blythe Intaglios, the Ripley Geoglyphs) also tend to be crossroad locations for trails. For example, the PTNCL, portions of which pass through the PSEGS project area, has trail branches that lead to the Blythe Intaglios and Ripley Geoglyphs, as well as various earth figures located in the Chuckwalla Valley. Along the outer perimeters of the Keruk/Xam Kwatcan Trail corridor are smaller earth figures with accompanying cairns, cleared circles, campsites and smaller interconnecting trails. This trail was not only used for sacred purposes, but was also an important route for north and south travel on the Lower Colorado River.

The Salt Song Trail is a culturally important trail for the Southern Paiute, of which the Chemehuevi are a part. A map provided by Laird (1976) suggests the Salt Song Trail proceeds southward along the western side of the Granite and Palen Mountains, very close to the PSEGS project area, and cutting across the northern tip of the Mule Mountains as it makes an eastward turn towards the Colorado River. However, practitioners today adhere to a course depicted in more recent maps (TCC 2010). The more recent map indicates that the Salt Song Trail corridor at its closest proximity to the PSEGS project area goes east through the Coachella Valley and south of the Chocolate Mountains to the Colorado River, where it then heads north into northwestern Arizona, southwest Utah, and southeast Nevada. Despite the Salt Song trail being outside of the PAA, Salt Song practitioners understand that all areas and secondary trails link through the various song cycles into the Salt Song trail.

The Salt Song Trail was researched and described in a previous Energy Commission staff document (Gates 2012:72-74). The previous study, conducted in response to the proposed Hidden Hills Solar Electric Generating System project in the Pahrump Valley, was done in collaboration with traditional Salt Song practitioners and adherents. The following has been excerpted and summarized from that study.

Many and various Southern Paiute still believe in, practice, understand, and educate others concerning the Salt Song Trail. The song trails are for all Southern Paiute. It can be argued that Salt Song trails are the most important of all trails for Southern Paiute because, sooner or later, all Southern Paiute will travel that trail (Stoffle 2005:40).

Upon death, a person's spirit or soul travels to a place towards the north called *Naugurivipi*, or the "spirit land." The funeral ceremony is held soon after death. Within three months to a year later the *Yagapi* or "Cry" or "Mourning" ceremony is held.

The Salt Song is sung at the Annual Mourning Ceremony or Cry Ceremony. The Song ushers the ceremony participants and the spirit of the deceased from place to place in a circuit, naming places, landforms and other natural phenomena. The song-travels are done at night. Each place along the way has its own story and part of a song. The man shakes the rattle and both man and woman sings the songs. The Salt Song describes where to go and how to get there and what can be found at specific places. Southern Paiute people travel on these trails physically across the land, mentally in a dream state, and spiritually after death.

The Chemehuevi also sing several other song cycles, although the locations they are associated with are not as close to the PSEGS project area as the Salt Song Trail. Additional information concerning these other songs and ceremonial aspects of the Chemehuevi are discussed below.

Archaeological Trail Features

There are several different indicators of ancient Native American trails in the Colorado Desert. These indicators are generally features associated with trails; some are sacred, others are secular, and some can be both sacred and secular depending on the resource. Because these archaeological trail indicators denote a culturally important trail, it is essential that these features be clearly understood, analyzed, and documented. The following list of archaeological trail features describes the trail indicator and the likely function of the feature as it relates to trails.

Trails

Desert pavement is the surface of the desert floor and consists of small, inter-locking pebbles and cobbles which have built up over time. Rock varnish is the accumulation of a shiny coating (patina) on rocks from the accumulation of clay minerals and iron and manganese oxides over thousands of years (Gilreath 2007:287). When these eons-old desert pavement and rock varnish are tramped on over time and/or moved out of the way with travelling feet, a visible trail appears on the lighter colored subsurface, which due to the dry climate is frequently not washed away, although sometimes eolian processes bury trails. Tribal people today claim that those originating footprints were the footprints of their ancestors and the traditional knowledge base that is extant today was relayed from those ancestors, despite the interruptions of newcomers such as the

Spanish, Mexicans and the Americans that utilized some of same routes in their movements of conquest, appropriation and “discovery.”

Ancient Indian trails are about 30 centimeters in width, and generally have one of the following associated features (Laylander and Schaefer 2011:64): pot drops/ceramic scatters, cairns, cleared circles, quartz shatter, spirit break/spirit deflectors, petroglyphs, earth figures, and rock rings. Often trails also had one or several parallel trails along side of it as well which could have served as a kind of “passing lane” or way for enemies to avoid each other when traveling on the same trail (Apple 2005:107, Laird 1976:136, Laylander and Schaefer 2011:64).

Trail research resulting from Data Requests 29, 30, 31 did show that there are known trail segments within the PAA, namely at the base of the southern extent of the Coxcomb Mountains (CA-Riv-160), ensuing out in various westward directions from the McCoy Springs and vicinity (CA-Riv-4582, -3110, -3112, -4596, -3111, -4592, -3113, -4591, -4594, -3114, -4573, -4571, -4570, --3129), near Chuckwalla Spring (Ca-Riv-263), fanning out from the Corn Spring Canyon (CA-Riv-893, -343, -892), one segment within the Chuckwalla Petroglyph District (CA-Riv-1383), one near Alligator Rock (CA-Riv-1115), and one trail segment has been documented where the Western end of the Chuckwalla Valley narrows into the passage way between the Chuckwalla Valley and where Hayfield dry lake rests (CA-Riv-72).

Pot Drops/Ceramic Scatters

Pot drops are broken ceramic vessels on the desert surface. These ceramic features are often found in close proximity to trail features (Johnston and Johnston 1957:30; McCarthy 1993:14). Ceramics in the Colorado Desert primarily consist of Patayan ceramics. Some of the common types include: Colorado Beige, Colorado Red, Black Mesa Buff, Tumco Buff, Palomas Buff, Parker Buff, and Topoc Buff (Schaefer and Laylander 2007:252-253). Scholars suggest that the pot drops associated with trails are the result of accidents or deliberate activity of those traversing the trails, a type of trailside shrine (Bean et al. 1978:7-13 – 7-14; Laylander and Schaeffer 2011:22).

Cairns

Cairns or rock piles in the desert often denote that one is in close proximity to a trail. However, it should be noted that historic mining claims in the form of cairns are also prevalent in the Colorado Desert, and care should be taken to distinguish between those cairns which are historic and which are from earlier time periods (Laylander and Schaefer 2011: 5). Sometimes cairns contain cremations, others were used as shrines, and others were simply trail markers; however, regardless of their purpose, they are “indications of the eco-cultural ethic which led Native Americans to pause for a moment and pay respect before setting foot on the trail” (Bean et al. 1978:7-14). One section of trail (CA-Riv-72) is known to have several cairns located alongside the trail tread. Documented in 1953 as having 13 associated cairns, the largest of which had numerous potsherds. A later site visit by subsequent archaeologists identified an additional cairn for a total of 14 cairns along the trail. The trail and associated cairns

were re-recorded in 2011 and an additional 5 cairns were discovered some of which had associated quartz debitage.

During a staff reconnaissance of the Southern Coxcomb Mountains, conducted due to inability to receive the results of Data Request 27, staff encountered a cairn quite distant from any readily apparent trail segment. In total, there are 19 known cairns associated with this trail.

Cleared Circles

Cleared circles are areas cleared of desert pavement in the shape of a circle. They can be large or small, clustered together or separate. These features can occur naturally (see McAuliffe and McDonald 2006); however, those which are cultural tend to have well-formed berms and associated cultural features (Laylander and Schaefer 2011: 5). The Quechan understand that cleared circles that are clustered together are places where a spiritual leader would take students to teach them about the connection between material and spiritual realms (Cachora 1997, cited in Apple 2005:108). The Mule Mountains Archaeological Site, located southeast of the project area, is an example of such a site. Cleared circles have also been identified south of the project area near Corn Spring, and west of the project site at the North Chuckwalla Petroglyph District. Those larger cleared circles which are not clustered are understood to represent areas where one could rest during physical or dream travel (Apple 2005:107-108). Most cleared circles measure about 1 meter across, with some of the larger circles measuring closer to 3 meters. One of the large cleared circles identified at the North Chuckwalla Petroglyph District was identified as a potential crying or mourning circle by a Chemehuevi informant (Westec 1980:192).

Quartz Shatter

Collections of quartz shatter are occasionally found adjacent to trails. Some tribal members suggest that they functioned as markers so that those travelling the trails at night would be able to see the trail as the moonlight reflected off the white rocks, or as a display of “power release” (Laylander and Schaefer 2011:16). Quartz is understood to retain supernatural power, and was often used by the creators of rock art to etch their drawings and sometimes can be found in association with rock art, which is another trail feature.

Spirit Breaks/Spirit Deflectors

Spirit break trail features require additional research with affiliated tribes.

Rock Art

There are two primary rock art mediums, petroglyphs which are designs etched into rock, and pictographs which are painted. All rock art is considered to be a symbol of the sacred past, a representation of the sacred being from the time of creation and of the Native Americans themselves. Rock art is understood to be a pictorial representation of the events and activities of the creator during sacred times (Bean et al. 1978:7-14). Rock art is often found near water sources, but is also frequently located near trails

which pass by suitable locations for rock art (Laylander and Schaefer 2011:68). Additional information concerning rock art can be found in a rock art section below.

Earth Figures

Earth figures are “ground scrapings” which are made by clearing away desert pavement, in order to make a depiction of various real or supernatural phenomena (Bean et al. 1978:7-15). These depictions can be abstract, zoomorphic, geometric, or anthropomorphic designs and are located at multiple places along the Keruk/Xam Kwatcan Trail (Altschul and Ezzo 1995:134) and tend to be in greater concentrations along the Colorado River. There are currently no known recorded geoglyphs in the PAA.

There is some literature that suggests that current Native Americans attribute the earth figures (and petroglyphs) to ancient ancestors; and while the meanings are not well understood today, the images are still considered sacred. There is some Chemehuevi, Mohave, and Quechan understanding that the earth figures guide the souls of the deceased to certain destinations on their journey to the afterlife (Kelly 2012). Johnson (2003:175-176), after much research suggests the following:

The primary function of the earth figures of the Lower Colorado and Gila River valleys was to serve as a mode of communication between the Earth People (local tribal people) and the Sky People (deities and ancestral spirits).

There is some interpretation that some of the earth figure’s characteristic differences result from various warring factions making territorial claims by creating earth figures in areas that are claimed after removing the previous occupants (Altschul and Ezzo 1995:142). The interpretation that the earth figures balance between unity and schism among warring factions that all participate within a common cultural framework is interesting, but remains unfounded and contrary to how traditional practitioners understand and use earth figures that contribute to the Keruk/Xam Kwatcan Trail in current times.

Rock Rings

Rock rings are interpreted to be secular features (Apple 2005:108), but others have also inferred a more significant cultural element to these features (Altschul and Ezzo 1995:133; Whitley 2011:35). When interpreted as a non-secular feature, scholars argue that these rock rings or rock alignments are associated with the earth figures that are associated with trail systems (Altschul and Ezzo 1995:133), or are the work of medicine men conducting ceremonies (Whitley 2011:35). Secular interpretations focus on the rock rings as utilitarian, i.e., for use in subsistence activities, warfare, or trade (Apple 2005:108). Rock rings are similar to cleared circles but have a single circle of stones. Dimensions are generally about 1 meter across, although, like cleared circles, the dimensions vary. A previously unrecorded rock ring encountered during staff reconnaissance in the Southern Coxcombs had a singular elongated rock in the center

of the ring. A Quechan participant explained that the center rock indicates directionality for indigenous travelers.

Running

Just as it is difficult to understand the architecture of an interstate highway without also considering the types of vehicles that utilize the transportation system, likewise, indigenous trail networks cannot be fully comprehended without also considering the tradition of indigenous running. Indigenous running has a long venerable tradition that continues into current times. The ethnographic record is replete with how trail networks supported inter- and intra- courier services. To be a courier was a venerable service; a form of training that resulted in a type of recognized knowledge and “medicine”, and was a high status position in indigenous societies.

Among peoples who developed foot messenger systems for knitting together vast territories were the... Chemehuevi of California.... As one examines these systems it becomes clear that their runners were more than functionary athletes. They were communicators of culture; their units were absorbed into social and religious life. They were highly regarded as safekeepers of accurate information. Their status was high for they helped to keep their worlds intact and in touch (Nabokov 1981:14).

The Cocomaricopa and the Halchidoma contracted with the Spanish missionaries to run messages between Sonora Mexico, New Mexico and the Southern California basins of San Diego, Los Angeles and Santa Barbara. Accounts abound of Yuman runners covering 200 miles in 24 hours (Nabokov 1981: 17) and performed such services for newcomers who had previously relied on horses, boats and trains for the passage of important messages (Bourke 1889:77).

Running is often incorporated into the male and female puberty rites. Girls are required to run a distance to a place where they must etch a diamond back puberty petroglyph and then run back. Yuman boys were trained to run in the four directions for four successive days as part of a nose-piercing rite (Nabokov 1981: 143). Races are a favorite subject played out in oral history and often figure in origin stories. The Gods liked to run and race, the animals picked this up from the gods and in turn instructed humans to run. Often linear geographic or astronomical phenomena are explained as ensuing from a race or journey. For example, the Milky Way was created as the dust is kicked up from behind the feet of great runner.

Therefore native running ethnography is replete with training knowledge, methods for endurance and breathing, special foods to take along the way, ways of carrying or locating water, travel prayers and songs, methods for relieving pains and strains, technologies for relaying messages, and techniques for finding and staying on trails including cairns and quartz shatter.

Indigenous running traditions continue today in many of the tribes affiliated with the Chuckwalla Valley.

Water

Water is critical to all life forms, particularly in the desert. Without water, life would not be possible. This is a fact not lost on those people indigenous to the desert, and places where water is obtained are often also culturally important places in addition to being important for sustaining life. Water is not very readily obtained in the central portion of the Chuckwalla Valley where the PSEGS project is sited. However, there were and still are several localities in and near the ethnographic PAA that supplied water in the forms of springs, tanks, and wells (see **Figure 13** redacted).

Water Sources

Springs are water resources formed when a landform intersects groundwater at or below the local water table. A spring is the result of an aquifer that has overflowed and spilled onto the land surface (USGS 2013). There are several springs located in the ethnographic PAA. These springs range in quality, reliability, and accessibility.

Corn Spring is located about 6.75 miles southwest of the project area. In 1909 the water was reported to rise 8 to 10 miner's inches³ in a *cienga* (Mendenhall 1983:81). Mendenhall (1983:81) suggested that if the water source was developed, i.e., if the spring was dug out and a pump was installed, then enough water for irrigation could be obtained. Unbeknownst to Mendenhall, Native Americans had been using the water from Corn Spring to irrigate crops, which is likely how Corn Spring received its name. A former resident of the area, Frank Coffey, planted fig trees at the spring and noted that "the spring used to supply water for a whole tribe of Indians. The corn they planted still comes up around the spring every summer" (Coffey 1967:53 cited in Gunther 1984:132). Today, the BLM has covered the spring and installed a hand-pump, as well as a developed campground. Standing at the water source at Corn Spring one would not be in the direct view-shed of the PSEGS; however, there are several ancillary characteristics of Corn Spring including the trails that lead to the spring, cleared circles, and rock art which are in direct visual impact areas. Staff considers that the close proximity of the spring to the PSEGS project area, and the importance of the spring to Native Americans, merits its inclusion here.

Chuckwalla Spring is located about 13 miles due south of the project area. Petroglyphs, lithics, ceramics and trails are located near the spring. This spring area provided travelers with a predictable water source accessible from the Chuckwalla trail corridor as well as the Bradshaw Trail.

McCoy Spring is located about 18 miles east of the PSEGS project area in the McCoy Mountains. The water quality was reported to be excellent but of a small supply, about 4 barrels⁴ daily (Mendenhall 1983:82). Both of these spring locations, Corn Spring and McCoy Spring, have several trails which lead to them, extensive petroglyphs on nearby rocks and boulders, and evidence of ancient Indian settlements. Other nearby springs

³ This is a measurement of the volume of water. Until 1905 there was no standard definition of a miner's inch in California. Wilson (1912:91-92) states that the agreed upon standard established that 1 miner's inch is equal to 1.5 cubic feet per minute/11.25 gallons per minute.

⁴ One barrel is equal to 31 gallons (27 CFR § 25.11)

include Buzzard Spring, Hayfield Spring, and Hayfield Summit Spring located west of the project area in the Eagle Mountains, and Tank Spring, probably also called Mohave Spring located northeast of the project area in the northwestern portion of the Little Maria Mountains.

Tanks are another water source that was used by Native Americans in the desert. Tanks are natural crevices or openings in rock that allow rainwater and runoff to collect, creating small natural reservoirs of potable water. The amount of water in a tank depends on a variety of factors, including location, depth, and the amount of direct sunlight focused on the tank. The closest tank to the PSEGS project area in the ethnographic PAA is Long Tank located on the alluvial fan of the north side of the Chuckwalla Mountains within the Alligator Rock Area of Critical Environmental Concern (ACEC). Spring Tank is located towards the back of a canyon on the north side of the Chuckwalla Mountains near Long Tank, and Granite Tanks is located in the northwestern Chuckwallas. Mule Tank is located on the western side of the Mule Mountains, relatively distant to the PSEGS project area, about 26 miles southeast, and this location has extensive rock art on the rocks and boulders surrounding it. McCoy Tank is located just outside of the ethnographic PAA on the eastern side of the McCoy Mountains (Gunther 1984:304). Like the springs mentioned above, trails that were a part of the PTNCL likely also lead to these tank locations, and tanks are considered part of this landscape.

There is a mention of the Black Tanks by Gunther (1984:54-55) in the Chuckwalla Mountains, 10 miles from Corn Spring near the Pacific Mining District. These tanks were supposedly identified by miners in 1887 and were described by C.R. Orcutt in 1888; “there is a smooth worn rock bearing on its nearly perpendicular face various Indian signs. It is beside an old Indian trail and several natural water reservations locally known as the Black Tanks” (Gunther 1984:55). Gunther’s mention of the Black Tanks is the only reference found to this area and staff has not yet been able to pinpoint the exact location of the tank.

The Cahuilla and Chemehuevi Indians were known to dig wells in order to obtain water (Grover 1919:78; James 1960:48). Wherever water seeps or springs could be improved, Indians dug out deep wells to more readily access the water. Chase (1919:72-73) wrote of an interesting linguistic feature of Cahuilla wells:

The Cahuillas have...poetic thought in their word *pal-he-push*, for a pool. In the word or phrase applied to their ancient wells, now non-existent, to which one descended by steps cut in the earth, we have an example of natural language-building. The Cahuilla word for a water-jar (Spanish *olla*) is *ka-wo-mal*, and that for earth or ground, *te-mal*. Hence the well was *te-ma-ka-wo-mal*, or earth-*olla*, neatly enough.

Several Indian wells were reported in the Coachella Valley, but few were identified in the Chuckwalla Valley and the ethnographic PAA in particular. However, during the Romero-Estudio expedition in 1823-1824 while attempting to establish a route for Euro-Americans to cross the Colorado Desert and more efficiently connect the Los Angeles

area to the Tucson region, an Indian well was reported in the ethnographic PAA approximately 5 miles from the PSEGS project area. The expedition named the well San Pascual, and Estudio's entry in his diary states "we found signs of basket-making by the Indian women on several occasions, bones of horses and pieces of ollas" (Bean and Mason 1962:41). Bean and Mason (1962:41, footnote 22) suggest that this well was in the Desert Center area based on the landmarks provided in the diary, and the fact that the expedition was likely headed for Palen Pass. A General Land Office (GLO) map from 1856 identifies "a well 45 feet deep of fair water in this quarter section" (Brown 1856).

There are two additional major sources of water in the Colorado Desert. Lake Cahuilla, now partially overlapped by the Salton Sea, was a large Pleistocene lake around which Cahuilla and other groups settled. The lake went through various cycles of inundation and desiccation (Laylander 1997), and evidence of groups around the northern margins of the lake have been documented which date as early as the Late Archaic period (Schaefer and Laylander 2007:250). The other major water source in the Colorado Desert is the Colorado River. The river and its floodplain was the primary residence for Yuman groups in the region. For many contemporary Native Americans, the Colorado River is one of the most culturally important locations in the area (Bean et al. 1978:6-59), both because of issues of water allocation and cultural understandings about the river itself (see Water and Oral Histories below). The river provided sustenance for the groups who lived along the river margins, and the river itself is understood as the corridor along which Yuman people travelled south from Spirit Mountain, where they were created.

Water and Oral histories

Water also plays an important role in the creation stories and histories of Indian tribes in the desert. The importance of the Colorado River to Yuman speakers is reinforced in the following example by Johnson (2003:161);

The Colorado River itself, in Native American mythology, is an earthly manifestation or mirroring of the great river in the night sky, the Milky Way. Both the Colorado River and the Milky Way are representations of the north-south orientation of the first migrations of the people, first from the world beyond, and second, into the physical world as the Creator led the people to the various new homelands of each group in Pai (Yuman) country.

In the creation story of the Mohave and Quechan, the Creator made the Colorado River after creating the sacred mountain Avikwame (Spirit Mountain), near Laughlin, Nevada (Kroeber 1976:788-789; Stewart 1983a:65). The creator then took a raft down the river from Spirit Mountain and steered it this way and that, creating where the bends, beaches and silt deposits would be. After creating the river, the people were formed and instructed to follow the river south to their respective homelands. The name of this trail that follows the river, the *Xam Kwatcan* trail, is where the Quechan derive their name, a form of the word *kwatcan* (Forbes 1965:4).

Among the Chemehuevi, the creation story of Ocean Woman stresses the importance of water. In this story, the world is primarily made up of water, but also earth and sky. When Ocean Woman scraped off some of her dead skin and sprinkled it on the water, it created the earth, which floats upon the water (Laird 1976:148-152). In the Chemehuevi story of Southern Fox, *tantivaipatsi*, on Southern Fox's journey north to Death Valley from the Whipple Mountains (northeast of the project area), he shot his arrows, and when he removed the arrows from the ground he created four springs (Laird 1976:18). Laird (1976:152-154) also presents the tale of Cottontail Rabbit and the sun. In this story, Cottontail Rabbit throws a rock at Immortal Water and breaks him, which causes water to enter into the environment and creates all of the streams, springs, seeps, and tanks in the world.

In the creation story of the Cahuilla, water plays a prominent a role. When the two brothers, *Mukat* and *Tamaioit* were creating the world they first made the earth from a substance that came from their mouths, and then created the ocean to hold the earth in one place (Hooper 1920:319). They also created people, and one of the people they created was *Keketumnamtum*, a very short medicine man in the north. *Keketumnamtum* gives the people power "through their dreams of North Wind or Rain. After obtaining this power, they would be able to create wind or rain. This world is a man. Rain was created and sent to the sky. Rain is a man and makes things grow. North wind is a man and makes things dry up" (Hooper 1920:320). *Mukat* and *Tamaioit* quarreled continually, and eventually *Tamaioit* decided that he was going to take the people he created into the earth. He sang a song and sank into the earth with his people, causing a great rumbling and an earthquake. It was at this time that the mountains arose and the ocean shook so much that it overflowed and caused the rivers and streams to fill up (Hooper 1920:321).

The Serrano creation story has several parallels with the Cahuilla story. Both mention two brothers who frequently fight as they are creating the world. In the Serrano story, a medicine person is enlisted to bewitch *Kukitatc*, who kills him by biting his excrement before it falls into the ocean (Benedict 1926:1). Water also has a role in the journey a deceased person takes to the Land of the Dead. The dead must ford a river in order to access the Land of the Dead (Benedict 1926:8). A belief in "water babies" can be found in both Serrano and Cahuilla understandings of the world. Water babies are found in places with water, and cry out to people. They are sacred beings and are generally revered by people to the point of avoidance (Benedict 1926:11; Ramon and Elliot 2000:5). Benedict (1926:11) suggests that water babies are "yellow lizards four inches long with blue eyes and hair that look like fingers." The Chemehuevi also have an understanding of water babies, but recognize that they inhabit dune areas (Russell et al. 2002:49).

Plants and Animals

The project area for the PSEGS is composed primarily of creosote desert scrub habitat, with some portions of desert dry wash woodland and sand dunes habitat located immediately outside the project area (RSA 2011: Figure 16). Several special status species have either been documented on site, or it has been determined that the habitat

in which the project area lies is suitable for certain special status species. However, this report focuses on plants and animals known to have been, or currently are, of importance to Native Americans with aboriginal ties to the project area.

Native Americans view their environment in a holistic manner, i.e., there is interconnectedness to all aspects of the environment, plants, animals, landforms, water (e.g., Stoffle et al. 1997:229). Therefore, an effect to one element of the environment is an effect to the whole. For example, most Southern California tribes do not make a distinction between special status species (i.e., threatened or endangered species) and species that are prevalent in the environment. Once a species is put on the special status list, it is believed to be too late to do anything substantial for that species (Bean et al. 1978:7-10). Moreover, the preservation of one aspect of the environment is directly intertwined with all other aspects. Bean et al. (1978:6-56) give the example of mistletoe; mistletoe grows on mesquite trees, and birds eat the mistletoe, therefore preservation of mesquite is critical to the preservation of mistletoe-eating birds.

Plants and animals known to inhabit the creosote desert scrub habitat was compared to a list of culturally important plant and animal species derived for various sources, the results of which are listed in two tables located in the appendix of this document. These tables are not complete lists of all important species to all cultural groups, but do offer a sample of those species that have potential cultural relevance. Some of the traditional knowledge base has been lost before elders had a chance to pass on the information and some species are now extinct; consequently that knowledge has also been forgotten. While some of the plants and animals in the project may not have a known use, they may have a specific name and indigenous knowledge of such species may be held by some tribal members. Such indigenous knowledge could include avoiding a species or knowledge of the species' function in some other ecological way, or a free association between the species and some otherwise unrelated ecological function. Plant and animal tables are included at the end of this document as Appendices A2 and A3.

Rock Art in the Chuckwalla Valley

Rock art is “the designs, motifs, or patterns that are permanently placed on a feature on the natural landscape” (Whitley 2000:35). Whitley (1998:11) precautions that the use of the word ‘art’ may interject bias of the western mind and viewer by compelling the modern day viewer to ethnocentrically compare rock art with the art one would view in an art museum. In California, rock art is generally classified based upon the designs and motifs of the art, the medium (i.e., rock art that is painted - pictographs, etched/chiseled/pecked - petroglyphs, or scraping large areas of desert pavement to reveal a lighter subsoil - earth figures), and ethnographic and ethnohistoric evidence.

While it is possible to conduct art analysis by breaking the artistic activity into smaller units such as the artist, methods and materials for creating the art, and the finished art product, to then get to an understanding of artistic intent by comparing the resultant art with known or conjectured meanings of society or culture, this method of analysis may lead to limited understanding because it considers art without an environmental context.

The museum replaces the environmental context with an environmental void in order to isolate the art and the viewer. This is often achieved by placing paintings in frames and sculptures on pedestals amidst viewing rooms of white light where sound is minimized or highly controlled. Rock art in an originating environmental context evokes the viewer to look beyond the art to make other connections.

Rock art, and the creators and viewers of the art, can be thought of as involved in a type of communicative engagement embedded in a broader landscape. That is to say that the “conversation” of the rock art can occur between multiple different parties, and for multiple reasons but within one or several landscapes over variable times and spaces. For example, rock art may communicate territory claims, it may reflect a spiritual conversation between a teacher and a student about a place, between a person and their ancestors, or between a person and the immediate natural world or a supernatural world, or it may communicate various signs which direct or inform the “viewer” about a place or specific guidance or directionality of one place to another. Because rock art meaning is no longer readily available because the creators of the rock art are no longer present for us to query as to communicative intent, we are left to decipher meaning. Interpretation should rely on icon depiction, but informed by the relationships between various depictions and relationships of various rock art locales to other known natural and cultural locales, as well as ethnographic and ethnohistoric evidence and analogy.

Whitley (2000:46) has identified four major rock art traditions in California, with variants within each tradition. The most prevalent is the California Tradition which encompasses the Central Valley and the coast from about Eureka south to the San Diego area (Whitley 2000:50). The Plateau Tradition, or Far Western Pit and Groove Tradition, is only found in California in the Lower Klamath River region, but is also found in the Great Basin, Columbia Plateau and other parts of the West (Whitley 2000: 47 – 49). The Earth Figure Tradition is found along the Colorado River, and portions of the Colorado Desert. Some elements of this tradition are found in the ethnographic PAA, and therefore a more detailed discussion of the Earth Figure Tradition is included below.

Earth figures are typically found in clusters of one or a few images, and are usually found in association with archaeological features (see trails section above). The most common motifs are thin anthropomorphic or human figures, but other motifs such as animals, concentric circles, crosses, arrows, quarter-moons, a maze-like grid, six-pointed stars, and interlocking ovals are also found. The earth figures are important sites for the Yuman speakers along the Lower Colorado River and are critical to understanding the relationship of these groups to the *Xam Kwatcan*/Dream Trail.

The Great Basin Tradition is the predominate tradition characterizing the rock art of the Chuckwalla Valley. In California, it is found in the “desert regions east of the mountain divide that separates the desert from the coastal and interior coastal provinces”. This is a not a strict boundary, and examples of the Great Basin Tradition are found in the central Sierra Nevada west of this crest (Whitley 2000:57). It is also found outside of California in all of Nevada, southern Idaho, northern Utah, and western Wyoming.

The Great Basin Tradition differs from the rock art in the rest of California in that rock engravings dominate rather than paintings, the rock art is concentrated in specific localities, and the motifs are different than those found in the rest of the state. Two variants are identified, the Great Basin Painted and the Great Basin Engraved, the latter of which characterizes the Chuckwalla Valley rock art. The Great Basin Engraved variant is characterized as rock art that is dominated by pecked and abraded motifs, fine-line incising or scratching, a variety of geometric designs, including curvilinear meanders, dot patterns, grids, zigzags, concentric circles, spirals, and circular designs (Whitley 2000: 57, 59).

The Chuckwalla Valley, and other nearby portions of the Colorado Desert, is a unique expression of the Great Basin Engraved variant. It incorporates some elements that are found in the Mohave Desert and other locales, primarily similar geometric forms, but does not include the same representational motifs, such as bighorn sheep or patterned body humans that are found at most other Great Basin engraved sites. Whitley (2000:128) provides a discussion of this difference:

The cultural distinction in origin and specific meaning between the Great Basin rock art of the Mojave Desert versus that of the Colorado River and Desert underscores one of the primary difficulties in the archaeological analysis of rock art, which generally considers only the formal attributes of the art. The rock art of these two areas is distinct in origin and meaning, and while there are some regional tendencies in the distribution of motifs (bighorn sheep and patterned body humans generally to the north, digitate humans usually to the south), these tendencies are by no means absolute or inviolate. Thus, we cannot distinguish the different specific origins and meanings of rock art on the basis of the rock art sites and motifs alone, and thereby have no means for categorizing them as identifiable variants even though, rightly, they should be.

The few representational images that are found in the Colorado Desert are primarily snakes and simple stick-figure humans with exaggerated fingers and toes (i.e., digitate human figures) (Whitley 2000:59, 64-65).

Another difference between Colorado Desert rock art, and that created in the Mojave Desert and beyond, is the producer of the art. Rock art of the Great Basin Tradition was made exclusively by medicine men (or medicine women in some cases), except in portions of the Colorado Desert and along the Lower Colorado River where puberty initiates also made rock art. The rock art of medicine men was intended to illustrate the supernatural events and experiences of his dream, the patterns of supernatural power that was obtained from the mythic past when he entered a dream state of consciousness. This could include a portrayal of the medicine man, his spirit helper, power talisman, or the rituals he performed in the supernatural world (Whitley 2000:89). In this region, Mohave puberty initiates also created rock art during the nasal piercing ceremony. This was a ceremony conducted to ensure entrance into the Land of the Dead and success in life as a warrior or leader. The rock art created by the initiates was

a depiction of the patterns of the spirit power that was received by the initiate which was manifest in geometric patterns (Whitley 2000:89, 92).

There are typical geometric patterns that result when a medicine man or other person enters an altered state of consciousness/dreams. These entoptic patterns, also called phosphenes or form constants, are light images generated in one's optical and neural systems when dreaming. There are several commonly reported entoptic patterns identified during clinical neuropsychological studies (Lewis-Williams and Dowson 1988), most of which appear in various rock art locations in the Chuckwalla Valley. These seven entoptic patterns include grids; dots, circles, and flecks; concentrics and spirals; parallel lines and ticks; zigzags; meanders; and nested curves (Whitley 2011:139). Therefore, it can be concluded that the rock art created in the vicinity of the PSEGS project area was created by persons who were in an altered state of consciousness, most likely medicine men or puberty initiates.

Dreaming is understood to be an important component of rock art and travelling on some trails. Dreamers are said to place the import of dreams above the reality that sensory perception provides in the awake state of consciousness. That is to say, dreams guide the person more than the immediately perceived world guides the person. In fact, there was no distinction between nocturnal dreaming and an altered state of consciousness, i.e., dreaming induced by ingesting hallucinogens such as jimson weed or tobacco, fasting, repetitive drumming, clapping or singing, sensory deprivation, or a combination of these (Whitley 2000:22, 92). When a Yuman medicine man dreamed, he re-experienced the creation of the world by the creator Mastamho at his sacred house at Spirit Mountain (the place of origin for Yuman peoples). The goal of the medicine man was to visualize a unique pattern of the specific events of creation, from which he obtained power. Therefore, rock art created by these medicine men are abstract symbolizations of the creation of the world, albeit a highly individualized and idiosyncratic version of those events (Whitley 2000:22, 92).

In general, rock art sites provide "one of our clearest avenues for insight into the relationship between man and the cosmos as reflected in the archaeological record" (Hedges 1980:20). Hedges (1980:18 -19), among others, suggest that rock art loci are sites of power because they are places where medicine people conducted rituals to draw upon supernatural forces. The rocks on which art was drawn are understood to contain this supernatural power, and animals such as lizards that were thought to inhabit the rocks because they often dart and hide in rock crevices, were also understood to have supernatural qualities (Whitley 2000:90). These "places of power" were not individually owned, but rather public places used by many people. Usually art is in locations that were visible for all of society, and the rock art acted as a form of long-term communication between the medicine man and the supernatural world, the medicine man and society at large, and the supernatural world and society.

Some places held specialized power, and medicine people would travel for great distances in order to conduct their ceremony at these locales (Whitley 2000:89). This is a likely interpretation for the rock art places of the Chuckwalla Valley. There are several rock art loci with extensive petroglyphs in the valley, yet there is very little evidence that

groups spent extensive time living in the valley. It can be concluded that medicine people came from non-local areas in order to gain the power that is found at these rock art sites in the Chuckwalla Valley.

Understanding the placement of rock art within the larger landscape can help a researcher to understand the art on both a macro and micro level (Chippendale and Nash 2004:22). That is, understanding the spatial relationship of the rock art to the boulder on which the art is located, and to other panels and boulders in the immediate vicinity (the micro level), and how this smaller area is then spatially related to the larger landscape and/or other rock art sites in that landscape. Analysis on the macro and micro levels can inform questions of “how a human being – be it the artist, the audience, the voyeur, even the archaeologist – views the world, in this case the corner of the world which is the rock art site” (Chippendale and Nash 2004:22), and can provide a point from which one can ask more informed ethnographic questions to Native Americans concerning rock art. No rock art studies have been conducted in the Chuckwalla valley that attempt to link various rock art places to one another. However, one in depth study is currently underway to thoroughly document the North Chuckwalla Petroglyph District as a form of mitigation for indirect impacts related to the Red Bluff Substation.

Cultural Specific Overviews

The following section addresses unique and specific cultural aspects of the five cultures, Mohave, Chemehuevi, Quechan, Cahuilla, and Serrano, with each sub-section focusing on a detailed discussion of cultural patterns and behaviors unique to that culture. This section begins with a discussion of the Mohave, followed by the Chemehuevi, Quechan, Cahuilla, and Serrano. Each cultural specific section will address, in this order, tribal organization and/or totemic clan names, subsistence/agriculture, and ceremonies. The categories were chosen to provide an overview of the culture and their relationship to the potential places of ethnographic significance within the limited time frame provided by the Energy Commission amendment process.

Mohave

As Yuman speakers the Mohave and Quechan share many cultural attributes, but also differ in some important ways. Because of this similarity this section on the Mohave will also introduce aspects of the Quechan culture as well; and likewise some of the information in the Quechan section will be applicable to the Mojave.

The tribal organization of the Mohave is more comprehensive in terms of its size and nature, than most other tribes in the region. The Mohave are unique in the region in that they conceive of themselves as a single tribal entity, and of their territory as a large area, encompassing all of the land and settlements within that territory. Moreover, in the past, Mohave tribal members mixed freely with other Mohave from other settlements, settlements which were frequently only occupied on a temporary basis (Kroeber 1976:727). Most other Native American groups place more emphasis on settlements and localized expressions of tribal culture than the Mohave. The Mohave had a

hereditary great chief who was from the *Malika* clan. His primary role was to obtain and keep the confidence of his people, but he could be replaced by a chief from a different clan. Each clan had a distinct chief, but this chief was not necessarily a military hero, although both were considered to be prestigious positions in the clan (Bean and Toenjes 2012:29)

Totemic clan names are an important identifying characteristic among Yuman speakers. Totems among Yuman speakers are a symbolic representation of the clan, and understanding the totemic clan structure of a group can help an anthropologist determine kinship and lineage affiliations. Totems can take the form of, or have over-arching bearing on many aspects of Native American life, including water, plants, animals or other natural phenomena. It is understood that these totems are assigned by the Creator, and that these totems belong to specific clan groups (Kelly 1942:677). There is some information that suggests the god *Mastamho*, residing in his northern “house” and immediately after the creation of humans, sent forth varying Yuman people that migrated and inhabited various portions of the Lower Colorado River from Spirit Mountain (the “Big House”) south to the Gulf of California. Other literature suggests that it was *Mastamho’s* father, *Mutavilya*, who provided the original clan designations (Sherer 1965:127). While the first migratory wave stayed closer to Spirit Mountain, some literature suggests that the last wave were the Mohave who stayed close to the place of origin, and successive waves migrated farther south (Johnson 2003:161). Each wave of people was also provided with totemic clan names. This totemic system “comprises patrilinear, exogamous, nameless groups of totemic reference“, and totem taboos, i.e., restrictions on killing or eating one’s totem, are either slight, or lacking (Kroeber 1976:741). Regardless of origins, the clan names can be grouped into three categories that reflect an indigenous division of the universe into three zones: above the earth, the earth, and below the earth (Sherer 1965:128). Each clan is a specific aspect of one of these three zones. The following table is adapted from Sherer (1965:136,138 table 1), and reflects only Mohave Clan names. Quechan maintain a similar clan system but with different name variations.

Table 2 Mohave Clan Names

CLAN NAMES – ABOVE GROUND	TOTEMS	NOTES
<i>Nedge</i>	Sun, fire, eagle, deer, beetle	
<i>Oach</i>	Cloud, rain, white cloud, rain cloud	
<i>Mat-hachva</i>	Wind	Extinct
<i>Whalia</i>	Moon	
<i>Maha</i>	Small bird	
<i>Motheha</i>	Night bird, screech bird	

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<i>Kutkilya</i>	Owl	Extinct
CLAN NAMES – GROUND	TOTEMS	NOTES
<i>Hipa</i>	Coyote	
<i>Moha</i>	Mountain sheep, deer	
<i>Masipa</i>	Quail, coyote	
<i>Nyikha</i>	Caterpillar	Extinct
<i>Vemacka</i>	Bean, honey mesquite	
<i>Mus</i>	Bean, screw mesquite	
<i>Chaca</i>	Corn	
<i>Vahadha</i>	Tobacco	Extinct (merged with <i>Gottah</i>)
<i>Gottah</i>	Mescal, agave, tobacco	
<i>Kumathee</i>	Ocotillo, cactus	
<i>Quinetha</i>	Prickly-pear cactus	
<i>Teelya</i>	Mescal	
CLAN NAMES – BELOW GROUND	TOTEMS	NOTES
<i>Shulia</i>	Beaver	
<i>Boudha</i>	Frog	
<i>Malika</i>	Ground squirrel, wood rat, desert rodent	

There is some disagreement in the literature as to whether clans are local or non-local, i.e., whether clans of a specific name resided in a certain area, and whether clans were named or nameless, i.e., how one uses another person's clan name when speaking with or referring to someone (Spier 1953). It appears as though the discrepancies between named or nameless is a matter of gender relations in evolving patrilineal societies with various and differing rules concerning speaking certain other persons' names or affiliations. Due to, 1) the various creation migrations that ensued from north to south, 2) the agricultural migrations that ensued from river floodplain to nearby mesas and mountains, 3) amity/enmity migrations that ensued from various alliances and warfare events, and 4) the rule of exogamy or marrying outside of one's own clan, it is difficult to assert that particular clans have rights to particular locales because of clan designations. Conversely, it is plausible that clans tended to settle in certain areas as units simply due to circumstances of particular times and upon settling asserted rights because they were there, and not because their respective clan totem provided a right to be at the specific locale (Spier 1953).

There is some evidence that clan names were associated with specific months when the totem plant or animal made a seasonal appearance requiring an important tribal interaction. For example the month of “Mesquite Beans Ripen,” late June to early July, was also a time that the Mesquite Clan was at its zenith of importance. There is a discrepancy as to whether the linking of clan names, totems, related plants, subsistence activities and specific locales were that important or even existent among some Yuman speakers (Castetter and Bell 1951:147). There is sufficient evidence that indicates that the Department of the Interior, with assistance from the boarding schools, attempted a systematic removal of the clan system in order to disrupt communal understanding of the environment and specific lineages’ relations to the land. The communal system of relating humans to the world was not conducive to the western introduced way of allotting land (160 acres) to specific individuals that were then responsible for subsistence on only that land (Sherer 1965:135-141).

Archaeological evidence indicates that Yuman speakers began to practice agriculture around A.D. 800-1000 in the Lower Colorado River Valley (Moratto 1984:358). However, tribal knowledge suggests alternative origins. The Lower Colorado River tribes understand that the Creator gave the people the knowledge and plants with which to conduct agriculture. For the Mohave, the god *Mastamho* told the people that food was incomplete until the vessels (i.e., pottery) in which to cook the food were provided. Therefore, in the Mohave mind, pottery and agriculture are associated, and both are thought of as something that was given to them (Kroeber 1976:736).

The Mohave plant a variety of crops; most are used for food, but some also have utilitarian uses. Corn is planted in seemingly random spots, i.e., not in rows, and is usually of the long-eared and white variety, but blue, red, yellow, and spotted yellow corn was also distinguished. Beans of several species were cultivated for food and the stalk fiber was used for cordage. Beans were called white, yellow, “deer droppings” (black), and “Pleiades” (spotted). Other cultigens included pumpkins, watermelons, wheat and cantaloupes (Kroeber 1976:735-736).

Among the Mohave, farm land was owned, and the land could be sold for other property or beads. Generally, lineage groups’ outer boundaries for agricultural use were determined by establishing lines of sight from a place on or near the river and up to a distant peak. Within this broad demarcated area, separate families were free to establish garden patches, often by predicting where flood waters would provide the best features for what and how the family headman decided to plant (Kroeber 1976:744-745).

With increased non-Indian settlement in the river valley in the late nineteenth century, agricultural practices started to go into disuse among most groups (Kroeber 1976:736). Indian gardens increased for a period during the late nineteenth century to provide fresh produce to local miners and military outposts in exchange for cash or credit. Soon the new residents began constructing dams on the river (Laguna Dam 1905, Boulder Dam 1935, and Parker Dam 1938), controlling the yearly flooding and resultant fertile silt (Castetter and Bell 1951:73-77). The entire Lower Colorado River Valley changed in response to the new methods of agriculture that required extensive irrigation canals,

chemical fertilization, mechanized farm equipment, new forms of manual labor, and checkerboard and permanent land owner concepts. Yuman people became cash laborers in the burgeoning mining and agricultural industries and personal gardening only occurred in Indian backyards close to permanent tribal housing.

Specific ceremonies in Mohave culture are not as common as among some other cultures. One of the most notable Yuman ceremonies is the Keruk Ceremony. After the deceased's funeral, usually soon after death, a year of mourning is undertaken. The Keruk ceremony is intended to bring closure to the grieving family and community (also see trails section). In the morning after the ceremony, the dead person's house and property, as well as the ceremonial shade and ritual paraphernalia, are burned (Forde 1931:252-253; Kroeber 1976:750-751; Stewart 1983a:67). The purpose of this ceremony is to move the soul along the dream trail towards Spirit Mountain and the afterlife in the above world. The Mohave Keruk shelter was built in a clearing 50 to 60 yards long, extending south from the main gathering shelter. The shade was set afire and the ceremonial gear burned. Mourners threw clothing and beads into the fire (Forde 1931:252-253).

Among the Mohave there exist about 30 song cycles or series, of which there can be 100 or 200 songs in each series. The songs are based on the mythical time of creation, and each singer has dreamed the myth and song cycle in order to properly sing the song. The same cycle can be sung differently by each person, and while some of the words may change, the overall theme of the story remains constant. Songs could be sung just for entertainment, during funerals, or were sung by shamans to cure a particular sickness (Kroeber 1976:755-757). One function of the songs is that of communication, i.e., retelling the myths and stories of the culture in an effort to reinforce them. Kroeber (1976:757) states that because when a song is sung the words often differ, that this is a literary style "which is as frankly decorative as a patterned textile. The pattern is far from random; but it is its color and intricacy, its fineness or splendor, that have meaning, not the action told by its figures."

Mesquite and harvest festivals were two other ceremonies, albeit secular in nature, celebrated by the Mohave. During the month of July and after the mesquite pods have ripened, lineages and extended families mobilized for the gathering of the important food source. Up until July most people subsided on a "catch as catch can" basis. The previous year's agricultural harvest had usually given out sometime during February. Hence the arrival of ripe mesquite was enthusiastically welcomed. The following excerpt from Castetter and Bell (1951:229) describes such a festival,

When the mesquite crop was abundant it was made a matter of universal rejoicing and congratulations. As the fruit ripened, the outlying districts were notified of the date of the ceremony by runners, and when a sufficient number of Indians had assembled, a large open bower or shed was built and at sunrise each morning young and old went to the mesquite groves to gather the pods in large baskets. The fruit was then brought to the shed and prepared by first discarding the inferior pods, then saturating the rest with water and burying the sticky masses in the ground. After a

day or two they were taken up, much shrunken and almost solidified, and piled in stacks beneath the shed. When enough had been gathered for storage, a light brush fence was constructed around the shed and bundles of pods were placed in different parts of the enclosure, in sets for each district represented. The evenings were spent singing, dancing, playing games, and love making. On the last day the participants gathered outside the frail fence and, at a given signal, dashed through the fence toward the pile of beans, each seizing as many bundles as possible, meanwhile in good nature seeking to prevent his neighbor from securing a share. Then all shouldered their bundles of pods and departed for home.

During the month of November, just after harvesting and before people departed from the agricultural areas of the floodplain and made their way to the mesa for the winter, harvest festivals were held. The fall Harvest Festival was similarly more of a social gathering and less of a religious event. Castetter and Bell (1951:230) further describe the festival:

The Indians sang songs of rejoicing and old men made speeches about the goodness of nature. Foot races, wrestling matches, kicking ball contests, gambling games, and later horse races characterized the celebration during which men bet articles of clothing, etc. If the harvest were abundant in any section of a tribe's territory, the chief or some other prominent individual summoned the tribe to a prearranged point for the celebration.The host families were instructed to bring generous contributions of pumpkin, maize, etc., being certain to bring the best of each crop, for it was the habit of the tribes to give away only the best. Families brought this produce with no thought of their own later needs. The products were sorted and stacked in large heaps in front of a special shelter constructed for the event. ...Yuman singing, dancing, frolic, and feasting continued throughout the night, songs having to do particularly with the growing and abundance of crops. ... The following morning the guests departed, as they were leaving each passed in front of the shelter and gathered up an arm load of the crop, which he took home.

Initiation ceremonies were conducted for both Mohave males and females. Males participated in a nasal piercing ceremony, conducted to ensure that they would gain entrance into the Land of the Dead and endurance and success in life as a warrior. The ritual was based on a mythical precedent (Bourke 1889:81),

Once upon a time, when the birds had no nostrils yet, they held a council near the sacred mountain Avikwame, for the purpose of obtaining endurance. They decided to have their noses pierced and said, 'The Mohave, Yuma, and Cocopa will also do this, if they wish their boys to acquire our swiftness and endurance.' Then they pierced their noses, and that is why all birds have had nostrils ever since. After the operation someone held a speech and instructed the birds to sleep on their bellies, and to rest their heads on their arms, during the healing period, in order to

protect the shape of their noses and to prevent their flattening. The 'duck' alone ignored this advice, and slept on its back. That is why all 'ducks' have flat beaks." (Devereux 1949:13)

The ritual was performed on boys between the ages of 10 to 15, but there was not specific event which precipitated the ritual. The ritual was always performed in the summer and when a man who was skilled at piercing nasal septums determined that there were enough boys to participate, he announced a time and place for the ceremony. They boys spent four days preceding the ritual and four days after refraining from eating salt and mesquite beans, and practicing celibacy. Violation of the dietary taboos was understood to cause life-long laziness. During the ritual, the septum was pierced with a sharp stick and a small arrowweed or willow stick was put in place so that the wound would not close. The boys received instruction concerning how to properly sleep and care for their nose so that it would not become flattened or collapse. They spent the next three days at home, and on the morning of the fourth day they ran from Parker to Ehrenberg and back again, although before reservation times this route was probably from Needles to Ehrenberg. When the boys returned, the arrowweed or willow stick was removed, and the ceremony was considered complete (Devereux 1949: 11-16). Usually, some object such as a shell or decorative item was placed in the hole. The event was conducted by other Yuman speakers in the region with some variation (Devereux 1949: 17-18; also see Alvarez de Williams 1983:110 who mentions that Cocopah initiates created rock art during the ceremony).

The female puberty rite may have served as the basis for the male rite (Devereux 1949:20), but was a ceremony conducted only among ones immediate family. The young woman spent four days in seclusion within the corner of the house, peacefully sitting and eating sparingly, avoiding meat and salt, and spent her nights in a warmed pit. Her dreams were considered to be important omens of her future (Stewart 1983a:67).

The Mohave are a more complex culture than can be described in these few brief pages. Ideally, this brief sketch of their culture will allow the reader to gain a better understanding of Mohave lifeways and how those lifeways play a role in the potential ethnographic resources. Following the Colorado River south, the Chemehuevi are discussed in the following section.

Chemehuevi

There were three main geographical divisions of the Chemehuevi, although the term *Tuumontcokowi* was used to be inclusive of all of these groups. Those from the northern areas, i.e., along the northern portion of the Colorado River, were referred to as *Tantiitsiwi*, northerners. Southerners, *Tantivaitsiwi*, were those who resided south of Fort Mohave, and north of the Maria Mountains. Those Chemehuevi who lived in the interior desert region were called *Tiiraniwiwwi*, Desert People. These subdivisions among the tribe were based primarily on geographic location rather than cultural differences, and these subgroups frequently interacted and intermarried, solidifying their

sense of *Tuumontcokowi* (Laird 1976:8). Each of these regions maintained the position of a High Chief. This was a sacred office, and these High Chiefs, as well as lesser chiefs, *niwiavi* (see below), are reported to have spoken together in the Chief's Language, *Tivitsiampagapi*, or Real Speech (Laird 1976:24).

Another important position within the Chemehuevi organization was the medicine person, *puhwaganti*, or *mamau puhwaganti* if the medicine person was a woman. The primary function of the medicine person was as a healer. Unlike some other tribes the only equipment of the Chemehuevi medicine person was his *poro*, a rod in the shape of a shepherd's crook. With this *poro* the medicine person wielded an object of great power, and he performed healing rituals by singing and dancing. Medicine people had an intimate relationship with a spirit-animal who help them, yet was invisible to everyone else. Spirit-animals used include dragonfly, mountain lion, mountain sheep, mouse, packrat, and various other mammals and birds. The traits of the animals often characterized the behavior of the medicine person when using the spirit animal. For example, a medicine person likely would have desired a mouse or packrat as a spirit-animal because they were known to be able to steal diseases away from their hosts. Those mammals and birds which are carnivorous had potential for good or bad actions. With these spirit-animals the possibility existed that the animal may eat the person and cause disease rather than curing it. Thus, a medicine person with such an animal familiar was considered to be potentially dangerous, maliciously so. The medicine person's spirit animal was reflected in his name; i.e., when saying the medicine person's name, that of the spirit-animal usually preceded the *puhwaganti* designation. Two exceptions to this rule existed, with the "snake doctor" and the "wound doctor". The "snake doctor" did not employ the snake as his spirit-animal, but rather was able to cure snakebites, usually because he had been bitten previously and survived the snakebite, thus gaining the power to cure them. Healing wounds was the specialty of the "wound doctor". After the medicine person performed his singing and dancing, he finished the ritual by publicly revealing the cause of the illness and exposing the responsible party (Laird 1976:31-37).

The Chemehuevi were not organized by clans in the sense of the term used for the Yumans and other tribes, but rather by inherited songs. Clans were exogamous and matrilineal, but not strictly so. Marriage usually entailed the man asking the woman's parents for permission to marry their daughter. The parents would then subject him to a "smoke test". If he was able to endure enough smoke without his eyes tearing, he was considered to be a suitable match. Another method of proposal was for a man and his cousin to visit a woman at her home, and the cousin would lie down next to the woman and proposition her. If she agreed the future husband would take the place of his cousin, and the marriage was consummated. Generally, the man stayed with his wife's family for an undefined period of time before he and his wife established their own home nearby. This system of marriage allowed for the creation of loosely formed bands, *niwiavi*, who had a spokesperson or chief if the group consisted of several families. Allegiance was based on residence rather than inheritance, thus one's chief was a matter of choice because Chemehuevi were not beholden to any specific locale. The members of a *niwiavi* "planted and harvested their crops together, travelled together on

gathering or hunting expeditions, and if necessary fought together” (Laird 1976:21-22). The name of the *niwiavi* was taken from the place that the group considered to be their “headquarters” (Laird 1976:21-22).

Historically the Chemehuevi were hunters and gatherers (Laird 1976:5), but “farmed in small patches where they could” (Kroeber 1976:597), most likely in the vicinity of springs and seeps in their desert territory. The bow and arrow was the primary weapon of choice, both for hunting game and for warfare, although the warfare bows and arrows were shorter and stronger than those used for hunting. Animals traditionally taken by Chemehuevi men included lizards, tortoises, jackrabbits, and cottontail rabbits, with deer and mountain sheep added to the diet after the adoption of the bow and arrow. Plant foods were also important to the Chemehuevi diet, with pine nuts, wild berries, various species of yucca fruits, mescal and seeds collected by the women of the tribe (Laird 1976:5; Kroeber 1976:597). Food stores were frequently cached in caves or rock crevices, seeds were stored in baskets with a ceramic lid and sealed with greasewood gum. Mescal and meat were preserved by pounding into slabs and dried, where it would keep indefinitely. Food caches were important for the Chemehuevi when they maintained a more nomadic existence because it allowed them the freedom to venture to other areas without having to be concerned with their subsistence when they returned (Laird 1976:6). Once the Chemehuevi migrated to the Colorado River Corridor they adopted the agricultural practices of their Yuman neighbors, and like the Yumans continued to supplement their agricultural pursuits with wild plant foods and occasional hunting. Crops grown by the Chemehuevi included beans, corn, and wheat (Laird 1976: 109), although they likely also grew gourds, squash and melons like the Yuman speakers.

The Chemehuevi sing four song cycles, the Salt Song (detailed above), the Deer Song, the Mountain Sheep Song, and the Shaman’s or Doctoring Song. Variations of the Salt Song and the Deer Song are also sung by the Mohave (Kroeber 1976:761). Songs were “owned” by different groups and this ownership reflected territorial rights and the hereditary nature of the songs. That is, songs were individually inherited, and the song served to define a man’s kinship and hunting area. Ownership of these songs is somewhat confusing, as Laird (1976:9-10) was unable to ascertain if it was moieties, one of the groups in which a society is divided, who controlled the Deer and Mountain Sheep Songs, or if they were just large and dominant clans. Regardless, these songs were ways that the Chemehuevi learned about the sacred and unbreakable connection between man, his song, and his land. These songs were important for the rites of the dead, but also had a social function (Laird 1976:10, 19). The song singers travel over vast areas when singing the songs, but the Salt Song Trail is the only song associated trail near the PSEGS project area. The Chemehuevi also celebrated the mesquite and harvest festivals when they lived along the Colorado River, as described in the Mohave section above.

Chemehuevi funerals were held soon after death. The body was buried, and the property of the deceased was burned (Kroeber 1976:599). About six months to a year after the funeral the Cry or Mourning Ceremony was held. This was an opportunity for

the group to express their communal and personal grief, as well as serving as a catharsis, or purging of one's emotions. This was an event for which there were many preparations, and numerous people were invited via a knotted string sent to the various invitees. One of the preparations was to kill an eagle to take its skin and feathers and made into a ritual object, *ming tcakuwinyakati*. Also a shade house, *takagani*, was constructed for the ceremony, and under it were all the possessions of the deceased which had not been burned during the initial funeral. During the ceremony the hereditary song of the deceased was performed, as was the Talking Song, and the Circle Dance⁵ was performed around a central fire. Gifts were given away and horses were either slaughtered or given away to guests (Laird 1976:41-43). There is a report of a "crying circle" at the North Chuckwalla Mountains Petroglyph District (CA-Riv-1383) by a Chemehuevi observer in 1980.

Quechan

As mentioned above, the Quechan and Mohave share many similar characteristics. Several common attributes of the two tribes were already mentioned in the Mohave section, but shared attributes are also discussed in this Quechan section, as are those characteristics of the Quechan that are unique to themselves.

The Quechan and Mohave have a similar totemic clan name structure. One difference between the two tribes is that the Quechan have a special name for the old woman of the clan, *akoi*, and this word "is preposed to the ordinary totemic name for the woman, to the name of the totem, or to yet another name which is neither that of the woman nor the totem" (Gifford 1918:163). Gifford (1918:163) states that Quechan informants indicated that the term was applied to a woman when gray hair begins to appear.

Quechan agricultural practices were very similar to those of the Mohave. The groups along the Lower Colorado River (and Paiutes to the northwest as far as the Owens Valley) were some of the only Indians in California who had well-developed agriculture practices. Most other tribes in the state were hunters and gatherers with perhaps some beginnings of agricultural technology or limited practices related to cultivating specific plants such as mesquite, clover, or tobacco. The development of agriculture in the Lower Colorado River Valley significantly improved tribal groups' ability to obtain reliable subsistence, and may have led to population aggregation into groups larger than what was typical of California tribes (Kroeber 1963:104). The annual flooding of the Colorado River provided a rich, silty floodplain on which Native Americans were able to plant and harvest a variety of crops. However, the floods varied yearly, and when the floods were slight groups had to intensify their wild food collecting efforts to make up the difference in the smaller crop yield. At other times the floods were heavier than normal, or a second round of flooding occurred. In these cases, crops would sometimes be severely damaged, or the second flooding could provide an opportunity to plant another crop (Castetter and Bell 1951:67-69). Crops grown by the Quechan included corn, various species of melon and beans, pumpkins, and wheat (Bee 1983:86-87).

⁵ Also known as the Ghost Dance (see Kehoe 2006 for a detailed description of the Ghost Dance)

The Lower Colorado River Valley was so fertile that the carrying capacity of the cultivatable land was “greatly in excess of the needs of the aboriginal population” (Castetter and Bell 1951:66). Despite the fertile ground, the Mohave and Quechan did not place much emphasis on maintaining large caches of crops to last them until the next harvest, or conduct rituals or prayers to improve their agricultural yield (Castetter and Bell 1951:87-88). Many of the Lower Colorado River tribes were very generous with their food, but food was not seen as a symbol of wealth or social prestige (Castetter and Bell 1951:71). Sometimes groups would grow extra food when they knew there was going to be a ceremony in which large amounts of food were needed, but in general, they were somewhat limited by the short window of opportunity in which to plant their crops after the floods, and limited available labor. The agricultural methods were fairly simple, and were described by a mid-nineteenth century observer,

Their agriculture was simple. With an old axe...knives and fire, a spot likely to overflow is cleared. After the waters subside, small holes are dug at proper intervals, a few inches deep, with a sharpened stick, having first removed the surface for an inch or two, as it is apt to cake. The ground is tasted, and if salty the place was rejected; if not, the seeds are then planted. No further care is required but to remove the weeds (Heintzelman 2008:35-35).

It is estimated that the maximum amount of land that a single family unit would have grown was about 2 acres, with the average family’s plot consisting of about 1 acre in the Lower Colorado River Valley (Castetter and Bell 1951:75). The Mohave obtained about 50 percent of their subsistence from agricultural efforts, and for the Quechan it was closer to 40 percent. Fishing provided about 10 percent of the diet, and the other foods that completed their diet came from wild and semi-wild plant gathering and animal hunting. These non-agricultural subsistence activities occurred in the floodplain, on the mesas, in the mountains, and in the washes that incise the alluvial fans that surround the mountains (Castetter and Bell 1951:74).

The Quechan Keruk ceremony was similar to that conducted by the Mohave. As mentioned earlier, one of the functions of this ceremony is to help the deceased move onto the afterlife, but it was also “intended to perpetuate a ritual taught to the first men after the death of the creator, Kukumat” (Forde 1931:214). Forde (1931:214-221) details the mythology surrounding the Keruk ceremony upon which the ritual conducted by the Quechan is based, a reenactment of the first Keruk. The families of the deceased are primarily the ones who instigate the ceremony, as it can occur at any time of the year, and they also bear the brunt of the cost for the ceremony (Forde 1931:221). The Keruk is held in a clearing and temporary camps are established around a Keruk house and pyre. Over the four day course of the ceremony singing and dancing occurs, but not exclusively mourning songs as this is also a time of revelry. The Keruk shelter is built during the ceremony; and, likely derived from tribes to the west, an image ceremony is also held (see Cahuilla section) (Forde 1931:221-226). The ceremony appears to be highly ritualized with several reenactments occurring at various times over the four

days. The ceremony ends before dawn of the fifth day with the burning of the Keruk house and the images on the pyre (Forde 1931:243-244).

Like the Mohave and Chemehuevi, the Quechan also celebrated the mesquite and harvest festivals, as described above in the Mohave section. Songs were also sung by the Quechan in similar cycles as the Mohave. Songs were learned by dreaming, and were sung at various times of the year, for pleasure, or were sung during the Keruk ceremony (Forde 1931:127-128).

The Quechan culture cannot be described in only a few short pages, but the information included here should help to inform the reader about the relationship between Quechan lifeways and the potential ethnographic resources in the ethnographic PAA. The discussion will now move to groups west of the Colorado River, beginning with the Cahuilla.

Cahuilla

In terms of tribal organization, clans, and moieties, the Cahuilla and Serrano share several attributes, similar to the Mohave and Quechan cultural relationship. Both the Cahuilla and Serrano are organized on the basis of exogamous, patrilineal clans grouped into two moieties. These moieties are totemic, and are identified with the wildcat (*tukut*) and the coyote (*isil* in Cahuilla, *wahil* in Serrano). The Cahuilla understand that totems were once men, but there is no belief in descent from the totems. The wildcat and coyote moieties do not associate with any other totems other than the one assigned to the moiety, as the Serrano do. Exogamy was traditionally practiced, with some modern exceptions (Gifford 1918:186; Kroeber 1976:705). After marriage, a woman lived with her husband's family, but she remained a member of the clan and moiety into which she was born. Cahuilla moieties are organized locally into clans, the name of which is frequently translated as living at a specified locale (Gifford 1918:186; Kroeber 1976:705-706).

Each clan maintained a chief (*net*), who inherited the leadership position. The *net*'s primary duties were in conjunction with ceremonial activities, and there was no higher ranking *net* for the moiety in its entirety. Several clans and moieties could live in the same village, thus such a village would have multiple *nets* and ceremonial assistants (*paha*). The role of the *paha* among the Cahuilla was to assist the chief during ceremonies. The Cahuilla used sacred bundles, which were for ceremonial purposes. Among the Cahuilla the *net* was responsible for the sacred bundle (*maiswut*), which contained a piece of reed matting wrapped around a string of eagle feathers, and the pelvis of a grizzly bear (*yuuknut*). The grizzly bear pelvis was understood to possess great power, and was used by the *paha* as a whistle to kill any irreverent or noisy persons (McAdams 1958:6). During more modern times, white people have appointed chiefs who exercised control over several clans. One of the most notable of such an appointed leader was Juan Antonio (see Smith 1960) who helped the Cahuilla adjust to life with the white people.

The Cahuilla had a fairly varied diet, this primarily being a product of inhabiting several different environmental zones. Acorns, available at higher elevations, were an especially important plant food and six varieties, black oak, coast live oak, canyon oak, scrub oak, and two unidentified varieties were used. Acorns were stored in granaries and then processed by shelling, crushing, and leaching the acorn meal which was eaten along with foods and condiments to give taste and bulk to those foods (Bean 1972:36-38; Bean 1978:578). Other important collected wild foods include: mesquite and screw beans which grow on the desert floor in places where the water table is relatively shallow; pinyon nuts which were an irregular food source and usually located far from most village sites; several varieties of edible cactus which were available in all ecological zones; and, agave a labor-intensive but highly nutritious food, the roasting of which was a festive occasion. These foods were supplemented with a variety of seeds, wild fruits, berries, tubers, roots, and succulent greens (Bean 1972:36-46). Various other plants also provided construction materials for houses or granaries.

Some agriculture was pursued by Cahuilla in locations where it was feasible. Corn, beans, squash, and melons were the most commonly raised foods. There is some evidence that Cahuilla groups may have selected village sites based on their agricultural potential, and although it undoubtedly provided some food security for desert groups, it does not appear that agriculture had significance for Cahuilla cultural patterns (Bean 1972:48; Bean 1978:578).

Hunting and butchering by the Cahuilla was the work of men, and they used a variety of methods for taking animals. Small game taken by the Cahuilla included rabbits, rats, mice, squirrels, chipmunks, birds, snakes, lizards, tortoises, and a variety of insects and worms. For these animals hunters usually used bows and arrows, throwing sticks, nets, snares, traps, or fire to light the brush where animals were located. Larger game was not as common in the diet, but was important in the economic, social, and religious institutions of the tribe. Big-game hunting was exclusively the domain of able-bodied adult men, who were also specialists in supernatural power and ritual. The principle large game taken includes mule deer, mountain sheep, and pronghorn antelope (Bean 1972:56-58; Bean 1978:578).

The Cahuilla practiced several different ceremonies, most of which were held at a specific time of the year. One ceremony which does not occur at a specific time is the funeral ceremony (*pemteutuwet*), occurring soon after a person dies. A series of rituals accompanied the funeral, a period of mourning in which certain behaviors and activities were prohibited, women cut their hair, and two or three days post-funeral, the property of the deceased was destroyed by fire. There was an annual (sometimes biannual) mourning ceremony (*nukil*), also referred to as the image ceremony, held in the winter. Bean (1972:136) suggests that “the frequency of the *nukil*... was determined by the number of deaths since the last ceremony, and whether there were sufficient economic resources to provide proper gifts for all invited guests.” This was the most elaborate and extensive of Cahuilla rituals, a culmination of a long series of rituals associated with the dead, and was a ceremony in which both moieties participated. The *nukil* lasted a week and commemorated all those who had died since the last *nukil*, allowing the family to

end their mourning and for the deceased soul to enter into the land of the dead (Bean 1972:136; Gifford 1918:187).

Preparations for the *nukil* involved all members of the community, and several months prior to the ceremony were spent planning and preparing for the event. The *net* invited other lineages and lineage leaders to the event in an effort to continue or establish ritual reciprocal relationships via a string of shell beads which served as an invitation. The first few days of the ceremony were spent dancing and singing by the *puvalam*, or doctors/medicine people, clearing the area of any malevolent spirits and “purifying the minds” of those who may have evil intent. The secondary purpose of these dances was to ensure that the rituals associated with the ceremony would be performed correctly. The songs and dances on the concluding four days of the ceremony focused on “the cosmologically oriented song cycle performed by ritualists from several lineages” (Bean 1972:136-137). In the morning of the last day of the *nukil*, life-sized images of the dead were set afire, the ultimate step in the deceased soul’s journey to the land of the dead. The ceremony concluded with the distribution of food and gifts to the guests.

The eagle was an especially important animal to the Cahuilla, and as such, they practiced an eagle ritual during the *nukil*. Each clan was said to own an eagle, a symbol of the constant life of the clan. It is understood by the Cahuilla that the eagle allowed himself to be killed each year, but lives forever like the clan lineage. The rituals of the event entailed the *net* assigning a person to watch an eagle nest located in the mountains. This person would then notify the clan when eggs were laid, when the eggs hatched, when the down on the eaglets began to grow, and when they started to eat live game. Each of these events was commemorated in the village with a special ritual. Once the eagle matured, a ceremony lasting three to seven days was held in which various neighboring lineages attended on different nights. On the last night of the ceremony all lineages were invited together, and the eagle “died”. The feathers were plucked and the eagle was ceremoniously buried and mourned as if one of the clan members died (Bean 1972:139-140). Bean (1972:140) suggests that the eagle killing ceremony served two functions; one was to refurbish the ceremonial paraphernalia with new eagle feathers, the second was to establish reciprocal relationships between lineages.

Several different rites of passage ceremonies were held by the Cahuilla. These rituals included a birth ceremony, a naming ceremony, boys’ initiation rites, girls’ initiation rites, a marriage ceremony, and a ceremonies celebrating changes in status (i.e., when a *net* or *paha* assumed office) (Bean 1972:142). The birth ceremony involved the mother and child who were placed in a pit warmed by hot stones and sand. Both were given special herbal concoctions, and specific food taboos were enforced for the woman. The ceremony included the lineages of the husband and wife, as well as the ceremonial figures of the clan who invited all members of the lineage and others from outside the village to a celebration in the ceremonial house where gifts and goods were given to the family. Naming ceremonies were held when several of the village children had reached four to six years old. The children gathered in the ceremonial house where they

received their name, sometimes two names where one was public and the other secret (Bean 1972:142; Strong 1929:118).

The initiation ceremony for boys and girls was separate, but both were intense ritual activities. The ceremony for boys entailed instruction in clan history and social obligations by family members overseen by the *paha*. It involved “fasting, food taboos, strenuous physical activities, tests of bravery and resistance to pain, learning dances and songs (particularly enemy songs), observing the drawing of sand paintings symbolizing Cahuilla cosmology, receiving explanations of the cosmology, as well as undergoing tattooing, ear piercing, and the piercing of the nasal septum” (Bean 1972:142-143). Among some groups the hallucination-producing plant, Jimson weed or *Datura meteloides*, was employed during the ceremony. No females were permitted to observe this part of the ceremony. The *net* prepared the hallucinogenic concoction by grinding it in a ceremonial mortar with water, placed it in a bowl, and gave each boy a drink. Then all the men danced around the fire, and when the boys eventually fell unconscious they were left to sleep in the ceremonial house. In the morning the boys were taken to a canyon where the *paha* taught them songs and they danced. The *Datura* was only drunk the one time (Strong 1929:174-175). For one month after the ceremony boys were required to observe a strict diet that forbade the consumption of salt and meat, and only permitted the drinking of cold water (McAdams 1958:15-16). If a boy had any potential for contacting the supernatural, this ability was understood to show itself during the hallucinogenic trance (Bean 1972:143), and although the drink did produce visions, no particular interpretation of such visions was recalled (Strong 1929:175). Also at this time the skills of the boys were assessed, in particular their abilities to hunt, farm, dance, sing, or to be a medicine person (Bean 1972:143).

The initiation for girls occurred after their first menstruation. It was a collective event that included all girls who had matured since the last ceremony. The girls were placed in pits with hot stones and sand for three days, and observed a taboo against scratching or touching their bodies. They were instructed by the lineage ceremonialists and their own grandmothers concerning their role as women in the clan, as food producers and mothers (Bean 1972:143; Strong 1929:173). For six months after the ceremony the girls observed a taboo against eating salt and cold food, and ate a special hot food made by their mothers (Strong 1929:173). After the ceremony girls were considered to be eligible for marriage (Bean 1972:143).

The Cahuilla sing two different types of songs, Bird Songs and *Wexily* Songs. Bird Songs are sung at festive times of the year and are not associated with any specific ritual, but are occasionally performed at ritual gatherings. Men perform the songs, some as leaders, others as followers, with other men and women also participating by singing and dancing. Rattles are used to keep a measured beat. The song cycle describes “various facets of environmental conditions and historic reactions to them by anthropomorphized birds” (Bean 1972:149). Large amounts of food are prepared for Bird Dances, and social roles were relaxed which permitted behaviors that at other times was considered to be impolite. Bean (1972:149) suggests that these song cycles

are associated with learning and socialization among tribal members because they provide lessons about how to behave properly and the consequences for misbehaving.

The *Wexily* Songs were sung as a subsidiary event to puberty rituals and the *nukil*. These “songs were acts of denigration against other specified lineages... were sung in an attempt to ward off impending disaster, to avert its impact to another group” (Bean 1972:150). The songs also functioned to sanction behaviors, and emphasize envious comparisons with other groups. Usually the lineage that is being sung about was located geographically far away, and inter-marriage with this group did not occur. These songs were often performed when multiple lineages were present, and contests were held to see which group could sing more songs about the other lineage. Bean (1972:15-151) suggests that one of the functions of these songs was to allow for animosities to be made public and allowed for the release of these anxieties in a manner in which no physical violence occurred. Both Bird Songs and *Wexily* Songs are a significant form of communication between group members in the development and continuance of Cahuilla culture.

The Cahuilla are a unique cultural group. But, as will be shown below, there were several similarities between the Cahuilla and Serrano.

Serrano

In addition to being organized on the basis of exogamous moieties, localized clans also served as an aspect of tribal organization for the Serrano. Not every localized clan belonged to one moiety, but most of them did. Those that were a single moiety were “exogamous as a member of one of the moieties, patrilinear in descent, and possessed its hereditary chief (*kika*) and hereditary ceremonial assistant (*paha*)” (Gifford 1918:179). The position of the *kika* was inherited from one’s father, but if there was no male heir a woman could take on the role. The role of the *paha* was primarily to assist the chief with ceremonial activities, and he was responsible for all of the ceremonial paraphernalia. This paraphernalia included the sacred bundle, *muurtc*, a mat of cactus or tule fibers within which would include a string of sacred eagle feathers (the most sacred object of the clan), bands of flicker and woodpecker feathers adorned by dancers, and rattles, head plumes, wands and strings of shell money for use in ceremonial activities. When not in use, the sacred bundle was hid in a nearby cave or somewhere within the ceremonial house of the clan (McAdams 1958:5; Strong 1929:20-21). Other responsibilities included notifying people of a ceremony, talking with guests, attending to anything the chief assigned, and singing the myths of the creation, origin and wanderings of the clan (Gifford 1918:181-182). In addition to the *paha*, a *teaka* also had an important role in ceremonies. This was an inherited position, and the *teaka* was charged with leading and signing during ceremonies, and also shared some of the responsibilities with the *paha* (McAdams 1958:3; Strong 1929:18). Another position within Serrano tribal organization was that of the medicine person, or *huremite*. This person was understood to be psychologically predisposed to being a medicine person, and they acquired their power through dreaming; dreaming at night, during the day via visions, or from drinking *Datura*. The primary duties of the medicine people were curing,

healing through sucking out the disease, and administering herbs (Bean and Smith 1978:573; Strong 1929:35).

It is understood that the creator *Pakrokiat* assigned totems to each moiety. The coyote moiety has as its totems the buzzard (*widukut*) a relative of coyote, the wolf (*wanats*) who is coyote's brother, and the coyote (*wahil*) for whom the moiety is named. The wildcat moiety has as its totems crow (*gatcawa*) a relative of wildcat, mountain lion (*tukuteu*) who is wildcat's brother, and the wildcat (*tukut*). It is understood that the totems were initially men and at some point became animals, and this understanding is applicable to all animals. It does not appear as though there was a taboo against killing totems among the Serrano (Gifford 1918:178).

Like their Cahuilla neighbors, the Serrano subsisted primarily on those items they hunted and gathered. Division of labor with respect to subsistence among the Serrano entailed the women conducting most of the gathering, and the men hunting and fishing. Wild foods taken were almost identical to those used by the Cahuilla; acorns, pinyon nuts, mesquite, yucca roots, cactus fruits and various other roots, bulbs, shoots, and seeds. The most common animals taken were deer, mountain sheep, antelope, rabbits and other small rodents, and various birds. Bows and arrows were used for larger game, and throwing sticks, traps, snares, and deadfalls were used for smaller animals (Bean and Smith 1978:571).

The Serrano conducted many of the same ceremonies as the neighboring Cahuilla, albeit by somewhat different methods. Like the Cahuilla, the Serrano held a ceremony after the birth of a child in which the mother and baby were placed in a heated pit. They remained in the pit for four days or until the baby's umbilical cord fell off. A feast was held by the paternal grandparents the day after the birth, where gifts were given to the guests and a cradle board was constructed for the infant (Strong 1929:30). The Serrano did conduct a naming ceremony for children, but it was not a separate ceremony as it was with the Cahuilla, but rather occurred during their annual mourning ceremony. The name for the annual ceremony among the Serrano is uncertain, but it was distinct from the funeral ceremony which occurred immediately following death and cremation⁶ of the individual (Strong 1929:32). The first three days of the ceremony were spent preparing food and ceremonial paraphernalia for use later in the week. On the third night the sacred bundle is brought into the ceremonial house and is presented to all present clans, and Strong (1929:33) suggests that this is the most important night for the host clan. The naming ceremony occurs on the fourth night for all those born in the last year, parents distribute gifts, singing and dancing occurs, and the *paha* carries the baby while the *net* bestows a name upon the child. The eagle killing ceremony takes place on the next night, and few details are available (Strong 1929:34) but it is likely that the ceremony is similar to the one performed by the Cahuilla. Like the Cahuilla, images are made of the deceased and on the last night of the ceremony the effigies are danced with and then burned (Strong 1929:34).

⁶ In historic times the Serrano buried their dead (Strong 1929:32)

La Cuna de Atzlan

La Cuna de Atzlan has been introduced earlier in this document. In this section a synopsis of the La Cuna de Atzlan world view and related sacred sites will be described.

In general La Cuna de Atzlan suggests an iteration of migration theory that suggests that an area, vertically and horizontally, centering about the Granite Mountains (directly north of the project area) is a center of an ancestral land that was abandoned thousands of years ago. The people migrated south to eventually form the great Azteca/Mixteca nation. La Cuna de Atzlan interprets the codices, and related stories produced in central Mexico that commemorate the history of the Aztec, to suggest that the codices refer back to the homeland or “Island of Atzlan.” The interpretations rely on aligning iconic codex images with local Native American oral history, related sites, places and areas, landforms (such as the various mountains), mountain shadows viewed at particular times of the day and seasons, and solar and other astronomical and cosmological signs and movements (Figueroa 2011:7-31).

La Cuna de Atzlan asserts that the Chuckwalla Valley rests in the southwest quadrant of the homeland, and claims that solar projects, including the Palen project, are impacting this homeland. Specifically, the advocacy group suggests that the PSEGS is placed in a visual and spiritual trajectory between the Ripley intaglios (located several miles south of Blythe and adjacent to and on the east side of the Colorado River), the petroglyphs at Dragon Wash and a ‘v’ notch of two Eagle Mountain peaks where the sun sets during the summer solstice. Various other assertions suggest that several large boulders near Corn Springs are mythological giants that hold up the space between the earth and the sky and that the thirteen rock cairns along the trail at the western end of the Chuckwalla Valley are depicted on the famous Aztec Calendar (despite the rock cairns now being numbered at 19). These assertions tend to be contradictory of archaeological migratory theories and duplicate or divert from Native American interpretations of the same sites, places and areas on a case-by-case basis. In summary, to quote from the Preface to Alfredo Figueroa’s recently revised book, Boma Johnson, a long term and now retired BLM archaeologist who has extensively studied the Lower Colorado River area, says: “I see many difficulties in his reasoning and lines of evidence, yet I see enough good evidence to intrigue me.” (Figueroa 2011:viii).

Places Analysis

Places and landforms can be part of a cultural system. For example, Native Americans often consider mountain peaks, rivers, springs, and seeps to be important or sacred places. The following list of places includes those areas which are understood to have potential cultural significance for tribes in the vicinity of the PSEGS project area and therefore should be evaluated as possible ethnographic resources. These places have been derived from topographical maps of the region, as well as from published sources (i.e., Bean et al. 1978, Kroeber 1976, and Laird 1976). They are discussed geographically beginning with the Palen Dunes/ Palen Lake ACEC and moving in a

clockwise direction around the PSEGS ethnographic PAA. **Figure 4** provides a map with the places depicted in a geographic context.

Palen Dunes/Palen Lake

The Palen Dunes/Palen Lake area is a BLM designated Area of Critical Environmental Concern for the sensitive cultural resources located in the boundaries of the ACEC. The Palen Dunes/Palen Lake area is a resource identified by staff. It is located in the PSEGS ethnographic PAA about 3.5 miles north of the proposed project area. This potential ethnographic resource includes the 3,632 acre Palen ACEC, which also includes some of the dunes on the alluvial terrace of the Palen Mountains and the dry lake bed of Palen Lake, as well as an additional approximately 500 acres of dunes north, west, and southwest of the ACEC. The key components of this area are the ancient Indian archaeological sites located in the dunes and on the margins of the dry lake bed, and the resources that were available to groups when water was present in the lake bed.

As mentioned previously, Palen Lake was an area that held ephemeral sources of water after significant rainfall events. This habitat provided a place for ancient Indian people to periodically obtain water and food resources, and evidence of their occupation of this lake habitat is indicated by several archaeological sites which have been documented along the shoreline of the lake, especially in the dunes (Ritter 1981). A geoarchaeological analysis by Nials (2013) suggests that Palen Lake does not exhibit the geologic characteristics that would indicate groups could have established anything more than temporary encampments because the lake only maintained ephemeral water sources.

The archaeological sites identified in the dune areas and along the margins of the lake identified in the Palen Dunes ACEC documentation (Ritter 1981) corroborate the suggestion that use of the lake and dune area was likely on a temporary basis. Artifacts identified include hearth features indicated by clusters of burnt (fire-affected) river cobbles, materials for making and maintaining stone tools, pottery sherds, a tortoise shell pendant, animal bones, and implements for grinding food (i.e., manos and metates)(Ritter 1981). The indications for short-term occupation of the area are suggested by the paucity of cultural remains and the sparse density of the artifacts (Ritter 1981:7). The activities which occurred likely included: gathering and processing mesquite and Palo Verde beans; gathering and processing grasses and other hard seed plants; hunting of rabbit, tortoise, and mountain sheep; cooking and consuming plant food resources and water; stone tool maintenance; and short-term camping (Ritter 1981:7-8).

In addition to those sites identified by Ritter (1981), at least 16 other archaeological sites have been identified in the area. Most of these sites occur to the west and southwest of the dry lake bed, and several are clustered around mesquite dunes. These sites primarily represent campsites and consist of lithic debitage, ground stone tools, ceramics, burned and unburned bone, fire-affected rocks, and hearths. Several of these types of sites were identified by staff during field visits to the area.

There are reports of ancient Indian era cremations at these sites as well. Site CA-Riv-201 (Rogers' designation C-82A, Koloseike Area A) was initially recorded by Malcolm Rogers at some point in the early 20th century as a large village site with a cremation area, ceramics, milling equipment, and many small projectile points (Singer 1984:45). Rogers' notes and site records were obtained from the Museum of Man, but there is no mention of cremations. However, Alan Koloseike re-examined the site in the early 1960s and did indicate the presence of a cremation (UCLA 2013). Another cremation was reported at CA-Riv-660 by Chester King in 1964, but Wilke (1973) suggests that the cremation may have been mistaken for what he identified as tortoise bone and shell fragments.

Little chronological information about these sites is available. Pottery was identified at multiple sites. Some of the pottery sherds were identified as Tizon brownware, another, a sherd of the Parker series. These artifacts suggest a date of A.D. 1000 to post 1500 (Waters 1980:1). Additionally, a projectile point collected during the Ritter (1981) survey was identified as a Rose Spring point. These projectile points date to about A.D. 200 to 1100 (Sutton et al. 2007: 236, table 15.4). There is an indication that some of the lithic flaking technology present at CA-Riv-697 may represent that of Paleo-Indians (12,000 to 8,000 years ago) (Davis and Taylor 1978), but this has not yet been confirmed. However, a projectile point identified as a Clovis point was found about 15 miles east of Riv-697 (Rondeau 2012), suggesting that Paleo-Indians were present in the Chuckwalla Valley. While the archaeological evidence suggests that this area was occupied during Late Prehistoric times, dune areas are not always reliable indicators of all of the artifacts at a site. Sand dunes frequently shift from aeolian processes, and can easily obscure and/or uncover artifacts.

Dune areas in the southern California deserts provide habitat for several plant and animal species which are especially important for Native American groups. The Palen Dunes area provides low to moderate potential for desert tortoise habitat (PSPP FSA 2010:C.2-1 – C.2-2), an animal species that has significance for all of the tribes of concern. Dunes are also habitat for other plant and animal species which are significant to Native American groups.

Places that have been occupied by the descendants of contemporary Native American peoples are considered culturally important. Regardless of the duration of occupation at the Palen Dunes and Lake, descendants of contemporary Native Americans were present here, and their presence indicates a culturally sensitive location for contemporary Native Americans. In the Bean et al. (1978:7-7) study, researchers found that Palen Lake was an area of concern for tribal groups. Moreover, Russell et al.'s (2002:49) study of the Imperial Sand Dunes indicated that members of the CRIT regard dune areas as important because in the past dunes were used to bury the dead, and "in Numic culture, starting around the Salton Sea, Twentynine Palms area, there is a belief that powerful little medicine people make the sand dunes their habitat. It also houses water babies, who are also powerful." While these concerns have yet to be expressed by any tribes with regard to the Palen Dunes, it is reasonable to assume that similar concerns about the Palen Dunes area are held by tribes. Interviews with Mohave

members in the Russell et al. (2002) study concerning the Imperial Sand Dunes indicated that dunes are important because they “sing”. The “singing sands” are a well-known phenomenon that occurs when wind-blown grains of sand rub together making an audible noise. The Mohave indicated that references to singing dunes are mentioned in Mohave history and songs (Russell et al. 2002:56). Interviews with Cahuilla tribal members suggest that they regard dune areas as mysterious. The mysterious quality of dunes comes from the fact that the wind is constantly changing the dunes, and the role of wind in the larger landscape connecting mountains and valleys (Russell et al. 2002:64).

Ford Dry Lake

Ford Dry Lake is located about nine miles east of the PSEGS project area, in the Chuckwalla Valley south-southeast of the Palen Mountains and south-southwest of the McCoy Mountains. Ford Dry Lake is similar to Palen Lake because these are both locations that contained water in the past; however, there are no extensive dunes which surround Ford Dry Lake. Geoarchaeology fieldwork conducted for the PSEGS project concluded that from the Late Pleistocene/Early Holocene, Ford Dry Lake (and Palen Lake) were only ephemerally present (Nials 2013:21). Like the sites represented around Palen Lake, the archaeological sites that surround Ford Dry Lake suggest occasional, short-term plant and animal gathering and processing camps, or overnight camps by groups moving through the Chuckwalla Valley. Although there are a larger number of sites recorded around Ford Dry Lake than there are around Palen Lake, this does not necessarily mean Ford Dry Lake was more densely occupied. A larger frequency of recorded sites could also be explained as a product of survey sampling bias.

Artifact assemblages at the sites around Ford Dry Lake typically include lithics and lithic debitage (which includes the materials for making stone tools, waste products from making stone tools, and stone tools themselves), groundstone tools (for processing plant foods), fire-affected and fire-cracked rock (indicating hearths used for processing resources), and ceramics. Several of these sites contain diagnostic artifacts, i.e., artifacts that can be assigned to a specific time period based on a chronology developed for the region. Table 6 indicates those sites which have diagnostic artifacts, what those artifacts are, and the time period (or periods) that the site may represent.

Ongoing research related to the Genesis Solar Project at Ford Dry Lake may provide additional archaeological information related to the Ford Dry Lake area.

Table 3 Archaeological Sites with Diagnostic Artifacts In the vicinity of Ford Dry Lake

Site Number	Diagnostic Artifacts	Time Period
CA-Riv-0663 (P-33-0663)	Parker Buff & Tizon brownware; Corner-notched projectile point	A.D. 1000 to post 1500
P-33-01818	Tumco Buff	A.D. 1000 to 1500
P-33-02157	Tizon brownware	A.D. 1000 to post 1500
P-33-03801	Parker Buff	A.D. 1000 to post 1500
P-33-03808	Tumco red-on-buff	A.D. 1000 to 1500
P-33-03809	Tumco Buff	A.D. 1000 to 1500
CA-Riv-06170 (P-33-08655)	Rose Spring projectile point	A.D. 200 to 1100
CA-Riv-09067 (P-33-017451)	Desert side-notched projectile point	A.D. 1100 to Contact
CA-Riv-09072 (P-33-017456)	Rose Spring projectile point	A.D. 200 to 1100
CA-Riv-09084 (P-33-017468)	Olivella shell bead	A.D. 1100 to Contact
CA-Riv-09220 (P-33-017789)	Cottonwood leaf-shaped projectile point	A.D. 1100 to Contact
P-33-01131	Tizon brownware	A.D. 1000 to post 1500
CA-Riv-09224 (P-33-017793)	Desert side-notched projectile point	A.D. 1100 to Contact

Like the occupation sites at Palen Lake, these are culturally important resources for Native Americans. Bean et al. (1978:7-7) also found that Ford Dry Lake was an area of concern for tribal groups. Ongoing consultations regarding discoveries related to Genesis solar projects attest to tribal importance related to archaeological resources.

McCoy Spring (CA-Riv-0132)

McCoy Spring is located approximately 15 miles east of the project area at the western base of the McCoy Mountains. The proposed PSEGS would be in the line of sight of this NRHP-listed district, which encompasses over 30 acres.

One of the most notable features at McCoy Spring is the extensive petroglyphs, one of the largest concentrations in the Colorado Desert. There are over 700 boulders with at

least 1,000 individual petroglyph elements, including abstract designs, geometric designs, and anthropomorphic digitate figures (McCarthy 1986, Reed 1981:2). Design elements representative of the Great Basin Engraved variant are present at the spring, which includes curvilinear forms (the most prevalent), plain circles, circles with central dots, circles with connecting bars, assemblages of circular elements, sets of concentric U or V-shaped forms, curvilinear meanders, wavy lines, dot patterns, grids, cross-hatching, and maze-like patterns (Reed 1981:8). At least 12 digitate anthropomorphic human figures are located at McCoy Spring (Reed 1981:3). The petroglyphs at McCoy Spring exhibit varying degrees of re-patination, indicating that these petroglyphs range in age over several thousands of years. That is, rocks exhibiting more patina are older, relatively, than rocks with no or less patina because it takes many years for patina to accumulate. Absolute dating of petroglyphs is still in the experimental phases (e.g., Dorn et al. 1992; Lyttle et al. 2008) and no dating of the petroglyphs at McCoy Spring has taken place thus far. Therefore, the variation of patina on the petroglyphs suggests that the site was occupied over a long period of time, and it continues to be a site of importance for Native Americans into the Late Prehistoric Period and up to the present.

In addition to petroglyphs, archaeological features located at the spring include midden deposits with associated ceramics, groundstone tools used for grinding food, and flaked stone tools and debitage.

It should be noted that numerous trails from the north, west, and south lead to McCoy Spring, and from here, radiate out to other culturally important locations such as Corn Spring. The trail network connected these culturally important places in both a real and metaphysical sense. Along those trails in close proximity to McCoy Spring are cleared circles. Cleared circles have been interpreted to have several different functions (see Apple 2005; Bullard et al. 2008), both secular and sacred. This archaeological evidence indicates that McCoy Spring was occupied on a relatively frequent basis, likely by groups travelling through the Chuckwalla Valley.

Springs are especially important features for Native American groups. They provided places for groups to rest and replenish, and their importance to ancient Indians is indicated by the vast number of petroglyphs often found at important springs. Rock art and trails, both of which are prevalent at McCoy Spring, are areas of concern for Native Americans when they have to potential to be impacted, directly or indirectly (i.e., impacted visually) (Bean et al. 1978:6-14 - 6-15, 6-24 – 6-27, 6-39 – 6-40, 6-52, 6-53 – 6-55). Additionally, as noted in the rock art section above, it is generally accepted that rock art are loci of religious activity and are understood to represent the activity of medicine people. Because of the religious connection Native Americans have with rock art, rock art sites are important resources for contemporary Native American groups.

Chuckwalla Spring (CA-Riv-0262)

Chuckwalla Spring is located in the southeastern portion of the Chuckwalla Mountains, about 13 miles south of the PSEGS project area. The boundaries of the site are situated such that portions are on the north face of the mountains, and therefore the PSEGS solar power towers would likely be visible from here. The most recent site form for this

site is from 1978, and consequently little contextual information is available about the site from these early, brief descriptions.

There are indications that Chuckwalla Spring was occupied as a village site, likely on a non-permanent basis, but most likely when the Colorado River seasonally overflowed its banks and groups retreated onto the mesa until the floods subsided (Bee 1963: 209, Castetter and Bell 1951: 70). Site forms suggest a high likelihood for petroglyphs at the site, in addition to trails, ceramics, lithics, and hearths extant at Chuckwalla Spring. This spring's location at the southern end of the Chuckwalla Valley suggests that it was useful for those travelling through the Chuckwalla Valley to the north, but also for those taking the route south of the Chuckwalla Mountains, what historically were portions of the Bradshaw Trail.

Corn Spring (CA-Riv-032)

This National Register listed site is a spring located in the Chuckwalla Mountains, about 6.75 miles southwest of the PSEGS project area. The PSEGS solar power towers would not be in the direct line of sight of Corn Spring, but this is one of the most important resources for Native Americans in the Chuckwalla Valley. Moreover, there are several ancillary components to the Corn Springs site, including trails, cleared circles, and other trail features just outside of the canyon that are in the direct line of sight of the project. As such, staff considers this place to be a possible ethnographic resource that should be evaluated for project impacts.

The most prominent feature of Corn Spring are the over 600 petroglyphs on 32 separate panels in 11 different concentrations located on rock outcrops surrounding the spring. Like most of the other petroglyphs in the area, these have been classified as the Great Basin Engraved variant, with the curvilinear style predominating. Design elements that have been identified include circles, assemblages of circular elements, curvy lines, U-shaped or semi-circular forms, dot patterns, cross-hatching, possible rain fringe, crosses, and circles with connecting bars. The petroglyphs exhibit varying degrees of re-patination, indicating a relatively long history of use and knowledge of the area by Native Americans. Like those petroglyphs at Mule Tank, Whitely (1996:109) suggests that the petroglyphs at Corn Spring represent the vision quests of medicine people or initiates.

Corn Spring was one of the most reliable sources of water within 20 miles of the spring (Fenenga 1981:13), and the archaeological evidence supports that this area was regularly occupied over several thousand years. In addition to water, food in the form of mesquite beans and edible seeds was easily obtained at the spring, and as mentioned previously, miners in the early 20th century indicated that corn grew up around the spring, no doubt having been planted by Native Americans years before (Gunther 1984:136). The spring not only attracted people, but animals as well, and groups set up hunting blinds along known animal trails into the spring. Other archaeological elements at the spring include trail segments, ceramic scatters, cleared circles, lithic debitage, bedrock mortars, and milling slicks.

As mentioned, rock art sites are especially important resources for Native Americans because of the religious connotations associated with medicine people and vision questing.

North Chuckwalla Petroglyph District (CA-Riv-01383)

The North Chuckwalla Petroglyph District is located in the northeastern portion of the Chuckwalla Mountains, about 4.5 miles west of the PSEGS project area, and about 5 miles east of the Alligator Rock geologic feature. Although the site was not officially recorded until 1979, the proximity of the site to a widely travelled corridor (i.e., the PTNCL and the U.S. 60/I-10) suggests that it was probably well known before it was formally recorded. The PSEGS solar power towers would be located in the direct viewshed of this NRHP-listed petroglyph district.

This site consists of 158 panels of petroglyphs in five loci, and the stylistic elements are similar to those at Corn Spring (Hedges 1980:15). On the 158 panels, there are 92 identifiable design elements, which include curvilinear designs, rectilinear designs, representational elements and various combinations of these designs (Hedges 1980:13). There are also several glyphs which are not discernible elements, but rather seemingly random peckings, a feature unique to this site. Interestingly, on one of the boulders on which petroglyphs are pecked (Locus B) it was noted that a metallic ringing sound occurred when struck with a rock (Hedges 1980:26). The general orientation of the petroglyphs is to the southwest; almost all north and east facing surfaces are bare of petroglyphs. Hedges (1980:21) suggested that this may be related to the orientation of the wash which comes out of the mountains in a northeast direction, but there is no evidence to suggest any obvious connection to a celestial body.

The petroglyphs at the North Chuckwalla Petroglyph district, like those from Corn Spring, Mule Tank, and McCoy Spring, likely represent the work of medicine people or initiates. The petroglyphs at this site exhibit varying degrees of re-patination; some glyphs appear relatively new or recently re-pecked, while others appear older with significant patina over the glyph.

Other elements present at the North Chuckwalla Petroglyph District include rock rings, trails, flaked stone debitage, bedrock milling features and groundstone artifacts, temporary camps, ceramics, and cleared circles. One of the Native American observers (Chemehuevi) during the Devers-Palo Verde transmission line survey suggested that one of the particularly large cleared circles was a crying or mourning circle, and likely was associated with Chemehuevi travel songs (Westec 1980:192).

As mentioned, rock art sites are especially important resources for Native Americans because of the religious connotations associated with medicine people and vision questing. The significance of this site to Native Americans is further emphasized by the presence of the crying or mourning circle that was identified.

North Chuckwalla Mountain Quarry District (CA-Riv-01814)

The North Chuckwalla Mountain Quarry District is located in the Alligator Rock ACEC, about 2 miles east of the Alligator Rock feature. The district encompasses about 480 acres⁷ centered on an igneous rock feature which was the source of most of the quarrying material. The site was first recorded by the cultural resources survey for the Devers-Palo Verde Transmission line in 1979/1980, and nominated to the NRHP the following year. The site is especially important for understanding ancient Indian lithic tool procurement and manufacture. One material in particular, aplite a fine-grained felsic rock, is found throughout the quarry site, and was especially desirable for its fracturing qualities (Eckhardt et al. 2006:5). Evidence for an emphasis on the block-on-block manufacturing technique for the creation of large flakes and blades and the production of large flake and core tools has been documented, and a dearth of smaller waste flakes suggests that the final stages of tool manufacture were likely conducted elsewhere (Gallegos 1981:4).

The site is composed of at least 79 discrete loci of lithic tool reduction, many of which also have additional archaeological elements (e.g., rock rings, hearth features). Lithic materials do not lend themselves to absolute dating techniques, and therefore only relative chronology can be developed using lithic artifacts. Such dating techniques focus on the degree of desert varnish, the degree of patination, weathering, and the depth of rock migration into the surface. Other archaeological artifacts and features present include fire-affected rock, charred animal bones, rock rings, cleared circles, a rock shelter, trails, and ceramics. Ceramics are a useful indicator of chronology, and it is known that ceramics were introduced to the area ca. A.D. 1000, and therefore, it can be suggested that the site dates to at least as early as this time period. However, a San Dieguito II tool was located at the site which suggests a date ca. 6000 B.C. Additionally, a high degree of patina and desert varnish has been noted on several artifacts suggesting an early component to this district (Gallegos 1981:6).

Rock outcroppings, rock features and trails, all of which are present at the North Chuckwalla Petroglyph District, are significant to contemporary Native American groups because they are understood to represent a physical link to the past (Bean et al. 1978:5-54, 6-14, 6-24). The prominent position of the quarry district to the PTNCL has led some to suggest that the quarry likely was used as a landmark and during the ancient Indian period likely would have had a place name for those who travelled along the trail (Gallegos 1981:8).

Long Tank

Long Tank is located in the Alligator Rock ACEC, on northern slope of Chuckwalla Mountains, about 10 miles west of the PSEGS project area. The tanks are in close proximity to the Alligator Rock geologic feature, situated less than 2 miles southeast. This location contains granite tanks which are known to hold water and likely was a spot

⁷ Although a subsequent survey of the surrounding 810 acres found that there are numerous smaller workshops associated with the major quarry loci (Carrico et al. 1982)

to stop for water along the PTNCL. Little archival information was available about this location in those sources examined thus far, and no archaeological site record exists. However, the site is known as a location along the trail network as a place where water was accessible.

Alligator Rock

Alligator Rock is a very large rock outcrop immediately north of the Chuckwalla Mountains, about 9.75 miles west of the PSEGS project area. The rock is named for its shape, as its rugged nature resembles the ridges on the back of an alligator. Alligator Rock is within a much larger designated ACEC area, and from the rock itself the PSEGS project would be visible.

Members of the La Cuna de Atzlan organization suggest that Alligator Rock has spiritual significance (Figueroa 2013b:3). The adjacent Chuckwalla Mountains were likely named for the desert reptile, the large Chuckwalla lizard (Gunther 1984:115), and it is understood by these members that Alligator Rock is a part of these “Lizard Mountains”, and represents the lizard. The understood continuity between these geologic formations is likely why a reptile was used to describe this feature. In discussions with tribal informants it was noted that at least the Quechan language has a word for alligator, ‘cai man,’ that was obtained from Quechan who encountered alligators while travelling further south in the central Mexico area.

Several archaeological sites are located in the immediate vicinity of Alligator Rock. Two National Register of Historic Places listed districts, the North Chuckwalla Petroglyph District and the North Chuckwalla Prehistoric Quarries District, are located in the Alligator Rock ACEC and are discussed in more detail in respective sections above. However, there are additional sites not located in these districts that are located primarily adjacent and to the west of the Alligator Rock formation. Archaeological artifacts and features at these sites include rock rings, lithic debitage and hammerstones, rock shelters, milling tools and bedrock mortars, petroglyph panels, and trails.

These archaeological sites likely represent temporary campsites for groups processing plant and lithic materials, or as overnight stops for groups travelling along the PTNCL (Swenson 1984:10). These archaeological resources are important to contemporary Native Americans, primarily because it is evidence of their ancestors. As mentioned, some archaeological artifacts and features, especially petroglyphs and rock rings, often have more ceremonial or religious significance for tribes than sites that are more utilitarian in nature.

Dragon Wash (CA-Riv-049)

Dragon Wash is a petroglyph site located in the southeastern Eagle Mountains, about 15 miles west of the PSEGS project and in the direct view-shed of the project. Located partially within the boundaries of Joshua Tree National Park, this petroglyph site has two loci of petroglyphs encompassing about 0.6 acres in total on 6 or 7 boulders. At

least 29 distinctive design elements were noted on these panels, with only moderate vandalism noted from surveyors. A trail feature was noted in 1948, but an update to the site in 1975 did not relocate the trail; however, a close look at Google Earth of the desert pavement just east of the wash does appear to show likely ancient Indian trails leading into the wash. Bedrock mortars were identified nearby in 1948, but also were not relocated in the 1975 update to the site. However, while conducting research at the Eastern Information Center at the University of California Riverside, staff noticed that CA-RIV-7317 recorded in 2003 located just south and slightly east of the wash, is a bedrock mortar location and is likely the same identified by earlier surveyors.

It is suggested by members of La Cuna de Atzlan (Figueroa 2013a) that the petroglyphs at Dragon Wash are in line with the Ripley Intaglios, about 60 miles east of the wash. Evidence of this connection is cited by La Cuna de Atzlan, who understand that the “hummingbird” petroglyph at Dragon Wash is also represented by a “hummingbird” earth figure at the Ripley Intaglio site. Another earth figure with a circle and four lines extending out is said to also be in line with Dragon Wash. Some tribal informants do not agree with the interpretation that suggests that one of the Dragon Wash petroglyphs represents a hummingbird.

Without diagnostic artifacts it is difficult to ascribe a time period to the Dragon Wash petroglyphs. A lack of other archaeological evidence does not necessarily suggest that this area was not frequently used by Native American groups, particularly because the alluvial nature of the wash likely has covered or transported any surface artifacts. The site is located in close proximity to the Chuckwalla Valley trail corridor, and likely played a role in the rituals of medicine people. The site is positioned in such a way that if one were to look east they would have a direct line of sight of the Lower Colorado River valley. Tribal informants suggest that line of sight also links Dragon Wash petroglyphs to Palen Pass and through a directionally oriented rock ring at the base of the Coxcomb Mountains.

San Pascual Well

The San Pascual Well was located during the Romero-Estudio expedition in 1823-1824 while attempting to establish a route for Euro-Americans to cross the Colorado Desert and more efficiently connect the Los Angeles area to the Tucson region. The well is approximately 5 miles northwest from the PSEGS project area. The expedition named the well San Pascual, and Estudio’s entry in his diary states “we found signs of basket-making by the Indian women on several occasions, bones of horses and pieces of ollas” (Bean and Mason 1962:41). Bean and Mason (1962:41, footnote 22) suggest that this well was in the Desert Center area based on the landmarks provided in the diary, and the fact that the expedition was likely headed for Palen Pass. A General Land Office (GLO) map from 1856 identifies “a well 45 feet deep of fair water in this quarter section” (Brown 1856).

TRADITIONAL CULTURAL PLACES ELIGIBILITY EVALUATION

Palen Dunes/Palen Lake

Theme

The Palen Dunes/Palen Lake is a TCP located on the floor of the Chuckwalla Valley, west of the Palen Mountains and southeast of the Coxcomb Mountains, the closest portion of which is less than one mile northeast of the PSEGS project area. This is a place that was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. This place was occupied by groups temporarily as a stop along the trail, but also for more extended periods of time, most likely for logistical forays into the area for locally procured resources, such as mesquite and palo verde beans, salt brush, grasses and other hard seed plants, desert tortoise, and rabbits (Ritter 1981:7-8). There are reports of cremations at some of the recorded sites in the TCP. Site CA-Riv-201 (Rogers' designation C-82A, Koloseike Area A) was initially recorded by Malcolm Rogers at some point in the early 20th century as a large village site with a cremation area, ceramics, milling equipment, and many small projectile points (Singer 1984:45). Rogers' notes and site records were obtained from the Museum of Man, but there is no mention of cremations. However, Alan Koloseike re-examined the site in the early 1960s and did indicate the presence of a cremation (UCLA 2013). Another cremation was reported at CA-Riv-660 by Chester King in 1964, but Wilke (1973) suggests that the cremation may have been mistaken for what he identified as tortoise bone and shell fragments.

Since the Late Pleistocene, Palen Lake has only been ephemerally filled, and most of the water seeps into the sand dunes which surround the lake (Nials 2013:13), creating a habitat in which plant species that require more water than the typical creosote-scrub brush which is present at throughout the valley. These unique plants and the animals drawn to them, served as an important resource to prehistoric Native Americans, and the vast amount of extant artifacts throughout the TCP, especially in the blowout areas on the playa surface, continue to be culturally significant resources for contemporary Native Americans who continue to frequent this area. The presence of potential cremation sites is especially significant to contemporary Native American groups, and the protection of these resources is of the utmost importance to them. Visiting these resources helps to contribute to Native Americans' sense of cultural identity because it helps them to better understand the lifeways of their ancestors, and the artifacts serve as a direct link to their past. The Palen Dunes/Palen Lake TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

There are several contributing elements to the Palen Dunes/Palen Lake TCP. These are identified in the table below.

Cultural Resources Table 4
Contributing Elements of the Palen Dunes/Palen Lake TCP

Element	Value(s)	Location	Additional information
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Ephemeral lake and blowout areas on the playa surface	The water, supports wetland-like plant and animal life, sustained human travelers	Throughout the TCP area	
Trails	Serves as connection between places of importance; provides means by which contemporary Native Americans can identify currently unknown important places	Many trails from all directions pass through portions of the TCP	
Cremations	Burials and cremations are understood to be of the upmost sacredness for the descendants of those whose remains are identified	Riv-201 and at sites the currently designated ACEC	There is not definitive evidence as to whether the bone is human
Archaeological artifacts and features (i.e., lithics, hearths, ceramics, groundstone and milling slicks)	Evidence of Native American lifeways	Throughout Palen Dunes/Palen Lake TCP	

Period of Significance

The period of significance for the Palen Dunes/Palen Lake TCP spans from Time Immemorial, the beginning of Creation, up to 1936 when US Route 60-70 between Indio and Blythe became a paved highway.

Boundaries

The boundaries of the Palen Dunes/Palen Lake TCP are not precisely defined because the entire vicinity of the dunes and lake area and all of the contributing elements have not been inventoried. Based on the currently available information, staff considers the boundaries of the Palen Dunes/Palen Lake TCP to include the dry lake, and the surrounding dunes and mesquite hummocks, encompassing the approximately 16

recorded sites in the vicinity of the dunes and lake, as well as several of the trail features which head towards and pass through the TCP.

Eligibility Criteria

The Palen Dunes/Palen Lake TCP is eligible under Criteria 1 at the regional and local level for its broad contributions to the unique historic events that shape Native American understanding of their ancestor's lifeways and burial practices, and the deep oral tradition that is understood to be related to their ancestors. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples lived, worked and possibly cremated deceased family members, and ecologically represents a unique wetland environment in this xeric landscape. On a regional level, the Palen Dunes/Palen Lake TCP contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network evidenced by the large number of temporary camps and associated resource processing artifacts which have been identified, as well as the importance of the area into the Proto-historic and Historic periods.

Criteria 4 is applicable to this TCP for the potential of this place to contribute to our understanding of the prehistory of the PRGTL in southeastern California and the prehistory of lifeways, trade, and movement in the Chuckwalla Valley.

Integrity

The integrity of the Palen Dunes/Palen Lake TCP has been visually and physically compromised by the establishment of a BLM road through the northern portion of the TCP and along the eastern margin of the area, refuse from historic and modern vehicle traffic through the region, looting and vandalism of some of the archaeological sites, natural environmental dune processes that affect the provenience of artifacts, refuse, tank tracks, and other military features associated with General George S. Patton's World War II Desert Training Center (DTC), historic and modern mining to the east in the Eagle Mountains and west in the Palen Mountains, the town of Desert Center, State Route 177, the I-10 corridor and the large transmission lines that parallel the freeway, as well as the recently constructed Red Bluff Substation and the Desert Sunlight Solar Farm. However, despite these intrusions the Palen Dunes/Palen Lake TCP is still relatively pristine and conveys the feeling of a repeated-use area in an ephemeral wetland environment amid an arid landscape, thus maintaining integrity of Association, Feeling, Setting, and Location.

Ford Dry Lake

Theme

The Ford Dry Lake is a TCP located on the floor of the Chuckwalla Valley, south-southeast of the Palen Mountains and southwest of the McCoy Mountains, about nine miles east of the PSEGS project area. This is a place that was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. This place

was occupied by groups temporarily as a stop along the trail, but also for more extended periods of time, most likely for logistical forays into the area for locally procured resources. Since the Early Holocene, Ford Dry Lake has only been ephemerally present (Nials 2013:13), but as indicated by the many temporary camps and resource processing areas in the vicinity of Ford Dry Lake, this area served as an important resource to prehistoric Native Americans. The vast amount of extant artifacts throughout the TCP, especially in the blowout areas on the playa surface, continues to be culturally significant resources for contemporary Native Americans who continue to frequent this area. Some Native Americans regard the Ford Dry Lake area as a place with a high potential for cremation sites, and one site, identified during construction monitoring of the Genesis Solar Energy Project consisting of an inverted metate, has been interpreted as a possible cremation. The presence of potential cremation sites is especially significant to contemporary Native American groups, and the protection of these resources is of the utmost importance to them. The Ford Dry Lake TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

There are several contributing elements to the Ford Dry Lake TCP. These are identified in the table below.

**Cultural Resources Table 5
Contributing Elements of the Ford Dry Lake TCP**

Element	Value(s)	Location	Additional information
Ephemeral lake and blowout areas on the playa surface	The water, when present, sustains plant and animal life, as well as human travelers	In the area around the dry lake bed	
Trails	Serves as connection between places of importance; provides means by which contemporary Native Americans can identify currently unknown important places	Many trails from all directions pass through portions of the TCP	Several of the trails which pass through the TCP head northeast to McCoy Spring
Cremations	Burials and cremations are understood to be of the utmost sacredness for the descendants of those whose	In Unit 4 of the GSEP, within the TCP	There is not definitive evidence as to whether a cremation was present at the identified site

	remains are identified		
Archaeological artifacts and features (i.e., lithics, hearths, ceramics, groundstone and milling slicks)	Evidence of Native American lifeways	Throughout Ford Dry Lake TCP	

Period of Significance

The period of significance for the Ford Dry Lake TCP spans from Time Immemorial, the beginning of Creation, up to 1936 when US Route 60-70 between Indio and Blythe became a paved highway.

Boundaries

The boundaries of the Ford Dry Lake TCP are not precisely defined because the entire vicinity of the lake area and all of the contributing elements have not been inventoried. Based on the currently available information, staff considers the boundaries of the Ford Dry Lake TCP to include the dry lake, and the surrounding recorded archaeological sites in the vicinity of the lake, as well as several of the trail features which head towards and pass through the TCP.

Eligibility Criteria

The Ford Dry Lake TCP is eligible under Criteria 1 at the regional and local level for its broad contributions to the unique historic events that shape Native American understanding of their ancestor's lifeways and burial practices, and the deep oral tradition that is understood to be related to their ancestors. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples lived, worked and possibly cremated deceased family members, and ecologically represents a unique ephemeral lake environment in this xeric landscape. On a regional level, the Palen Dunes/Palen Lake TCP contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network evidenced by the large number of temporary camps and associated resource processing artifacts which have been identified, as well as the importance of the area into the Proto-historic and Historic periods.

Criteria 4 is applicable to this TCP for the potential of this place to contribute to our understanding of the prehistory of the PRGTL in southeastern California and the prehistory of lifeways, trade, and movement in the Chuckwalla Valley.

Integrity

The integrity of the Ford Dry Lake TCP has been visually and physically compromised by the establishment of a BLM road through the northern and western portion of the TCP, refuse from historic and modern vehicle traffic through the region, looting and vandalism of some of the archaeological sites, refuse, tank tracks, and other military features associated with the Desert Training Center California-Arizona Maneuver Area Cultural Landscape⁸ (DTCCCL), the Chuckwalla Valley State Prison, the I-10 corridor and the large transmission lines that parallel the freeway, as well as the recently constructed Red Bluff Substation and the Genesis Solar Energy Project. However, despite these intrusions the Ford Dry Lake TCP is still relatively pristine and conveys the feeling of a repeated-use area in an ephemeral lake environment amid an arid landscape, thus maintaining integrity of Association, Feeling, Setting, and Location.

McCoy Spring (CA-RIV-0132)

Theme

McCoy Spring is a TCP located in the western portion of the McCoy Mountains about 16 miles northeast of the PSEGS project area, and was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. This place was occupied by groups temporarily as a stop along the trail, but also for more extended periods of time, most likely when the Colorado River seasonally overflowed its banks and groups retreated onto the mesa until the floods subsided (Bee 1963: 209, Castetter and Bell 1951: 70). McCoy Spring not only provided a source of water, but the canyon walls and boulders that surround the spring served as a medium for over 1,000 petroglyphs. In fact, rock art is often found near water sources. All rock art is understood to be a symbol of the sacred past, a pictorial representation of the events and activities of the Creator during sacred times (Bean et al. 1978:7-14) as well as a depiction of events during Proto-historic times, and the rock art panels at McCoy Spring contribute to the cultural identity of the Native Americans who still visit the site today. The McCoy Spring TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

There are several contributing elements to the McCoy Spring TCP. These are identified in the table below.

Cultural Resources Table 6
Contributing Elements of the McCoy Spring TCP

Element	Value(s)	Location	Additional information
Spring	Water, supports oasis like plant and animal life, sustained human travelers		

⁸ For information on the Desert Training Center California-Arizona Maneuver Area Cultural Landscape (DTCCCL), see the Final Staff Assessment prepared for the PSEGS.

Petroglyphs	Native American cultural identity; Evidence of spiritual communication	On canyon walls and boulders in McCoy Spring wash area	One of the petroglyphs is the largest cross design in eastern California, and possibly all of the southwest. Another petroglyph is the largest rain fringe (or lattice) design in eastern California
Trails	Served as connection between places of importance; provides means by which contemporary Native Americans can identify currently unknown important places	Emanate from the spring and head west into the valley, but also north of McCoy Mountains and west towards the Palen Mountains heading towards other spring locations and the main trail corridor	
Cleared circles and rock rings	Evidence of spiritual communication, ceremonial tutelage and trail navigation	Throughout site and along trail exiting spring	
Archaeological artifacts and features (i.e., lithics, midden, ceramics, groundstone and milling slicks)	Evidence of Native American lifeways	Throughout McCoy Spring TCP	

Period of Significance

The period of significance for the McCoy Spring TCP spans from Time Immemorial, the beginning of Creation, up to the Present.

Boundaries

The boundaries of the McCoy Spring TCP are not precisely defined because the entire vicinity of the spring and all of the contributing elements have not been inventoried. Based on the currently available information, staff considers the boundaries of the McCoy Spring TCP to include the spring itself and the surrounding canyon walls and boulders, the trails emanating from the spring which head in numerous directions North, West and South.

Eligibility Criteria

The McCoy Spring TCP is eligible under Criteria 1 at the regional level for its broad contributions to the unique historic events that shape Native American understanding of the petroglyphs, cleared circles and rock rings in the TCP, and the deep oral tradition that is understood to be related to these spiritual communications. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples found and commemorated their spiritual world, and helps to promote and preserve the spiritual life and well-being of the Native American people. McCoy Spring also contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network evidenced by the extensive petroglyphs, many of which exhibit a dark patina indicating substantial age, as well as the importance of the site into the Proto-historic and Historic periods.

This TCP is also eligible under Criteria 3 for its contributions to the production of the petroglyphs, cleared circles, and rock rings that exhibit a high degree of artistic value. Each petroglyph, cleared circle and rock ring is a unique expression of the creator of the communicative device and while there may be similar designs at other sites in the Chuckwalla Valley, these are not replicable and therefore of a unique craftsmanship.

Criteria 4 is applicable to this TCP for the potential of the site to contribute to our understanding of the prehistory of the PRGTL in southeastern California, the prehistory of the Chuckwalla Valley, and the prehistory of religion, and ritual and belief.

Integrity

The integrity of the McCoy Spring TCP has been visually and physically compromised by the construction of a cap over spring, modern and historic vandalism and looting, the historic mining and associated infrastructure in the vicinity, refuse, tank tracks, and other military features associated with the DTCCL, the I-10 corridor and the large transmission lines that parallel the freeway, the Chuckwalla Valley State Prison, as well as the recently constructed Genesis Solar Energy Project. However, despite these intrusions the McCoy Spring TCP is still relatively pristine and conveys the feeling of an oasis amidst an arid landscape, thus maintaining integrity of Workmanship, Association, Feeling, Setting, and Location.

Chuckwalla Spring (CA-Riv-0262)

Theme

Chuckwalla Spring is a TCP located in the northern portion of the Chuckwalla Mountains about 13 miles south of the PSEGS project area, and was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. This place was occupied by groups temporarily as a stop along the trail, but also for more extended periods of time, most likely when the Colorado River seasonally overflowed its banks and groups retreated onto the mesa until the floods subsided (Bee 1963: 209, Castetter and Bell 1951: 70). Chuckwalla Spring not only provided a source of water,

but the canyon walls and boulders that surround the spring served as a medium for many petroglyphs. In fact, rock art is often found near water sources. All rock art is understood to be a symbol of the sacred past, a pictorial representation of the events and activities of the Creator during sacred times (Bean et al. 1978:7-14) as well as a depiction of events during Protohistoric times, and the rock art panels at Chuckwalla Spring contribute to the cultural identity of the Native Americans who still visit the site today. The Chuckwalla Spring TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

There are several contributing elements to the Chuckwalla Spring TCP. These are identified in the table below.

**Cultural Resources Table 7
Contributing Elements of the Chuckwalla Spring TCP**

Element	Value(s)	Location	Additional information
Spring	Water, supports oasis like plant and animal life, sustained human travelers		
Petroglyphs	Native American cultural identity; Evidence of spiritual communication	On canyon walls and boulders in Chuckwalla Spring wash area	
Trails	Served as connection between places of importance; provides means by which contemporary Native Americans can identify currently unknown important places	Recorded trails emanate from spring and head south towards Augustine Pass and Imperial County	
Cleared circles	Evidence of spiritual communication, ceremonial tutelage and trail navigation	Southern portion of the TCP, on alluvial fan	
Archaeological artifacts and features (i.e., lithics, ceramics, groundstone and milling slicks)	Evidence of Native American lifeways	Throughout Chuckwalla Spring TCP	

Period of Significance

The period of significance for the Chuckwalla Spring TCP spans from Time Immemorial, the beginning of Creation, up to the Present.

Boundaries

The boundaries of the Chuckwalla Spring TCP are not precisely defined because the entire vicinity of the spring and all of the contributing elements has not been inventoried. Based on the currently available information, staff considers the boundaries of the Chuckwalla Spring TCP to include the spring itself and the surrounding documented lithics, cleared circles, ceramics, and trails.

Eligibility Criteria

The Chuckwalla Spring TCP is eligible under Criteria 1 at the regional level for its broad contributions to the unique historic events that shape Native American understanding of the petroglyphs, cleared circles and rock rings in the TCP, and the deep oral tradition that is understood to be related to these spiritual communications. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples found and commemorated their spiritual world, and helps to promote and preserve the spiritual life and well-being of the Native American people. Chuckwalla Spring also contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network evidenced by the extensive petroglyphs, many of which exhibit a dark patina indicating substantial age, as well as the importance of the site into the Protohistoric and Historic periods.

This TCP is also eligible under Criteria 3 for its contributions to the production of the petroglyphs, cleared circles, and rock rings that exhibit a high degree of artistic value. Each petroglyph, cleared circle and rock ring is a unique expression of the creator of the communicative device and while there may be similar designs at other sites in the Chuckwalla Valley, these are not replicable and therefore of a unique craftsmanship.

Criteria 4 is applicable to this TCP for the potential of the site to contribute to our understanding of the prehistory of the PRGTL in southeastern California, the prehistory of the Chuckwalla Valley, and the prehistory of religion, and ritual and belief.

Integrity

The integrity of the Chuckwalla Spring TCP has been visually and physically compromised by historic mines and mining roads, modern and historic vandalism and looting. The northern portion of the TCP looks out over the I-10 corridor and the large transmission lines that parallel the freeway. However, despite these intrusions the Chuckwalla Spring TCP is still relatively pristine and conveys the feeling of an oasis amidst an arid landscape, thus maintaining integrity of Workmanship, Association, Feeling, Setting, and Location.

Corn Spring (CA-RIV-032)

Theme

Corn Spring is a TCP located in the eastern portion of the Chuckwalla Mountains, about 6.75 miles southwest of the PSEGS project area, and was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. This place was occupied by groups temporarily as a stop along the trail, but also for more extended periods of time, most likely when the Colorado River seasonally overflowed its banks and groups retreated onto the mesa until the floods subsided (Bee 1963: 209, Castetter and Bell 1951: 70). Corn Spring not only provided a source of water which Native Americans used to irrigate crops, in particular corn (Coffey 1967:53 cited in Gunther 1984:132), but the canyon walls and boulders that surround the spring served as a medium for over 600 petroglyphs. In fact, rock art is often found near water sources. All rock art is understood to be a symbol of the sacred past, a pictorial representation of the events and activities of the Creator during sacred times (Bean et al. 1978:7-14) as well as a depiction of events during Proto-historic times, and the rock art panels at Corn Spring contribute to the cultural identity of the Native Americans who still visit the site today. The Corn Springs TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

There are several contributing elements to the Corn Spring TCP. These are identified in the table below.

**Cultural Resources Table 8
Contributing Elements of the Corn Spring TCP**

Element	Value(s)	Location	Additional information
Spring	Water, supports oasis like plant and animal life, sustained human travelers		
Petroglyphs	Native American cultural identity; Evidence of spiritual communication	On canyon walls and boulders in Corn Spring wash area	Some petroglyphs are reported to depict the early steam boats along the Colorado River, Others are said to be maps of the twists and turns of the Colorado River.
Trails	Served as connection between places of importance; provides means by which contemporary Native Americans can identify currently unknown	In Corn Springs wash and west into the canyon, also exiting the canyon and heading towards other spring locations and the main trail corridor	

	important places		
Corn horticulture	Evidence of Native American horticultural practices	In the vicinity of the spring itself	
Cleared circles and rock rings	Evidence of spiritual communication, ceremonial tutelage and trail navigation	Southwest portion of Corn Spring TCP, and on desert pavement exiting the canyon	
Archaeological artifacts and features (i.e., lithics, ceramics, groundstone and milling slicks)	Evidence of Native American lifeways	Throughout Corn Spring TCP	

Period of Significance

The period of significance for the Corn Spring TCP spans from Time Immemorial, the beginning of Creation, up to the Present.

Boundaries

The boundaries of the Corn Spring TCP are not precisely defined because the entire vicinity of the spring and all of the contributing elements have not been inventoried. Based on the currently available information, staff considers the boundaries of the Corn Spring TCP to include, from west to east, the segment of trail adjacent to Aztec Well and the surrounding canyon walls, following the wash east including the Corn Springs site extending east into the wash and desert pavement area, encompassing the trail segments heading east out of the canyon, as well as the petroglyph sites, cleared circles, rock rings, and trail shrines along these trails.

Eligibility Criteria

The Corn Spring TCP is eligible under Criteria 1 at the regional level for its broad contributions to the unique historic events that shape Native American understanding of the petroglyphs, cleared circles and rock rings in the TCP, and the deep oral tradition that is understood to be related to these spiritual communications. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples found and commemorated their spiritual world, and helps to promote and preserve the spiritual life and well-being of the Native American people. Corn Spring also contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network evidenced by the extensive petroglyphs, many of which exhibit a dark patina indicating substantial age, as well as the importance of the site into the Proto-historic and Historic periods.

This TCP is also eligible under Criteria 3 for its contributions to the production of the petroglyphs, cleared circles, and rock rings that exhibit a high degree of artistic value. Each petroglyph, cleared circle and rock ring is a unique expression of the creator of the communicative device and while there may be similar designs at other sites in the Chuckwalla Valley, these are not replicable and therefore of a unique craftsmanship.

Criteria 4 is applicable to this TCP for the potential of the site to contribute to our understanding of the prehistory of the PRGTL in southeastern California, the prehistory of the Chuckwalla Valley, and the prehistory of religion, and ritual and belief.

Integrity

The integrity of the Corn Spring TCP has been visually and physically compromised by the modern developments at the site (i.e., a cap on the spring, the BLM campground, and the BLM access road), historic mines, mining roads, and a related historic cabin, the fact that the spring no longer flows, modern and historic vandalism and looting, and invasive tamarisk species. The eastern portion of the TCP looks out over the I-10 corridor and the large transmission lines that parallel the freeway, as well as the recently constructed Red Bluff Substation and the Genesis Solar Energy Project. However, despite these intrusions the Corn Spring TCP is still relatively pristine and conveys the feeling of an oasis amidst an arid landscape, thus maintaining integrity of Workmanship, Association, Feeling, Setting, and Location.

North Chuckwalla Petroglyph District (CA-RIV-01383)

Theme

The North Chuckwalla Petroglyph District is an NRHP-listed property located in the northern portion of the Chuckwalla Mountains about 4 miles west of the PSEGS project area, and was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. This place was occupied by groups temporarily as a stop along the trail, and the myriad boulders that are encompassed in the TCP served as a medium for over 170 petroglyph panels. All rock art is understood to be a symbol of the sacred past, a pictorial representation of the events and activities of the Creator during sacred times (Bean et al. 1978:7-14) as well as a depiction of events during Proto-historic times, and the rock art panels at the North Chuckwalla Petroglyph District contribute to the cultural identity of the Native Americans who still visit the site today. The North Chuckwalla Petroglyph District TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

There are several contributing elements to the North Chuckwalla Petroglyph District TCP. These are identified in the table below.

Cultural Resources Table 9
Contributing Elements of the North Chuckwalla Petroglyph District TCP

Element	Value(s)	Location	Additional information
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Petroglyphs	Native American cultural identity; Evidence of spiritual communication	On boulders within the TCP area	
Trails	Served as connection between places of importance; provides means by which contemporary Native Americans can identify currently unknown important places	Within and adjacent to site. TCP is located along main trail corridor.	
Cleared circles and rock rings	Evidence of spiritual communication, ceremonial tutelage and trail navigation	Throughout TCP area	
Archaeological artifacts and features (i.e., lithics, ceramics, groundstone and milling slicks,	Evidence of Native American lifeways	Throughout TCP area	

Period of Significance

The period of significance for the North Chuckwalla Petroglyph District TCP spans from Time Immemorial, the beginning of Creation, up to the Present.

Boundaries

Based on the currently available information, staff considers the boundaries of the North Chuckwalla Petroglyph District TCP to include all of the boulders which have petroglyphs, the rock rings, cleared circles, trails, and archaeological artifacts and features in the vicinity of the TCP.

Eligibility Criteria

The North Chuckwalla Petroglyph District TCP is eligible under Criteria 1 at the regional level for its broad contributions to the unique historic events that shape Native American understanding of the petroglyphs, cleared circles and rock rings in the TCP, and the deep oral tradition that is understood to be related to these spiritual communications.

This place identifies one of several locations in the Chuckwalla Valley where Native American peoples found and commemorated their spiritual world, and helps to promote and preserve the spiritual life and well-being of the Native American people. The North Chuckwalla Petroglyph District also contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network evidenced by the extensive petroglyphs, many of which exhibit a dark patina indicating substantial age, as well as the importance of the site into the Protohistoric and Historic periods.

This TCP is also eligible under Criteria 3 for its contributions to the production of the petroglyphs, cleared circles, and rock rings that exhibit a high degree of artistic value. Each petroglyph, cleared circle and rock ring is a unique expression of the creator of the communicative device and while there may be similar designs at other sites in the Chuckwalla Valley, these are not replicable and therefore of a unique craftsmanship.

Criteria 4 is applicable to this TCP for the potential of the site to contribute to our understanding of the prehistory of the PRGTL in southeastern California, the prehistory of the Chuckwalla Valley, and the prehistory of religion, and ritual and belief.

Integrity

The integrity of the North Chuckwalla Petroglyph District TCP has been visually and physically by the transmission lines that intersect the site and associated access roads, refuse, tank tracks, and other military features associated with the DTCCL, the 1-10 freeway, modern and historic vandalism and looting, the town of Desert Center, State Route 177, as well as the recently constructed Red Bluff Substation and Desert Sunlight Solar Farm. However, despite these intrusions the North Chuckwalla Mountains Petroglyph District TCP is still relatively pristine and conveys the feeling an important location along a trail network, thus maintaining integrity of Workmanship, Association, Feeling, Setting, and Location.

North Chuckwalla Prehistoric Quarry District (CA-RIV-01814)

Theme

The North Chuckwalla Prehistoric Quarry District is a TCP located on the northeast slopes of the Chuckwalla Mountains, about 6.5 miles west of the PSEGS project area. This is a place that was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. This place was occupied by groups temporarily as a stop along the trail for the acquisition of Aplite, a fine-grained intrusive felsic rock found throughout the quarry site that was desired for its fracturing qualities. In addition to a large number of lithic artifacts, rock shelters, rock rings, and trails are also present at the site, indicative of its multiple uses as a temporary camp and stop along the trail corridor in this portion of the Chuckwalla Valley. The vast amount of extant artifacts throughout the TCP continues to be culturally significant resources for contemporary Native Americans who frequent this area. Bean et al. (1978:5—54, 6-14, 6-24) has indicated that rock outcroppings, rock features, and trails are considered to be physical

links to the past that possess significance to living peoples. Visiting these resources helps to contribute to Native Americans' sense of cultural identity because it helps them to better understand the lifeways of their ancestors, and the artifacts serve as a direct link to their past. The North Chuckwalla Prehistoric Quarry District TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

There are several contributing elements to the North Chuckwalla Prehistoric Quarry District TCP. These are identified in the table below

Cultural Resources Table 10
Contributing Elements of the North Chuckwalla Prehistoric Quarry District TCP

Element	Value(s)	Location	Additional information
Trails	Serves as connection between places of importance; provides means by which contemporary Native Americans can identify currently unknown important places	Many trails from all directions pass through portions of the TCP	
Archaeological artifacts and features (i.e., lithics, rock shelters, hearths, midden, ceramics, groundstone and milling slicks)	Evidence of Native American lifeways	Throughout North Chuckwalla Prehistoric Quarry District TCP	

Period of Significance

The period of significance for the North Chuckwalla Prehistoric Quarry District TCP spans from Time Immemorial, the beginning of Creation, up 1936 when US Route 60-70 between Indio and Blythe became a paved highway.

Boundaries

Based on the currently available information, staff considers the boundaries of the North Chuckwalla Prehistoric Quarry District TCP to consist of the at least 84 documented lithic reduction loci, in addition to the rock shelter and several of the trail features which head towards and pass through the TCP. The boundaries drawn by staff, accords with the boundary indicated on the DPR forms for the quarry district, CA-RIV-1814.

Eligibility Criteria

The North Chuckwalla Prehistoric Quarry District TCP is eligible under Criteria 1 at the regional and local level for its broad contributions to the unique historic events that shape Native American understanding of their ancestor's lifeways, and the deep oral tradition that is understood to be related to their ancestors. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples acquired lithic materials on a large scale. On a regional level, the North Chuckwalla Prehistoric Quarry District TCP contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network evidenced by the large number of temporary camps and associated resource processing artifacts which have been identified, as well as the importance of the area into the Protohistoric and Historic periods.

Criteria 4 is applicable to this TCP for the potential of this place to contribute to our understanding of the prehistory of the PRGTL in southeastern California and the prehistory of lithic technology, lifeways, trade, and movement in the Chuckwalla Valley

Integrity

The integrity of the North Chuckwalla Prehistoric Quarry District TCP has been visually and physically compromised by the refuse from historic and modern vehicle traffic through the region, looting of some of the archaeological sites, refuse, tank tracks, and other military features associated with the DTCCL, historic and modern mining to the east in the Eagle Mountains and south in the Chuckwalla Mountains, the I-10 corridor and the large transmission lines that parallel the freeway, the town of Desert Center, State Route 177, as well as the recently constructed Red Bluff Substation and the Desert Sunlight Solar Farm. However, despite these intrusions the North Chuckwalla Prehistoric Quarry District TCP is still relatively pristine and conveys the feeling of a prehistoric lithic quarry, thus maintaining integrity of Association, Feeling, Setting, and Location.

Long Tank

Theme

Long Tank is a TCP located in the Alligator Rock ACEC, on northern slope of Chuckwalla Mountains, about 10 miles west of the PSEGS project area. This is a place that was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. It was occupied by groups temporarily as a stop along the trail in order to access the granite tanks which are known to hold water and was a spot to stop for water along the Chuckwalla Valley trail corridor. This tank location is a culturally significant place for the contemporary Native American groups who visit the site. Moreover, Bean et al. (1978:5—54, 6-14, 6-24) has indicated that rock outcroppings, rock features, and trails are considered to be physical links to the past that possess significance to living peoples. Water places in particular are important resource

locations for Native American groups. The Long Tank TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

Period of Significance

The period of significance for the Long Tank TCP spans from Time Immemorial, the beginning of Creation, up to 1936 when US Route 60-70 between Indio and Blythe became a paved highway.

Boundaries

The boundaries of the Long Tank TCP are not precisely defined because the entire vicinity of the TCP and all of the contributing elements have not been inventoried. Based on the currently available information, staff considers the boundaries of the Long Tank TCP to include the granite tanks and the area around the tanks.

Eligibility Criteria

The Long Tank TCP is eligible under Criteria 1 at the regional and local level for its broad contributions to the unique historic events that shape Native American understanding of their ancestor's lifeways, and the deep oral tradition that is understood to be related to their ancestors. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples acquired water while travelling along this portion of the trail corridor in the Chuckwalla Valley. On a regional level, the Long Tank TCP contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network, as well as the importance of the area into the Protohistoric and Historic periods, indicated by its noted location by early miners in the region.

Criteria 4 is applicable to this TCP for the potential of this place to contribute to our understanding of the prehistory of the PRGTL in southeastern California and the prehistory of lifeways, trade, and movement in the Chuckwalla Valley.

Integrity

The integrity of Long Tank TCP has been visually and physically compromised by the refuse from historic and modern vehicle traffic through the region, looting of some of the archaeological sites, refuse, tank tracks, and other military features associated with the DTCCCL, historic and modern mining to the northeast in the Eagle Mountains and south in the Chuckwalla Mountains, the I-10 corridor and the large transmission lines that parallel the freeway, the town of Desert Center, State Route 177, as well as the recently constructed Desert Sunlight Solar Farm. However, despite these intrusions the Long Tank TCP is still relatively pristine and conveys the feeling of a trailside water tank, thus maintaining integrity of Association, Feeling, Setting, and Location.

Alligator Rock

Theme

The Alligator Rock is a TCP located adjacent to the north portion of the Chuckwalla Mountains, about 9 miles west of the PSEGS project area. This is a place that was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. This place was occupied by groups temporarily as a stop along the trail for the acquisition of Aplite, a fine-grained intrusive felsic rock found throughout the quarry site that was desired for its fracturing qualities. In addition to a large number of lithic artifacts, metates and ground stone tools, and trails are also present at this place, indicative of its multiple uses as a temporary camp and stop along the trail corridor in this portion of the Chuckwalla Valley. The vast amount of extant artifacts throughout the TCP continues to be culturally significant resources for contemporary Native Americans who frequent this area. Bean et al. (1978:5—54, 6-14, 6-24) has indicated that rock outcroppings, rock features, and trails are considered to be physical links to the past that possess significance to living peoples. Members of the La Cuna de Atzlan organization suggest that Alligator Rock has spiritual significance (Figueroa 2013b:3). The adjacent Chuckwalla Mountains were likely named for the desert reptile, the large Chuckwalla lizard⁹ (Gunther 1984:115), and it is understood by these members that Alligator Rock is a part of these “Lizard Mountains”, and represents the lizard. Visiting these resources helps to contribute to Native Americans’ sense of cultural identity because it helps them to better understand the lifeways of their ancestors, and the artifacts serve as a direct link to their past. The Alligator Rock TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

There are several contributing elements to the Alligator Rock TCP. These are identified in the table below.

Cultural Resources Table 11
Contributing Elements of the Alligator Rock TCP

Element	Value(s)	Location	Additional information
Trails	Serves as connection between places of importance; provides means by which contemporary Native Americans can identify currently unknown important places	Many trails from all directions pass through portions of the TCP	

⁹ Gunther’s (1984:115) informant, Ms. Katherine Saubel of the Morongo Reservation, indicated that depending how the word “chuckwalla” is pronounced it can refer to either the lizard or a type of cactus.

Archaeological artifacts and features (i.e., lithics, temporary camps, rock rings, ceramics, groundstone)	Evidence of Native American lifeways	Throughout Alligator Rock TCP	
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Period of Significance

The period of significance for the Alligator Rock TCP spans from Time Immemorial, the beginning of Creation, up to 1936 when US Route 60-70 between Indio and Blythe became a paved highway.

Boundaries

The boundaries of the Alligator Rock TCP are not precisely defined because the entire vicinity of the TCP and all of the contributing elements have not been inventoried. Based on the currently available information, staff considers the boundaries of the Alligator Rock TCP to include the geologic landform itself and the several lithic reduction sites, rock rings, temporary camps, and trails in the vicinity of Alligator Rock.

Eligibility Criteria

The Alligator Rock TCP is eligible under Criteria 1 at the regional and local level for its broad contributions to the unique historic events that shape Native American understanding of their ancestor's lifeways, and the deep oral tradition that is understood to be related to their ancestors. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples acquired lithic materials on a large scale. On a regional level, the Alligator Rock TCP contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network evidenced by the temporary camps and associated resource processing artifacts which have been identified, as well as the importance of the area into the Proto-historic and Historic periods.

Criteria 4 is applicable to this TCP for the potential of this place to contribute to our understanding of the prehistory of the PRGTL in southeastern California and the prehistory of lithic technology, lifeways, trade, and movement in the Chuckwalla Valley

Integrity

The integrity of Alligator Rock TCP has been visually and physically compromised by the refuse from historic and modern vehicle traffic through the region, looting of some of the archaeological sites, refuse, tank tracks, and other military features associated with the DTCCCL, historic and modern mining to the east in the Eagle Mountains and south in the Chuckwalla Mountains, the I-10 corridor and the large transmission lines that parallel the freeway, the town of Desert Center, State Route 177, as well as the recently

constructed Red Bluff Substation and the Desert Sunlight Solar Farm. However, despite these intrusions the Alligator Rock TCP is still relatively pristine and conveys the feeling of a prehistoric lithic quarry, thus maintaining integrity of Association, Feeling, Setting, and Location.

Dragon Wash (CA-RIV-049)

Theme

Dragon Wash is a TCP located in the eastern portion of the Eagle Mountains about 14 miles west of the PSEGS project area, and was, and continues to be, an important destination along the trail network within the Chuckwalla Valley. This place was occupied by groups temporarily as a stop along the trail, and the canyon walls and boulders that surround the wash served as a medium for several dozen petroglyphs. In fact, rock art is often found near water sources. All rock art is understood to be a symbol of the sacred past, a pictorial representation of the events and activities of the Creator during sacred times (Bean et al. 1978:7-14) as well as a depiction of events during Protohistoric times, and the rock art panels at Dragon Wash contribute to the cultural identity of the Native Americans who still visit the site today. The Dragon Wash TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

There are several contributing elements to the Dragon Wash TCP. These are identified in the table below.

Cultural Resources Table 12
Contributing Elements of the Dragon Wash TCP

Element	Value(s)	Location	Additional information
Wash	Water ephemerally ran through wash sustaining plant and animal life, which in turn aided human travelers		
Petroglyphs	Native American cultural identity; Evidence of spiritual communication	On canyon walls and boulders in Dragon Wash area	
Trails	Served as connection between places of importance; provides means by which contemporary Native	Northeast of the opening to the wash on the desert pavement	

	Americans can identify currently unknown important places		
Prayer Seat	Evidence of spiritual communication, and Native American cultural identity	On boulder outcrop, just outside of the wash area	
Archaeological artifacts and features (i.e., temporary camps and milling slicks)	Evidence of Native American lifeways	Throughout Dragon Wash TCP	

Period of Significance

The period of significance for the Dragon Wash TCP spans from Time Immemorial, the beginning of Creation, up to the Present.

Boundaries

The boundaries of the Dragon Wash TCP are not precisely defined because the entire vicinity of the wash and all of the contributing elements has not been inventoried. Based on the currently available information, staff considers the boundaries of the Dragon Wash TCP to include the wash and canyons that make up the mouth of the wash and the large rock outcrops less than 0.5 miles southwest of the wash.

Eligibility Criteria

The Dragon Wash TCP is eligible under Criteria 1 at the regional level for its broad contributions to the unique historic events that shape Native American understanding of the petroglyphs in the TCP, and the deep oral tradition that is understood to be related to these spiritual communications. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples found and commemorated their spiritual world, and helps to promote and preserve the spiritual life and well-being of the Native American people. Dragon Wash also contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network evidenced by the extensive petroglyphs, many of which exhibit a dark patina indicating substantial age, as well as the importance of the site into the Protohistoric and Historic periods.

This TCP is also eligible under Criteria 3 for its contributions to the production of the petroglyphs that exhibit a high degree of artistic value. Each petroglyph is a unique expression of the creator of the communicative device and while there may be similar

designs at other sites in the Chuckwalla Valley, these are not replicable and are therefore of a unique craftsmanship.

Criteria 4 is applicable to this TCP for the potential of the site to contribute to our understanding of the prehistory of the PRGTL in southeastern California, the prehistory of the Chuckwalla Valley, and the prehistory of religion, and ritual and belief.

Integrity

The integrity of the Dragon Wash TCP has been visually and physically compromised by the construction of a transmission line and associated access road that bisects the TCP, historic mining and mining roads associated with Eagle mine, and historic vandalism. The TCP looks out over the I-10 corridor and the large transmission lines that parallel the freeway, the town of Desert Center, State Route 177, as well as the recently constructed Red Bluff Substation and the Desert Sunlight Solar Farm. However, despite these intrusions the Dragon Wash TCP is still relatively pristine and conveys the feeling of an oasis amidst an arid landscape, thus maintaining integrity of Workmanship, Association, Feeling, Setting, and Location.

San Pascual Well

The San Pascual Well TCP is located in a wash on the valley floor of the Chuckwalla Valley, and is about 5 miles northwest from the PSEGS project area. The Native American well was initially relocated during the Romero-Estudio expedition in 1823-1824 while attempting to establish a route for Euro-Americans to cross the Colorado Desert and more efficiently connect the Los Angeles area to the Tucson region. The expedition named the well San Pascual, and Estudio's entry in his diary states "we found signs of basket-making by the Indian women on several occasions, bones of horses and pieces of ollas" (Bean and Mason 1962:41). Bean and Mason (1962:41, footnote 22) suggest that this well was in the Desert Center area based on the landmarks provided in the diary, and the fact that the expedition was likely headed for Palen Pass. A General Land Office (GLO) map from 1856 identifies "a well 45 feet deep of fair water in this quarter section" (Brown 1856). This well location is a culturally significant place for the contemporary Native American groups who visit the site. Water places in particular are important resource locations for Native American groups. The San Pascual Well TCP is a contributing element to the Chuckwalla Valley portion of the PRGTL.

Period of Significance

The period of significance for the San Pascual Well TCP spans from Time Immemorial, the beginning of Creation, up to 1936 when US Route 60-70 between Indio and Blythe became a paved highway.

Boundaries

The boundaries of the San Pascual Well TCP are not precisely defined because the entire vicinity of the well and all of the contributing elements has not been inventoried. Based on the currently available information, staff considers the boundaries of the San Pascual Well TCP to include the redacted.

Eligibility Criteria

The San Pascual Well TCP is eligible under Criteria 1 at the regional and local level for its broad contributions to the unique historic events that shape Native American understanding of their ancestor's lifeways, and the deep oral tradition that is understood to be related to their ancestors. This place identifies one of several locations in the Chuckwalla Valley where Native American peoples acquired water while travelling along this portion of the trail corridor in the Chuckwalla Valley. On a regional level, the San Pascual Well TCP contributes to the unique historical events surrounding travel, trade, and movement along the PRGTL, and was an important place in the trail network, as well as the importance of the area into the Proto-historic and Historic periods, indicated by its use and mention by early explorers in the region.

Criteria 4 is applicable to this TCP for the potential of this place to contribute to our understanding of the prehistory of the PRGTL in southeastern California and the prehistory of lifeways, trade, and movement in the Chuckwalla Valley.

Integrity

The integrity of the San Pascual Well TCP has been visually and physically compromised by the construction of the Desert Center airfield and Chuckwalla Raceway, refuse from historic and modern vehicle traffic through the region, natural environmental dune processes that affect the provenience of artifacts, refuse, tank tracks, and other military features associated with the DTCCL, historic and modern mining to the east in the Eagle Mountains, the I-10 corridor and the large transmission lines that parallel the freeway, the town of Desert Center, State Route 177, as well as the recently constructed Red Bluff Substation and the Desert Sunlight Solar Farm. However, despite these intrusions the San Pascual Well TCP is still relatively pristine and conveys the feeling of a repeated-use area in an ephemeral wetland environment amid an arid landscape, thus maintaining integrity of Association, Feeling, Setting, and Location.

Connectivity of Places, Landforms and Cultures

Native Americans view their environment in a holistic manner; therefore the places and landforms listed and described earlier in the document are not the only important ones, and should be considered a less-than comprehensive list. In addition, all land, space, air between, above and below these places and landforms are also considered important.

Lorey Cachora, a Yuman traditional practitioner (2000, cited in Bean and Toenjes 2012:19), noted that there is a web of power which connects important landscape

features such as mountains and springs. Destruction of this web of power affects the “entire cosmos.” Peaks are most important, but valleys between peaks and desert pavements are also important in that they are pathways for “the web that must run through from peak to peak” (Cachora 2000, cited in Bean and Toenjes 2012:19). In discussions with Mr. Cachora, staff has come to understand that the Chuckwalla Valley is part of a multi-layered cultural landscape, and while staff, due to project constraints, must bound the landscape within the view-shed impacted by the proposed solar power towers, the Chuckwalla Valley is nested in concentric rings of larger and larger landscapes. This is not an arbitrary concept. As Mr. Cachora suggests, “after all, we Indians must navigate our lands.” Mr. Cachora utilizes the concept of “natural setting” to organize the disparate and seemingly random collection of rock rings, petroglyphs, cleared circles, lithic and ceramic scatters, and mineral, rock and plant and animal source areas into one organized collective. From any one locale of obvious importance to Native Americans, for example a petroglyph site, one will find a sitting place that provides the knowledgeable inhabitant obvious directionality. Attentive to such directionality, one will note distant lines of the land, such as horizons, canyon walls, playas, changes in vegetation biomes, or sweeping alluviums. These lines are the “natural settings.” Internalizing these lines one travels to a destination, and if the travelling inhabitant maintains intent and focus will arrive at a distant destination, marked by a spring, petroglyphs, the nearness of a distinctive landform, etc., where another viewing place will be located and naturally found. In this way landscapes are nested and overlapped one to the next in multiple directions. Staff was standing on the west side of the Chuckwalla Valley with Mr. Cachora when he exclaimed, “I can navigate from here to San Francisco peaks quite easily without ever having made the journey and without a map if I know several natural settings between here and there.” These natural settings are what are encoded in the traditional songs and dreams of Chemehuevi, Cahuilla and Yuman people and culture.

Traditional Yuman dreamers make connections between disparate landforms, plants and animals and other cultural, historic, and religious events by dreaming. In the practice of dreaming, the dreamer makes a journey through the land and is presented with signs that provide omens of a person’s individual and family capacity for good or ill fortune (Devereux 1956:43). The process of dreaming is understood to often result in the dreamer creating a visual representation of their dream, either by pictographs, or in the case of the Native Americans in the vicinity of the PSEGS project area, as petroglyphs, earth figures, or rock alignments (Whitley 2000:66). This is a form of communication between the dreamer and the supernatural, between the dreamer and the person seeing the rock art, and the supernatural and the person seeing the rock art.

In the Yuman worldview, the current world of the living is sandwiched between an underworld and an above world. The underworld is a place of demons, monsters, snakes, and other forms of malady, poison and disease that medicine people either use or combat for personal or communal gains. The above world is a place where the deceased reside should proper ceremony be conducted by the living to usher their loved ones onto the next life. Johnson (2003:169) explains the Yuman understanding by

using an analogy of the Tree-of-Life or World Tree, a symbol common in ancient and historic Mesoamerican cultures;

...the Tree symbol involves three parts; the roots associated with the underground or underworld; the trunk associated with the present world and as a symbol of the axis mundi, or passageway between the underworld and the upper world; and lastly the branches representing the sky, the upper world or the beyond world, all pertaining to the greater journey of life.

Johnson further explains that the earth figures allow traditional practitioners and those attempting to understand the meaning of life and death, particularly during a time of grieving from the loss of a family member, to come to understand the connectivity of time and space at the place of the earth inscribed figures (Johnson 2003:169).

The Chemehuevi sense of landscape and connectivity between places is revealed in the multiple song cycles they sing. These songs allow people to travel across vast areas and describe numerous locations. The singing of the songs is critical to the understanding of place and spirituality for the Chemehuevi. Each song covered a specific territory, and the person singing the song identified personally with certain landforms in the song, singing “my land” or “my mountain” (Laird 1976:11, 14).

The Cahuilla understanding of the world is partly based around the concept of iva’a, or power. Cahuilla philosophy suggests that all things were and are created by this basic generative power. This power is understood to have been present and available for people throughout history, and it continues to account for present phenomena. Power generally operated for the benefit for humans, but uncharacteristic amounts could be obtained through birth, placation, manipulation, gift or ritual. For example, success in hunting, curing disease, unusual events and differences in cultural attainment are attributed to the presence of this power, as are dramatic variations in topography (Bean 1972:161-163). Thus, the acquisition or loss of this power can have far-ranging implications in terms of the relationships of people to each other, people to their environment, and people to supernatural beings.

Cahuilla people understand that humans are an integral part of the system of nature. That is, “Man was seen as one of a number of cooperative beings, who, together with his fellow Cahuilla, shared in the workings of the universe. Thus, an ecological ethic existed which assumed that any action affected other parts of the system” (Bean 1972:165). In this understanding, humans are obligated to act reciprocally towards the rest of the universe. Bean (1978:165) offers an example of this reciprocal relationship; it was understood that deer allowed themselves to be taken, under the condition that humans would not overkill or waste the deer products, and a plant collector would never take all of the seeds of a plant in order that it should be able to germinate and reproduce. Again, hunting rituals and actions helped to maintain the natural balance between humans and nature.

Chapter 2 from the ethnographic study conducted on behalf of the BLM, to support the government's understanding the designation of Solar Energy Zones (SEZs) and resulting impacts to ethnographic resources, devotes 20 pages to explaining the role that cultural landscapes provide for understanding Native American land values, to wit:

By re-centering the cultural theory of the Numic and Yuman people from gastric to place-based ceremony, we provide an avenue for totally rethinking the cultural ecology of land and Indian culture. There is now a new epistemology of connections to consider. Indian people who have shared their cultural interpretations of place during the past three decades maintain that this is the richness of their environmental adaptations to this land since creation, and it constitutes the core of their culture and contemporary ethnic identity. (Bandy et al 2011:43)

Energy Commission staff finds that the Chuckwalla Valley is one such landscape in a larger concentric ring of nested and overlapping landscapes. These cultural landscapes are further defined in the Cultural Resources section of the PSEGS Final Staff Assessment.

REFERENCES

- ACHP. Advisory Council on Historic Preservation 2002. Executive Order No. 13007: Indian Sacred Sites. Electronic Resource. Available at <http://www.achp.gov/EO13007.html>, accessed May 13, 2013.
- Agua Caliente Band of Cahuilla Indians. 2013. Electronic Resource. Available at <http://www.aquacaliente.org/content/Tribal%20Enterprises/>, accessed May 13, 2013
- Altschul, Jeffrey H. and Joseph A. Ezzo. 1995. "Ceremony and Warfare along the Lower Colorado River during the Protohistoric Period". *Proceedings of the Society for California Archaeology*, vol. 8, pp. 133-145.
- Apple, Rebecca M. 2005. Pathways to the Past. *Proceedings of the Society for California Archaeology*, vol. 40, pp. 106-112.
- Augustine Band of Cahuilla Indians. 2010a. Electronic Resource. Available at <http://www.augustinetribes.org/home.html>, accessed May 13, 2013
- Augustine Band of Cahuilla Indians. 2010b. Electronic Resource. Available at <http://www.augustinetribes.org/projects.html>, accessed May 13, 2013
- Augustine Band of Cahuilla Indians. 2010c. Electronic Resource. Available at <http://www.augustinetribes.org/casino.html>, accessed May 13, 2013
- Bandy, Matthew, Suzanne Griset, Alan Bartholomew, Jennifer Hider, Brianne Sisneros, Paul Rawson, Richard Stoffle, Kathleen Van Vlack, Hannah Johnson, Philip Dukes, Stephanie De Sola, and Kristen Simmons. 2011. *Ethnographic and Class I Records Searches for the Proposed Solar Energy Zones in California, Nevada, and Utah for the Bureau of Land Management's Solar programmatic Environmental Impact Statement*. Bureau of Land Management, Denver, Colorado.
- Bean, Lowell J. 1972. *Mukat's People: The Cahuilla Indians of Southern California*. Berkeley: University of California Press.
- Bean, Lowell J. 1978. "Cahuilla," in *Handbook of North American Indians* vol. 8, pp. 575-587. W. C. Sturtevant, ed. Washington, D.C.: Smithsonian Institution.
- Bean, Lowell J. and Marvin M. Mason. 1962. *Diaries & Accounts of the Romero Expeditions in Arizona and California*. Los Angeles: Palm Springs Desert Museum.
- Bean, Lowell J. and Katherine Saubel. 1972. *Temalpakh: Cahuilla Indian Knowledge and Usage of Plants*. Banning, California: Maliki Museum Press.
- Bean, Lowell J., Henry F. Dobyns, M. Kay Martin, Richard W. Stoffle, Sylvia Brakke Vane, and David R. M. White. 1978. *Persistence and Power: A Study of Native American Peoples in the Sonoran Desert and the Devers-Palo Verde High Voltage Transmission Line*. Submitted by Cultural Systems Research, Menlo Park, CA. Submitted to Southern California Edison Company.

- Bean, Lowell J. and Charles R. Smith. 1978. "Serrano," in *Handbook of North American Indians* vol. 8, pp. 570-574. W. C. Sturtevant, ed. Washington, D.C.: Smithsonian Institution.
- Bean, Lowell J. and James Toenjes. 2012. "Chapter 3, Native American Ethnographic Context," in *Chuckwalla Valley Prehistoric Trails Network Cultural Landscape: Historic Context, Research Questions, and Resource Evaluation Criteria*. Prepared for the California Energy Commission.
- Bee, Robert L. 1983. "Quechan," in *Handbook of North American Indians* vol. 10, pp. 86-98. W. C. Sturtevant, ed. Washington, D.C.: Smithsonian Institution.
- Benedict, Ruth. 1926. "Serrano Tales," *Journal of American Folklore*, vol. 39(151), pp. 1-17.
- Borrows, David P. 1978. *The Ethnobotany of the Coahuilla Indians of Southern California*. Chicago: University of Chicago Press.
- Bourke, John G. 1889. "Notes on the Cosmogony and Theogony of the Mohave Indians of the Rio Colorado, Arizona," in *A Collection of Ethnographic Articles on California Indians*, R.F.Heizer, ed. Ramona California: Ballena Press.
- Brown, H.M.C. 1856, General Land Office Plat Map of Township 5 South, Range 16 east of the San Diablo Meridian, 53204. United States Department of the Interior.
- Bullard, T.F., E.V. McDonald, S.E. Baker. 2008. *Final Report Geoarchaeology Workshop: Integration of New Methods in Soils and Geomorphology Applied to Cultural Resources Management on Military Lands*. Prepared U.S. Army Research Office by Desert Research Institute.
- Bureau of Indian Affairs. 2012. *Tribal Leaders Directory, Spring 2012*. Office of Indian Services, Bureau of Indian Affairs, Washington D.C.
- Cahuilla Band of Mission Indians. 2013a. Electronic Resource. Available at <http://cahuillabandofindians.com/>, accessed May 13, 2013.
- Carrico, Richard, Dennis K. Quillen, and Dennis Gallegos. 1982. Cultural Resource Inventory and National Register Assessment of the Southern California Edison Palo Verde to Devers Transmission Line Corridor (California Portion). Unpublished manuscript on file at the Eastern Information Center, University of California Riverside.
- Castetter, Edward F. and Willis H. Bell. 1951. *Yuman Indian Agriculture: Primitive Subsistence on the Lower Colorado and Gila Rivers*. Albuquerque: University of New Mexico Press.
- Castillo, Edward D. 1978. "The Impact of Euro-American Exploration and Settlement," in *Handbook of North American Indians* vol. 8, pp. 99-127. W. C. Sturtevant, ed. Washington, D.C.: Smithsonian Institution.
- Chase, J. Smeaton. 1919. *California Desert Trails*. New York: Houghton Mifflin Company.
- Chemehuevi Indian Tribe. 2013a. Electronic Resource. Available at <http://chemehuevi.net/history.php>, accessed May 13, 2013.

- Chemehuevi Indian Tribe. 2013b. Electronic Resource. Available at <http://chemehuevi.net/govcouncil.php>, accessed May 13, 2013.
- Chemehuevi Indian Tribe. 2013c. Electronic Resource. Available at <http://chemehuevi.net/departmentscultural.php>, accessed May 13, 2013.
- Chemehuevi Indian Tribe. 2013d. Electronic Resource. Available at <http://www.havasulanding.com/>, accessed May 13, 2013.
- Chippendale, C. and G. Nash. 2004. "Pictures in Place: Approaches to the Figured Landscapes of Rock Art" in *The Figured Landscapes of Rock Art: Looking at Pictures in Place*. C. Chippendale and G. Nash, eds. pp. 1-21.
- Clemmer, Richard O., and Omer C. Stewart. 1986. "Treaties, Reservations, and Claims," in *Handbook of North American Indians*, vol. 11., pp. 525-557. W.C. Sturtevant, ed. Washington D.C.: Smithsonian Institution.
- Cocopah Indian Tribe. n.d. Electronic Resource. Available at <http://www.cocopah.com/government.html>, accessed May 17, 2013.
- Colorado River Indian Reservation. 2009a. Electronic Document. Available at http://www.critnsn.gov/crit_contents/about/, accessed May 13, 2013.
- Colorado River Indian Reservation. 2009b. Electronic Document. Available at http://www.critnsn.gov/crit_contents/government/, accessed May 13, 2013.
- Davis, James T. 1961. "Trade Routes and Economic Exchange Among the Indians of California". *University of California Archaeological Survey*, vol. 54. Berkeley.
- Davis, E. and C. Taylor. 1978. Site Record CA-Riv-0697. Available at University of California Riverside, Eastern Information Center.
- Devereux, George. 1949. "The Mohave Male Puberty Rite" *Samiksa, Journal of the Indian Psycho-Analytic Society*. Vol. 3(1), pp. 11-25.
- Devereux, George. 1956. "Mohave Dreams of Omen and Power," in *Dreamers of the Colorado: The Mojave Indians, Part 1: Their Land and Their Religion*. Tunxis Community College.
- Dobyns, Henry F., Paul H. Ezell, and Greta S. Ezell. 1963. "The Death of a Society," in *Ethnohistory*, vol. 10(2), pp. 105-161.
- Dorn, R.I., P.B. Clarkson, M.F. Nobbs, L.L. Loendorf, and D.S. Whitley. 1992. "New Approach to Radiocarbon Dating of Organic Matter Encapsulated by Rock Varnish, with Examples from Archaeology and Geomorphology," *Annals of the Association of American Geographers*, vol. 82, pp. 36-151.
- Driver, Harold E. 1957. "Estimation of Intensity of Land Use from Ethnobotany: Applied to the Yuma Indians," *Ethnohistory*, vol. 4(2), pp. 174-197.

- Eckhardt, William T. S.L. Wilson, M.J. Wise, and J.D. Patterson. 2006. Site Record CA-Riv-01814. Available at University of California Riverside Eastern Information Center.
- Erlandson, J.M. 2013. A Land By the Sea: An Ocean View of California Archaeology,” in *Contemporary Issues in California Archaeology*, T. Jones and J. Perry, eds, pp. 21-35. Walnut Creek, California: Left Coast Press.
- Farmer, R., F.E. Budinger, Jr., J. Fogerty, J. Farrell, and M. Carper. *Class II and Class III Cultural Resources Inventories for the Proposed Genesis Solar Energy Project, Riverside County, California*. Report submitted to the Bureau of Land Management, North Palm Springs.
- Fenega, Gerrit L. 1981. *Archaeological Reconnaissance at Corn Spring (CA-Riv-032)*. Report submitted to the Bureau of Land Management, Riverside.
- Figueroa, Alfredo. 2011. *Ancient Footprints of the Colorado River*. La Cuna de Atzlan Publishing Company, Blythe California.
- Figueroa, Alfredo. 2013a. La Cuna de Atzlan Sacred Sites Protection Circle Intervener Letter. Docketed 09-AFC-7C, TN#69964.
- Figueroa, Alfredo. 2013b. La Cuna de Atzlan Sacred Sites Protection Circle Intervener Letter. Docketed 09-AFC-7C, TN#69254.
- Figueroa, Alfredo. 2013c. La Cuna de Atzlan Sacred Sites Protection Circle Intervener Report. Docketed 09-AFC-7C, TN#200226.
- Fitzgerald, Richard. Terry Jones, Adella Schroth. 2005. *Ancient Long Distance trade in Western North America: New AMS radiocarbon dates from Southern California*. *Journal of Archaeological Science* 32(3): 423-434.
- Fleming, Marie. 2013. Palen Solar Electric Generating System Revised Tower View-shed Delineation – Potential Sensitive Receptors Palen Solar Electric Generating System. Docketed 09-AFC-7C, TN#70343.
- Forbes, Jack D. 1965. *Warriors of the Colorado: The Yumas of the Quechan Nation and their Neighbors*. Norman, Oklahoma: University of Oklahoma Press.
- Forde, C. Daryll. 1931. *Ethnography of the Yuma Indians*. Berkeley: University of California Press.
- Fort Mojave Indian Tribe. n.d. Electronic Document. Available at <http://mojaveindiantribe.com/about/>, accessed May 13, 2013.
- Fowler, Catherine S. 2009. *Reconstructing Southern Paiute-Chemehuevi Trails in the Mojave Desert of Southern Nevada and California: Ethnographic Perspectives from the 1930s*. In: *Landscapes of Movement: Trails, paths, and Roads in Anthropological Perspective*. Ed by James Snead, Clark Erickson and Andrew Darling. U. of Pennsylvania, Philadelphia.

- Gallego, Dennis. 1981. National Register of Historic Places Inventory Nomination Form, CA-Riv-01814, North Chuckwalla Mountains Quarry. Available at University of California Riverside Eastern Information Center.
- Gates, Thomas. 2012. Redacted Version Hidden Hills Ethnographic Report. Docketed 11-AFC-02, TN#66701.
- Gifford, E.W. 1918. "Clans and Moieties in Southern California," *University of California Publications in Archaeology and Ethnology*, vol. 14(2), pp. 155-219.
- Gifford, E.W. 1926. "Yuman Dreams and Omens," *Journal of American Folklore*, vol. 39(151), pp. 58-69.
- Gilreath, A.J. 2007. "Rock Art in the Golden State: Pictographs and Petroglyphs, Portable and Panoramic," in *California Prehistory: Colonization, Culture, and Complexity*, pp. 273-289. T.L. Jones and K. Klar, eds. Lanham, MD: Academic Press.
- Grover, Nathan C. 1919. *Contributions to the Hydrology of the United States*. Water Supply Paper 450. Prepared for the United States Geological Survey.
- Gunther, Jane D. 1984. *Riverside County, California, Place Names: Their Origins and Their Stories*. Riverside, California: J.D. Gunther.
- Hedges, Ken. 1980. *The Petroglyphs of Riv-1383*. Available at University of California Riverside Eastern Information Center.
- Heintzelman, Samuel P. 2008. "Headquarters, Fort Yuma, California, July 15, 1853," *Journal of California and Great Basin Anthropology*, vol. 28(1), pp. 89-102.
- Heizer, Robert F., and M.A. Whipple (eds). 1971. *The California Indians: A Source Book*. Berkeley: University of California Press.
- Hinton, Leanne and Lucille J. Watahomieie. 1984. *Spirit Mountain: An Anthology of Yuman Story and Song*. Tucson, Arizona: Sun Tracks and University of Arizona Press.
- Hooper, Lucile. 1920. *The Cahuilla Indians*. Master's Thesis, University of California. Available at <http://babel.hathitrust.org/cgi/pt?id=uc2.ark:/13960/t4qj7851m#view=1up;seq=7>, accessed May 13, 2013.
- Ingold, T. 1986. *Territoriality and Tenure: The Appropriation of Space in Hunting and Gathering Societies*. In T. Ingold, *The Appropriation of Nature*. Manchester: Manchester University Press.
- Inter-Tribal Council of Arizona. 2011. Electronic Document. Available at http://itcaonline.com/?page_id=1173, accessed May 13, 2013.
- James, Harry C. 1960. *The Cahuilla Indians*. Riverside, California: Westernlore Press.
- Johnson, Boma. 2003. "Geoglyphs Associated with the *Xam Kwatcan* Trail in the Palo Verde Point Area, South of Blythe, California" Chapter 11, *A View Across the Cultural*

Landscape of the Lower Colorado Desert Cultural Resource Investigations for the North Baja Pipeline Project, J.H. Cleland and R.M. Apple, eds. Prepared for North Baja Pipeline, LLC, Portland, Oregon.

- Johnston, Francis J. and Patricia H. Johnston. 1957. "An Indian Trail Complex in the Central Colorado Desert" *University of California Archaeology Survey Report*, vol. 37, pp. 22-39. Berkeley.
- Kearney, Michael. 1984. *World View*. Novato, California: Chandler and Sharp Publishers, Inc.
- Kehoe, Alice Beck. 2006. *The Ghost Dance: Ethnohistory and Revitalization*. Long Grove, Illinois: Waveland Press, Inc.
- Kelly, David. 2012. "He's the Guardian of the Geoglyphs" *Sacramento Bee*, Monday May 10, 2012, Section A3.
- Kelly, Isabel T., and Catherine S. Fowler. 1986. "Southern Paiute" in *Handbook of North American Indians*, vol. 11, pp. 368-397. W.C. Sturtevant, ed. Washington D.C.: Smithsonian Institution.
- Kelly, William H. 1942. "Cocopah Gentes" *American Anthropologist*, vol. 44(4), pp. 675-691.
- Kelly, William H. 1977. *Cocopah Ethnography*. Tucson, Arizona: University of Arizona Press.
- Kendall, Martha B. 1978. "Yuman Languages," in *Handbook of North American Indians*, vol. 10, pp. 4-12. W.C. Sturtevant, ed. Washington D.C.: Smithsonian Institution.
- Kenny, Miles. 2010. *Preliminary Report of Ancient Shorelines in Ford Dry Lake for Genesis Solar Energy Project, Chuckwalla Valley, Riverside County, California*. Prepared for the California Energy Commission. Docket Number 09-AFC-8.
- King, Thomas F. 2003. *Places That Count: Traditional Cultural Properties in Cultural Resource Management*. Walnut Creek, California: Alta Mira Press.
- Kroeber, Alfred L. 1908. "Ethnography of the Cahuilla Indians," *University of California Publications in American Archaeology and Ethnology*, vol. 8(2), pp. 29-68.
- Kroeber, Alfred L. 1959. "Ethnographic Interpretations," *University of California Publications in American Archaeology and Ethnology*, vol. 47, pp. 235-310.
- Kroeber, Alfred L. 1963. "The Nature of Land-Holding Groups in Aboriginal California," in *Aboriginal California: Three Studies in Cultural History*. Berkeley: University of California Archaeological Research Facility.
- Kroeber, Alfred L. 1976. *Handbook of the Indians of California*. New York: Dover Publications, Inc.
- Laird, Carobeth. 1976. *The Chemehuevis*. Banning, California: Malki Museum Press.

- Langdon, Margaret. 1976. *Yuman Texts*. Native American Text Series, vol. 1(3). Chicago: University of Chicago Press.
- Laylander, Don. 1997. "The Last Days of Lake Cahuilla: The Elmore Site". *Pacific Coast Archaeological Society Quarterly*, vol. 33(1 and 2), pp. 1-138.
- Laylander, Don and Jerry Schaefer. 2011. *Draft – Chuckwalla Valley Prehistoric Trails Network Cultural Landscape: Historic Context, Research Questions, and Resource Evaluation Criteria*. Prepared for California Energy Commission.
- Lewis, M. Paul, Gary F. Simons, and Charles D. Fennig. 2013. *Ethnologue: Languages of the World, Seventeenth edition*. Dallas: SIL International Online version <http://www.ethnologue.com>
- Lewis-Williams, J.D. and T.A. Dowson. 1988. "The Signs of All Times" *Current Anthropology*, vol. 29, no. 2, pp. 201-245.
- Lincoln, Jackson Steward. 2003. *The Dream in Native American and other Primitive Cultures*. Mineola, New York: Dover Publications, Inc.
- Lytle, Farrel W., Manetta Lytle, Alexander K. Rogers, Alan P. Garfinkel, Caroline Maddock William-Wight, and Clint Cole. 2008. *An Experimental Technique for Measuring Age of Petroglyph Production: Results on Coso Petroglyphs*. Paper presented at the 31st Great Basin Anthropological Conference, Portland, Oregon.
- McAdams, Henry. 1958. "A Comparison of Ceremonial Practices Among the Serrano and Pass Cahuilla Indians" *San Bernardino County Museum Reports*, summer 1958.
- McAuliffe, Joseph R. and Eric V. McDonald. 2006. "Holocene environmental change and vegetation contraction in the Sonoran Desert" *Quaternary Research*, vol. 65, pp. 204-215.
- McCarthy, Daniel. 1993. *Prehistoric Land-Use at McCoy Spring: An Arid-Land Oasis in Eastern Riverside County, California*. Master's Thesis. University of California, Riverside.
- McCarthy, Daniel. 1986. Site Record CA-Riv-0132. Available at University of California Riverside Eastern Information Center.
- Mendenhall, W.C. 1983. *320 Desert Watering Places in Southeastern California and Southwestern Nevada*. Second edition. Las Vegas: Nevada Publications.
- Mithun, Marianne. 1999. *The Languages of Native North America*. New York: Cambridge University Press.
- Moratto, Michael. 1984. *California Archaeology*. New York: Academic Press.
- Morongo Band of Mission Indians. 2013a Electronic Resource. Available at <http://www.morongonation.org/content/economic-story>, accessed May 13, 2013.

- Morongo Band of Mission Indians. 2013b Electronic Resource. Available at <http://www.morongonation.org/content/cultural-heritage>, accessed May 13, 2013.
- Nabokov, Peter. 1981. *Indian Running: Native American History and Tradition*. Ancient City Press, Santa Fe, New Mexico.
- National Park Service. 2007. NPS-28 Cultural Resource Management Guidelines. Chapter 10. Electronic Resource. Available at http://www.nps.gov/history/history/online_books/nps28/28chap10.htm, accessed May 13, 2013.
- Nials, Fred L. 2013. *Geoarchaeology of the Palen Solar Electric Generating System Project Area*. Report submitted to California Energy Commission.
- Norris, Frank and Richard Carrico. 1978. *A History of Land Use in the California Desert Conservation Area*. Report submitted to the Bureau of Land Management. Riverside, California.
- Parker, Patricia and Thomas King. 1998. National Register Bulletin 38: Guidelines for Evaluating and Documenting Traditional Cultural Properties. United States Department of the Interior.
- Patencio, Chief Francisco. 1943. *Stories and Legends of the Palm Springs Indians*. As told to Margaret Boynton. Electronic Resource. Available at <http://babel.hathitrust.org/cgi/pt?id=inu.32000013153889#view=1up;seq=5>, accessed May 13, 2013.
- Ramona Band of Cahuilla Indians. 2005a. Electronic Resource. Available at <http://www.ramonatribe.com/aboutus.html>, accessed May 13, 2013.
- Ramona Band of Cahuilla Indians. 2005b. Electronic Resource. Available at <http://www.ramonatribe.com/projects.html>, accessed May 13, 2013.
- Ramon, Dorthy and Eric Elliot. 2000. *Wayta' Yawa' always believe*. Banning, California: Malki Museum Press.
- Reed, Judyth. 1981. National Register of Historic Places Inventory Nomination Form. CA-Riv-0132. Available at University of California Riverside Eastern Information Center.
- Ritter, Eric. 1981. Archaeological Appraisal of the Palen Dry Lake Area of Critical Environmental Concern, Riverside County, California. Available at University of California Riverside Eastern Information Center.
- Rondeau, Michael F. 2012. *The McCoy Fluted Point, Bureau of Land Management, Riverside County, California*. Prepared by Rondeau Archaeological for the United States Department of the Interior, Bureau of Land Management.

- Rusco, Elmer R. and Mary K. Rusco. 1986. "Tribal Politics," in *Handbook of North American Indians*, vol. 11, pp. 558-572. W.C. Sturtevant, ed. Washington D.C.: Smithsonian Institution.
- Russell, John C., Clyde M. Woods, Jackson Underwood. 2002. *An Assessment of the Imperial Sand Dune as a Native American Cultural Landscape*. Prepared for the Bureau of Land Management, Sacramento, California.
- Salt River Pima Indian Community. 2013. Electronic Resource. Available at http://www.srpmic-nsn.gov/history_culture/maricopa.asp, accessed May 13, 2013.
- Sample, L.L. 1950. *Trade and Trails in Aboriginal California*. Reports of the University of California Archaeological Survey No. 8. University of California Berkeley, Berkeley, California.
- San Manuel Band of Mission Indians. 2013a. Electronic Resource. Available at <http://www.sanmanuel-nsn.gov/tribal.php.htmlc>, accessed, May 13, 2013.
- San Manuel Band of Mission Indians. 2013b. Electronic Resource. Available at <http://www.sanmanuel-nsn.gov/economic.php.html>, accessed, May 13, 2013.
- Schaefer, Jerry and Don Laylander. 2007. "The Colorado Desert: Ancient Adaptations to Wetlands and Wastelands," in *California Prehistory: Colonization, Culture, and Complexity*, pp. 247-257. T.L. Jones and K. Klar, eds. New York: Alta Mira Press.
- Sherer, Lorraine M. 1965. "The Clan System of the Fort Mojave Indians", *Dreamers of the Colorado: The Mojave Indians – Part 1: Their land and Their Religion*. F.L. O'Neil and P.W. Wittmer eds. Tunxis Community College.
- Singer, C.A. 1984. "The 63-KM Fit". *Prehistoric Quarries and Lithic Production*, J.E. Erikson and B.A. Purdy eds. New York: Cambridge University Press.
- Smith, Gerald A. 1960. "Juan Antonio: Cahuilla Indian Chief and Friend of the Whites". San Bernardino County Museum Quarterly, vol. 8(1), pp. 31-42.
- Soboba Band of Luiseño Indians. 2013a. Electronic Resource. Available at <http://www.soboba-nsn.gov/index.php/history>, accessed May 13, 2013.
- Soboba Band of Luiseño Indians. 2013b. Electronic Resource. Available at <http://www.soboba-nsn.gov/index.php/government>, accessed May 13, 2013.
- Soboba Band of Luiseño Indians. 2013c. Electronic Resource. Available at <http://www.soboba-nsn.gov/index.php/economy>, accessed May 13, 2013.
- Spier, Leslie. 1953. *Yuman Tribes of the Gila River*. New York: Dover Publishing, Inc.
- Stewart, Kenneth. 1983a. "Mohave," in *Handbook of North American Indians*, vol. 10, pp. 55-70. W.C. Sturtevant, ed. Washington D.C.: Smithsonian Institution.

- Stewart, Kenneth. 1983b. "Yumans: Introduction," in *Handbook of North American Indians*, vol. 10, pp. 1-3. W.C. Sturtevant, ed. Washington D.C.: Smithsonian Institution.
- Stoffle, Richard W., David B. Halmo, and Diane E. Austin. 1997. "Cultural Landscapes and Traditional Cultural Properties: A Southern Paiute View of the Grand Canyon and Colorado River" *American Indian Quarterly*, vol. 21(2), pp. 229-249.
- Stoffle, Richard W. Kathleen Van Vlack, Alex K. Carol, Fletcher Chmara-Huff, and Aja Martinez. 2005. *Yanawant Paiute Places and Landscapes in the Arizona Strip: Volume One of the Arizona Landscapes and Place Name Study*. Bureau of Applied Research in Anthropology, University of Arizona, Tucson, Arizona.
- Stone, Connie. 1981. "Economy and Warfare Along the Lower Colorado River," *The Protohistoric Period in the North American Southwest, A.D. 1450-1700*. D.R. Wilcox and W.B. Masse eds., pp. 183-197. Tempe, Arizona: Anthropological Research Papers No. 24. Arizona State University.
- Strong, William Duncan. 1929. Aboriginal Society in Southern California. *University of California Publications in American Archaeology and Ethnology*, vol. 26. Berkeley: University of California Press.
- Sutton, Mark Q., M.A. Basgall, J.K. Gardner, and M.W. Allen. 2007. "Advances in Understanding Mojave Desert Preshistory," in *California Prehistory: Colonization, Culture, and Complexity*, pp. 229-245. T.L. Jones and K. Klar, eds. New York: Alta Mira Press.
- Taylor, Edith S. and William J. Wallace. 1947. *Mohave Tattooing and Face-painting*. Southwest Museum, Los Angeles.
- Tennyson, Matt and Rebecca Apple. 2009. *Cultural Resources Class III Report for the Proposed Palen Solar Power Project, Riverside County*. Prepared for Solar Millenium, LLC and Chevron Energy Solutions, August 2009.
- The Cultural Conservancy. 2010. Electronic Resource. Available at <http://www.nativeland.org/saltsong.html>, accessed May 13, 2013.
- Torres-Martinez Desert Cahuilla Indians. 2013a. Electronic Resource. Available at <http://www.torresmartinez.org/Departments/Planning/CulturalResources.aspx>, accessed May 13, 2013.
- Torres-Martinez Desert Cahuilla Indians. 2013b. Electronic Resource. Available at <http://www.torresmartinez.org/Government/TribalCouncil.aspx>, accessed May 13, 2013.
- Torres-Martinez Desert Cahuilla Indians. 2013c. Electronic Resource. Available at <http://www.torresmartinez.org/Departments/HR.aspx>, accessed May 13, 2013.
- Twenty-nine Palms Band of Mission Indians. 2013a. Electronic Resource. Available at <http://29palmstribes.com/history.html>, accessed May 13, 2013.

- Twenty-nine Palms Band of Mission Indians. 2013b. Electronic Resource. Available at <http://29palmstribes.com/triballeadership.html>, accessed May 13, 2013.
- Twenty-nine Palms Band of Mission Indians. 2013c. Electronic Resource. Available at <http://29palmstribes.com/index-3.html>, accessed May 13, 2013.
- United States Geological Survey. 2013. Electronic Resource. Available at <http://ga.water.usgs.gov/edu/watercyclesprings.html>, accessed, May 13, 2013.
- University of California Los Angeles. 2013. Alan Koloseike's Field Notes from Site 320, Palen Dry Lake. Available at the Fowler Museum at the University of California Los Angeles.
- Wallace, William J. 1947. "The Dream in Mohave Life," *Journal of American Folklore*, vol. 60(237), pp. 252-258.
- Waters, Michael. 1982. "The Lowland Patayan Ceramic Typology," in *Hohokam and Patayan: Prehistory of Southwestern Arizona*, pp. 537-570. R.H. McGuire and M.B. Schiffer, eds. New York: Academic Press.
- Westec. 1980. Cultural Resource Survey of the Proposed Southern California Edison Palo Verde-Devers 500Kv Transmission Line. Available at University of California Riverside Eastern Information Center. RI-0221.
- Wilson, P. 1988. *The Domestication of the Human Species*. New Haven: Yale University Press.
- Whitley, David. 1996. *Guide to Rock Art Sites: Southern California and Southern Nevada*. Missoula, Montana: Mountain Press Publishing Company.
- Whitley, David. 1998. "Finding Rain in the Desert: Landscape, gender, and Far Western North American Rock Art", in *The Archaeology of Rock Art*, C. Chippendale and P. Tacon, eds. New York: Cambridge University Press.
- Whitley, David. 2000. *The Art of the Shaman: Rock Art of California*. Salt Lake City: University of Utah Press.
- Whitley, David. 2001. National Register of Historic Places Inventory Nomination Form, Mule Tank, CA-Riv-504 and CA-Riv-773. Available at University of California Riverside Eastern Information Center.
- Whitley, David. 2011. *Introduction to Rock Art Research*. Walnut Creek, California: Left Coast Press.
- Wilke, Phillip. 1973. Site Record CA-Riv-0660. Available at University of California Riverside Eastern Information Center.
- Williams, Anita Alvarez. 1983. "Cocopah," in *Handbook of North American Indians*, vol. 10, pp. 99-112. W.C. Sturtevant, ed. Washington D.C.: Smithsonian Institution.
- Wilson, Eugene B. 1912. *Hydraulic and Placer Mining*. New York: John Wiley and Sons.

Wilson, Peter J. 1988. *The Domestication of the Human Species*. New Haven, Connecticut:
Yale University Press.

APPENDIX

Table A1: Items Traded between Groups in the Southern California Desert and Beyond

([Davis 1961:15-45] y axis – recipients, x axis – givers)

	Chemehuevi	Mohave	Cahuilla	Quechan	Serrano	Tribes to West	Tribes to East
Chemehuevi	X						
Mohave	Eagle down, chicken hawk down	X				Acorns, unspecified goods	Rabbit-skin blankets, red paint, meat of deer, mountain sheep, antelope, cottontail, jackrabbit, and rat, Hopi and Navajo blankets, eagles, eagle feathers, buckskin, mountain sheep skins, eagle down, chicken hawk down, mescal, woven wool ponchos
Cahuilla	Basketry caps and conical burden baskets		X	Gourd rattles			Gourd rattles and red paint

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Quechan		Gourds, eagle feathers		X		Acorns, tobacco	Rabbit- skin blankets, baskets, buckskin, other skins, mescal, finished skin dresses, martynia pods (used in basketry)
Serrano						Acorns, deer skins, seed foods	
Tribes to West		Gourd seeds, unspecified goods	Tule roots, bulbs, cattail sprouts, yucca leaves, mescal, pine nuts, manzanita berries, chokecherries , mesquite beans	Gourd seeds, tobacco	Shell beads, dried fish, sea otter pelts, steatite vessels	X	
Tribes to East	Shell beads	Horses, shells (halketap), shell beads, glass beads, beadwork, corn, dried pumpkin, screw and mesquite beans, kwava			Glass trade beads, dried pumpkin , maize, beans, melons		X

| seeds,
beans

Table A2: Culturally Important Plant Species

Legend - A-Mohave; B-Chemehuevi; C-Quechan; D-None
E-Cahuilla; F-No specified tribe;
G-Serrano

Common Name	Scientific Name	Indian Name	Use	Potential to Occur in Project Area	Reference
Agave	<i>Agave</i> sp.	Amul (E)	Food (B, D, E); cordage (C, E)	None	Bean and Toenjes 2012; Driver 1957; Bean and Saubel 1972
Arrowhead/wild onion	<i>Sagittaria latifolia</i>	Če□ (D)	Food (D)	None	Kelly 1977
Arrowweed	<i>Pluchea sericea</i>	Hangal (E)	Traditional house construction (A,B,C,D,E); arrows (A,B,C); fish nets and traps (C); granaries (C); lining earth oven and pit mortars (C); covering of shelter for drying seeds (C); shelter for mourning ceremonies (C); torches for mourning ceremony (C); gum from roots to fasten handle of gourd rattle or gum mixed with mud and plastered on girl's head in puberty rite (C); couch in girl's puberty rite (C); shield (C); stakes for goal in game (C); archery target (C); funeral pyre (C);	Moderate	Bean et al. 1978; Driver 1957; Kroeber 1908; Langdon 1976; Kroeber 1976; Kelly 1977; Bean and Saubel 1972

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Barrel cactus	<i>Ferocactus cylindraceus</i>	Copash (E)	beater of basket drum (C); glue (A); cradleboards (A); basketry (D); granary construction (E) Food (E); water (E)	High	Bean et al. 1978
Bladderpod	<i>Isomeris arborea</i>		Food (E)	Low	Bean and Saubel 1972
Blazing star	<i>Mentzelia sp.</i>		Food (E)	Low	Bean and Saubel 1972
Boxthorn	<i>Lycium sp.</i>		Food (E)	Moderate	Bean et al. 1978; Bean and Saubel 1972
Brittlebush	<i>Encelia farinose</i>	Pa'akal (E)	Medicine (E)	Moderate	Bean et al. 1978; Bean and Saubel 1972
Buckthorn	<i>Rhamnus californica</i>		Medicine (E); food (E)	Low	Bean and Saubel 1972
Buckwheat	<i>Eriogonum sp.</i>	Hulaqal (E)	Food (E); medicine (E)	Low	Bean and Saubel 1972
Bulrush/ cattail/tule	<i>Typha latifolia, T. angustifolia</i>	Saimpiv (B), Atpilya (A); pa'ul (E)	Flutes (B); pollen (C); rhizomes (C); food (D, C,E); basketry (C,E); boats/rafts (D, C, A); thatching (G,E)	Low	Borrows 1978; Laird 1976; Driver 1957; Kroeber 1976; Kelly 1977; Bean and Smith 1978; Bean and Saubel 1972
Burrobush	<i>Ambrosia dumosa</i>			Moderate	Bean et al. 1978

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Bursage	<i>Ambrosia deltoidea</i>			Moderate	Bean et al. 1978
California poppy	<i>Eschscholzia sp.</i>	Tesinat (E)	Cosmetic (E); sedative for babies (E)	Low	Bean and Saubel 1972
Cane	<i>Phragmites communis</i>		Arrow (B, C); basketry (C); floats/rafts (C); flutes and whistles (C); funeral effigy (C); scarecrows (C); tobacco pipe (C)	Moderate	Kroeber 1976; Driver 1957; Forde 1931
Cactus	Cylindropuntia echinocarpa, Cylindropuntia ramosissima, Mammillaria tetrancistra, Mammillaria grahamii, Opuntia basilaris, Echinocactus polycephalus	Mutal (E); manal (E); chukal (E);	Thorns used for fishing and tattooing (C); food (C, E); medicine (E)	High	Laird 1976; Driver 1957; Bean and Saubel 1972
Carrizo	<i>Chamaesyce pediculifera</i>	Pagamp□	Arrow shafts (B)	Moderate	Laird 1976
California ditaxis	<i>Ditaxis californica</i>			Moderate	Bean et al. 1978
Catclaw	<i>Acacia greggii</i>	Sichingily (E)	Food (E), construction (E), firewood	Moderate	Bean and Saubel 1972
Cheesebush	<i>Hymenoclea salsola</i>			Moderate	Bean et al. 1978
Centauray	<i>Zeltnera venusta</i>		Medicine (E)	Moderate	Bean and Saubel 1972
Chia	<i>Salvia columbariae</i>	Av'a (C)	Medicinal (B); food (C,G)	Low	Bean et al. 1978; Driver 1957
Chuparosa	<i>Beloperone californica</i>	Pisily (E)	Food (E)	Low	Bean and Saubel 1972
Cottonwood	<i>Populus sp.</i>	Soovimp□ lavalvanat (E)	Bows (C); mortars (C); rafts (C); house construction (C,E); firewood (C,E);	Low	Laird 1976; Driver 1957;

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			cremations (C); shelters for mourning ceremony (C); mortars (E)		Bean and Saubel 1972
Creosote	<i>Larrea tridentate</i>	yatamp□ (B); atukul (E)	Medicinal (B,E)	High	Bean and Toenjes 2012; Laird 1976; Bean and Saubel 1972
Crucifixion thorn	<i>Castla emoryi</i>		Food (C)	Moderat e	Drvier 1957
Crucillo	<i>Condalia parryi</i>	Chawaxat (E)	Food (E)	Low	Bean and Saubel 1972
Croton	<i>Croton californicus</i>	Te'ayal (E)	Medicine (E)	Low	Bean and Saubel 1972
Curly dock	<i>Rumex crispus</i>		Food (C, A)	Moderat e	Driver 1957; Kroeber 1976
Desert lavender	<i>Hyptis emoryi</i>		Medicine (E)	High	Bean and Saubel 1972
Desert lily	<i>Hesperocallis undulata</i>		Food (C; E)	High	Driver 1957; Bean and Saubel 1972
Desert peach	<i>Prunus andersonii</i>		Food (E)	Low	Bean and Saubel 1972
Desert saltbrush	<i>Atriplex polycarpa</i>		Food (C)	Moderat e	Driver 1957
Devil's Claw	<i>Proboscidea arenaria</i>	Akawat (E)	Basketry (B,C, E,F)	Moderat e	Bean et al. 1978; Bretting and Nablan 1986; Bean and Saubel 1972

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Elephant tree	<i>Bursera microphylla</i>	Kelawat eneneka (E)	Medicinal (E)	Low	Bean and Saubel 1972
Fan Palm	<i>Washingtonia filifera</i>	Maul (E)	Food (E), mythology (E); house construction (E); rattles (E); sandals (E)	Low	Bean and Saubel 1972
Grasses	<i>Epicampes</i>		Basketry (E)		Kroeber 1976
Greasewood	<i>Adenostoma fasciculata</i>	Ataquil (E)	Sacred plant placed on walls of ceremonial and private houses for protection (E); medicinal (B,E, F); traditional house construction (E); bedding for sweat bath (C); tea (C); nose piercing (C); lacing (C)	Unknown	Bean et al. 1978; Borrows 1978; Driver 1957
Ground cherry	<i>Physalis fendleri, P. pubescens</i>		Food –fruit only eaten by children (C)	Low	Driver 1957
Hackberry	<i>Celtis reticulata</i>		Food (C)	Moderate	Driver 1957
Hog potato	<i>Hoffmannseggia glauca</i>		Food (C)		Driver 1957
Indigo bush	<i>Dalea emoryi</i>		Dye (E); medicine (E)	Moderate	Bean and Saubel 1972
Iodine bush	<i>Allenrolfea occidentalis</i>		Food (C)	Low	Driver 1957
Ironwood	<i>Oneya tesota</i>	Kelwat qalwiswet (E), □aaparki□ i (B), Axpai□ (C)	Sacred plant used in cremation ceremonies (E); tools (E); food (C,E); rattles (C)	High	Bean et al. 1978; Laird 1976; Driver 1957; Bean and Saubel 1972
Jimson weed	<i>Datura metaloides. D. discolor</i>	Momop□ (B); Smalykapit	Medicinal/Hallucinogen (B, C, E); dream inducing (A,C, E)	Unknown	Bean et al. 1978; Bean and

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		a (C); Malykatu (A); kiksawva'a I (E)			Toejenes 2012; Laird 1976; Kroeber 1976; Driver 1957; Bean and Saubel 1972
Jojoba	<i>Simmondsiaceae</i>	Qawnaxal (E)	Medicinal (B), Food (C,E)	Unknow n	Bean et al. 1978; Driver 1957
Lamb's quarter	<i>Chenopodium berlandieri</i>		Food (B, F)	Low	Bean et al. 1978
Mariposa lily	<i>Calochortus var.</i>	Talyki (E)	Food (E)	Low	Bean and Saubel 1972
Mecca aster	<i>Xylorhiza cognata</i>			Moderat e	Bean et al. 1978
Mescal	<i>Agave deserti</i>		Fibers used for bow backing (E); sandals (E); rope and cordage (E)		Bean 1978; Kroeber 1976

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Mesquite	<i>Prosopis juliflora</i>	Eya'c (C), □opimp□ (B); Halyahwai – mallet- headed club (A); Tokyeta - straight club (A; ily (E))	Food (A,B,C,D,E,F,G); traditional house construction (C,E); bows (C,E); bark and clay mixed for hair dye and cleaning (C, D, F); firewood (F); mortar and pestle (C); weapons (A, C, D); planting/weeding stick (C); ball (C); shinny stick (C); pottery paddle (C); basketry coiling awl (C); weaving sword (C); fish net (C); cremation torches (C); gum used to fasten gourd rattle and feathers to arrow (C); gum mixed with pigments for paint (C); gum mixed with mud for girl's hair puberty rite (C); charcoal tattooing (C, A); cradle frame and hood (C, A); medicinal (C); drink (A); sap used for paint (D); sap for medicinal use (D); bark for diapers (E)	High	Bean et al. 1978; Kroeber 1908; Laird 1976; Driver 1957; Taylor and Wallace 1947; Langdon 1976; Kroeber 1976; Kelly 1977; Williams 1978; Bean 1978; Bean and Saubel 1972
Milkvetch	<i>Astragalus var.</i>	Qashil	Food flavoring (E)	Moderate	Bean and Saubel 1972
Milkweed	<i>Asclepias var.</i>	Kivat or kiyal (E)	Gum (E), fiber (E), food (E)	Moderate	Bean and Saubel 1972
Mistletoe	<i>Phoradendron sp.</i>	Chayal (E)	Food (E); dye (E)	Moderate	Bean and Saubel 1972
Mormon Tea	<i>Ephedra nevadensis</i>	Tutut (E)	Beverage (E)	Low	Bean and Saubel 1972
Nolina	<i>Nolina bigelovii</i>	Kuku'ul (E)	Food (E)	Low	Bean and Saubel 1972

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Ocotillo	<i>Fourquieria splendens</i>	Utush (E)	Food(E); construction material (E)	High	Bean and Saubel 1972
Orocopia sage	<i>Salvia greatae</i>			Moderate	Bean et al. 1978
Paloverde (blue)	<i>Cercidium floridum</i>	U'uwet (E)	Food (C, E)	High	Driver 1957; Bean and Saubel 1972
Paloverde (yellow)	<i>Cercidium microphyllum</i>		Food (C, E)	High	Driver 1957; Bean and Saubel 1972
Panic grass	<i>Panicum hirticaule</i>	Sangval (E)	Food (C,E)	Moderate	Driver 1957; Bean and Saubel 1972
Peppergrass	<i>Lepidium nitidum</i>	Pakil (E)	Medicine (E)	Low	Bean and Saubel 1972
Pigweed	<i>Amaranthus retroflexus</i> , <i>Amaranthus palmeri</i>	Koa-p (D); pekat (E)	Food (B,C, D, E)	Low	Bean and Saubel 1972; Driver 1957
Pinon	<i>Pinus monophylla</i>		Food (C, D, E)	None	Driver 1957; Kelly 1977
Prickly pear	<i>Opuntia basilaris</i> , <i>O. engelmannii</i>	Qexe'yily (E)	Food (B,C,D,E,F)	High	Bean et al. 1978; Driver 1957; Kelly 1977; Bean and Smith 1978; Bean and Saubel 1972
Quail brush	<i>Atriplex lentiformis</i>		Food (C)	Low	Driver 1957
Rabbit Brush	<i>Chrysothamnus nauseosus</i>	Tesinit (E)	Medicine	Moderate	Bean and Saubel 1972

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Reed	<i>Juncus robustus</i> <i>Rhus trilobata</i> <i>Phragmites communis</i>	Pakhal (E)	Basketry (E); tea (E); cordage (E)		Bean 1978; Bean et al. 1978; Kroeber 1976; Bean and Saubel 1972
Sagebrush	<i>Artemisia ludoviciana</i> ; <i>Salvia</i> sp.	Murunav□ or S□□api (B); qas'ily (E)	House thatching (B, E); food (B,E); arrow shafts (E); Medicine (E)	Unknow n	Bean and Toenjes 2012; Bean and Saubel 1972
Saguaro cactus	<i>Cereus gigantean</i>		Food (C); drink (C)	none	Driver 1957
Salt Grass	<i>Distichlis spicata</i>	Simut (E)	Condiment (E)	Low	Bean and Saubel 1972
Sandfood	<i>Pholisma sonora</i>		Food (C)	Low	Driver 1957
Santa Rosa sage	<i>Salvia eremosachya</i>			Moderat e	Bean et al. 1978
Screwbean	<i>Prosopis pubescens</i>	Kwiyaram p□ (B), i'i'c (C); qwinyal (E)	Food (B, C,E); fish hooks (C)	High	Bean et al. 1978; Driver 1957; Bean and Saubel 1972
Seepwillow	<i>Baccharis glutinosa</i>		Food (C)	Low	Driver 1957
Smoketree	<i>Psoralea spinosa</i>	□□n□pim ahav□	Mythological - devil bush (animates whirlwinds) (B)	Moderat e	Laird 1976
Spanish needles	<i>Palafoxia linearis</i>	Tesqal (E)	Yellow dye (E)	Low	Bean and Saubel 1972
Spurge	<i>Chamaesyce platysperma</i>			Moderat e	Bean et al. 1978
Sumac	<i>Rhus trilobata</i>		Basketry materials (E)	Unknow n	Kroeber 1908
Tansy mustard	<i>Descurainia</i> sp.	Asily (E)	Food (C, E); medicine (E)	Unknow n	Driver 1957; Bean and Saubel 1972

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Tobacco	<i>Nicotiana sp.</i>	Mela'v (C); pivat (E)	Smoked (C, E); used in curing soul loss (C); mythology (E); medicine (E)	Unknown	Driver 1957; Forde 1931; Bean and Saubel 1972
Wild grape vine	<i>Vitis girdiana</i>	iyavimp	Tying house poles (B); food (B)	Low	Laird 1976
Wild rice	<i>Uniola palmeri</i>	Nyupa (D)	Food (D)	None	Kelly 1977
Wild rhubarb	<i>Rumex hymenosepalus</i>	Maalval (e)	Hide tanning (E)	Low	Bean and Saubel 1972
Wild Sand-Verbena	<i>Abronia villosa</i>	Temal nyuku (E)	Games (E)	Moderate	Bean and Saubel (1972)
Willow	<i>Salix gooddingii</i>	Sagah/Kanav (B); qaankish (E); avasily (E)	Medicinal (B); basketry (B,C,D,F); house construction (A,B,C,D,E,G); cradleboards (B); bows (B,C,D,E); food (C); tea (C,E); shield (C); apron (C,D); breechcloth (C); fish net (C); twine (C); cordage (C); dress (C, A); pottery (C); scalping (C); shinny stick (C); weaving sword (C); scratching stick for girl's puberty rite (C); firewood (C); drum sticks (C); stick for throwing mud balls game (C); mixed with ashes and bark, paste put on severed umbilicus (C); used in curing soul loss (C); tattooing (A); ball (A); dice (A); rafts (D); rope –bark (D)	Low	Bean et al. 1978; Laird 1976; Hinton and Watahumi 1984; Driver 1957; Forde 1931; Taylor and Wallace 1947; Langdon 1976; Kelly 1977; Williams 1978; Bean and Smith 1978; Bean 1978; Bean and Saubel 1972
Wolfberry	<i>Lycium fremontii, L. exsertum</i>		Food (C)	Moderate	Driver 1957

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Wormwood	<i>Artemisia ludoviciana</i>		Mesquite storage baskets (E); arrow shaft (E)	Low	Kroeber 1908
Yerba del Pasco			Medicinal (B)	Low	Bean et al. 1978
Yucca	<i>Yucca mohavensis</i> , <i>Yucca schidigera</i>	□uuvimp□ (B), kaayuvimp □ (B), sovaramp □ (B)	Pole binding (E); Food (B,G,E); cordage (C,E); carrying strap (C)	Low	Borrows 1978; Bean and Toenjes 2012; Driver 1957; Bean and Smith 1978; Bean and Saubel 1972

Table A3: Culturally Important Animal Species

Legend - A-Mohave; B-Chemehuevi; C-Quechan; D-None; E-Cahuilla; F-No specified tribe G-Serrano					
Common Name	Scientific Name	Indian Name	Use	Potential to Occur in Project area	Reference
American egret	<i>Casmerodius egretta</i>		Feathers (C)	Low	Driver 1957
Arizona cottontail	<i>Sylvilagus auduboni arizonae</i>		Food (C); blankets (C)	Low	Driver 1957
Badger	<i>Taxidea taxus</i>	Huna (B)	Sacred (B)	Moderate	Laird 1976
Bat		Paatsatsi (B)	Sacred (B)	Unknown	Laird 1976
Bighorn sheep	<i>Ovis canadensis</i>	Naxa (B), Amō' (c)	Food (B, C, G); sacred (B)	Low	Laird 1976; Bean and Smith 1978
Black widow spider		Hukāmpi (B)	Sacred (B)	Unknown	Laird 1976
Blue Jays		āngla (B)	Sacred (B)	Very Low	Bean and Toenjes 2012; Laird 1976
Bobcat	<i>Lynx rufus</i>		Skin for quivers or worn on head during Deer dance (C)		Driver 1957
Bony tail		Meko'ik (C)	Food (C)	None	Forde 1931
Buzzards		Wiku (B)	Sacred (B)	Unknown	Bean and Toenjes 2012; Laird 1976
California gray fox	<i>Urocyon cinereoargenteus</i>	Yāpatsi (B)	Sacred (B, F)	Moderate	Laird 1976; Bean and Toenjes 2012
Chicken		Kwaroyaawi		Unknown	Laird 1976
Chuckwalla	<i>Sauromalus obesus obesus</i>	Tcagwara (B)	Food (B); sacred (B)	Moderate	Laird 1976
Cougar	<i>Puma concolor</i>	Tukumumuuntsi (B)	Sacred (B)	Low	Laird 1976

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Coyote		C□na□avi	Creation story/myth (B,E, G); food – in times of great hunger (B)	Moderate	Laird 1976; Bean and Smith 1978
Crows	<i>Crovis corax sinuatus</i>	□atap□tsi (B)	Sacred (B); feathers used on arrows and mourning ceremony (C)	Moderate	Driver 1957; Laird 1976
Deer	<i>Odocoileus hemionus</i>	T□hiya (B), akwa'k (C)	Food (B, C, G); buckskin (B); sacred (B); infant and cradle cover (C); shield (C); hoof rattles (G)	Low	Laird 1976; Driver 1957; Bean and Smith 1978
Desert cottontail	<i>Sylvilagus audubonii</i>	Tavutsi (B)	Sacred (B); food (B); blankets (B)	Moderate	Laird 1976
Desert tortoise	<i>Gopherus agassizi</i>	□aya (B)	Food (B,C,E); Sacred (B,E); Rattles (G)	Moderate	Bean et al. 1978; Driver 1957; Bean and Smith 1978
Dove			Food (C)	Low	Driver 1957
Duck		Tc□xa	Food (B, C)	Low	Laird 1976
Flickers	<i>Zenaida macroura</i>		Sacred (C)	Moderate	Bean et al. 1978
Fly		Muupitsi (B)	Myth (C)	Unknown	Laird 1976
Frog		Wagata (B)	Creation story/myth (C, G)	Unknown	Laird 1976; Bean and Smith 1978
Gecko		Mugwi□a (B)		Unknown	Laird 1976

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Gila Monster	<i>Heloderma suspectum</i>	□□tcivi (B)	Sacred (C)	Low-Moderate	Laird 1976
Golden eagle	<i>Aquila chrysaetos</i>	M□ngi (B)	Sacred (B); feathers worn in hair, mourning ceremony, and arrows (C)	Moderate	Bean and Toenjes 2012; Laird 1976; Driver 1957
Gopher	<i>Thomomys bottae</i>		Food (C)	Moderate	Driver 1957
Grasshopper		□Aatakapitsi (B)	Sacred (B)	Unknown	Laird 1976
Ground squirrel	<i>Spermophilus tereticaudus</i>	Tava□atsi (B)		Moderate	Laird 1976
Hawk (unspecified)			Feathers used for ceremonies, ghost doctors, arrows and war bonnets (C)	Moderate	Driver 1957
Horned toad		Makatcatsi (B)		Unknown	Laird 1976
Horsefly		Pipita (B)		Unknown	Laird 1976
Humpback fish		Tsáxnap (C)	Food (C)	None	Forde 1931
Jackrabbit	<i>Lepus californicus</i>	Kam□ (B)	Sacred (B); food (B, C); blankets (B, C)	Moderate	Laird 1976
Lesser snow goose	<i>Chen hyperboreus</i>		Food (C); feathers on arrows (C)	Low	Driver 1957
Little brown crane	<i>Grus canadensis</i>		Feathers used in mourning ceremony and war bonnet (C); leg bone used in guessing game (C)	Low	Driver 1957

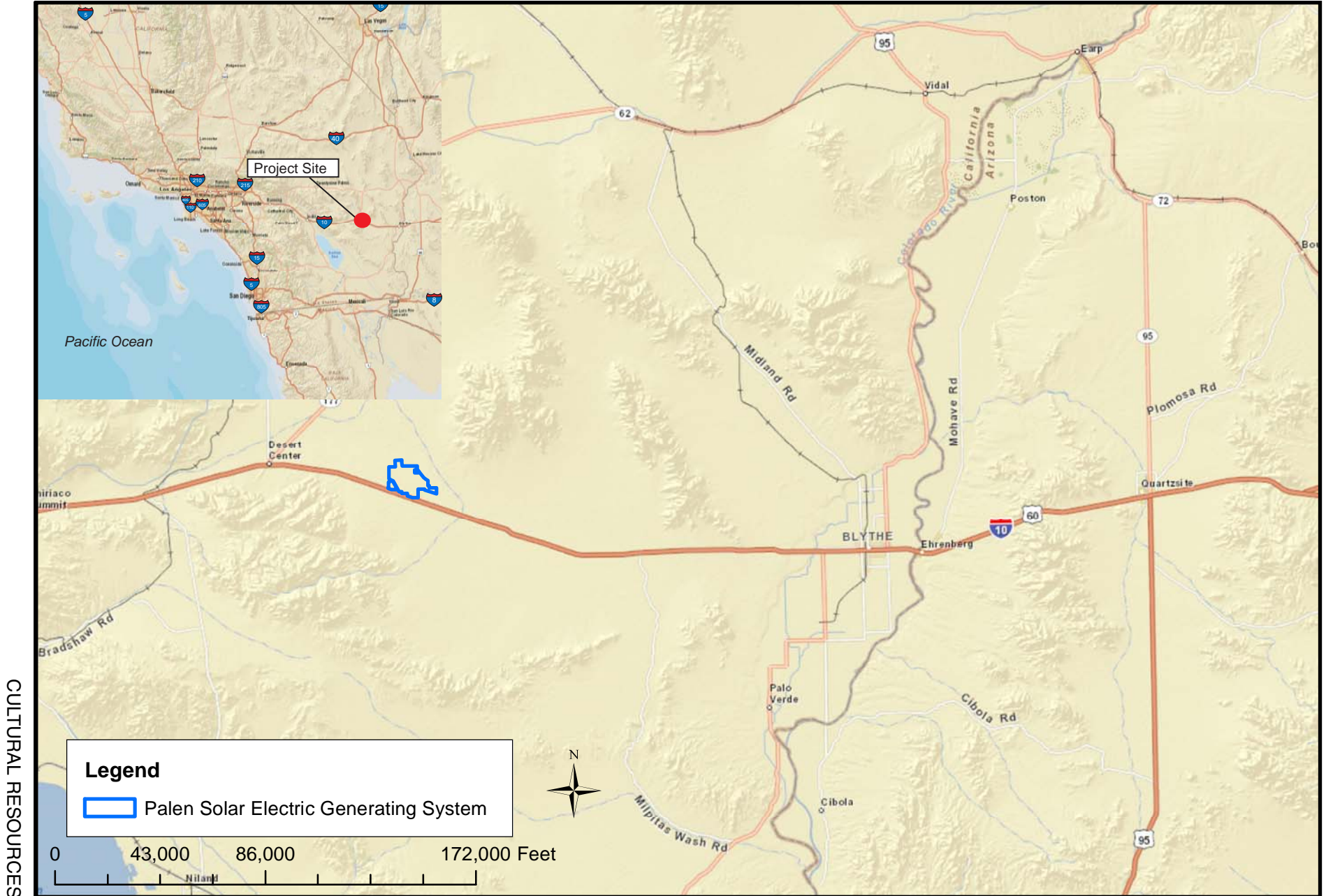
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Louse		Poo□□avi (B)	Sacred (B)	Unknown	Laird 1976
Mockingbird		Yampa (B)	Myth (B)	Low	Laird 1976
Mosquito		Muhavi (B)		Unknown	Laird 1976
Mountain Sheep	<i>Ovis candensis</i>				
Mourning dove	<i>Zenaida macroura</i>	Hi□ovi	Sacred (B, C)	Moderate	Laird 1978; Bean et al. 1978
Mouse	<i>Peromyscus sp.</i>	Pu□□intcastsi (B)	Food (C)	Unknown	Laird 1976
Nighthawk		Maumáup□tsi		Very low	Laird 1976
Owls	<i>Athene cunicularia</i>	muhuump□tsi (B), tavamuhuump□s (B)-day owl; Pa□n□nagw□itsi (B)-burrowing owl	Sacred (B)	Moderate-High	Bean and Toenjes 2012; Laird 1976
Prairie falcons	<i>Falco mexicanus</i>		Sacred (C)	Moderate	Bean et al. 1978
Pronghorn antelope	<i>Antilocapra Americana</i>	Mo'□'I (c)	Food (C, G)	Moderate	Driver 1957; Forde 1931; Bean and Smith 1978
Quail	<i>Lophoortyx gambeli</i>	Kakara	Sacred (B, C); Food (C, G)	Moderate	Laird 1976; Hinton and Watahumigie 1984; Driver 1957; Bean et al. 1978; Bean and Smith 1978
Rat	<i>Netotoma sp.</i>	Kaatsi (B)	Food (C)	Unknown	Laird 1976; Driver 1957
Red ants		Tsasiyavi (large), □Angavi (small) (B)		Unknown	Laird 1976
Red racer	<i>Coluber flagellum piceus</i>	N□nt□navi (B)		Moderate	Laird 1976
Red-tailed hawk		Kwanantsitsi	Sacred (B); Feathers used for ceremony (F)	Moderate	Laird 1976; Bean et al. 1978
Sandbar fly		□Atarakamuupitsi (B)	Sacred (B)	Unknown	Laird 1976

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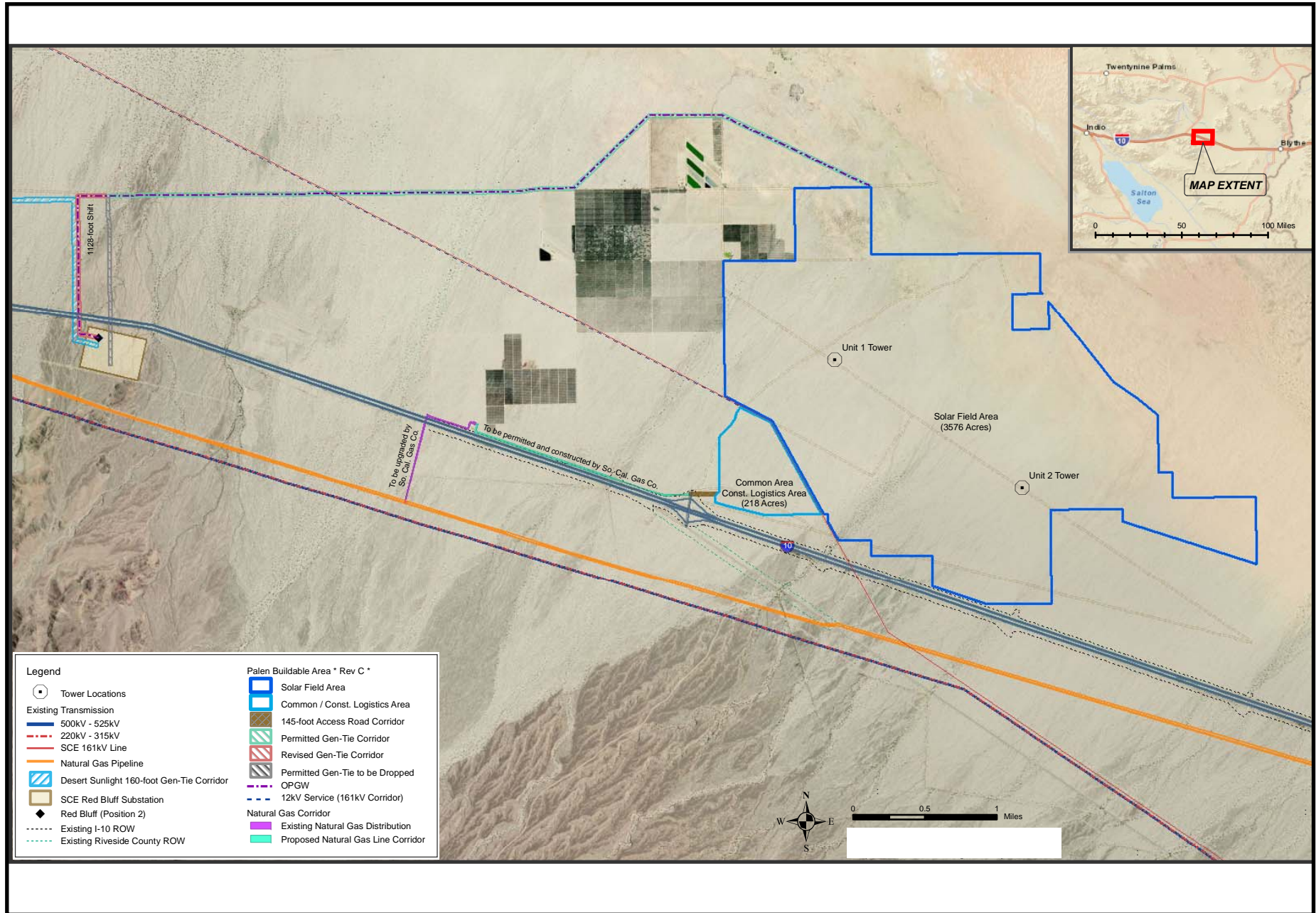
Seagull		Pawanantsi (B)	Sacred (B)	Unknown	Laird 1976
Sidewinder	<i>Crotalus cerastes</i>	Tannakaitsi (B)		Moderate	Laird 1976
Skunk	<i>Spilogale gracilis</i>	Poniya (B)	Sacred (B)	Moderate	Laird 1976
Snowy egret	<i>Egretta candidissima</i>		Feathers (C)	Low	Driver 1957
Spider		Hokoso□□avi (B)		Unknown	Laird 1976
Sphinx moth	<i>Celerio lineata</i>		Food – larvae (C)	Moderate	Driver 1957
Turkey vultures	<i>Cathartes aura</i>		Sacred (C)	Moderate	Bean et al. 1978
Water spider		Pahokoso□□avi (B)	Sacred (B)	Unknown	Laird 1976
Western diamond-backed rattlesnake	<i>Crotalus atrox</i>	Kwiyatsi (B)	Sacred (B); rattles worn in hair by warriors (C)	Moderate	Laird 1976; Driver 1957
White “salmon”		Maw□'lk (C)	Food (C)	None	Forde 1931
Yellow jacket	<i>Vespulla sp.</i>		Food – larvae (C)	Moderate	Driver 1957

CULTURAL RESOURCES - ETHNOGRAPHIC STUDY - FIGURE 1
 Palen Solar Power Project - Project Vicinity Map



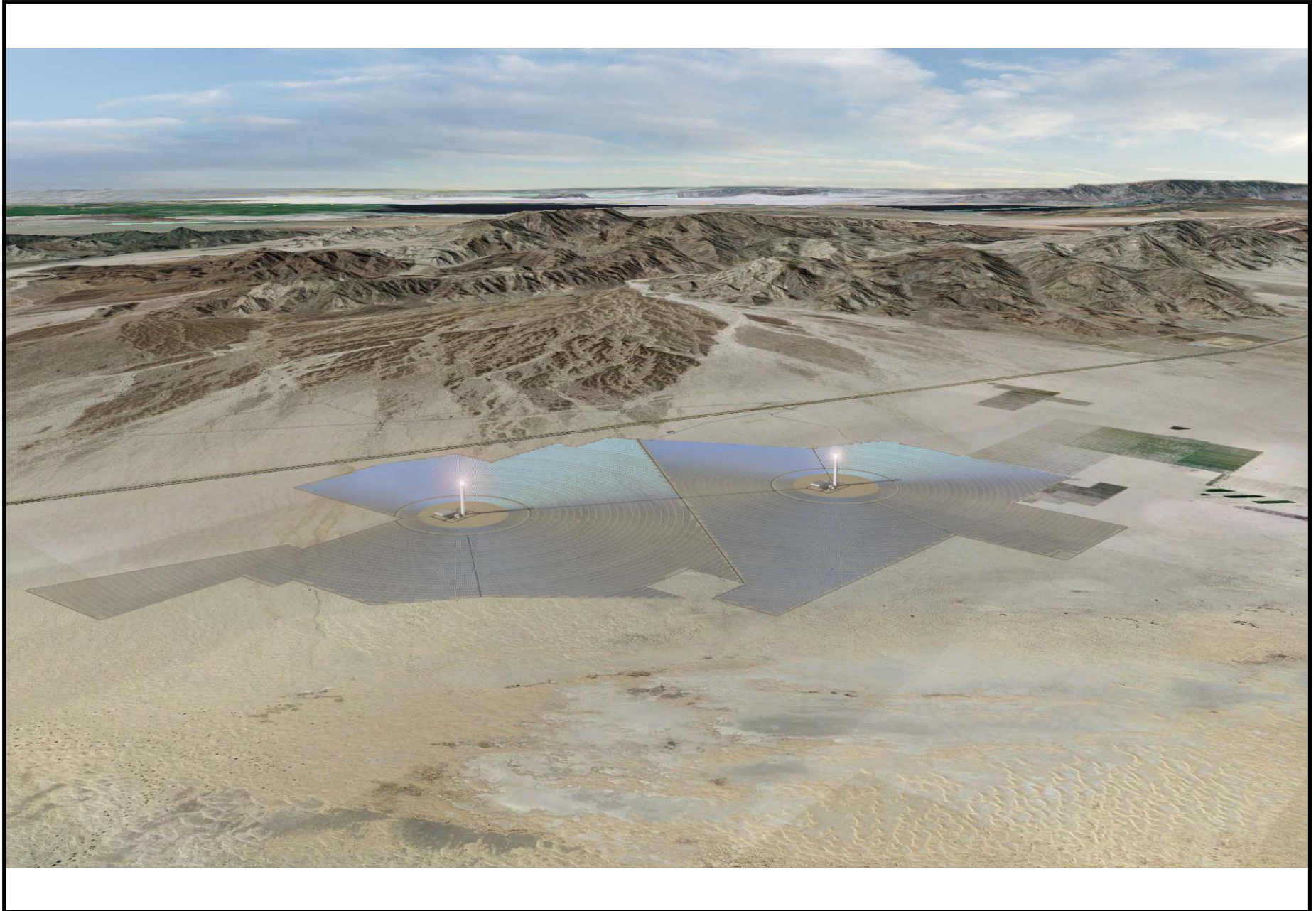
CULTURAL RESOURCES

CULTURAL RESOURCES - ETHNOGRAPHIC STUDY - FIGURE 2
 Palen Solar Power Project - Project Site Map



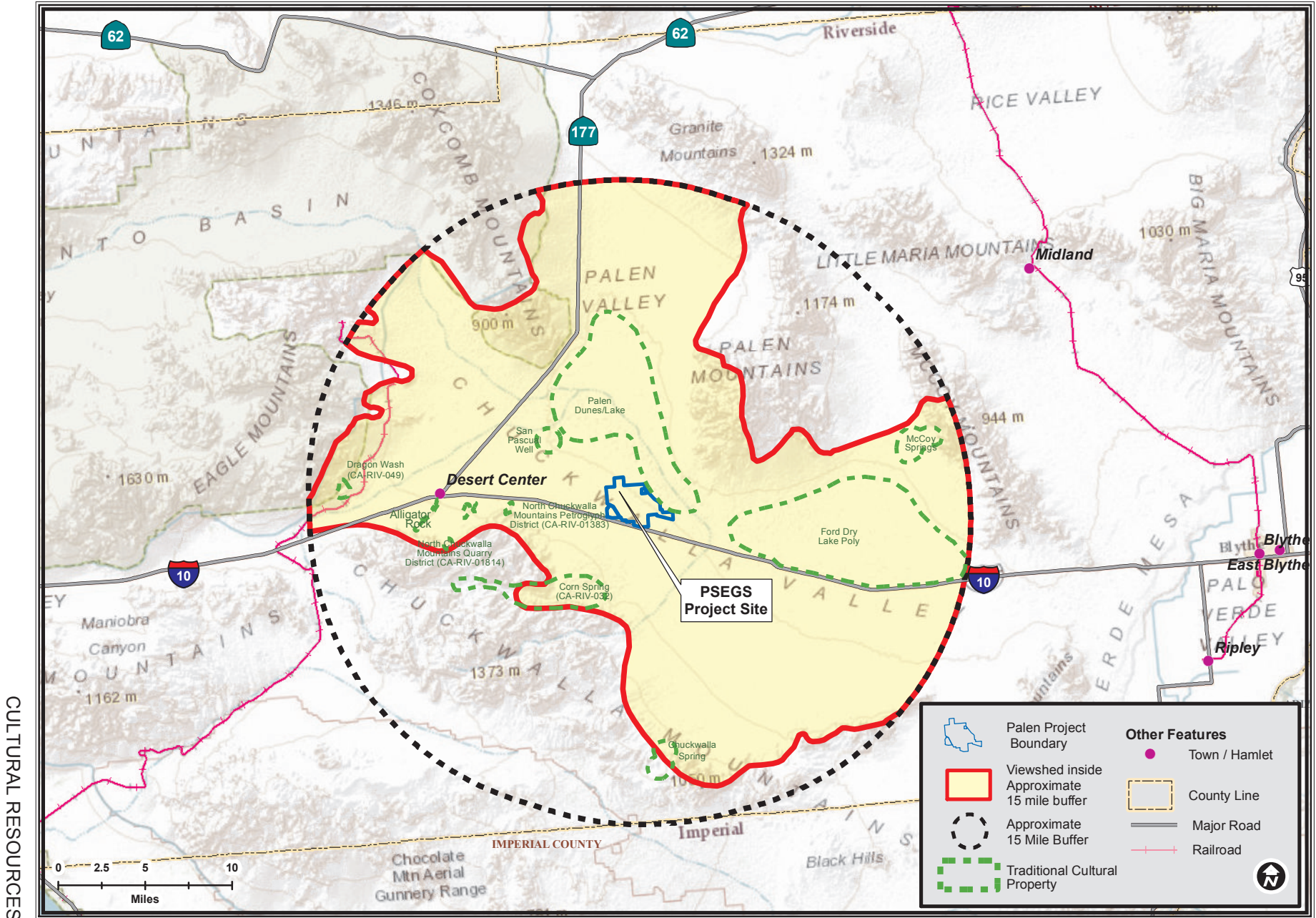
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CULTURAL RESOURCES - ETHNOGRAPHIC STUDY - FIGURE 3
Palen Solar Power Project - Oblique View Facing Southwest

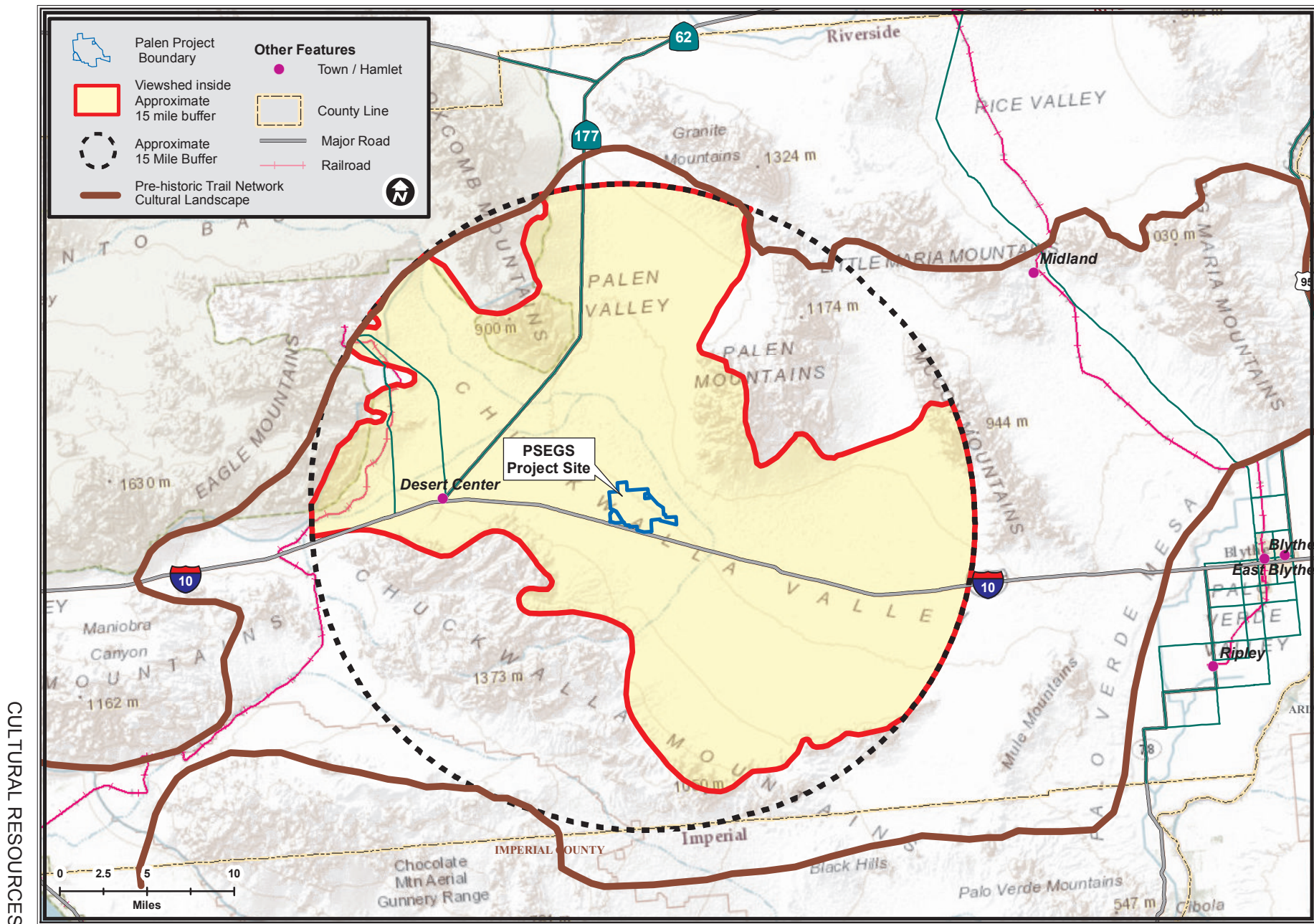


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CULTURAL RESOURCES- ETHNOGRAPHIC STUDY - FIGURE 4
 Palen Solar Electric Generating System - Places of Importance to Tribes



CULTURAL RESOURCES- ETHNOGRAPHIC STUDY - FIGURE 5
Palen Solar Electric Generating System - PTNCL Overlay



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CULTURAL RESOURCES- ETHNOGRAPHIC STUDY - FIGURE 6
 Palen Solar Electric Generating System - Pacific to Rio Grande Trails Landscape



CULTURAL RESOURCES - ETHNOGRAPHIC STUDY - FIGURES 7 AND 8
Palen Solar Electric Generating System - General Tribal Occupation Lands

Figure 7: California 17th Century AD



Figure 8: California Pre-1827



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: Tele Atlas Data, and Bing Aerial Image.

CULTURAL RESOURCES - ETHNOGRAPHIC STUDY - FIGURES 9 AND 10

Palen Solar Electric Generating System - General Tribal Occupation Lands and Current Tribal Reservation Lands

Figure 9: California Post - 1827



Figure 10: California Post-19th Century

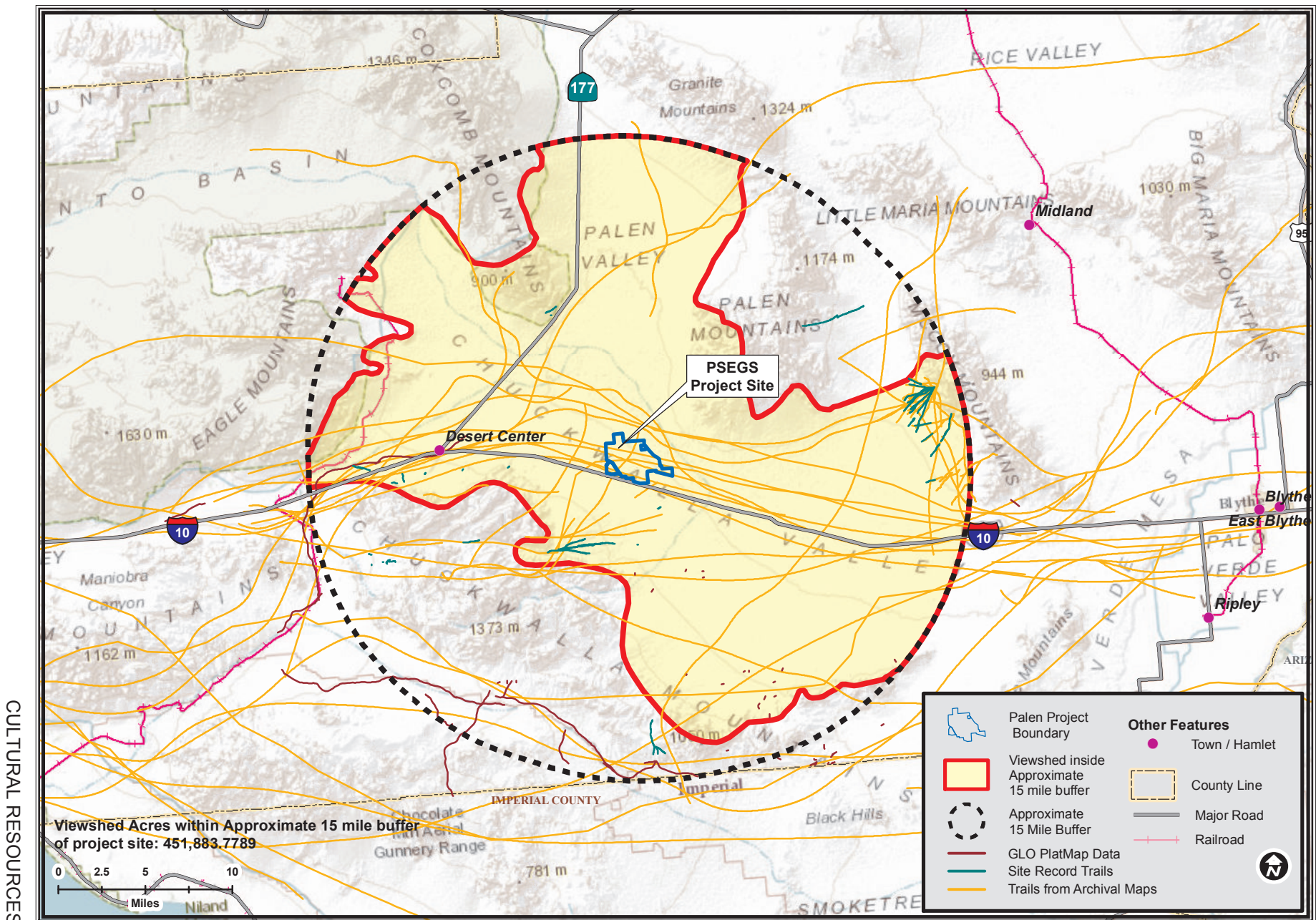


CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: Tele Atlas Data, and Bing Aerial Image.

CULTURAL RESOURCES - ETHNOGRAPHIC STUDY - FIGURE 11

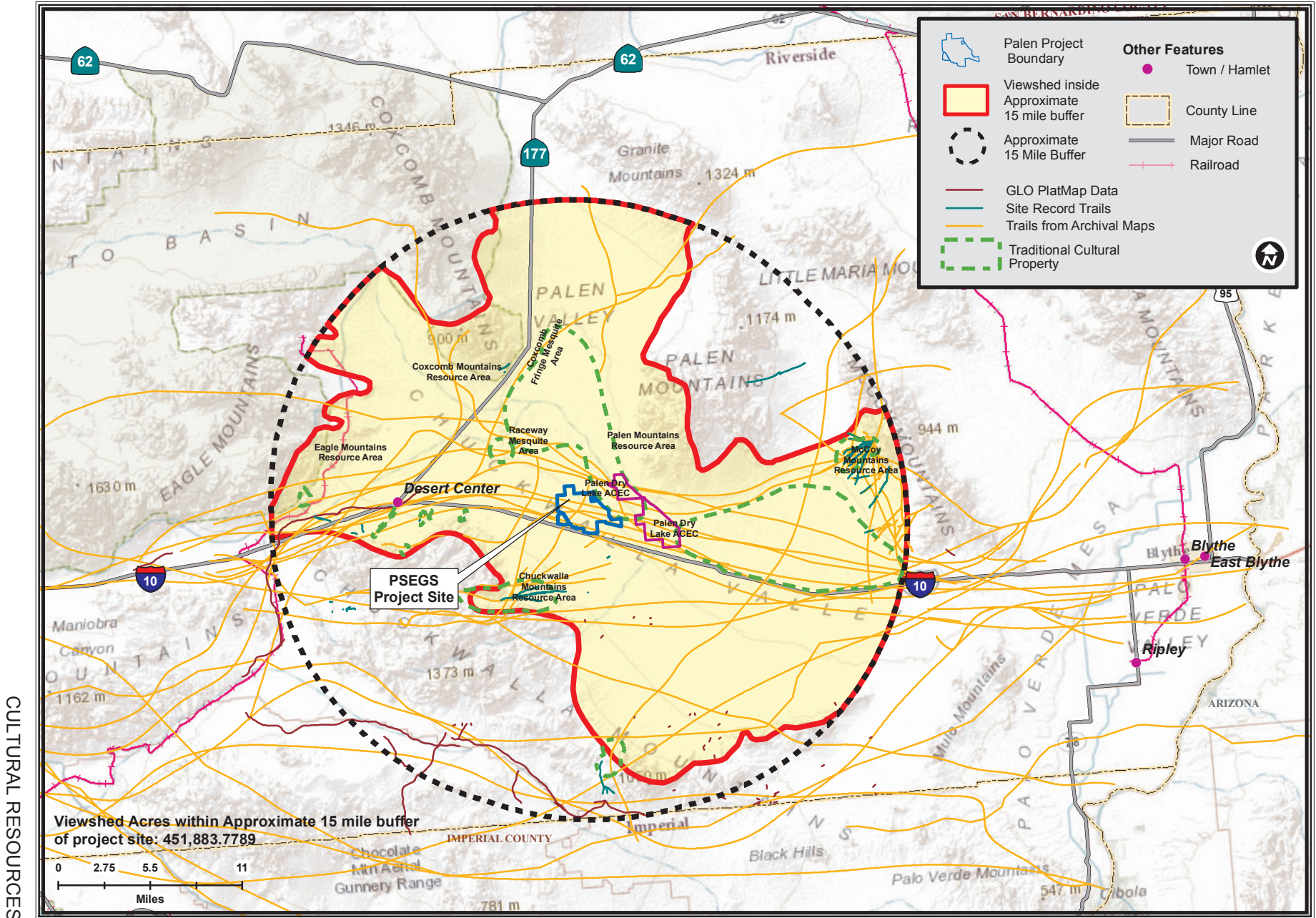
Palen Solar Electric Generating System - Trails



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CULTURAL RESOURCES - ETHNOGRAPHIC STUDY - FIGURE 12

Palen Solar Electric Generating System - Trails and Contributing Elements to Prehistoric Trails Network Cultural Landscape



**FIGURES 13 & 14
ARE REDACTED**