

**C.3 - CULTURAL RESOURCES**

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**C.3.1 SUMMARY OF CONCLUSIONS**

Staff<sup>1</sup> concludes that the proposed Genesis Solar Energy Project (GSEP) would have a significant direct impact on 27 historically significant archaeological resources and significant indirect impact on 248 contributors to a historically significant cultural landscape. These impacts include:

- Direct impacts to 6 prehistoric-to-historic-period Native American archaeological sites;
- Direct impacts to 6 and indirect impacts to 248 prehistoric-to-historic-period Native American archaeological sites which are potential contributing elements to the prehistoric and ethnographic cultural landscape (historic district), herein referred to as the Prehistoric Trails Network Cultural Landscape (PTNCL);
- Direct impacts to 15 historic-period archaeological sites that are potential contributing elements to a historic-period cultural landscape (historic district), herein referred to as the World War II Desert Training Center California-Arizona Maneuver Area Cultural Landscape (DTCCL); and
- Direct and cumulative impacts to the PTNCL and the DTCCL, resulting from the GSEP's impacts to contributors to these regional resources that staff has determined register-eligible.

Staff finds that the GSEP construction impacts, when combined with impacts from past, present, and reasonably foreseeable projects, contribute in a small but significant way to the cumulatively considerable adverse impacts for cultural resources at both the local I-10 Corridor and regional levels. This analysis estimates that more than 800 sites within the I-10 Corridor, and 17,000 sites within the Southern California Desert Region, will potentially be destroyed. *Mitigation can reduce the impact of this destruction, but not to a less-than-significant level.*

To reduce GSEP's impacts to the greatest extent possible staff recommends the adoption of **CUL-1** and **CUL-2**. **CUL-1** and **CUL-2** would reduce GSEP's cumulative impact by funding programs to define, document, and possibly nominate to the National Register of Historic Places the two cultural landscapes that GSEP shares with two other nearby solar projects. The cost of these programs would be shared by the three projects based on the acreage they would occupy. While the implementation of these conditions would reduce the GSEP impacts to the greatest extent possible, they would still be cumulatively considerable.

To mitigate GSEP's direct and indirect impacts, staff recommends that the Commission adopt cultural resources Conditions of Certification **CUL-3** through **CUL-17**, which would mitigate GSEP's direct and indirect impacts to the cultural resources specific to

<sup>1</sup> "Staff" means Energy Commission staff, unless otherwise indicated.

the project. **CUL-3** identifies the people who would implement the balance of the conditions, and **CUL-4** specifies the information the project owner would supply. **CUL-5** provides for the preparation and implementation of the Cultural Resources Monitoring and Mitigation Plan (CRMMP), which would structure and govern the implementation of the broader treatment program. **CUL-6** provides for the preparation of a final report to analyze, interpret, and document the ultimate results of the whole GSEP cultural resources management program. **CUL-7** would provide training of project personnel to identify, protect, and provide appropriate notice about known and new potential cultural resources in the project construction area. **CUL-8** and **CUL-9** would provide construction monitoring and cultural resources discovery protocols. **CUL-10** through **CUL-13** and **CUL-17** are treatment conditions for direct impacts to historic-period and prehistoric resources that would reduce the severity of GSEP impacts to less-than-significant.

**CUL-14** through **CUL-16** might reduce some of the indirect impacts of the proposed project on PTNCL contributors to less-than-significant. However, as of the publication date of this document, the indirect impacts to the contributing elements of the PTNCL have only been partially identified. Staff expects incidental indirect impacts, such as vandalism, to be relatively minor for most of the 248 contributors to the PTNCL. Many of them are either relatively distant from the GSEP site or protected by their location in the Palen-McCoy Wilderness. However, other indirect impacts, of a cultural or spiritual nature, can only be identified by members of the community who value the resources culturally and/or spiritually, in this case Native Americans. The Bureau of Land Management (BLM) is currently in the process of consulting with local Native American groups and others regarding impacts and potential mitigation for the GSEP project area. The results of these negotiations will be formalized in a Programmatic Agreement (PA), as required by Section 106 of the National Historic Preservation Act, and included in BLM's Final Environmental Impact Statement (FEIS) for the GSEP.

Ideally, staff's recommended conditions of certification will not conflict with the required mitigation measures for GSEP impacts promulgated by the BLM in their PA. This is particularly important for the mitigation of impacts to ethnographic resources that rely on the formal Section 106 government-to-government consultation process with Native American groups as an information source for impact assessment and mitigation recommendations. However, in the case of GSEP, this Energy Commission Revised Staff Assessment (RSA) will be published in advance of the FEIS or the PA. Therefore, staff's recommended conditions may be revised, based on BLM's finalized PA, which, it is anticipated, will coordinate the Energy Commission and BLM cultural resources mitigation measures and address the issues of unidentified indirect impacts and appropriate ways to mitigate them. Significant unavoidable indirect impacts that cannot be fully mitigated may be possible, however.

With the adoption and implementation of the entire complement of cultural resources conditions, Conditions of Certification **CUL-1** through **CUL-17**, the GSEP project would be in conformity with all applicable laws, ordinances, regulations, and standards. **CUL-1** and **CUL-2** would reduce the cumulative impacts to the greatest extent possible, but those impacts would still be cumulatively considerable. **CUL-3** through **CUL-17** would reduce the direct impacts to less than significant. In addition, the impacts to ethnographic resources have not yet been evaluated. Consequently, staff does not

know if these resources are significant, or if any mitigation is needed or appropriate. However, significant unavoidable indirect impacts to ethnographic resources that cannot be fully mitigated may be possible. Only with the resolution of those impacts in the BLM's Programmatic Agreement, reflecting Native American identification of additional indirect impacts and recommendation of appropriate mitigation of those impacts, would GSEP's indirect impacts be reduced to a level less than significant. This resolution cannot be guaranteed, however.

Energy Commission staff's recommended Conditions of Certification **CUL-1** through **CUL-17** reflect staff's assessment of what constitutes appropriate mitigation, under the California Environmental Quality Act, for GSEP's identified impacts to register-eligible cultural resources. Staff recognizes that BLM's parallel but different process for resolving adverse project effects (consultation resulting in a PA) may result in different conclusions regarding cultural resources evaluations, the nature and severity of project impacts, and appropriate mitigation measures. Staff recommends that the Commission encourage and work with the BLM to incorporate staff's recommended conditions of certification into the GSEP PA and its associated plan documents.

### **C.3.2 INTRODUCTION**

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This cultural resources assessment identifies the potential impacts of the NextEra Genesis Solar Energy Project (GSEP) on cultural resources. Cultural resources are categorized as buildings, sites, structures, objects, and districts under both federal law [for the purposes of the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA), § 106] and under California state law [for the purposes of the California Environmental Quality Act (CEQA)]. Three kinds of cultural resources, classified by their origins, are considered in this assessment: prehistoric, ethnographic, and historic.

Prehistoric archaeological resources are associated with the human occupation and use of California prior to prolonged European contact. These resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American human behavior. Groupings of prehistoric resources are also recognized as historic districts and as cultural landscapes. In California, the prehistoric period began over 12,000 years ago and extended through the eighteenth century until 1769, when the first Europeans settled in California.

Ethnographic resources represent the heritage of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbedded landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.

Historic-period resources, both archaeological and architectural, are associated with Euro-American exploration and settlement of an area and the beginning of a written historical record. They may include archaeological deposits, sites, structures, traveled ways, artifacts, or other evidence of human activity. Groupings of historic-period resources are also recognized as historic districts and as cultural landscapes.

Under federal and state historic preservation law, cultural resources must be at least 50 years old to have sufficient historical importance to merit consideration of eligibility for listing in the National Register of Historic Places (NRHP) or in the California Register of Historical Resources (CRHR). A resource less than 50 years of age must be of exceptional historical importance to be considered for listing.

For the GSEP, staff provides an overview of the environmental setting and history of the project vicinity, an inventory of the cultural resources identified in the project vicinity, an analysis of the project's potential impacts to significant cultural resources, and recommendations of measures by which the project's adverse impacts to significant cultural resources may be resolved or mitigated.

This analysis is based primarily upon information in the Application for Certification (AFC) (GSEP 2009a) and the Data Adequacy Supplements provided by the Applicant (GSEP 2009c, TTEC 2010c). Most of the key information for this analysis was submitted under confidential cover in Appendix G and three separate versions of the Archaeological Technical Report entitled *Draft Class II and Class III Cultural Resources Inventories for the Genesis Solar Energy Project, Riverside County, California* (August 2009, November 2009, and March 2010). These confidential documents contain site location maps, archaeological site forms for both previously recorded and newly recorded sites, and copies of archaeological technical reports describing other archaeological mitigation in the region. Other important information sources included the applicant's *Preliminary Report of Ancient Shorelines in Ford Dry Lake* (TTEC 2010e) and various communications with BLM archaeological staff, Energy Commission cultural resources staff regularly uses draft archaeological survey reports and archaeological site forms as data sources in order to facilitate the timely completion of the permitting process. Otherwise, last minute changes to facility site footprints or linear corridors requiring additional archaeological survey would result in significant delays.

### **C.3.3 CULTURAL RESOURCES LAWS, ORDINANCES, REGULATIONS, AND STANDARDS**

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Projects licensed by the Energy Commission are reviewed to ensure compliance with all applicable laws. Although the Energy Commission has pre-emptive authority over local laws, it typically ensures compliance with local laws, ordinances, regulations, standards, plans, and policies. For this project, proposed for construction on federally managed public lands, the Energy Commission must assess the project's conformance with federal laws, ordinances, regulations, standards, and executive orders as well.

**CULTURAL RESOURCES Table 1**  
**Laws, Ordinances, Regulations, and Standards to Which the GSEP is Subject**

<b><u>Applicable Law</u></b>	<b><u>Description</u></b>
<b>Federal</b>	
Antiquities Act of 1906 16 United States Code (USC) 431–433	Establishes criminal penalties for unauthorized destruction or appropriation of “any historic or prehistoric ruin or monument, or any object of antiquity” on federal land; empowers the President to establish historical monuments and landmarks.
Archaeological Resources Protection Act of 1979 (ARPA) 16 USC 470aa et seq.	Protects archaeological resources from vandalism and unauthorized collecting on public and Indian lands.
<b>State</b>	
Public Resources Code (PRC), Section 5097.98(b) and (e)	Requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the Native American Heritage Commission-identified Most Likely Descendants (MLDs) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to re-inter the remains elsewhere on the property in a location not subject to further disturbance.
PRC, Sections 5097.99 and 5097.991	5097.99 establishes as a felony the acquisition, possession, sale, or dissection with malice or wantonness Native American remains or funerary artifacts.  5097.991 establishes as state policy the repatriation of Native American remains and funerary artifacts.
Health and Safety Code (HSC), Section 7050.5	Makes it a misdemeanor to mutilate, disinter, wantonly disturb, or willfully remove human remains found outside a cemetery;  Requires a project owner to halt construction if human remains are discovered and to contact the county coroner.

<b><u>Applicable Law</u></b>	<b><u>Description</u></b>
<b>Local</b>	
Riverside County General Plan, Multipurpose Open Space Element (Chapter 5), Open Space Policies OS 19.2–19.4	<p>OS 19.2 requires the review of all proposed development for archaeological sensitivity;</p> <p>OS 19.3 Employs procedures to protect the confidentiality and prevent inappropriate public exposure of sensitive archaeological resources when soliciting the assistance of public and volunteer organizations.</p> <p>OS 19.4 Require a Native American Statement as part of the environmental review process on development projects with identified cultural resources.</p>
Riverside County General Plan, Multipurpose Open Space Element (Chapter 5), Open Space Policies OS 19.5–19.7	<p>OS 19.5 allows the History Division of the Riverside County Regional Park and Open-Space District to evaluate large project proposals for their potential preservation or destruction of historic sites; requires projects to provide feasible mitigation for impacts to historic sites prior to county approval.</p> <p>OS 19.6 enforces the California State Historic Building Code so that historic buildings can be preserved and used without posing a hazard to public safety.</p> <p>OS 19.7 endorses the allocation of resources and/or tax credits to prioritize retrofit of historic structures.</p>
Riverside County General Plan, Exhibit A, CEQA Findings of Fact and Statement of Overriding Considerations, Mitigation Monitoring Program,	Measures 4.7.1A, 4.7.1B, and 4.7.1C outline mitigation measures for cultural resources monitoring programs.

### **C.3.4 SETTING AND EXISTING CONDITIONS**

Information provided regarding the setting of the proposed project places it in its geographical and geological context and specifies the technical description of the project. Additionally, the prehistoric, ethnographic, and historical background provides the context for the evaluation of the National Register of Historic Places (NRHP) and CRHR eligibility of any identified cultural resources within staff's area of analysis for this project.

### **C.3.4.1 REGIONAL SETTING**

The proposed GSEP site is located in eastern Riverside County within the central Chuckwalla Valley, an east-southeast-trending valley in California's Mojave Desert Geomorphic Province. This province is characterized by east-west-trending ranges separated by desert valleys with enclosed drainages and dry lakes. The project area of analysis is surrounded by the Palen Mountains to the north, the McCoy Mountains to the northeast, the Little Chuckwalla Mountains to the south, and the Chuckwalla Mountains to the west. The Chuckwalla Valley is a relatively stable tectonic region located between the seismically active Salton Trough to the west and southwest, and the Garlock Fault to the north. The nearest active seismic features, the San Andreas Fault and the Brawley Seismic Zone, are located approximately 47 miles to the southwest (GSEP 2009a, p. 5.5-2). The elevation of Chuckwalla Valley ranges from under 400 feet at its lowest point to approximately 1,800 feet along the valley flanks. The surrounding mountains reach between 3,000 and 5,000 feet in elevation (GSEP 2009a, p. 5.4-1). The project region is relatively flat and generally slopes from north to south with elevations of approximately 400 to 370 feet (GSEP 2009a, p. 3-3).

Physiographically, the project vicinity lies near the toe of alluvial fans which emanate from the Palen Mountains to the north and the McCoy Mountains to the east. The eastern portion of the project site footprint is underlain by a broad, valley-axial drainage that extends southward between these mountains and drains to the Ford Dry Lake playa about one mile south of the project site footprint (GSEP 2009a, p. 3-3). This area receives an average of 5 inches of rain per year. Rather than forming major drainages, rains create sheet wash which eventually reaches the lake bed, but more commonly is absorbed into the ground water (GSEP 2009a, 5.4-3). The site is located near the transition between the Mojave and Colorado Deserts. The dryer Mojave Desert is characterized by Joshua Tree woodland interspersed with creosote bush and white bursage. The more summer-wet climate of the Colorado Desert is also characterized by creosote bush and white bursage but in addition can support such trees as palo verde, ironwood, and ocotillo (West et al. 2007, p. 30). The project vicinity has two main vegetation types: Sonoran creosote bush scrub and stabilized and partially stabilized sand dunes (GSEP 2009a, p. 5.3-1).

The desert environment supports a variety of animals depending on the amount and source of water available. Small mammals, birds and reptiles are the most common in the proposed project vicinity. Some of the mammals in the region include rodents especially rabbits, ground squirrels, gophers, mice, and Kangaroo Rats. Larger mammals are not as common but might include mule deer, Bighorn sheep, and Pronghorn antelope. Among the carnivores, Coyote, Kit Fox, American Badger, Bobcat, and Mountain Lions have been noted. Common reptiles noted in the area include snakes, chuckwalla, Desert Iguana, Mojave Fringe-toed lizard, and the Desert Tortoise. Among the birds hawks, quail, doves, burrowing owls, songbirds, and migrating waterfowl are relatively common.

The project site footprint and linear facilities corridor land is owned and managed by the BLM as part of the Big Maria Colorado Desert Planning Unit. Other units include: Imperial, Santa Rosa, Orocopia, Twenty-nine Palms, Bristol/Cadiz, Palen, Turtle Mountain Whipple Mountain, Big Maria and Picacho. The Big Maria Unit is managed as

part of an amendment to the 25-million-acre California Desert Conservation Area (CDCA)—the Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan—which encompasses 5.5 million acres in the southeastern California Desert (GSEP 2009a, p. 5.3-1). Under BLM’s Multiple Use Classification system, the project site footprint and linear facilities corridor lies in Class M (Moderate Use) lands. These lands are managed to provide a variety of uses such as mining, livestock grazing, recreation, utilities, and energy development. Nearby BLM-managed lands with more sensitive classifications include the Palen-McCoy Wilderness, immediately to the north of the project site footprint and the Palen Dry Lake Area of Critical Environmental Concern (ACEC), designated to protect prehistoric cultural resources, adjacent to the southwest corner of the project site footprint.

The Chuckwalla Valley is primarily undeveloped. Historically, its main role has been as an important trade and transportation route between the Pacific coast and the Colorado River. Other uses of the valley include mining, ranching, military training, and recreation. The project site footprint itself has recently been used for off-road vehicle races and sheep grazing, but neither activity currently takes place.

### **C.3.4.2 PROJECT, SITE, AND VICINITY DESCRIPTION**

The proposed facility would be located approximately two miles to the north of Interstate 10 (I-10) between the communities of Blythe, California (21 miles to the east) and Desert Center, California (32 miles to the west). Other nearby landmarks include Ironwood and Chuckwalla State Prisons 6 miles to the south, the Blythe airport 13 miles to the east, and Joshua Tree National Park 61 miles to the west. The facility would be accessed from I-10.

The proposed GSEP consists of two independent, concentrated solar electric-generating facilities. Each facility would have a nominal electrical output of 125 megawatts (MW), for a total of 250 MW. The proposed power blocks and solar arrays would occupy approximately 1,360 acres while the evaporation ponds, access road, administration buildings, and other support facilities would occupy 440 acres. In all, the facility would occupy a total of 1,800 acres, with an additional 90 acres for a primary access road, natural gas pipeline, and a transmission line through which the proposed project would connect to California’s electrical grid system (GSEP 2009a, p. 3-1). A secondary access road has been proposed for safety reasons (CEC 2010g) but its route has not yet been determined by the applicant’s engineers.

The proposed project would entail the construction of two 125-MW solar collector fields, six 8-acre evaporation ponds, a 10-acre bioremediation land treatment unit, a 230-kV on-site switchyard, a new 6.5-mile, 230-kV transmission line, natural gas pipelines, primary and secondary access roads, a septic system, an on-site leach field, and two power blocks. Existing ground water wells would supply project water. The size and location of the septic system and associated leach field are unspecified. Each proposed power block would include: solar steam generator heat exchangers; a steam turbine generator and condensers; two wet-cooling towers; two natural-gas fired auxiliary boilers; surge volume tanks; fire suppression pumps and pump house; diesel generators; and water storage tanks (GSEP 2009a, p. 3-4). Foundation excavation for



the above project components would reach between 2 and 30 feet below the present ground surface (TTEC 2010c).

Extensive earthwork would be required to grade the site to achieve an average slope of one to three percent. Grading cuts would reach approximately two feet below the present ground surface. The final expected elevation across the project site footprint is unspecified. The proposed drainage realignment would also involve extensive earthwork. In the event of an intense rain storm, the project facilities would need to be protected from storm runoff. As discussed in the Drainage Erosion and Sediment Control Plan, three off-site water diversion channels would be constructed, one passing on either side of the facility and the third through the center. The east and west storm diversion facilities would include the use of swales, ditches, and detention ponds with proposed volumes of 49 acre-feet and 66 acre-feet respectively (GSEP 2009a, p. 3-23). The exact size and location of these drainage facilities are still being determined by the applicant's engineers.

Overall, the total soil volume to be moved to level the site, including drainage diversion channels, evaporation and retention pond excavation, and berm fill placement, would be approximately 712,000 cubic yards of cut and 1,000,000 cubic yards of fill (GSEP 2009a, p. 3-25). However, since the applicant's engineers are still in the process of designing some of the project components, these figures may change.

The proposed project places one 125-MW facility on the east side of the project site footprint with a second 125 MW facility immediately adjacent to the southeast. In order to tie into the proposed Southern California Edison 500–230-kV Colorado River Substation, the applicant proposes that a transmission line from the facility would travel in a southeast direction until it crosses the existing Imperial Irrigation District Blythe-to-Eagle Mountain 162-kV transmission line and then I-10. The line would eventually connect with the Blythe Energy Project Transmission Line (BEPTL). From that intersection, or generation-tie, the line would travel east sharing a series of transmission poles with the BEPTL until it terminates at the Colorado River Substation (GSEP 2009a, p. 3-25; TTEC 2010j). The primary access road would share this same route. The route of the recently proposed secondary access road has not yet been determined (CEC 2010g).

### **C.3.4.3 ENVIRONMENTAL SETTING**

Identifying the kinds and distribution of resources necessary to sustain human life in an environment, and the changes in that environment over time is central to understanding whether and how an area was used during prehistory and history. During the time that humans have lived in California, the region in which the proposed project is located, the Mojave Desert, has undergone several climatic shifts. These shifts have resulted in variable availability of vital resources, and that variability has influenced the scope and scale of human use of the vicinity of the project site. Consequently, it is important to consider the historical character of local climate change, or the paleoclimate, and the effects of the paleoclimate on the physical development of the area and its ecology.

## **Paleoclimate and Paleoecology**

Over the last 20 years studies of pack-rat middens and lake-level studies have provided a picture of the paleoclimate and paleoecology of the Mojave and Colorado Deserts. During prehistoric times, this region fluctuated between cool-and-moist and warm-and-dry periods. These fluctuations in temperature and moisture were crucial to the human occupation of the region. Environmental changes also had important implications for the project vicinity specifically, because of the proximity of Ford Dry Lake. During cool, wet times the regional lakes filled and the necessary resources for human occupation were available. During warm, dry times the lakes dried and the region became a difficult place to live and traverse.

Recent environmental studies suggest that during the Late Pleistocene (18,000 to 8000 cal BC<sup>2</sup>), when humans first occupied North America, conditions in the Mojave Desert were cool and wet (West et al. 2007). Vegetation in the region was dominated by juniper and pinyon woodland, and the freshwater lakes of the region were permanent. This period was followed by the Early Holocene (8000 to 6000 cal BC), which was relatively wet and characterized by regular lake-refilling episodes. This wet environment continued to support the woodland. In contrast, the Middle Holocene (6000 to 4500 cal BC) was significantly dryer with shallow, rapidly oscillating lake levels. During this period the vegetation began to transition to desert scrub. The drying trend continued between 4500 and 1900 cal BC, resulting in persistently dry lake beds and the complete transition to the creosote biotic communities of the modern Mojave and Colorado Deserts, by approximately 4900 cal BC. From 1900 cal BC to the present, the dry pattern has been dominant, with lakes filling periodically for short periods (Sutton et al., 2007, pp. 231–233).

## **Geology**

The Mojave Desert has undergone a complex geologic history that includes sedimentation, volcanic activity, folding, faulting, uplift, and erosion. The project site footprint and linear facilities corridor is underlain by Quaternary<sup>3</sup> alluvial fill. This fill includes Holocene to Pleistocene alluvial fan and stream deposits, as well as lake (lacustrine) and ephemeral lake (playa) deposits. These sediments consist of gravel, sand, silt, and clay, with the coarser deposits located near the valley edges and the finer deposits near the center of the basin. The Quaternary deposits are underlain by the Pliocene Bouse Formation. This formation includes ocean and estuary deposits from an arm of the proto-Gulf of California, or alternatively, a closed brackish basin. No descriptions of this formation come from the Chuckwalla Valley, but in other locations it is a basal limestone (marl) overlain by interbedded clay, silt, sand, and tufa. The Bouse

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<sup>2</sup> There are two kinds of radiocarbon (C14) dates: uncalibrated and calibrated dates. Uncalibrated dates are not identical to calendar dates because the level of atmospheric radiocarbon (C14) has not been constant over time. Uncalibrated ages can be converted to calendar dates by means of calibration curves based on comparison of raw radiocarbon dates of samples independently dated by other methods, such as tree ring dating and stratigraphy. Such calibrated dates are expressed as cal AD or BC, where "cal" indicates "calendar years" or "calibrated years."

<sup>3</sup> The Quaternary period is the youngest period of the Cenozoic era in the geologic time scale, spanning 2.588 +/- 0.005 million years ago to the present. It includes two geologic epochs: the Pleistocene (1.8 million–10,000 years ago) and the Holocene (the current epoch, 10,000 years ago to the present).

Formation is irregularly underlain by pebbles cemented in a sandy matrix, representing composite alluvial fans (called a fanglomerate). It is likely Miocene-age, but may also be Pliocene-age. Bedrock beneath the GSEP site consists of metamorphic and igneous intrusive rocks of greater than 63 million years of age (GSEP 2009a, p. 5.5-2).

## **Geomorphology**

Geomorphology is the scientific study of landforms and the processes that shape them. Geomorphologists seek to understand why landscapes look the way they do, to understand landform history and dynamics, and to predict future changes through a combination of field observation, physical experiment, and modeling. Archaeologists use geomorphology to understand how archaeological sites were formed and to predict where sites of various types can be found. Over time, objects, sites and other man-made objects are moved, buried, or exposed by wind, water, plant growth, animal activity, and other natural processes. Geomorphology is a technique that helps archaeologists interpret physical clues in order to understand the specific nature of the changes that have taken place over time. In the case of the current project, geomorphology can be used to predict the location of buried sites, to estimate their current condition, and to estimate the relative age of various geological or archaeological features.

Two geomorphological investigations were completed by the applicant for the proposed project vicinity (Farmer et al. 2009, app. C; TTEC 2010e). Both investigations included a review of existing literature and a site visit to ground-check information from the documentary sources. Kenney (TTEC 2010e) also conducted shallow test excavations (1.5 feet in depth), drew cross-sections of the existing stratigraphy, and estimated the age of the local geologic units.

Kenney (TTEC 2010e) determined the minimum age of the site geologic units in both numerical and relative terms. Relative ages were assigned by stratigraphic position of the sedimentary layers. Numerical ages for sedimentary units were assigned by careful examination of the soil profiles. Desert soils are typically dated utilizing the Soil Development Index (SDI) method. With an SDI value, a soil in question may be compared to other regional soils evaluated with the same method and dated with absolute techniques such as carbon<sup>14</sup>. For this study, numerical ages for sediments were arrived at by correlating site soil profiles with known dated soils in the Coachella Valley (TTEC 2010e, p. 2).

One of the geomorphic hallmarks of the Basin and Range Geomorphic Province is that streams terminate in local or regional valley sinks and not the Pacific Ocean or Sea of Cortez. A central feature of the proposed project vicinity is one of these sinks, Ford Dry Lake. Two kinds of lakes form in these kinds of conditions: pluvial and playa lakes. Pluvial or perennial lakes formed during Pleistocene glacial maximums that existed for thousands of years. Playa lakes, formed during the Holocene, are quite ephemeral, with life cycles of one to a few tens of years. Each type of lake would have supported different kinds of plants and animals, and as such, would have been attractive to humans in different ways. The sediments of these two types of lakes are also distinct. Pluvial lakes deposit sediments are: green, yellow, or olive-brown in color; consist of sand and clay; form thin, distinct layers; contain aquatic fossils; and lack saline layers.

Playa lakes deposit sediments are: orange or brown in color; consist of silt and sand; do not form distinct layers; do not contain aquatic fossils; and contain saline layers. Geological bore samples from Ford Dry Lake show that it contains playa lake deposits to depths of approximately 160 meters (m) (TTEC 2010e, p. 3).

Field mapping within the GSEP vicinity yielded a local stratigraphy of only six units. These included stream deposits, both active and dormant sand deposits, alluvial deposits, and lake deposits. These six units, their distribution across the project site footprint, their estimated age and approximate depths, are described in detail below (TTEC 2010e).

1. Qw sediments are active stream wash deposits composed of loose, very fine to very coarse, light brown to yellowish brown sand with small gravel. This unit is confined within the active washes and is typically 1 to 6 inches thick, but may be greater than 2 feet thick in some of the larger washes. This unit was identified but not recorded in this study.
2. Qs deposits are active, dormant, and relict aeolian sand deposits. They consist of fine, yellowish brown sand sheets up to 1 foot thick. These deposits are scattered across the project site footprint on the modern ground surface of Ford Dry Lake.
3. Qal sediments consist of Quaternary alluvium composed of fine to coarse, brown sand mixed with small gravels averaging 1 foot thick. Gravel surfaces similar to desert pavement can form. This alluvium is present across most of the project site footprint and linear facilities corridor, usually overlaying older alluvium above elevation 374 feet, lake deposits below elevation 374 feet (approximate elevation of latest Pleistocene shoreline). This sediment can be divided into two soil types, the upper which ranges in age from 1,000 to 3,000 years old, and the lower which ranges in age from 7,000 to 8,000 years old. Unit Qsr typically overlays this alluvium.
4. Qsr consists of a relict sand sheet and highly degraded small coppice dune deposits. These sediments were deposited within wind transport and depositional areas during the Holocene that are no longer active. Deposits consist of fine brown sand ranging between 4 and 8 inches thick. Coarse sand and gravel surfaces similar to desert pavement can form. Soil horizons in the upper 2 to 6 inches of this unit range in age from 1,000 to 7,000 years old. Unit Qsr is the most common unit exposed on the surface and typically overlies unit Qal.
5. Qoaf consists of older alluvial fan deposits likely created by Pleistocene glaciers. It is composed of yellowish-red, fine to coarse, silty sand with small to medium gravels. These deposits are ubiquitous across the site near to the surface except for below elevation 374 feet (old shore line) where it may exist below several layers of lake deposits (Ql). This sediment can be divided into multiple soils, the youngest of which is 12,000 to 20,000 years old. The average depth of this unit was not determined, but extended beyond the bottom of most of the test units (deeper than 1.5 feet).
6. Ql sediments are lake deposits associated with the ancient playa Ford Dry Lake. They consist of light yellowish-brown, fine to medium, sandy silt with iron oxide staining. No fossils were noted. Multiple layers of this unit were noted at distinct

elevations. Deposits between 377 and 380 feet were found beneath unit Qoaf indicating they were formed during the Pleistocene at least 12,000 years ago but more likely between 15,000 and 20,000 years ago. All other Ql deposits were above Qoaf indicating that they were formed during the Holocene, at least 12,000 years ago. Deposits between 373 and 374 feet are estimated to 12,000 years old, those between 367 and 370 feet in elevation to be between 8,000 and 12,000 years old, and those at 364 feet in elevation to be between 5,000 and 12,000 years old. The most recent shoreline is located at 360 feet in elevation and appears to have been created during the late Holocene. Ql sediments tend to be overlain by Qal alluvium or Qs sand dunes. These deposits are located mainly in the southwest edges of the project site footprint.

## **Prehistoric Background**<sup>4</sup>

Human populations have occupied the California desert for at least 10,000 years (Moratto 1984). Stratified sites that would aid in providing temporal controls and help establish a cultural chronology are virtually unknown in the study area. The earliest explorations of the Mojave and Colorado Deserts took place in the 1930s and 1940s (Campbell 1931, 1936; Campbell and Campbell 1935; Campbell et al. 1937; Rogers 1939, 1945). During this time a basic cultural-historical outline was established, which has formed the foundation for subsequent efforts (Arnold et al. 2002, pp. 46–48; Love and Dahdul 2002; Schaefer 1994; Warren 1984). However, these early attempts were based on surface scatters and inference rather than large-scale data recovery projects or regional surveys.

Numerous cultural resource management projects have resulted in dramatic increases in our understanding of the prehistory of the region. Two of the most notable synthetic works include the BLM's large-scale cultural resources inventory of the Central Mojave and Colorado Desert Regions (Gallegos et al. 1980) and Crabtree's (1980) overview. It was not until the late 1990s that any archaeological site was excavated and reported in the literature within 100 kilometers (km) of the GSEP project areas. Jones and Klar's (2007) recent review of California archaeology builds from where these earlier authors left off, including the results of recent data recovery projects (Schaefer and Laylander 2007; Sutton et al. 2007). The following discussion and culture-historical sequence primarily follows the sources listed above.

### **Paleo-Indian Period (about 10,000–8000 BC)**

The Paleoindian Period occurs during the first half of the Early Holocene. Isolated fluted projectile points, assignable to the Western Clovis Tradition have been recovered from the Pinto Basin, Ocotillo Wells, Cuyamaca Pass, and the Yuha Desert (Dillon 2002, p. 113; Moratto 1984, pp. 77, fig. 3.1, 87; Rondeau et al. 2007, pp. 64–65, fig. 5.1, table 5.1). All are surface finds, and have no associations with extinct fauna.

### **Lake Mojave Complex (8000–6000 BC)**

The Lake Mojave complex, also known as the Western Pluvial Lakes/Western Stemmed Tradition (Beck and Jones 1997; Erlandson et al. 2007; papers in Graf and Schmitt 2007; Schaefer 1994, pp. 63–64; Sutton et al. 2007; papers in Willig et al. 1988), occurs

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<sup>4</sup> This subsection was written by Dwight Simons and Kim Tremaine of Tremaine and Associates.

during the second half of the Early Holocene. It is characterized by Great Basin Stemmed Series projectile points (Lake Mojave and Silver Lake types), abundant bifaces, steep-edged unifaces, crescents, and occasional cobble tools and ground stone tools. These artifacts often occur in undated surface contexts. Assemblage composition and site structure suggest highly mobile foragers, often traveling considerable distances. Little reliance upon vegetal resources is evidenced. The value of wetland habitats remains unclear. Lake Mojave lifeways may have resulted from relatively rapidly changing climate and habitats during the Early Holocene. This would have produced unpredictability in resource distribution and abundance, producing a high degree of residential mobility.

### **Pinto Complex (8000–3000 BC)**

The Pinto complex spans portions of the Early and Middle Holocene. Toolstone use, based on sites attributed to this complex, focus upon materials other than obsidian and cryptocrystalline silicate (CCS). Pinto Series points are stemmed with indented bases, and display high levels of reworking. Bifacial and unifacial cores/tools are common. Ground stone tools are moderately to very abundant, indicating greatly increased use of plant resources. Pinto sites occur in a broad range of topographic and environmental settings, especially within remnant pluvial lake basins. Moderate to large numbers of people, practicing a collector subsistence strategy, occupied large residential base camps for prolonged periods. Logistical forays into surrounding resource patches probably were made from these sites.

### **Deadman Lake Complex (7500–5200 BC)**

Currently, the Deadman Lake complex appears confined to the Twentynine Palms area. Sites usually are surficial and located on old alluvial pediments. Artifacts include small-to-medium-size contracting stemmed or lozenge-shaped points, large concentrations of battered cobbles and core tools, and abundant bifaces, simple flake tools, and ground stone tools. The abundance of cobble tools suggests an emphasis upon plant processing. The Deadman Lake and Pinto complexes may represent two different human populations practicing different seasonal/annual rounds, or Deadman Lake may represent a component of the overall Pinto complex adaptation.

### **Possible Abandonment (3000–2000 BC)**

Beginning roughly at this time, conditions in the Mojave Desert were warmer and drier. Few archaeological sites date to this period. This suggests population densities were very low. It is possible some areas were largely abandoned. This period corresponds in part to the latter part of the proposed “Altithermal Abandonment,” recognized by some prehistorians as characterizing portions of the Great Basin (see Kelly 1997, pp. 8–9).

### **Gypsum Complex (2000 BC–200 AD)**

The Gypsum complex, spanning most of the Early Late Holocene, is characterized by the presence of corner-notched Elko Series points, concave-base Humboldt Series points, and well-shouldered contracting-stemmed Gypsum Series points. Numerous bifaces also occur. Manos and metates are relatively common. During the early portion of the Gypsum complex, settlement-subsistence appears focused near streams. At this time, increased trade and social complexity apparently occurred. Gypsum components

are smaller, more abundant, and occur over a more diverse suite of settings than those dating previously. Evidence for ritual activities include quartz crystals, paint, split-twig animal figurines, and rock art. Gypsum sites are uncommon in the southern and eastern Mojave Desert.

### **Rose Spring Complex (200 AD–1000 AD)**

Cultural systems profoundly changed in the southern California deserts during the Late Holocene with the introduction of the bow and arrow, represented by Rosegate Series points. During this time, a major increase in population is thought to have occurred, possibly resulting from a more productive environment and a more efficient hunting technology. Sites often are located near springs, along washes, and sometimes along lakeshores. Intensive occupation is indicated by the presence of wickiups, pit houses, and other types of structures. Well-developed middens have yielded artifact assemblages containing knives, drills, pipes, bone awls, various ground stone tools, marine shell ornaments, and large amounts of obsidian. Obsidian procurement and processing apparently significantly structured settlement-subsistence.

During the middle of this period, a drought referred to as the Medieval Climatic Anomaly occurred, resulting in hypothesized resource shortages.

### **Late Prehistoric Period (1000 AD–1700 AD)**

During the Late Prehistoric period, horticultural practices and pottery were introduced (most likely from the Hohokam area in southern Arizona or from northern Mexico), having its greatest impact along the Lower Colorado River (McGuire and Schiffer 1982; Schaefer 1994, pp. 65–74; Schaefer and Laylander 2007, pp. 253–254). Ceramic artifacts began to appear in the Colorado Desert approximately 1000 AD, assigned to the Lowland Patayan (Lower Colorado Buff Ware) and Tizon Brown Ware traditions (Lyneis 1988; Waters 1982a, 1982b).

A complex cultural landscape composed of rock art, trails, and geoglyphs<sup>5</sup> developed during the Late Prehistoric period. Trade and exchange were elaborated, with an emphasis on links between coastal southern California and the Southwest. In addition to pottery, artifact assemblages include Desert Series projectile points, shell and steatite beads, and a variety of milling tools. Obsidian use declines significantly, with CCS becoming the dominant toolstone.

### **Prehistory of the Chuckwalla Valley**

Singer (1984) presents a lithic quarry-oriented prehistoric settlement model for the Chuckwalla Valley and environs. Over 200 prehistoric sites occur in the region. Past peoples inhabiting the area appear to have been very mobile, especially during late prehistoric and early historic times. During early historic times, native peoples inhabited towns/hamlets located along the Colorado River, within the Coachella Valley, and at major desert springs/oases.

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<sup>5</sup> Geoglyphs, also known as intaglios, were created on desert pavements by rearranging and/or clearing pebbles and rocks to form alignments, clearings, and/or figures. Rock alignments are present throughout this region, while representational figures only occur close to the Lower Colorado River. It is assumed that they played some role in sacred or ritual activities.

The Chuckwalla Valley was a relatively closed resource exploitation zone. It served as an east-west oriented trade route/corridor between the Pacific Ocean and the Colorado River/greater Southwest. An extensive network of trails is present within the Chuckwalla Valley. Given its orientation and location, the valley may have been neutral territory (i.e., a buffer zone), unclaimed by neighboring native peoples. Quarry sites probably were “owned” by tribal groups. The distribution of particular types of toolstones may have corresponded to a group’s territorial boundaries, and a toolstone type may not have occurred beyond the limits of a group’s specific territory.

Within the Chuckwalla Valley, prehistoric sites are clustered around springs, wells, and other obvious important features/resources. Sites include villages with cemeteries, occupation sites with and without pottery, large and small concentrations of ceramic sherds and flaked stone tools, rock art sites, rock shelters with perishable items, rock rings/stone circles, geoglyphs, and cleared areas, a vast network of trails, markers and shrines, and quarry sites. Possible village locations are present at Ford Dry Lake, McCoy Spring, Palen Lake, Granite Well, and Hayfield Canyon.

A cluster of temporary habitation and special activity (task) sites occurs around a quarry workshop in the Chuckwalla Valley. The Chuckwalla Valley aplite quarry workshop complex probably was used throughout the Holocene. During this period, Chuckwalla Valley most likely was occupied, abandoned, and reoccupied by a succession of ethnic groups. In the Early Holocene (i.e., Lake Mohave complex times), the area may have been relatively densely inhabited. During the Middle Holocene (i.e., Pinto and Gypsum complexes period) it may only have been sporadically visited. The subsequent Late Holocene Rose Spring and Late Prehistoric periods probably witnessed reoccupation of the valley by Yuman and Numic-speaking peoples.

## **Research Topics**

Research topics commonly appearing in the Colorado Desert archaeological literature include toolstone procurement, ceramic traditions, horticulture, trade and exchange, and cultural landscapes.

### ***Toolstone Procurement***

The geology of the Colorado Desert provided prehistoric peoples with a variety of lithic materials for artifact production (Schaefer and Laylander 2007, pp. 252–253). These included obsidian, cryptocrystalline silicates (chert), crystalline volcanics (basalt, rhyolite), quartz, and plutonic, metamorphic, and sedimentary rocks.

Coso obsidian was the dominant source of obsidian used by Colorado Desert peoples prior to 1000 AD. Other obsidian sources, from the southern Mojave Desert, include Bristol Mountains and Devil Peak (Shackley 1994). Approximately a dozen sources located in Baja California, extreme northwest Sonora, and western Arizona may also have been used (Shackley 1988, 1995, 2005). During the last thousand years, however, Obsidian Butte was the principal obsidian used in the Colorado Desert and coastal southern California (Hughes 1986; Hughes and True 1983; Laylander and Christenson 1988; Schaefer and Laylander 2007, p. 251). Obsidian Butte, located near the southern edge of the Salton Sea, was inaccessible when Lake Cahuilla rose to inundate it (130 feet above sea level).



Several topics relating to prehistoric quarrying and tool manufacturing/use have been identified, including: distinction between formal versus the expedient procurement of toolstone (Wilke and Schroth 1989); lithic reduction strategies and transport of toolstone (Bamforth 1990, 1992); scales of production at ground stone tool quarries (Schneider et al. 1995); and differences in tools/toolstones by gender (Walsh 2000).

Bamforth (1990, 1992) considers Holocene settlement, raw material, and lithic procurement at several quarry sites in the central Mojave Desert. He suggests that quarry use was conditioned upon mobility strategies, regional quality and abundance of toolstone, as well as quarry location. Bamforth suggests that an emphasis on transporting prepared cores during the period 2000 BC–500 AD may have resulted from the formation of relatively large and stable communities in areas with concentrated plant resources.

Singer (1984) studied two quarry workshop sites located in Chuckwalla Valley. Core production and reduction from locally available aplite was emphasized. This yielded flakes and bifaces, which appear to have been exported from the quarries for final reduction at other sites. Few formed tools were observed. Those that were present were choppers and scrapers, possibly used to manufacture wooden digging or prying sticks and shafts. The quarry sites appeared to have experienced long-term occupation and use.

Manufacturing efforts appear to have been directed towards production of expedient, rapidly discarded cutting/scraping/pounding/milling tools from locally available toolstone(s) (Ludwig 2005; Schaefer and Laylander 2007, pp. 252–252; Singer 1984). Specialized tool manufacturing included production of sandstone metates along the western side of the Colorado Desert, projectile point (arrow) workshops at seasonal task sites situated around playas, and large quarries at volcanic outcrops within the Lower Colorado and Gila River Valleys, where mortars and pestles were made (Schaefer and Laylander 2007, p. 252).

### ***Ceramic Traditions***

Schaefer and Laylander (2007, pp. 252–253) note that buffware pottery occurring within the Colorado Desert was initially assigned to the Hakataya ceramic series (Schroeder 1958, 1979). Subsequent studies (Waters 1982a, 1982b, 1982c) place it within the Lowland Patayan Ceramic Tradition. Both typologies are based on surface collections of sherds, with little data resulting from stratigraphic excavations, or associated radiocarbon dates. Schroeder focuses upon details of temper, inclusions, and surface treatment, while Waters emphasize rim form. Both attempt to define geographic limits of production for each type. Difficulties in applying either typology and problems with stratigraphic integrity, archaeological contexts, and anomalous associated radiocarbon dates, have allowed only gross chronological estimates and have limited identification of manufacturing regions.

In the Salton Basin, some sites dating between about 350 and 1200 AD contain pottery (Love and Dahdul 2002). This evidence suggests pottery was not introduced or rarely used prior to about 1000 AD. Earlier dates from the preceding 200 years suggest Lake Cahuilla may have attracted Colorado River peoples (and their pottery). Early ceramic

dates from the Colorado Desert correspond closely with the inception of widespread use of Tizon Brownware pottery in the Peninsular Ranges and along the Pacific Coast (Lyneis 1988; Griset 1996), although some dates suggest initial introduction of ceramics by 1200 BC, if not before.

Viewed regionally, pottery use within the Late Prehistoric of the Colorado Desert can be divided into three periods (Arnold et al. 2002, pp. 46–47; Love and Dahdul 2002, pp. 72–73; Waters 1982a, 1982b, 1982c). Patayan I times, about 1200–950 BC, witnessed the inception of several ceramic traditions. During Patayan II times, 950–500 BC, increased local manufacture and use of pottery occurred. Patayan III, 500–240 BC, saw the introduction of “Colorado Buff” pottery, and the westerly spread of ceramics to coastal southern California.

With respect to social and cultural factors governing pottery adoption and use within the Colorado Desert, recent analyses of pottery from the Mojave Desert and surrounding areas provide models focused on behavioral implications regarding its manufacture and function. One concern has been with determining if ceramic vessels were locally made (Eerkens 2001; Eerkens et al. 1999, 2002a; Griset 1996). Neutron activation analysis and petrographic studies have been used to identify chemical and material signatures (Eerkens et al. 2002b). Pottery manufacture does not appear to have been organized at a higher regional level. Instead, pots generally appear to have been locally produced and used, with limited exchange of pots between different groups. Production appears to have been organized at an individual or family level, emphasizing production of largely utilitarian wares.

Pottery from sites in the northern Mojave is characterized by a relatively high number of elemental signatures suggesting higher levels of mobility (Eerkens et al. 2002b). In addition to a higher degree of residential mobility, Eerkens (2003b) suggests people inhabiting the northern Mojave Desert produced a fairly large numbers of pots. The combination of high mobility and a fairly high level of pottery production is seen as leading to caching pots near lowland wetlands, which were fixed in the landscape, development of pottery attributes promoting fuel consumption, and a high degree of standardization of largely utilitarian ceramics.

Sedentism in the Owens Valley, northeast of the Project Area, appears to have developed concurrently with, or immediately prior to, an emphasis on resource storage, at approximately 500 AD. Small seed intensification appears to have occurred about 700–600 BC, at the time brownware pottery became widely used. He concludes that social models, such as those suggesting the activities of aggrandizers or the stabilization of long-distance exchange networks, do not explain these developments. The role played by decrease(s) in population-to-resource balance(s), resulting from increased population pressure, remains unclear.

Eerkens (2003c; 2004) suggests the significant increase in small seed use and the advent of brownware pottery around 700–600 BC are linked. People focused upon seeds because they could easily be privatized. That is, they could be individually owned and thus would not be subject to unrestricted sharing. Pots were a critical component of small seed intensification, because they generally were individually made and owned and could be used within houses, allowing food preparation and consumption to occur

in private. Privatization of small seeds may have resulted from increased population size yielding more potential “freeloaders,” new community kinship structures, and the creation of resource surplus.

### ***Horticulture***

At the time of initial Euroamerican contact, 240 years ago, native peoples living along the Lower Colorado River and the Colorado Delta were growing a wide variety of domesticates and wild grasses, which provided 30–50 percent of their subsistence economy (Bean and Lawton 1993; Castetter and Bell 1951; Schaefer and Laylander 2007, pp. 253–254). Annual flooding of the floodplains along the Colorado rejuvenated the soil and provided enough moisture to sustain crops. Lower Colorado River agriculture is presumed to have begun around 700 AD. It probably spread either from the Hokokam area (to the east), or from northern Mexico (to the southeast) (McGuire and Schiffer 1982).

Horticulture subsequently appears to have spread west from the Colorado River. Desert Tipai peoples practiced floodplain agriculture along the New and Alamo Rivers. They also constructed small dams and ditches along washes to direct irrigation water onto adjacent terraces. Agricultural elements probably reached the Imperial Valley around 300 BC. Seed caches and mythological references to cultigens possibly indicate very late prehistoric adoption of agriculture. However, the caches contained both native and Old World cultigens. Thus it is unclear if agriculture penetrated west of the Peninsular Ranges in southern California before Euroamerican contact and the sustained influence that came with the establishment of Spanish missions.

Native cultigens may have reached the western Colorado Desert through trade instead of by local production (Schaefer and Laylander 2007, p. 254). Within the Colorado Desert, several archaeological sites have ceramic jars or rock-lined cache pits containing food remains of native or Old World plants (cf., Bayman et al. 1996; Swenson 1984; Wilke 1978; Wilke and McDonald 1989; Wilke et al. 1977). Pumpkin seeds occur in human coprolites (fossilized feces) from the Myoma Dunes at the north end of Lake Cahuilla, and also in a ceramic jar from the west shore of Lake Cahuilla, north of the Fish Creek Mountains. The latter dated to 580–340 BC (Wilke 1978; Wilke et al. 1977).

Early-to mid-nineteenth-century Cahuilla archaeological sites contain glass beads, flaked glass, domestic animal bones, carbonized maize and tepary beans, and uncarbonized gourds. Abundant evidence exists indicating the Cahuilla practiced irrigated agriculture during the early- and mid-nineteenth century. The paucity of macro- and micro-fossil cultigen remains from prehistoric archaeological deposits in Cahuilla territory strongly suggests agriculture did not play a significant role in the Cahuilla economy until the early nineteenth century. Early historic intensification of agriculture may have resulted from final desiccation of Lake Cahuilla, regional population growth, decreased mobility, and acculturation, including introduction of Euroamerican irrigation techniques.

In the Mojave Desert and environs, in the approximate period from 2000 to 800 BC, agriculture first was practiced in southern Nevada and environs as a consequence of

the Anasazi Intrusion (Warren 1984, p. 421, fig 8.25). Maize, squash, beans, grain amaranth, and sunflowers were grown. Agriculture was practiced along with foraging for wild plants and animals. Fields probably were irrigated in some manner. Agriculture appears to have intensified over time.

The Owens Valley Paiute were Great Basin Numic-speaking horticulturalists (Lawton et al. 1976; Liljeblad and Fowler 1986, pp. 417–418; Steward 1930, 1933, 1938, 1941, 1970). Ditch and surface irrigation of blue dicks (*Brodiaea capitata*), yellow nut grass (*Cyperus esculentus*), and spikerush (*Eleocharis* sp.), was practiced. This most likely developed during late prehistoric times, possibly triggered by increased population pressure resulting from climatic change and/or immigration (Bouey 1979).

Yohe (1997) notes aboriginal cultigens, such as melons, squash, and beans, were present at two rockshelters dating to the late nineteenth or early twentieth century in Death Valley. Fowler (1995, pp. 110–112; 1996, pp. 91–98) details garden horticulture among the Southern Paiute and Panamint and Timbisha Shoshone. Stream-irrigated gardens were cultivated, in which corn, beans, squash, sunflowers, and amaranth were grown. These groups also planted gardens near springs, had communal fields with irrigation ditches, and unirrigated stream-bank garden plots. Various land management practices were employed, including intentional burning, clearing, pruning, and coppicing, transplanting and cultivation, and cleaning of water sources.

Winter and Hogan (1986, pp. 125–127, table 1) note that during protohistoric times, agriculture was practiced by the southern California/Nevada Chemehuevi and Ash Meadows, Pahrump, Las Vegas, and Moapa Southern Paiute bands. Among the crops grown were corn, beans, squash, and sunflowers. Forms of plant husbandry directed towards non-domesticates included burning to encourage growth of new plants, broadcast seed sowing, and irrigation of wild stands of bulb and seed plants (Winter and Hogan 1986, pp. 128–129, table 2). These practices are thought to have begun prehistorically, continuing and possibly expanding during early historic times. Wallace (1980) suggests Native American agriculture in the Mojave region was exclusively a historic-period phenomenon.

### ***Trade and Exchange***

As Schaefer and Laylander (2007, pp. 254–256) note, prehistoric and ethnohistoric Colorado Desert peoples had a highly developed network of connections linking locations within and beyond the region. High mobility produced considerable cross-cultural interaction and integration in spite of frequent open aggression and warfare between different groups. This integration and interaction occurred between mobile hunter-gatherers and sedentary horticultural peoples. They are archaeologically manifested by the spatial distribution of site types, rock art, artifacts (especially ceramics and shell ornaments), and toolstones (especially obsidian).

Archaeologists monitor the dynamics of prehistoric trade in the Colorado Desert by analysis of the distributions of artifacts made from various toolstones, shell beads and ornaments, and ceramic types and composition (Schaefer and Laylander 2007, pp. 255–256). As previously stated, with respect to toolstones, obsidian from Obsidian Butte is fairly commonly represented in sites located within montane and coastal southern

California (Hughes 1986; Hughes and True 1982; Laylander and Christensen 1988). Obsidian from sources in northern Baja California may have been routed via the Colorado Desert to coastal southern California sites (McFarland 2000). Wonderstone from the Rainbow Rock source is present in western San Diego County and the northern Coachella Valley (Bean et al. 1995; Pignoli 1995). Material for steatite artifacts found in Colorado Desert sites probably comes from sources in the Peninsular Ranges. Material for argillite artifacts may be from a central Arizona source.

Artifacts made from shellfish species inhabiting the northern Sea of Cortez occur in coastal southern California and the Great Basin (Bennyhoff and Hughes 1987; Fitzgerald et al., 2005) and may have been traded through the Colorado Desert (Schaefer and Laylander 2007, p. 255). Shells from southern California coastal species have been found at a number of Colorado Desert sites and those in the Southwest (Ford 1983). These artifacts may have resulted from direct procurement of shells, or exchange. At the Elmore site, associated with the protohistoric recession of Lake Cahuilla, shell debitage indicates local manufacture of shell beads and ornaments (Rosen 1995). In the Coachella Valley, shell artifacts may reflect close ties to peoples living along the Santa Barbara Channel.

A cache of Lower Colorado Buffware (i.e., Patayan) anthropomorphic figures found in an Orange County site indicates interregional connections (Koerper and Hedges 1996). These also are suggested by the frequency of Lower Colorado Buffware (i.e., Patayan/Hakataya) pottery throughout the Colorado Desert (Bean et al. 1995; Cordell 1997; McGuire 1982; Schaefer and Laylander 2007, p. 255; Schroeder 1979; Shaul and Hill 1998; Waters 1982a, 1982b, 1982c). However, its use occurred among a number of prehistoric peoples practicing divergent settlement and subsistence patterns. Consequently little effort has been made to refine or apply the Patayan tradition as an integrative model.

On a local level, Plymale-Schneeberger (1993) examined pottery from three sites in Riverside County. Petrographic and geochemical analyses allowed quantitative distinction between Tizon Brown Ware and Lower Colorado Buff Ware. The study concluded that Brown Ware was locally produced while Buff Ware was imported. Seymour and Warren (2004) examined proportions of Tizon Brown Ware and Lower Colorado Buff Ware present at sites in Joshua Tree National Park and noted correspondence of pottery types with approximate boundaries of territories occupied by ethnohistorically known native peoples (that is, Cahuilla, Serrano, Chemehuevi).

Davis (1961) and Sample (1950) note that a considerable degree of historic-period trade between Native Americans occurred within and across the Colorado Desert. Trade networks across the Colorado Desert extended to the Yokuts and Chumash. Native peoples living along the Colorado River received and reciprocated goods from many groups living to the west.

### ***Cultural Landscapes***

In the Colorado Desert, trails, cairns, geoglyphs, cleared circles, rock rings, other desert pavement features, rock art sites, and artifact scatters appear to be elements of

prehistoric-ethnohistoric cultural landscapes<sup>6</sup> (Schaefer and Laylander 2007, pp. 254–255; Cleland and Apple 2003). Specific localities include the Pilot Knob Complex, the rock art complex at Palo Verde Point, the Ripley Locality, and the Quien Sabe-Big Maria complex. Lower Colorado River geoglyph and rock art sites may represent prehistoric ceremonial centers, located along a route extending between sacred places, representing the cosmology and iconography of Yuman peoples (Altschul and Ezzo 1995; Cleland 2005; Ezzo and Altschul 1993; Gregory 2005; Hedges 2005; Johnson 1985, 2004; Woods et al. 1985).

### **Trails**

During late prehistoric and ethnohistoric times, an extensive network of Native American trails was present in the Colorado Desert and environs (Heizer 1978; Cleland 2007; Sample 1950, p. 23; Apple 2005; Earle 2005; McCarthy 1993; Melmed and Apple 2009; Von Werlhof 1986). Segments of many trails are still visible, connecting various important natural and cultural elements of landscape, for example, these trails are often marked by votive stone piles (cairns) and ceramic sherd scatters (pot drops).

A late prehistoric-early historic Native American trail has been reported traversing roughly east/west through the Chuckwalla Valley (Johnson and Johnstone 1957, map 1). Johnson (1980, p.89-93, fig. 1) identifies this route as part of the Halchedhoma Trail (recorded as CA-Riv-53T) running from San Bernardino through San Gorgonio Pass to the Colorado River at present day Palo Verde Valley. In the vicinity of the Chuckwalla Valley, the trail proceeded roughly east-northeast from Hayfield Dry Lake past the future site of Desert Center to Gruendike Well. From there it went east, south of Palen Dry Lake to Sidewinder Well, then turned east, north of Ford Lake to McCoy Spring. It then headed south, around the south end of the McCoy Mountains, before going northeast towards the Colorado River. Work by McCarthy (1993, Fig. 10) suggests that offshoots of this trail may have crossed the GSEP site footprint leading to Ford Dry Lake and points to the south and west.

### **Geoglyphs**

Geoglyphs were constructed on desert pavements by rearranging and/or clearing pebbles and rocks to form alignments, clearings, and/or figures (Arnold et al. 2002; Gilreath 2007, pp. 288–289; Solari and Johnson 1982). These rock alignments (Harner 1953) occur throughout the deserts of southeast California and adjacent portions of southern Nevada and western Arizona. Rock alignments are present throughout this region, including two recorded along the western foot of the McCoy Mountains (McCarthy 1993). Representational figures have only been noted in close proximity to the Lower Colorado River.

In the Mojave Desert, large rock alignments are found in Panamint Valley, Death Valley, Eureka Valley, and the Owens River Valley (Davis and Winslow 1965; Gilreath 2007, pp. 288–289; von Werlhof 1987). They have been interpreted as resulting from group

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<sup>6</sup> “Ethnohistoric” refers to the period during which Euroamerican accounts of Native Americans augment the archaeological record and Native American oral traditions as sources of information on Native Americans. Cultural landscapes, when related to specific ethnic groups, are referred to as “ethnographic landscapes” (Hardesty 2000).

ritual(s) (von Werlhof 1987). Many appear characterized by multiple-use episodes, with portions added through the years as part of ongoing rituals/ceremonies.

Colorado River geoglyphs include the Top Rock Maze (Rogers 1929) and a few dozen giant ground figures (Harner 1953; Setzler and Marshall 1952), often first observed from the air. During historic times, the Top Rock Maze was used by Yuman peoples for spiritual cleansing.

Johnson (1985, 2003), von Werlhof (2004), and Whitley (2000) relate the geoglyphs to Yuman cosmology, origin myths, and religion. Cation ratio dating<sup>7</sup> of desert varnish has provided estimated ages of approximately 1200–1000 BC for the Colorado geoglyphs (Dorn et al. 1992; Schaefer 1994, p. 63; von Werlhof 1995), although use of the technique remains controversial (Gilreath 2007, p. 289).

Von Werlhof (1995, 2004) relates these sites to the Yuman creation story. They also may have functioned as focal points for shamanistic activities, vision quests, curing, and group rituals/ceremonies. Symbolic activities also were represented by intentional pot drop distributions along trails near water sources. The importance to Native Americans of water sources for survival during long-distance trips and seasonal rounds is obvious. Water sources also manifested significant spiritual values and often were associated with major rock art complexes (McCarthy 1993; Schaefer 1992).

### **Ethnographic Background**<sup>8</sup>

Currently, it is unclear which historic Native American group or groups occupied or used the region in which the proposed project site is located, but the Chemehuevi, Serrano, Cahuilla, Mojave, Quechan, Maricopa, and Halchidhoma are the most likely.

Singer (1984, pp. 36–38) concluded the Chuckwalla Valley was not clearly assigned to any Native American group on maps depicting group territories. Following Johnson and Johnstone (1957), he observed that the west end of the Chuckwalla Valley was near the intersecting boundaries of Cahuilla-Serrano-Chemehuevi territory. Possibly before 800 BC, the Chemehuevi may have expanded into Serrano territory, occupying the Chuckwalla Valley. No evidence suggested that the Cahuilla occupied the area. Given its east-west orientation and location, however, the Chuckwalla Valley may have been neutral territory, occupied by no Native American group in particular, which served as an east-west trade and travel route.

### **The Cahuilla**

A wealth of information exists regarding traditional and historic Cahuilla society and culture (see Bean and Lawton 1967 for a comprehensive bibliography of sources). Primary sources for the Cahuilla include Bean (1972; 1978), Bean and Saubel (1972), Drucker (1937), Gifford (1918), Hooper (1920), James (1960), Kroeber (1908; 1925, pp.

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<sup>7</sup> Cation ratios between weathered rock varnish and unweathered rock are used as a relative dating technique to roughly determine the age of prehistoric rock carvings (petroglyphs). The quantity of positively-charged ions within the varnish (a chemically-changed layer built up of calcium and potassium leachate over time) is compared to those within the unweathered rock beneath the varnish.

<sup>8</sup> This subsection was written by Dwight Simons of Tremaine and Associates and Sarah Allred of the California Energy Commission.

692–708), and Strong (1929, pp. 36–182). The Cahuilla language, divided into Desert, Pass, and Mountain dialects, has been assigned to the Cupan subfamily of the Takic branch of the Uto-Aztecan linguistic family (Golla 2007; Moratto 1984; Shipley 1978; Munro 1990, p. 218).

Territory traditionally claimed by the Cahuilla was topographically complex, including mountain ranges, passes, canyons, valleys, and desert. Bean (1978:375) described it as, "...from the summit of the San Bernardino Mountains in the north to Borrego Springs and the Chocolate Mountains in the south, a portion of the Colorado Desert west of Orocopia Mountain to the east, and the San Jacinto Plain near Riverside and the eastern slopes of Palomar Mountain to the west." The natural boundaries of the desert, mountains, hills, and plains separated the Cahuilla from surrounding Native American groups. The Cahuilla interacted with surrounding peoples via intermarriage, ritual, trade, and war. The Cahuilla, Gabrielino, Serrano, and Luiseño shared common cultural traditions, with the Cahuilla having especially close ties to the two former groups.

Cahuilla villages usually were located in canyons or on alluvial fans near water and food patches. The area immediately around a village was owned in common by a lineage. Other lands were divided into tracts owned by clans, families, and individuals. Numerous sacred sites with rock art were associated with each village. Villages were connected by trail networks used for hunting, trading, and social visiting. Trading was a prevalent economic activity. Some Cahuilla were trading specialists. The Cahuilla went as far west as the Channel Islands and east to the Gila River to trade.

Hunting and meat processing were done by men. Game included deer, mountain sheep, pronghorn, rabbits, rodents, and birds. These were pursued by individuals and communal hunting groups. Blinds, pits, bows and arrows, throwing sticks, nets, snares, and traps were used to procure game. Communal hunts with fire drives sometimes occurred.

The Cahuilla had access to an immense variety of plant resources present within a diverse suite of habitats (Barrows 1900; Bean and Saubel 1972). Several hundred plant species were used for food, manufacture, and medicine. Acorns, mesquite and screw beans, pinyon nuts, and cactus fruits were the most important plant foods. They were supplemented by a host of seeds, tubers, roots, bulbs, fruits and berries, and greens. Corn, beans, squash, and melons were cultivated. Over 200 species of plants were used as medicines.

Structures varied in size from brush structures to dome-shaped or rectangular houses, 15–20 feet long, and ceremonial houses. The chief's house usually was the largest. Used for many social, ceremonial, and religious functions, it was located near a good water source. It generally was next to the ceremonial house, which was used for rituals, curing, and recreational activities. Other structures included a communal men's sweathouse and granaries.

Mortars and pestles, manos and metates, pottery, and baskets were used to process and prepare plant and animal foods. Cahuilla material culture included a variety of decorated and plain baskets; painted/incised pottery; bows, arrows, and other hunting-related equipment; clothing, sandals, and blankets; ceremonial and ritual costumes and



regalia; and cordage, rope, and mats. Games and music were important social and ritual activities for the Cahuilla.

The Cahuilla had named clans, composed of 3–10 lineages, with distinct dialects, common genitors, and a founding lineage. Each lineage owned particular lands, stories, songs, and anecdotes. Each lineage occupied a village and controlled specific resource areas. Clan territory was jointly owned by all clan members. Territory ownership was established by marked boundaries (rock art, geographic features), and oral tradition. Most of a clan's territory was open to all Cahuilla. Kinship rules determined rights to assets and responsibilities within a lineage. Each lineage cooperated in defense, large-scale subsistence activities, and ritual performance. The founding lineage within a clan often owned the office of ceremonial leader, the ceremonial house, and sacred bundle. Artifacts and equipment used in rituals and subsistence was owned by individuals and could be sold or loaned.

The office of lineage leader usually passed from father to eldest son. He was responsible for correct performance of rituals, care of the sacred bundle, and maintenance of the ceremonial house. The lineage leader also determined when and where people could gather and hunt, administered first-fruits rites, and stored food and goods. He knew boundaries and ownership rights, resolving conflict with binding decisions. The lineage leader met with other lineage leaders concerning various issues. He was assisted in his duties by a hereditary official responsible for arranging details for performance of rituals. Other functionaries included song leaders/ceremonialists, assisted by singers and dancers.

Laws were enforced by ritual, stories, anecdotes, and direct action. Supernatural and direct sanctions were used. Tradition provided authority. The past was the referent for the present and future. Old age provided access to privilege, power, and honor. Reciprocity was a significant expectation. Doing things slowly, deliberately, and thoughtfully was stressed. Integrity and dependability in personal relations were valued. Secrecy and caution were exercised in dealing with knowledge.

Disputes between Cahuilla villages usually arose over access to resources. Other causes included sorcery, personal insults, kidnapping of women, nonpayment of bride price, and theft. Armed conflict occurred after all other efforts to resolve things had failed. A lineage leader and/or skillful warrior lead a temporary war party. Community rituals were held before and after a fight, which usually involved ambush.

Ritual and ceremony were a constant factor in Cahuilla society. Some ceremonies were scheduled and routine, while others were sporadic and situational. The most important ceremonies were the annual mourning ceremony, the eagle ceremony, rites of passage (especially those associated with birth, naming, puberty, and marriage), status changes of adults, and rituals directed towards subsistence resources. The main focus was upon performance of cosmologically-oriented song cycles, which placed the Cahuilla universe in perspective, reaffirming the relationship(s) of the Cahuilla to the sacred past, present, to one another, and to all things.

## The Serrano

Sources for the Serrano include Bean and Smith (1978), Benedict (1924, 1929), Drucker (1937), Gifford (1918), Johnson (1965), Kroeber (1925, pp. 615–619), and Strong (1929, pp. 5–35). The Serrano Cahuilla shared many traits and artifacts with the Cahuilla, discussed above. The Serrano spoke a language belonging to the Serean Group of the Takic subfamily of the Uto-Aztecan family (Golla 2007; Moratto 1984; Shipley 1978).

It is nearly impossible to assign definite boundaries to Serrano territory. Territory traditionally claimed by the Serrano included the San Bernardino Mountains east of Cajon Pass, lands in the desert near Victorville, and territory extending east in the desert to Twenty-nine Palms and south to, and including, the Yucaipa Valley.

The Serrano occupied small village-hamlets located mainly in the foothills near water sources. Others were at higher elevations in coniferous forest, or in the desert. The availability of water was a critical determinant of the nature, duration, and distribution of Serrano settlements.

Women gathered, and men hunted and occasionally fished. Topography, elevations, and biota present within the Serrano territory varied greatly. Primary plant foods varied with locality. In the foothills, they included acorns and pinyon nuts. In the desert, honey mesquite, pinyon, yucca roots, and cactus fruits were staples. In both areas they were supplemented by a variety of roots, bulbs, shoots, and seeds, especially chia. Among primary game animals were deer, mountain sheep, pronghorn, rabbits, rodents, and quail. Large game was hunted with bows and arrows. Small game was taken with throwing sticks, traps, snares, and deadfalls. Meat was cooked in earth ovens. Meat and plant foods were parched or boiled in baskets. Plant foods were ground, pounded, or pulverized in mortars and pestles or with manos and metates. Processed meat and plant foods were dried and stored. Occasional communal deer and rabbit hunts were held. Communal acorn, pine nut, and mesquite gathering expeditions took place. These communal activities involved several lineages under a lineage leader's authority.

Serrano houses were circular, domed, individual family dwellings, with willow frames and tule thatching. They were occupied by a husband and wife along with their children, and often other kin. Houses were mainly used for sleeping and storage. Most daily activities occurred outside, often in the shade of a ramada (a flat-roofed, open-sided shade structure) or other sun cover.

Settlements usually had a large ceremonial house where the lineage leader and his family lived. It was the social and religious center for each lineage/lineage set. The latter was two or more lineages linked by marriage, economic reciprocity, and ritual participation. Other structures included semi-subterranean, earth-covered sweathouses located near water, and granaries.

Serrano material culture was very similar to that of the Cahuilla. Stone, wood, bone, plant fibers, and shell were used to make a variety of artifacts. These included highly decorated baskets, pottery, rabbit skin blankets, bone awls, bows and arrows,

arrowshaft straighteners, fire drills, stone pipes, musical instruments, feathered costumes, mats, bags, storage pouches, cordage, and nets.

The clan was the largest autonomous landholding and political unit. No pan-tribal union between clans existed. Clans were aligned through economic, marital, and ceremonial reciprocity. Serrano clans often were allied with Cahuilla clans and Chemehuevi groups. The core of a clan was the lineage. A lineage included all men recognizing descent from a common ancestor, their wives, and their descendants. Serrano lineages were autonomous and localized, each occupying and using defined, favored territories. A lineage rarely claimed territory at a distance from its home base.

The head of a clan was a ceremonial and religious leader. He also determined where and when people could hunt and gather. Clan leadership was passed down from father to son. The clan leader was assisted by a hereditary ceremonial official, from a different clan. This official held ceremonial paraphernalia (the sacred bundle), notified people about ceremonies, and handled ceremonial logistics.

Serrano shamans were primarily healers who acquired their powers through dreaming. A shaman cured illness by sucking it out of the sick person and by the administration of herbal medicines. Various phases of an individual's life cycle were occasions for ceremonies. After a woman gave birth, the mother and baby were "roasted," and a feast held. Differing puberty ceremonies were held for boys (*datura* ingestion used in a structured ceremonial vision quest) and girls ("pit roasting," ingestion of bitter herbs, dietary restrictions, instruction on how to be good wives). The dead were cremated, and a memorial service was held. During the annual seven-day mourning ceremony, the sacred bundle was displayed, the eagle-killing ceremony took place, a naming ceremony for all those born during the preceding year was held, images were made and burned of those who had died in the previous year, and the eagle dance was performed.

## **The Chemehuevi**

Sources for the Chemehuevi include Drucker (1937), Kelly (1934; 1936), Kelly and Fowler (1986), Kroeber (1925, pp. 593–600), Miller and Miller (1967), and Roth (1976; 1977). Carobeth Laird married a Chemehuevi and collected a large corpus of data, primarily on ritual, religion, and myth (Laird 1974a; 1974b; 1975a; 1975b; 1976; 1977a; 1977b; 1977c; 1978a; 1978b; 1984). The Chemehuevi spoke a language belonging to the Southern Group of the Numic subfamily of the Uto-Aztecan family (Golla 2007; Moratto 1984; Shipley 1978). Many traits characterizing Chemehuevi culture are very similar or identical to those of the Mohave, discussed below. Several probable Quechan traits also were noted for the Chemehuevi.

For the territory traditionally claimed by the Chemehuevi, the Colorado River formed the eastern boundary south to the Palo Verde Mountains. The boundary then ran northwest, passing east of the Ironwood Mountains, crossing the Maria Mountains, paralleling the Iron Mountains, and then running between Old Woman Mountain and Cadiz Dry Lake (Kelly 1934; Kelly and Fowler 1986, p. 369, fig. 1). Mohave territory lay to the northeast, and that of the Las Vegas group of Southern Paiute to the north-northwest.

The Chemehuevi lacked any form of overall “tribal” organization. Anthropologists refer to territorial subdivisions among the Chemehuevi as “bands.” Each band was composed of a small number of camps/communities/villages. Bands most likely correspond to economic clusters (Kelly 1964). Each group was a geographic unit, associated with a definite territory. In general, each band was economically self-sufficient.

In general, Chemehuevi settlement was mobile and scattered, with residence recurring within a fixed area. Houses were closely grouped. Their occupants usually were related by blood or marriage. Settlement size ranged from 1–2 households to 10–20. Springs often were inherited private property. Married siblings often camped at the same spring.

The Chemehuevi traveled widely. They had amicable contact with the Serrano, Cahuilla, Quechan/Yumans, and other Native American groups. The Chemehuevi sometimes joined with the Mohave/Quechan to fight the Cocopa/Halchidhoma. The Chemehuevi often crossed the Colorado River and hunted deer in Quechan, Yavapai, and Western Walapai territory. They also traded, intermarried, and competed in games with the Yavapai. To the west, the Chemehuevi hunted in the Tehachapi area and went to the Pacific Coast along the Santa Barbara Channel to get abalone shell. Sometimes, a party of 8–10 Chemehuevi men joined men from neighboring groups to make a two-month journey to the Hopi villages (in what is now New Mexico) to trade.

The Chemehuevi apparently did not eat fish, but bighorn sheep, deer, pronghorn antelope, and desert tortoise were among the animal food resources they used (Kelly and Fowler 1986, p. 369). Plant foods in this region included pinyon nuts and mescal. Men inherited rights to hunt large game within certain tracts, defined in songs using geographic references. Women gathered a great variety of plant foods, which were more important in the Chemehuevi diet than game. In addition to pinyon nuts and mescal, agave and seeds were staples. Along the Colorado River, the Chemehuevi practiced floodplain agriculture. They grew corn, squash, gourds, beans, sunflowers, amaranth, winter wheat, grasses, and devil’s claw using techniques similar to Mohave agricultural practices (see below).

Chemehuevi winter houses were conical/subconical structures. They also built earth-covered houses without a front wall, similar to those constructed by the Mohave. During the summer, many Chemehuevi lived outside, often building and occupying armadas and windbreaks.

With respect to material culture, Chemehuevi baskets and cradles were made from plant fibers. Plant fibers also provided materials for rope, string, and cordage nets. Pottery, which followed Mohave patterns and styles, included cooking pots, water jars, seed germination and storage pots, spoons/scoops, and large pots for ferrying children across the Colorado River. Watercraft included log rafts and reed balsas. Clothing consisted of double skin or fiber aprons and sandals for men and women. The Chemehuevi commonly had pierced ears and wore body paint.

Monogamy was the commonest form of marriage among the Chemehuevi, but some men had more than one wife. Women gave birth in a special enclosure, followed by a 30-day period of seclusion for mother, father, and child. Puberty rites for boys and girls

were held, with the former focused on acquisition of hunting skills. Cremation of the dead was traditional, replaced by in-ground burial in the historic period.

In general, no central political control existed. Territorial boundaries were not rigid, and some bands were named, while others were not. The basic social and economic unit was the nuclear family and could include other close kin. Groups of individual households moved together on hunting and gathering trips, returning to the same spring or agricultural site. Most large bands had a headman whose leadership was more advisory than authoritative. He was usually succeeded by his eldest son.

The principal role of Chemehuevi shamans was curing illness. They acquired their healing powers through dreams rather than through the use of *datura* or a trance. Chemehuevi families held a mourning ceremony (“cry”), with which several speeches and songs were associated, within the year after the death of a relative. The “cry” was sponsored by the family and included the ceremonial burning of material goods.

The Chemehuevi had deer and mountain sheep song-dances, held for entertainment and hunting success. The Chemehuevi had other songs, as well: bird, salt, quail, and funeral songs. During winter evenings, men narrated a rich body of traditional stories and myths. These performances often included mimicry, song, and audience participation. Oral tradition related people to social norms, their territories, and to the subsistence resources present within them.

## **The Mohave**

Information regarding the traditional lifeways of the Mohave has mainly been drawn from the accounts of early explorers and/or fur trappers who were among the first to encounter native groups, as well as from the later ethnographic accounts of anthropologists, usually well after the influences of Euro-American contact had begun to alter traditional ways of life. The following summary derives mainly from Kroeber (1925) and Stewart (1983a, 1983b).

The name Mohave is a variation on the name Hamakhava, which is what the tribal people called themselves (Kroeber 1925, p. 727). The Mohave language is classified into the Yuman subfamily of the Hokan language family. The Mohave were the northernmost and largest tribe of the River and Delta Yumans, who comprised a series of agricultural tribes that occupied the lower Colorado and Gila Rivers. The traditional ethnographic territory attributed to the Mohave includes the Mojave, Chemehuevi, and Colorado River Valleys along the lower Colorado River at the intersection of the borders of Arizona, Nevada, and California. In pre-contact times, Mohave tribal settlement is reported to have centered in the Mohave Valley where their population densities were observed to be the greatest (Stewart 1983b, p. 55).

The Colorado River served as something of an oasis in the otherwise harsh, dry environment that surrounded the river valleys. The spring overflow of the river, which spread gently over the bottomlands, left behind a rich silt deposit in its recession. It is within these bottomlands that the Mohave cultivated crops, which served as the foundation of their subsistence economy. Their agricultural methods were relatively simple, consisting of planting seeds on the richly silted floodplains and allowing their

crops to mature with a minimum of maintenance or effort. Corn was the primary crop, but several varieties of tepary beans, pumpkins, melons, and other plants were also grown. Once harvested, the portions of the harvest that were not immediately consumed were dried in the sun and stored in large basketry granaries. The Mohave supplemented their diet mainly by gathering wild plants and by fishing, which served as their principle source of flesh non-plant food. Hunting played a minor role in the Mohave subsistence economy (Stewart 1983b, pp. 56–59).

Technology of the Mohave was relatively simple, and tools were reported to have been crafted to meet only the minimum requirements of utility (Stewart 1983b, p. 59). According to Kroeber (1925, p. 736), the farming implements consisted of only two items: a heavy wooden staff or digging stick for planting and a spatulate wooden hoe-like implement, whose square edge was pushed flat over the ground to control weeds. Metates, consisting of a rectangular block of stone, were used for grinding corn, wheat, and beans, and both stone and wooden pestles, as well as stone mortars, were also used for food processing (Kroeber 1925, pp. 736–737). Fish were commonly taken with seines, large basketry scoops, sieves, dip nets, and weirs. The bow and arrow and cactus-spine fish hooks were also used for fishing. Mojave basketry was crudely woven, and their pottery was basic and utilitarian (Stewart 1983b, p. 59). Since hunting was of relatively little significance to the Mohave, hunting devices and techniques were not well developed, consisting mainly of snares, nets, bow and arrow, or curved throwing sticks (Stewart 1983b, pp. 59–61).

Mohave political and social organization was very informal, and no one individual or group had significant authority over another. Despite the Mohave's loose division into bands or local groups that were spread out over great distances, their cohesion as a tribe was very strong, and they considered themselves as one people occupying a nation with a well-defined territory (Stewart 1983a, 1983b).

The nuclear family was the basic unit of economic and social cooperation, although the extended family constituted the core of a settlement. Rather than large centralized villages, Mohave settlements were widely distributed along the riverbanks in close proximity to arable lands. Houses were situated on low rises above the floodplain and often separated by as much as a mile or two (Stewart 1983b, p. 57). During most of the year, the Mohave slept under ramadas; however, during the colder season, they occupied more substantial, semi-subterranean, rectangular earth-covered houses.

Warfare was a dominant strain in River Yuman culture, and the Mohave's strong tribal unity served them well in times of warfare. They apparently traveled great distances to do battle, and their principle weapons were bows and arrows and hard wood clubs. According to Kroeber (1925, p. 727), their main motivation was sheer curiosity, as they liked to see other lands and were eager to know the manners of other peoples, but were not heavily interested in trade.

The Mohave were culturally similar to the other River and Delta Yumans: the Quechan, Halichidhoma, Maricopa, and Cocopa. During ethnographic times, the Quechan were considered friends and allies of the Mohave, while the Halchidhoma, Maricopa, and Cocopa were considered to be enemies with whom the Mohave engaged in warfare (Stewart 1983b, p. 56). The Mohave were also friendly with the Upland Yuman tribes of

the Yavapai and Walapai of western Arizona, although relations with the Walapai were somewhat mixed.

One of the most important rituals observed by the Mohave centered on death, namely the funeral and subsequent commemorative mourning ceremony. As soon as possible after death, the deceased was cremated upon a funeral pyre along with all of his or her possessions. The house and granary of the deceased were also burned. It was believed that by burning, these things would be transmitted to the land of the dead along with the soul of the deceased (Stewart 1983b, pp. 65–67).

Due to their relatively remote location inland, the Mohave maintained their independence throughout the Spanish period of the sixteenth and seventeenth centuries and were only rarely visited by explorers during that time. The few Spanish accounts of encounters with the Mohave provided similar descriptions of Mohave lifeways as those reported later by ethnographers. It is believed that the ancestors of the Mojave resided in the area for at least 1000 years and the mode of life in prehistoric times is thought to be similar to that observed historically (Stewart 1983b, p. 56).

### **The Quechan/Yuma**

The following summary of the Quechan or Yuma is derived mainly from Bee (1983), Kroeber (1925), and Stewart (1983a).

Quechan is a variation on the names Kwichyan or Kuchiana, which are the names the tribe called themselves, but this group is also commonly known as the Yuma. The Quechan are among the Yuman-speaking tribes who occupied the lower Colorado River where it forms the boundary between California and Arizona. According to Kroeber (1925, p. 782), the Quechan and their neighbors to the north, the Mohave, appear to be virtually identical in terms of their agriculture, manufactures, clothing, hair styles, houses, warfare, and sense of tribal unity.

The ethnographic territory traditionally associated with the Quechan, now divided between the states of California and Arizona, is centered around the confluence of the Colorado and the Gila Rivers, extending several miles north and south along the Colorado and east along the Gila. Quechan legend tells of a southward migration of their ancestors from a sacred mountain; however, it is not known when the ancestors of the Quechan first settled near the confluence (Bee 1983, p. 86). No group of this name was mentioned in the account of Hernando de Alarcón when he passed through the area during an expedition in 1540, and the first reference to this group did not appear in Spanish documents until the late seventeenth century, at which time they were settled around the river confluence area (Bee 1983, p. 86).

In an environment otherwise surrounded by dry desert terrain, the subsistence economy of the Quechan focused on riverine agriculture, which was one of the main sources of food for the tribe. Crops were cultivated in the richly silted river bottomlands following the recession of the spring floods and provided a relatively high yield in exchange for relatively low labor output (Bee 1983, pp. 86–87). The main cultivated crops included corn, tepary beans, pumpkins, and gourds. In post-contact times, watermelons, black-eyed peas, muskmelons, and wheat were introduced by Europeans and brought into

cultivation by the Quechan, as well. The Quechan also relied on the gathering of wild foods, the most important of which were mesquite and screw-bean pods, although a variety of other wild plants were also collected (Bee 1983, p. 87; Castetter and Bell 1951, pp. 187–188). Fishing was of minor importance, as there were few species in the lower Colorado River suitable for eating. Among the fish sought were the humpback, white salmon, and boneytail, which were sometimes caught with unfeathered arrows or cactus-spine hooks, but more often taken with traps and nets during floods (Forde 1931, pp. 107–120). Given the low incidence of game available in the area, hunting played a minor role in the overall subsistence economy (Bee 1983, p. 86).

Like the Mohave, Quechan tribal settlements, or *rancherías*, consisted of extended family groups that were widely dispersed along the riverbanks. Settlements shifted throughout the year, dispersing into smaller groups along the bottomlands during the spring and summer farming seasons and reconvening into larger groups on higher ground, away from the river, during the winter and spring flood periods (Bee 1983, pp. 87–88). The geographic dispersion of the households within the *ranchería* groups was closely correlated with the condition of the rivers and the technology of riverine agriculture (Bee 1983, p. 89). The warm climate and scant precipitation made substantial housing unnecessary for most of the year, so most people made use of *ramadas* or dome-shaped arrowweed shelters. Each *ranchería* typically had one or two large, earth-covered shelters for the *ranchería* leaders' families, but these shelters also accommodated small crowds during colder weather (Forde 1931, p. 122).

Much like the Mohave, Quechan technology lacked technical or decorative elaboration beyond the demands of minimal utility (Bee 1983, p. 89). Quechan bows did not feature “backed” construction and so lacked power, and their arrows were frequently untipped, so the bow and arrow's range was short and the penetrating power weak. Sharpened staffs served as digging sticks or, when cut in longer lengths, as weapons (Bee 1983, p. 89).

In terms of property, there were no marked gradations in wealth, and social pressure favored the sharing of one's abundance with others who were less fortunate. Land ownership was informal, and people did not show much interest in the accumulation of material goods beyond the immediate needs of the family group or the surplus maintained by local leaders for redistribution to needy families within their *ranchería* (Bee 1983, p. 89). Lands were not inherited by family members upon the death of an individual; rather, the lands of the deceased were abandoned, and replacement plots were sought by the family members.

Despite the wide distribution of settlements, the Quechan had a strong sense of tribal unity. As with their neighbors and allies, the Mohave, warfare played a major role in Quechan culture, and it was during times of warfare that tribal unity was most prevalent among the individual settlements (Bee 1983, p. 92). Their major enemies were the Cocopa and the Maricopa, and they often allied themselves with the Mohave in strikes against common enemies (Bee 1983, p. 93). Bee (1983, p. 93) suggests that warfare among the riverine peoples may have increased in scale and intensity during the eighteenth and early nineteenth centuries due to new economic incentives, such as the opportunity to trade captives to the Spaniards or to other tribes for horses or goods.



Quechan social and political organization, like that of the Mohave, appears to have been very informal, with no one individual or group having significant authority over others. Two types of tribal leadership have been reported for the Quechan, one for civil affairs and the other for war, but it is questionable how influential these leadership roles may have been. Each rancheria had one or more headmen, but their authority was contingent upon public support and continued demonstration of competence. According to Bee (1983, p. 92), important matters at either the tribal or the rancheria level were always decided by consensus, sometimes after long debates dominated by the better and more forceful speaker.

Another important aspect of Quechan society that was shared with the Mohave concerns the commemoration of the dead, which was an elaborate ceremony involving wailing and the destruction of property and ritual paraphernalia. All possessions of the deceased, including the family home, were destroyed or given away (Bee 1983, pp. 89, 93–94).

### **The Maricopa and the Halchidhoma**

Ethnographic information for the Maricopa and Halchidhoma is meager in comparison to the Mohave and the Quechan. The following brief summary is derived from Harwell and Kelly (1983) and Stewart (1983a).

The Halchidhoma first entered written history in the early seventeenth century with the account of Juan de Oñate, who encountered the “Alebdoma” or “Halchedoma” during a Spanish expedition on the lower Colorado River, below its junction with the Gila River. When later encountered by missionary-explorer Eusebio Francisco Kino in the early eighteenth century, the Halchidhoma (or “Alchedoma,” as they were referred to by Kino) had moved farther north up the Colorado beyond the Gila. The traditional territory attributed to the Halchidhoma lay along the lower Colorado between the Mohave and the Quechan territories. They were later driven from that area under pressure from their hostile Mohave and Quechan neighbors and moved to the middle Gila River area, where some merged with the Maricopa (Stewart 1983a).

The term Maricopa refers to the Yuman-speaking groups who in the early nineteenth century occupied the area along or near the Gila River and its tributaries (in what is now southern Arizona), but who earlier had occupied the lower Colorado River area. The Maricopa language is closely related to Quechan and Mohave, all three of which are classified as members of the River branch of the Yuman language family (Harwell and Kelly 1983, p. 71). The Maricopa call themselves *pi•pa•s*, “the people.” The name Maricopa is an English abbreviation of the name Cocomaricopa, first used by Eusebio Kino in the late seventeenth century (Harwell and Kelly 1983, p. 83).

The Maricopa, who by the early nineteenth century included remnant tribes of the Halyikwamai, Kahwan, Halchidhoma, and Kavelchadom, share common origins and are culturally similar to both the Quechan and the Mohave, the most prominent traits of which included floodwater agriculture and cremation of the dead. Their material culture was also essentially the same (Harwell and Kelly 1983, p. 71). The Colorado River Maricopa lived in low, rectangular, earth-covered houses, but the Maricopa of the Gila River had adopted the round houses of their Piman neighbors. Technology was of little

interest to the River Yumans and remained at a low level of development (Stewart 1983a).

## **Historical Background**<sup>9</sup>

The Mojave Desert area, in which the GSEP is located, has remained one of the more sparsely populated regions of the American West. The harsh arid environment and paucity of natural water supply has presented a challenge to the development of trans-desert routes for the movement of people and goods, to the exploitation of resources in the area, and to the establishment of permanent settlement. The major historical themes for the Mojave Desert region and GSEP vicinity, in particular, are centered on the establishment of transportation routes, water access, mineral exploitation, and military uses. The following brief historical background of the Mojave Desert area in eastern Riverside County is derived from the following sources: Bischoff (2000); Castillo (1978); Farmer, et al. (2009); GSEP (2009); von Till Warren (1980); and WESTEC (1982).

The earliest recorded history of the lower Colorado River region began with the expeditions of Spanish explorers, who were lured by rumors of a rich northern Indian civilization. However, due to the Spaniards' failure to find the fabled northern treasures and the remoteness of the region, the Mojave Desert was seldom visited during the Spanish and Mexican periods.

The desert region has produced a variety of mineral deposits, including gold, silver, fluorite, manganese, copper, gypsum, and uranium. The 1880s and 1890s were years of relative prosperity for mining regions of eastern Riverside County, and intermittent mining activity has occurred in the area since that time. Early mining activities played a significant role in stimulating early occupation and travel across the arid desert. Following the end of the Mexican period in 1848 and the onset of the California Gold Rush in 1849, a flood of gold-seeking emigrants began to pour into California, many of whom were unprepared and suffered extreme hardships during the overland trek through the desert.

One of the earliest major trans-desert trail/wagon routes established in the vicinity of the GSEP was known as Frink's Route. Frink's Route was established in the mid nineteenth century (prior to 1856), connecting southern California supply points with mines and outposts along the Colorado River. Frink's route appears to have passed south of the GSEP site footprint. Another important stage route was the Bradshaw Trail, an overland stage route pioneered by William Bradshaw in 1862. It began in San Bernardino and passed through San Geronimo Pass, Palm Springs, and the north shore of the Salton Sea before reaching the Colorado River near Blythe. This route followed traditional Indian trails and was used between 1862 and 1877 to haul miners and other passengers to the gold fields at La Paz, Arizona (now Ehrenberg). Wiley's Well Road, which intersects the GSEP linear facilities corridor, was an offshoot of the Bradshaw Trail. The construction and expansion of the Southern Pacific Railroad between Phoenix and Los Angeles by way of Yuma in the late 1870s also brought travelers and supplies to more remote areas, enabling further development of mines and irrigation.

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<sup>9</sup> This subsection was written by Sarah Allred of the California Energy Commission.

Around the turn of the last century gypsum was found in the McCoy Mountains. A mining town, Midland, was established here. From 1925 to the 1960s, Midland was a company town owned by the U.S. Gypsum Co. The company had harvested vast amounts of gypsum found in the area. At its peak, the town had a population of approximately 1,000. The Arizona and California Railway, built between 1903 and 1907, was a 50 mile spur rail route connecting Blythe and Midland to the main Santa Fe Railway line at the town of Rice. There were daily trains along this line until the late 1930s. Midland was a thriving mining town until the 1960s when it was entirely abandoned.

Automobile travel across and within the Colorado Desert area first developed using existing wagon roads. By the early twentieth century, the automobile became the preferred means of transportation, and in 1916, Congress approved an Act to identify safe travel routes and ensure protection of available water within the least documented regions of the desert (Brown 1920). The Mecca-Blythe-Ehrenberg route, which approximates the current Interstate 10, is one such route identified under the Act and is located near the southern GSEP project boundary. Travelers along these routes relied on natural water sources such as McCoy Spring and wells excavated by wagon road users. Most of the wells in eastern Riverside County were excavated by early prospectors and/or landowners and were often named for the men who dug them. Among the early known wells near the GSEP site footprint and linear facilities corridor include the Hopkins Well, Wiley's Well, and the Ford Well, which appear on the 1920 USGS Water Supply Paper Map, south of the GSEP limits. Portions of Wiley's Well Road, where it passes near McCoy Spring, may have been improved in the 1940s and 1950s to provide access to Midland after rail service ceased.

The GSEP site footprint and linear facilities corridor falls within the limits of Gen. Patton's World War II Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA), which was in operation from 1942-1944. The area was chosen by Gen. George S. Patton, Jr. to prepare troops for the harsh conditions and environment of combat for the North Africa Campaign. At 12,000,000 acres, the DTC/C-AMA was the largest-ever military training center, stretching from west of Pomona, California, to Yuma, Arizona, and north into Nevada. The valley bordered by the Palen, Little Maria, and McCoy Mountains is considered one of the most extensive maneuver areas in the DTC/C-AMA. After two years in operation and the training of one million troops, the DTC/C-AMA was closed in 1944 as a result of the allied victory in North Africa and the need for trained troops elsewhere. Following the closure of the DTC/C-AMA dismantling and salvage efforts began and the land was ultimately returned to private and government holdings. The remains of the DTC/C-AMA areas consist of rock features, faint roads, structural features, concertina wire, tank tracks, footprints of runway and landing strips, foxholes and bivouacs, concrete defensive positions, refuse, and trails.

#### **C.3.4.4 CULTURAL RESOURCES INVENTORY**

A project-specific cultural resources inventory is a necessary step in staff's effort to determine whether the proposed project may cause significant impacts to historically significant cultural resources and would therefore have an adverse effect on the environment.

The development of a cultural resources inventory entails working through a sequence of investigatory phases. Generally the research process proceeds from the known to the unknown. These phases typically involve doing background research to identify known cultural resources, conducting fieldwork to collect requisite primary data on not-yet-identified cultural resources within and near the proposed project, assessing the results of any geoarchaeological studies or environmental assessments completed for the proposed project site, and compiling recommendations or determinations of historical significance for any cultural resources that are identified.

This subsection describes the research methods used by the applicant and Energy Commission staff for each phase and provides the results of the research, including literature and records searches (California Historical Resources Information System (CHRIS) and local records, archival research, Native American consultation, and field investigations.

This subsection also provides a brief description of each cultural resource identified by the applicant. The inventory consists of the body of resources the applicant identified in the AFC, and the descriptions are limited to what the applicant provided, either with the AFC or in response to staff's data requests.

Staff's assessments of the project's impacts on known cultural resources, potential impacts on previously unidentified, buried archaeological resources, and proposed mitigation measures for the project's impacts are presented in a separate subsection below.

### **Project Area(s) of Analysis**

The inventorying of cultural resources within what staff defines as the appropriate area for the analysis of a project's potential impacts is the first step in the assessment of whether the proposed project may cause a significant impact to an important cultural resource and therefore have an adverse effect on the environment. The area that staff considers when identifying and assessing impacts to important cultural resources, called the "project area of analysis" (PAA), is a composite geographic area that accommodates the analysis of each type of cultural resources that is present. The PAA can vary depending on the type of cultural resources under analysis and is usually defined as a specific area within and surrounding the project site and associated linear facility corridors. For this project, staff has defined a PAA for the following cultural resources types:

For archaeological resources, the PAA is defined as the proposed project site footprint, plus a buffer of 200 feet, the project linear facilities routes plus 50 feet to either side of the route, and the maximum depth that would be reached by all foundation excavations and by all pipeline installation trenches. This definition serves to address both direct and indirect impacts on resources whose dimensions may well extend below the surface and beyond the project site.

For ethnographic resources, the PAA is expanded to take into account traditional use areas and traditional cultural places which may be further afield than the project site footprint or the project vicinity. The areas of analysis for ethnographic resources may

include viewsapes that contribute to the historical integrity of a subject resource. Ethnographic resources are often identified in consultation with Native Americans as well as other ethnic or cultural communities, and issues that are raised by these communities may define the APE. For this project the ethnographic PAA is the geographic area around and including the proposed project where the project has the potential to physically or visually degrade ethnographic resources.

For built-environment resources in the rural context of the proposed project, the PAA is defined as the project site and any above-ground linear facilities, plus a half-mile buffer. As this project is located in an undeveloped area, the PAA was reduced to include only the above-ground linear facilities and a half-mile buffer.

### **Background Inventory Research**

Various repositories in California hold compilations of information on the locations and descriptions of cultural resources older than 45 years that have been identified and recorded in past cultural resources surveys. Applicants acquire information specific to the vicinity of their project from certain repositories and to provide it to staff as part of the AFC submitted to the Energy Commission. Additionally, to acquire further information on potential cultural resources in the vicinity of a proposed project, the applicant is required to make inquiries of knowledgeable individuals in local agencies and organizations and to consult Native Americans who have expressed an interest in being informed about development projects in areas to which they have traditional ties.

The archaeologists for the applicant reviewed a number of resources during their background inventory research. This research of the GSEP site footprint and vicinity identified 30 previous cultural resources projects, 88 previously-identified sites (including 1 National Register District), 79 previously-identified cultural isolates, and no built-environment resources (Farmer et al. 2009). Tetra Techs figures are inconsistent; the text, tables, and site forms do not match.

### **CHRIS Records Search**

The California Historical Resources Information System, or CHRIS, is a federation of 11 independent cultural resources data repositories overseen by the California State Office of Historic Preservation. These centers are located around the state, and each holds information about the cultural resources of several surrounding counties. Qualified cultural resources specialists obtain data on known resources from these centers and in turn submit new data from their ongoing research to the centers.

Under BLM's protocol for inventory-level cultural resources investigations on lands for which a Right-of-Way (ROW) grant has been requested, the applicant undertakes a Class I survey. This is a preliminary gathering of data for known sites and other resources from published and unpublished documents, records, files, registers, and other sources, and is intended to produce an analysis and synthesis of all reasonably available data. A Class I survey encompasses prehistoric, historic, and ethnological/sociological elements and essentially chronicles past land uses (BLM 2004, sec. 8110.21).

The Class I survey of the proposed GSEP was intended to compile information on known cultural resources and previously conducted cultural resources studies pertinent to the location of the proposed project location. These records include individual site forms for known archaeological sites and built-environment resources as well as survey and excavation reports from previous investigations. The primary source for the current project is the Eastern Information Center (EIC) of the CHRIS, at the Department of Anthropology, University of California, Riverside. Tetra Tech asked the staff of the EIC to conduct a literature and records search of the GSEP site footprint and vicinity (Farmer et al. 2009, p. 46). The search covered the areas proposed for the main project components and the linear facilities corridor with a 1.5-mile buffer. In addition, the EIC staff searched the following resources:

- National Register of Historic Places (NHRP);
- California Register of Historical Resources (CRHR);
- California State Historical Landmarks;
- California Points of Historical Interest;
- California Inventory of Historic Resources; and
- BLM cultural Areas of Critical Environmental Concern (ACEC).

### ***CHRIS Results***

The CHRIS literature and records search identified 30 previous cultural resources investigations within the search area (**Cultural Resources Table 2**). This included 22 surveys, 6 literature reviews, 1 set of miscellaneous field notes from the region, and 1 project whose nature is undefined. In their review, EIC staff found that 11 of these overlapped with the GSEP archaeological and built-environment PAAs. Parts of three investigations took place on the project site. The first investigation (IC Report No. RI-00220) was an intensive linear survey that cut a 123-m-wide corridor from southeast to northwest through much of the project site. The second investigation (IC Report No. RI-01249) was a sample survey sponsored by the BLM that covered approximately 64 acres or 4 percent of the 1,800-acre project site. The third survey was part of an earlier stage of the GSEP (Farmer et al. 2009). This BLM Class II survey covered a 20 percent random sample of 1,896 acres, including 520 acres within the proposed project site footprint and linear facilities corridor. After these three projects, approximately 68 percent of the project site remained unsurveyed prior to the preparation for the current proposed project. Seven additional surveys, associated with fiber optic lines, geothermal resources, transmission lines, highway improvements, and gas line installation (IC Report Nos. RI-01664, RI-02210, RI-03227, RI-04347, RI-07192, RI-1279, RI-00221), crossed the PAA for the GSEP proposed linear alignment. These surveys covered roughly 25 percent of the 90-acre proposed linear facilities corridor (Farmer et al. 2009).

A new secondary access road has been proposed (CEC 2010g) but the route has not yet been identified. If this new route is outside the original CHRIS search area, an additional cultural resources literature and records search would be required.

**CULTURAL RESOURCES Table 2**  
**Previous Cultural Resources Investigations in the GSEP Records Search Area**

IC Report Number	Author	Date	Report Title	Survey Type, Acreage	Distance From Project Area of Analysis (PAA)
RI-00002	Rogers	1953	Miscellaneous Field Notes, Riverside County, California. Series of handwritten archaeological field notes of various areas within Riverside County.	Several areas in region.	Within region
RI-00010	McCarthy	1986	A Cultural Resources Assessment of a Proposed Prison Site Near Blythe in Riverside County, California	960 acres	Adjacent
RI-00011	Wilke	1986	Letter Report: Addendum to "A Cultural Resources Assessment of a Proposed Prison Site Near Blythe in Riverside County, California"	15.15 acres	0.1
RI-00092	King et al.	1973	Archaeological and Paleontological Impact Evaluation: American Telephone and Telegraph Company's Oklahoma City/Los Angeles "A" Cable Route, Between the Colorado River and Corona, California	N/A	0.05
RI-00160	Greenwood	1977	Archaeological Resource Survey-West Coast-Mid-Continent Pipeline Project, Long Beach to the Colorado River, Addendum.	11 miles linear survey, 30-m survey corridor.	Within 2.5 miles
RI-00161	Greenwood	1975	Paleontological, Archaeological, Historical, and Cultural Resources-West Coast-Midwest Pipeline Project, Long Beach to the Colorado River.	No survey. Literature review for 235 linear miles, 5-mile-wide corridor.	Within 3 miles
RI-00190	Haymond	1981	Archaeological Survey Report for the Proposed Safety Project on Interstate Route 10 Between Chiriaco Summit and Wiley's Well Overcrossing, Riverside County, CA.	Intensive Pedestrian Survey, linear survey of over 56 km	Within 1 mile

IC Report Number	Author	Date	Report Title	Survey Type, Acreage	Distance From Project Area of Analysis (PAA)
RI-00220	Cowan & Wallof	1977	Interim Report—Fieldwork and Data Analysis: Cultural Resource Survey of the Proposed SCE Palo Verde-Devers 500kV Power Transmission Line.	Intensive linear pedestrian survey, 322 km, 123-m corridor	Within 1 mile
RI-00221	Westec Services, Inc.	1982	Cultural Resource Inventory and National Register Assessment of the Southern California Edison Palo Verde to Devers Transmission Line Corridor (California Portion)	6120 acres	Adjacent and Intersects
RI-00222	Wallof & Cowan	1977	Final Report: Cultural Resource Survey of the Proposed Southern California Edison Palo Verde-Devers 500kv Power Transmission Line	N/A	Adjacent and Intersects
RI0-0982	Crew & Fitting	1980	An Archaeological Survey of Geothermal Drilling Sites in Riverside County. Science Applications, La Jolla, California.	101 well sites, 30-m-diameter around each site, intensive pedestrian survey	Within 1 mile
RI-01211	Crabtree et al.	1980	A Cultural Resources Overview of the Colorado Desert Planning Units	N/A	Regional overview
RI-01249	BLM Staff	1978	California Desert Program: Archaeological Sample Unit Records for the Big Maria Planning Unit, BLM. No report, series of BLM California Desert Program Archaeological Sample Unit Record field forms.	Pedestrian intensive survey, sample survey units, sample units 1.6 km linear.	Portions within PAA
RI-01279	Cook & Cardenas (Principal Investigators)	1981	A Cultural Resource Inventory of the Ford Dry Lake Known Geothermal Resource Area. American Pacific Environmental Consultants, Inc.	Pedestrian sample survey, ~1,600 acres.	Portions within PAA
RI-01280	Elliott	1981	Draft: Ford Dry Lake Known Geothermal Resource Area Environmental Assessment. BLM.	No survey. Literature review.	Portions within PAA



IC Report Number	Author	Date	Report Title	Survey Type, Acreage	Distance From Project Area of Analysis (PAA)
RI-01341	Ritter	1981	Archaeological Appraisal of the Palen Dry Lake, Area of Critical Concern Environmental Concern, Riverside County, California.	Pedestrian and vehicle survey.	Regional overview, northwest of project area
RI-01664	Westec Services, Inc.	1982	Cultural Resource Inventory of Seisdata Services Chuckwalla Geophysical Test Corridor, Riverside County, California	85.3	Intersects
RI-01973	Mack	1985	Archaeological Assessment of Six Parcels (Northern, Rocky, Metro, Palen, Ironwood, and Cockrell) Near Palen Dry Lake, Desert Center, California.	Pedestrian survey of approximately 5 square miles.	Within 12 miles
RI-02210	Underwood et al.	1986	Preliminary Cultural Resources Survey Report for the US Telecom Fiber Optic Cable Project, From San Timoteo Canyon to Socorro, Texas: The California Segment		Intersects
RI-02897	Mitchell	1990	Cultural Resource Assessment of 219 Acres of Public Lands Proposed for Exchange to Newport Harbor Development Corp. Letter Report	219	Partial overlap
RI-03029	Rosenthal, R. Conard et al.	1990	Cultural Resources Assessment Southern California Gas Company Proposed Line 5000, Riverside County, California. LSA Associates, Inc.	Linear pedestrian survey, 54 km, 90-m corridor	Within 2 miles
RI-03227	Demcak	1991	An Archaeological Assessment of Tracts 19734 and 19735, Lot #8 in the La Sierra Area of the City of Riverside, California	42	Intersects
RI-03674	McCarthy	1993	Prehistoric Land Use at McCoy Spring: An Arid-Land Oasis in Eastern Riverside County, California. Thesis paper.	Systematic and intuitive intensive pedestrian survey, approximately 300 acres	Within 9 miles
RI-04082	Mooney	1990	Wiley's Well Road Land Exchange, Cultural Resource Survey	470	0.35

IC Report Number	Author	Date	Report Title	Survey Type, Acreage	Distance From Project Area of Analysis (PAA)
RI-04347	Keller	1999	A Phase I Cultural Resources Assessment of General Plan Amendment 500, Change of Zone 6468, +/- 50.0 Acres of Land Near Blythe, Riverside County, California	50	Partial overlap
RI-05245	Schmidt	2005	Southern California Edison Company Blythe-Eagle Mountain 161 kV Deteriorated Pole Replacement Project, BLM State Permit CA#-04-23 Field Authorization #CA-690-05-FA04.	Pedestrian survey, 40-m radius around each pole location.	Within 2 miles
RI-05828	Raschkow	2001	Project Review and Statistical Summary: Primitive Skills Team-Rehab of Wilderness Area Intrusions, BLM, Palm Springs South Coast Field Office. No report, summary.	Intensive Class III pedestrian survey, 7 acres	Within 2 miles
RI-07192	Duke	2002	Cultural Resource Assessment: AT&T Wireless Services, Facility No.06003, Riverside County, California	~0.25	Intersects
RI-07315	Bonnery & Aislin-Kay	2006	Cultural Resource Records Search and Site Visit Results for T-Mobile Telecommunications Facility Candidate IE24133A (ATC Colo at Wiley Well Rd.) Wiley Well Road and Interstate 10, Desert Center, Riverside County, California	0.25	0.03
N/A	Mooney, Jones & Stokes	2006	Cultural Resource Inventory of the Proposed Blythe Energy Transmission Line Project.	4,072 acres	0.1 to 5+ miles south and east
N/A	Farmer et al. 2009	2009	Class II and Class III Cultural Resources Inventories for the Proposed Genesis Solar Energy Project, Riverside County, California, Final Draft	Class II & III pedestrian survey, 5430.3 acres, 520 in site footprint	Overlaps with PAA

The most extensive previous research in the region was conducted by McCarthy (1993a). He and his volunteers recorded 227 sites along the western flank of the McCoy Mountains. Many of these sites and trails were directly associated with McCoy Spring, an arid-land oasis and major focus of prehistoric use in the region for several millennia.

Only three of these sites were identified in the Tetra Tech CHRIS literature and records search. Staff considers these sites to be part of the GSEP ethnographic PAA.

In general the previous research in the Chuckwalla Valley suggests that prehistoric archaeological sites are typically located near water (specifically, near springs), on terraces near the shore of the dry lake beds, and in areas where natural resources were utilized. Prehistoric site types in the GSEP site footprint and vicinity include rock shelters, petroglyphs, activity areas, artifact scatters, pot drops, temporary camps, gathering areas, sacred areas, trails, and isolated finds. Prehistoric site types in the region are irregularly defined, particularly in the case of “temporary camps.” Using inconsistent types assigned by multiple archaeologists runs the risk of obscuring important prehistoric patterns.

In an effort to be more consistent, staff reviewed the artifacts and features reported at each site and placed each of them into the following categories relevant to the GSEP project: lithic scatter, ceramic scatter, artifact scatter, activity areas, temporary camp, trails, rock rings, cleared areas, rock clusters, cairns, geoglyphs, and petroglyphs. These are defined as follows.

- *Lithic scatters* are light artifact scatters that consist exclusively of debitage and other lithic artifacts, suggesting short-term use.
- *Ceramic scatters* consist exclusively of ceramics. They may or may not also be considered “pot drops” depending on the types of ceramics present and the spatial relationships of the sherds. The small size and low artifact density of ceramic scatters suggest short-term use.
- *Artifact scatters* have multiple types of artifacts present, have light artifact density suggesting short-term use, are not located near water, and have no evidence of features, such as house pits, cleared circles, pot drops, rock art, hearths, rock rings, or petroglyphs.
- *Activity areas* are places where limited specific activities were performed such as rituals, resource extraction, or resource processing. These sites can have features, such as rock rings or petroglyphs, but usually have a low artifact density suggesting short-term use.
- *Temporary camps* are located near water, have a higher artifact density than artifact scatters or activity areas and have artifact types that suggest processing activities, such as ground stone and fire-affected rock (FAR). Ceramics may or may not be present at temporary camps depending on the age of the site. They may also have features such as house pits, cleared circles, pot drops, rock art, hearths, and trails.
- *Trails* are pathways that are deliberately or inadvertently made. They can be sites in themselves or associated with other sites and features. Pot drops are often found along trails. Water sources, temporary camps, and important resources such as toolstone quarries are often the destination of trails.
- *Rock rings* or *cleared areas* are circular features 1–3 m in diameter created on desert pavement and sometimes ringed with rocks. They are thought to be prehistoric short-term habitations areas built along prehistoric trails.

- *Cairns* are stacks of rock deliberately piled up on each other, usually two to three courses high.
- *Rock clusters* are collapsed cairns.
- *Geoglyphs* (also called ground figures, effigies, or intaglios) are rare art images formed on the ground by clearing rocks from patches of ground or forming rock alignments.
- *Petroglyph* sites in the region are either pecked or scratched images on small boulders in the Desert Archaic Abstract style or the Colorado Desert Representational style. These images are usually concentrated around water sources and are the destination of multiple trail segments.

Historical archaeological sites in the region are primarily associated with transportation, DTC/C-AMA and Desert Strike military maneuvers, mining, and ranching. Historical archaeological site types for the area include road segments, wells, refuse scatters with domestic and/or military discards, tank tracks, and other isolates.

A total of 312 previously identified cultural resources and 79 isolated finds were identified in the CHRIS records search area (**Cultural Resources Table 3**). These figures include the results of the Tetra Tech Class II survey and McCarthy's (1993) survey. Two-hundred and ninety-two of these resources were prehistoric sites and 14 were historic-period sites. Four sites had both prehistoric and historic-period components. Two sites have undetermined time periods. Sixty-nine prehistoric isolates were identified including 59 lithics, 4 ceramics, 4 ground stone, 1 isolate with both lithics and ceramics, and 1 unspecified prehistoric artifact. Ten historic-period isolates were identified during the literature search. They included 7 glass isolates, 2 cans, and 1 metal artifact. As is common practice in cultural resources management, staff has eliminated the isolated finds from consideration. If a secondary access road is required (CEC 2010g), these figures would need to be revised.

**CULTURAL RESOURCES Table 3**  
**Summary of Previously Known Cultural Resources Identified in GSEP Vicinity**

	Pre-historic Sites	Historic Sites	Multi-Component Sites	Unknown Sites	Built Environment	Pre-historic Isolates	Historic Isolates	Total
<b>McCarthy 1990s Survey</b>	224	0	0	0	0	0	0	224
<b>Previously Known Tetra Tech</b>	22	9	1	2	0	35	1	70
<b>Tetra Tech Class II</b>	46	5	3	0	0	34	9	97
<b>Total</b>	292	14	4	2	0	69	10	<b>391</b>

A total of 9 of the 312 previously identified sites are within the GSEP plant site footprint or linear corridor. Five previously identified prehistoric sites fell within or near the boundary of the GSEP plant site footprint, including 1 large artifact scatter (CA-Riv-9084), three small lithic scatters (CA-Riv-9047, CA-Riv-9048, CA-Riv-9051), and one

large temporary camp (CA-Riv-9072). All five of these sites were identified during the recent Tetra Tech Class II survey. Four previously identified sites fell within or near the GSEP linear corridor boundary. These sites include two large prehistoric temporary camps (CA-Riv-0260 and CA-Riv-0663), 1 small historic-era refuse scatter (P33-13598), and 1 medium-sized group of WWII-era foxholes and refuse (P33-13656). Staff notes that only one of the four linear corridor sites (CA-Riv-0663) was discussed by Tetra Tech in their updated report.

Sites identified by McCarthy:

68 ceramic scatters  
41 trail segments  
32 artifact scatters  
27 activity areas  
22 isolates (mostly metates)  
14 petroglyphs  
6 temporary camps  
3 isolated rock clusters  
3 isolated rock rings  
2 isolated cleared circles  
2 geoglyphs  
1 cairn  
1 historic-period military camp and refuse scatter  
2 unknown.

Previously known single-component prehistoric sites  
(including those identified in Tetra Tech's Class II survey):

29 lithic scatters  
18 artifact scatters  
14 temporary camps  
5 ceramic scatters  
2 trail segments (also identified by McCarthy).

Previously known single-component historic-period sites  
(including those identified in Tetra Techs Class II survey):

10 refuse scatters  
1 refuse scatter with features  
1 group of WWII era features  
1 historic-period well  
1 two-track road.

Previously known multi-component sites  
(including those identified in Tetra Techs Class II survey):

1 prehistoric temporary camp/historic refuse scatter  
2 prehistoric artifact scatters/historic refuse scatters  
1 prehistoric lithic scatter/historic refuse scatter.

Other sites:

1 site that may be either prehistoric rock rings or WWII era foxholes  
1 unknown site type.

Additional important locations in the region identified during the review of previous research in the area include:

- McCoy Spring National Register District (approximately 5 miles north of the proposed linear facilities corridor at Wiley's Well Road Rest Area);
- Palen Dry Lake, BLM cultural Area of Critical Environmental Concern (adjacent);
- Corn Springs, BLM cultural Area of Critical Environmental Concern (approximately 30 miles);
- Alligator Rock, BLM cultural Area of Critical Environmental Concern (25 miles);
- Camp Young-Desert Training Center, BLM cultural Area of Critical Environmental Concern and State Historical Landmark Riv-985 (marker in Desert Center);
- Colorado River Aqueduct Contractor's General Hospital, State Historical Landmark Riv-922( marker in Desert Center); and
- 1877 Thomas Blythe Canal Intake, State Historical Landmark Riv-948 (marker in Blythe).

### **Archival and Library Research**

Detailed resource-specific information needed by staff may entail primary and secondary research in various archives and libraries, holding such sources as historic aerial photography, historic maps, city directories, and assessors' records. The applicant may include archival information as part of the information provided to staff in the AFC or may undertake such research to respond to staff's data requests. Staff may also undertake such research to supplement information provided by the applicant.

### ***Archival and Library Research Results***

The archaeologists for the applicant conducted additional archival research on the history of the GSEP site footprint and vicinity at the BLM State Office Public Records Room where they obtained copies of General Land Office (GLO) maps and surveyor field notes (Farmer et al. 2009, p. 46). The results of this research were primarily data for the historical background subsection of the cultural resources section of the AFC. Additional sources of information consulted for the built-environment section (Farmer et al. 2009, app. F, p. 3-1) of the AFC include:

- County of Riverside Transportation Department and Land Management Agency;
- Caltrans Bridge Inventory;
- San Francisco Public Library;
- Los Angeles Public Library;
- BLM Palm Springs/South Coast Field Office;
- American Automobile Association of Southern California's Archives, Los Angeles; and
- On-line maps.

## **Local Agency and Organization Consultation**

California counties and cities may recognize particular cultural resources as locally historically important by ordinance, in general plans, or by maintaining specific lists. To facilitate the environmental review of their projects, applicants acquire information on locally recognized cultural resources specific to the vicinity of their project by consulting local planning agencies and local historical and archaeological societies.

### ***Results of Inquiries to Local Agencies and Organizations***

In order to identify the presence of any locally important cultural resources the archaeologists for the applicant contacted the following organizations by mail or email:

- City of Blythe Planning Department;
- Riverside County Planning Department;
- Coachella Valley Historical Society;
- Coachella Valley Archaeological Society;
- Colorado Desert Archaeology Society;
- George S. Patton Memorial Museum;
- Imperial County Historical Society Pioneers Museum;
- Imperial Valley College Desert Museum;
- Indio Chamber of Commerce;
- Pioneer Historical Society of Riverside;
- Twenty-nine Palms Historical Society; and
- Palo Verde Historical Society and Museum.

The majority of these groups did not respond. The City of Blythe, Coachella Valley Archaeological Society, the Riverside County Planning Department, and the Twenty-nine Palms Historical Society all reported a lack of important cultural resources within or near the GSEP site footprint and linear facilities corridor and/or a lack of relevant information (Farmer et al. 2009, p. 46). Thus, no additional information on known cultural resources was obtained from these sources.

## **Native American Consultation**

The Native American Heritage Commission (NAHC) maintains two databases to assist cultural resources specialists in identifying cultural resources of concern to California Native Americans, referred to by staff as Native American ethnographic resources. The NAHC Sacred Lands database has records for places and objects that Native Americans consider sacred or otherwise important, such as cemeteries and gathering places for traditional foods and materials. The NAHC Contacts database has the names and contact information for individuals, representing a group or themselves, who have expressed an interest in being contacted about development projects in specified areas. Both applicants and staff request information from the NAHC on the presence of sacred lands in the vicinity of a proposed project and also request a list of Native Americans to whom inquiries would be made to identify both additional cultural resources and any

concerns the Native Americans may have about a proposed project. While the BLM must formally consult, government-to-government, with the federally recognized Native American tribes that have traditional cultural ties to the area in which the project is located, the Energy Commission provides information and sends notices of all public events regarding the project to all Native American groups and individuals whom the NAHC identifies as having an interest in development in the area, whether federally recognized or not.

### ***Results of Native American Consultation***

The applicant contacted the NAHC by email on October 17, 2007, to obtain information on known cultural resources and traditional cultural properties and to learn of any concerns Native Americans may have about the GSEP. In addition, they requested a list of Native Americans who have heritage ties to Riverside County and who want to be informed about new development projects there (Farmer et al. 2009, app. E). The NAHC responded on October 19, 2007, with the information that the Sacred Lands File (SLF) database failed to indicate the presence of Native American cultural resources in the immediate GSEP vicinity. The NAHC also forwarded a list of Native American groups or individuals interested in development projects in Riverside County.

On November 26, 2007, the Palm Springs-South Coast Field Office of the BLM sent letters to 28 Native American groups, including those identified by the NAHC, initiating government-to-government consultation for the proposed project. In addition the letter invited comments or concerns regarding potential impacts to cultural resources or areas of traditional cultural importance within the vicinity of the proposed project. On November 23, 2009, BLM sent an additional letter to the Agua Caliente Band of Cahuilla Indians and informational copies to 12 other groups listed in **Cultural Resources Table 4**, noting the *Federal Register* publication of the Notice of Intent (NOI) for the proposed project, stating that in compliance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the Federal Land Policy and Management Act of 1976, as amended, the BLM Palm Springs-South Coast Field Office, together with the Energy Commission, intend to prepare an Environmental Impact Statement (EIS) and Staff Assessment (SA), which may also include an amendment to the California Desert Conservation Area (CDCA) Plan (1980, as amended) for GSEP. In this same notice the BLM announced that it intends to use the NEPA commenting process to satisfy the public involvement process for Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) as provided for in 36 CFR 800.2(d)(3). Publication of the NOI initiated the scoping process to solicit public comments and identify issues (BLM 2009a). The letter urged any concerned Native American groups to utilize the Section 106 process to provide comments or specific concerns.



**CULTURAL RESOURCES Table 4**  
**Dates of BLM Inquiries Made to Native American Groups**

<b>Native American Group</b>	<b>Contact Person</b>	<b>Dates of Contact with BLM</b>
Agua Caliente Band of Cahuilla Indians	Richard Milanovitch, Chairman Richard Begay and Patty Tuck, Tribal Historic Preservation Officers	11/26/07 NAHC letter from BLM 01/29/08 Reply from Ms. Tuck 05/20/09 Meeting with BLM 06/05/09 Meeting with BLM 11/23/09 NOI letter from BLM 04/23/10 Meeting with BLM and CEC
Ak-Chin Indian Community	Terry Enos, Chairman	11/23/09 Copy of NOI letter
Anza Cahuilla	Contact person unknown	05/20/09 Meeting with BLM 11/05/09 Meeting with BLM
Augustine Band of Cahuilla Mission Indians	Mary Ann Green, Chairperson	11/26/07 NAHC letter from BLM 11/23/09 Copy of NOI letter
Cabazon Band of Mission Indians	John A. James, Chairperson Judy Sapp, Cultural Resources Coordinator	11/26/07 NAHC letter from BLM 12/21/07 Reply from Ms. Sapp 05/20/09 Meeting with BLM 11/05/09 Meeting with BLM 11/23/09 Copy of NOI letter
Cahuilla Band of Indians	Anthony Madrigal, Sr., Chairperson	11/26/07 NAHC letter from BLM 11/23/09 Copy of NOI letter 04/23/10 Meeting with BLM and CEC
Chemehuevi Reservation	Charles Wood, Chairperson	11/26/07 NAHC letter from BLM 11/23/09 Copy of NOI letter 12/09/09 Reply
Cocopah Tribal Council	Sherry Cordova, Chairwoman	11/23/09 Copy of NOI letter
Colorado River Indian Reservation	Daniel Eddy, Jr., Chairman Michael Tsosie, Cultural Contact	11/26/07 NAHC letter from BLM 11/23/09 Copy of NOI letter
Fort McDowell Yavapai Nation	Raphael Bear, President	11/23/09 Copy of NOI letter
Fort Mojave Indian Tribe	Timothy Williams, Chairperson Linda Otero, Director, AhaMakav Cultural Soc.	11/23/09 Copy of NOI letter
Gila River Indian Community Council	Richard Narcia, Governor	11/23/09 Copy of NOI letter
Havasupai Tribe	Rex Tilousi, Chairman	11/23/09 Copy of NOI letter
Hualapai Indian Tribe	Charles Vaughn, Chairman	11/23/09 Copy of NOI letter
Kaibab-Paiute Tribe	Carmen Bradley, Chairwoman	11/23/09 Copy of NOI letter
Los Coyotes Band of Indians	Katherine Staubel, Spokesperson	11/23/09 Copy of NOI letter
Morongo Band of Mission Indians	Richard Martin, Chairperson Brit W. Wilson, Cultural Resources	11/26/07 NAHC letter from BLM 05/20/09 Meeting with BLM 11/05/09 Meeting with BLM 11/23/09 Copy of NOI letter
Pechanga Band of Luiseño Indians	Contact person unknown	05/20/09 Meeting with BLM 11/05/09 Meeting with BLM

<b>Native American Group</b>	<b>Contact Person</b>	<b>Dates of Contact with BLM</b>
Quechan Indian Tribe	Michael Jackson, Sr. President Bridget Nash, Cultural Resources	12/18/07 Contact from Ms. Nash 06/23/08 Contact from Ms. Nash 04/29/09 Contact from Ms. Nash 05/21/09 Reports from BLM 05/29/09 Reports from BLM 06/09/09 Contact from Ms. Nash 09/03/09 Letter from Mr. Jackson 11/23/09 Copy of NOI letter 02/16/10 Letter from Mr. Jackson
Ramona Band of Mission Indians	Manuel Hamilton, Chairperson Joseph Hamilton, Vice Chairperson John Gomez, Environmental Coordinator	11/26/07 NAHC letter from BLM 05/21/09 Meeting with BLM 11/05/09 Meeting with BLM 11/23/09 Copy of NOI letter
Salt River Pima-Maricopa Indian Community Council	Joni Ramos, President	11/23/09 Copy of NOI letter
San Mañuel Band of Mission Indians	Ann Brierty, Environmental Department	11/26/07 NAHC letter from BLM 05/20/09 Meeting with BLM 11/05/09 Meeting with BLM 11/23/09 Copy of NOI letter
Santa Rosa Band of Mission Indians	John Marcus, Chairman Terry Hughes, Tribal Administrator	11/23/09 Copy of NOI letter
Soboba Band of Mission Indians	Robert Salgado, Chairperson Bennae Calac, Cultural Resources Coordinator	11/23/09 Copy of NOI letter
The Hopi Tribe	Wayne Taylor Jr., Chairman	11/23/09 Copy of NOI letter
Tohono O'odham Nation	Vivian Saunders, Chairwoman	11/23/09 Copy of NOI letter
Torres-Martinez Desert Cahuilla Indians	Raymond Torres, Tribal Administrator William J. Contreras, Cultural Resources Coordinator	11/26/07 NAHC letter from BLM 05/20/09 Meeting with BLM 11/05/09 Meeting with BLM 11/23/09 Copy of NOI letter
Twentynine Palms Band of Mission Indians	Mike Darrell, Chairperson Anthony Madrigal, Jr., CR Specialist	11/26/07 NAHC letter from BLM 05/20/09 Meeting with BLM 11/05/09 Meeting with BLM 11/23/09 Copy of NOI letter 04/23/10 Meeting with BLM and CEC
Yavapai-Apache Nation	Jamie Fuller, Chairman	11/23/09 Copy of NOI letter
Yavapai-Prescott Indian Tribe	Ernie Jones, Sr., President	11/23/09 Copy of NOI letter

Tetra Tech reports that no responses to the initial 2007 BLM letter were received by the time the final draft of the cultural resources technical report was included in the AFC in November, 2009 (Farmer et al. 2009, app. E). However the BLM reports a number of contacts and meetings between November, 2007, and December, 2009. The details of these contacts are listed in **Cultural Resources Tables 4 and 5**. A number of tribes—Agua Caliente Band of Cahuilla Indians, Morongo Band of Mission Indians, Cabazon Band of Mission Indians, Torres-Martinez Desert Cahuilla Indians, Pechanga Band of Luiseño Indians, Anza Cahuilla, Ramona Band of Mission Indians, Twentynine Palms

Band of Mission Indians, and San Manuel Band of Mission Indians—attended meetings with BLM staff about various solar energy and transmission line projects in the region. In general the tribes expressed concern over possible damage to cultural resources, cultural landscapes, and traditional cultural properties. In addition they expressed interest in receiving copies of archaeological reports after cultural resources surveys of the GSEP footprint and linear facilities corridors were complete and being informed about the amount of damage to these resources expected to take place. It is unclear which of these groups is specifically interested in GSEP, other than the three tribes discussed below.

Four tribes—the Quechan Tribe, the Agua Caliente Band of Cahuilla Indians, the Cabazon Band of Mission Indians, and the Chemehuevi Reservation—responded to BLM letters about GSEP. Originally, the Agua Caliente Band of Cahuilla Indians stated that they were not interested in consulting about GSEP as it is outside of tribal traditional use areas. More recently, however, they have participated in several meetings organized by the BLM and expressed concern (**Cultural Resources Table 5**). The Cabazon Band of Mission Indians and the Chemehuevi Reservation expressed general concerns about the potential destruction of cultural resources and traditional cultural properties.

The Quechan Tribe has expressed the most interest in GSEP, and has contacted BLM multiple times. Their concerns have been summarized in a formal letter written in response to the proposed Programmatic Environmental Impact Statement for Solar Energy Development for the six southwestern states. In this letter they consider the area around Blythe, presumably including the GSEP site footprint and linear facilities corridor, to be part of the Quechan Tribe's traditional land. To alleviate potential impacts to cultural resources, spiritual landscapes, or traditional cultural properties (TCPs) they request to be consulted at the inception of the project, prior to any plans being finalized. They further request that the clustering of these large multi-thousand-acre projects be prohibited, that traditional areas rich in cultural resources be avoided, that projects be placed on land that has already been disturbed, and that existing buildings be favored over undisturbed land for the placement of solar panels. Finally, they emphasize their concern over indirect as well as direct impacts to cultural resources. They request that BLM not “focus exclusively on archaeological site impacts, while failing to fully address impacts to resources such as cultural landscapes and TCPs” (Jackson 2009, p. 3). An additional letter from the Quechan Tribe was sent on February 16, 2010. In this letter President Jackson expresses doubt that the appropriate Section 106 consultation process can be completed within the “fast-track” timeframe that requires a final Record of Decision by September, 2010. He further comments that the Tribe does not believe that the “fast-track” projects meet the regulatory criteria for the use of a Programmatic Agreement.

Californians for Renewable Energy (CARE) members favor a “no action” alternative. Among their concerns are several related to cultural resources. Alfredo Acosta Figueroa, a CARE member and member of the La Cuna de Aztlan Sacred Sites Protection Circle notes that the proposed project will “despoil a portion of the desert wilderness” (CARE 2009a, p. 2), which is sacred to the Uto-Aztecan language speakers. Further, he mentions that solar energy projects in general are “antithetical to the sacred sites purpose and appear to be intended to essentially trap the Creator

Quetzalcoatl as the deity descends at sun down” (CARE 2009a, p. 2). In particular CARE is concerned about damage to sacred petroglyph sites—one in the Palen Mountains and another at McCoy Spring National Register District—and the ancient trails that run between them. Knowledge of these sites is part of local traditional knowledge and has also been documented by archaeologists including Johnson and Johnstone (1957). According to the descriptions provided by Mr. Figueroa and by the archaeological maps, portions of several prehistoric trails potentially associated with McCoy Spring National Register District appear to pass near to or through the GSEP site footprint and linear facility corridor (McCarthy 1993, Fig. 10). In addition, staff may have identified the sacred place in the Palen Mountains, mentioned by Mr. Figueroa, as CA-Riv-0980, a place where two prehistoric trails intersect with several small boulders bearing petroglyphs. Also present is a historic-period inscription which says: “Watter in left hand gulch about 200 yds J B 1873.”

Further comments by CARE are discussed in the “Response to Agency and Public Comments subsection.”

**CULTURAL RESOURCES Table 5**  
**Details of Communications Between BLM and Native American Groups**

<b>Date</b>	<b>Group</b>	<b>Communication Details</b>
12/18/07	Quechan Tribe	Bridget Nash replied: Expressed concerns for the potential impacts affiliated with the Tribe. Requests a copy of the cultural report once it is completed.
12/21/07	Cabazon Band of Mission Indians	Judy Sapp replied: If there are substantial impacts, the Tribe will request an in-person meeting with Morongo Tribal Historian and BLM staff. She requested additional cultural resource information and for the BLM to provide a report when it becomes available.
01/29/08	Agua Caliente Band of Cahuilla Indians	Patty Tuck replied: The project is beyond both the Reservation lands and traditional use areas of the Tribe. Suggests contacting the Augustine Band of Cahuilla Indians, the Cabazon Band of Mission Indians, the Twentynine Palms Band of Mission Indians, and the Torres-Martinez Desert Cahuilla Indians.
06/23/08	Quechan Tribe	Bridget Nash requests archaeological reports.
04/29/09	Quechan Tribe	A telephone and e-mail conversation between Bridget Nash (Quechan Tribe) and Wanda Raschkow (BLM); Ms. Nash sends requested reports and Ms. Raschkow sends e-mail regarding project status.
05/20/09	Multiple Tribes	A meeting was held to discuss various solar energy projects and transmission lines in the Chuckwalla and Coachella Valleys. Attendees included BLM staff C. Dalu, R. Queen, and J. Kalish and representatives from the Agua Caliente Band of Cahuilla Indians, Morongo Band of Mission Indians, Cabazon Band of Mission Indians, Torres-Martinez Desert Cahuilla Indians, Pechanga Band of Luiseño Indians, Anza Cahuilla, Ramona Band of Mission Indians, Twentynine Palms Band of Mission Indians, and San Mañuel Band of Mission Indians.
05/21/09	Quechan Tribe	A letter was posted to Ms. Nash (Quechan Tribe) from BLM Palm Springs Field Office providing requested reports. C. Dalu sent Tetra Tech's archaeology reports.
05/29/09	Quechan Tribe	A package was posted to Ms. Nash (Quechan Tribe) from BLM Palm Springs Field Office providing requested reports.
06/05/09	Agua Caliente Band of Cahuilla Indians	Meeting with BLM and representatives of the Agua Caliente Band of Cahuilla Indians to discuss various solar projects.

Date	Group	Communication Details
06/09/09	Quechan Tribe	A telephone conversation between Bridget Nash (Quechan Tribe) and Wanda Raschkow (BLM); Ms. Raschkow reports status of project. Ms. Nash requests report. Ms. Raschkow indicates that a data-sharing agreement will be necessary before providing archaeological reports and other sensitive data.
11/05/09	Multiple Tribes	Meeting with BLM to discuss various solar projects. Attendees included BLM staff and representatives from the Agua Caliente Band of Cahuilla Indians, Morongo Band of Mission Indians, Cabazon Band of Mission Indians, Torres-Martinez Desert Cahuilla Indians, Pechanga Band of Luiseno Indians, Anza Cahuilla, Ramona Band of Mission Indians, Twentynine Palms Band of Mission Indians, and San Manuel Band of Mission Indians. Tribes request a monthly report regarding all projects. The Agua Caliente Band of Cahuilla Indians requests a site visit.
09/03/09	Quechan Tribe	BLM receives a letter from President Mike Jackson, Sr., commenting on the Programmatic Environmental Impact Statement regarding solar development being developed for the six southwestern states. Concerns expressed over cultural resources and traditional cultural properties.
12/09/09	Chemehuevi Reservation	A telephone conversation between C. Dalu and a representative of the Chemehuevi Reservation expressing concern about the impact of Genesis, Palen, and Blythe solar projects on cultural resources and traditional cultural properties.
12/23/09	La Cuna de Aztlan Sacred Sites Protection Circle	This is a group composed of members from multiple tribes dedicated to the protection of sacred sites in traditional territories in the Colorado and Mojave Deserts. Their comments were included in a formal letter from the CALifornians for Renewable Energy (CARE) in response to the BLM/CEC request for comments on the GSEP NOI. Concerned about damage to cultural resources such as trails and springs, in particular McCoy Spring.
02/16/10	Quechan Tribe	BLM receives a letter from President Mike Jackson, Sr., commenting on the regulatory approval schedule for the solar "fast-track" projects including Genesis. Concerns expressed about the ability of BLM to consult appropriately with the Tribe in the time frame envisioned. Also suggests that a Section 106 PA is inappropriate for these projects.

Date	Group	Communication Details
04/23/10	Multiple Tribes	Meeting with BLM and CEC to discuss cultural resources impacts for the I-10 Corridor solar projects (Genesis, Blythe, Palen). Attendees included BLM and CEC cultural resources staff, CA SHPO, cultural resources specialists for the applicants, and representatives from the Agua Caliente Band of Cahuilla Indians, Cahuilla Band of Indians, and the Twentynine Palms Band of Mission Indians.

### **Field Inventory Investigations**

To facilitate the environmental review of their projects, applicants conduct surveys to identify previously unrecorded cultural resources in or near the GSEP site footprint and linear facilities corridor. These surveys include a pedestrian archaeological survey and a built-environment windshield survey. The applicant includes the acquired new survey information as part of the information provided to staff in the AFC and may undertake additional field research, including geoarchaeological studies and site testing, to respond to staff's data requests. Staff may also undertake additional field research to supplement information provided by the applicant.

BLM's Class I survey, mentioned above, is an archival exercise. Under BLM's protocol for inventory-level cultural resources investigations on lands for which a Right-of-Way grant has been requested, after the Class I survey, the applicant generally undertakes field research, sequentially, at two increasing levels of intensity. A Class II survey, sometimes referred to as a "reconnaissance survey," is a statistically based sample survey designed to help characterize the probable density, diversity, and distribution of archaeological sites in a large area by interpreting the results of surveying (walking across and examining the ground surface) limited and discontinuous portions of the target area. A Class III survey is a continuous, intensive survey of an entire target area, aimed at locating and recording all archaeological properties that have surface indications, by walking close-interval parallel transects until the area has been thoroughly examined (BLM 2004, sec. 8110.21).

In summary, the archaeologists for the applicant employed six phases of fieldwork to inventory the cultural resources in the GSEP site footprint and linear facilities corridor: 2 geoarchaeological studies, 3 intensive pedestrian surveys, and 1 built-environment survey (**Cultural Resources Table 6**). Class III fieldwork identified 148 cultural resources which summarized below. These totals do not include the Class II survey but do include the various GSEP linear corridor alternatives. Some of linear corridor sites would be avoided. If a secondary access road is required (CEC 2010g), a fourth Class III intensive pedestrian survey may be required for the new route.

**CULTURAL RESOURCES Table 6**  
**All Cultural Resources Identified in GSEP PAAs and Vicinity**

	Pre-historic Sites	Historic Sites	Multi-Component	Unknown Sites	Built Environment	Pre-historic Isolates	Historic Isolates	Total
<b>McCarthy 1990s Survey</b>	224	0	0	0	0	0	0	224
<b>Previously Identified Tetra Tech</b>	68	14	4	2	0	69	10	167
<b>Tetra Tech Class III</b>	26	20	2	0	2	72	26	148
<b>Total</b>	318	34	6	2	2	141	36	<b>539</b>

**Results of Pedestrian Archaeological Survey**

The archaeologists for the applicant (Tetra Tech) undertook four distinct intensive pedestrian archaeological surveys of the proposed GSEP site footprint and linear facilities corridor alternatives. Class II survey covered 1,896 acres and Class III surveys covered 3,534.3 acres. In total the number of acres surveyed by Tetra Tech for the GSEP project is 5,430.3.

The initial survey was a BLM Class II Sampling Field Inventory, which was conducted to facilitate decision-making regarding the placement of the project footprint. The results of this survey were included in the “CHRIS Results” subsection because this information helped inform the boundaries of the Class III survey area. During the Class II survey 20 percent of the original GSEP site footprint (9,480 acres) was surveyed. To identify locations to survey, this area was divided into 40-acre parcels along eighth-section lines. Forty-eight 40-acre parcels were then randomly selected from a total sample universe of 237 using a random numbers table. In total, 1,896 acres were surveyed. The field work was conducted between November, 2007, and January, 2008.

The second survey was an intensive BLM Class III survey of the 2,494-acre proposed project facility plus a perimeter buffer of 200 feet. The field work was conducted between March and April, 2009. Sites that had been recorded in this area during the initial Class II survey were briefly revisited during the Class III survey and updated if necessary.

The third pedestrian survey was an intensive BLM Class III survey of the proposed linear facilities corridor. Survey coverage included the proposed linear alignment, plus 75 feet to either side of the center line of the routes. A total of 449.5 acres were surveyed. The fieldwork was conducted in June of 2009.

The fourth pedestrian survey was an intensive BLM Class III survey of a number of linear facilities corridor alternatives. Survey coverage included the corridor alternatives, plus 75 feet to either side of the center line of the routes. A total of 590.8 acres were surveyed. The fieldwork was conducted in January and February of 2010.



An additional intensive BLM Class III survey of the recently proposed secondary access road may be required (CEC 2010g). Survey coverage is expected to be similar to other Tetra Tech linear corridor surveys.

The four surveys used identical methods and encountered similar working conditions. Two-to ten-person survey teams walked at 15-m intervals looking for archaeological remains. Each team sought to relocate previously recorded sites and assess their current condition. For new resources, they defined three or more artifacts and/or features as a site and two or fewer as an isolate. They used an arbitrary distance of 50 m between artifacts and features to separate deposits into individual sites. They used handheld GPS units to plot the locations of features, sites, and isolated artifacts. All sites and architectural resources over 45 years of age with the data required by Department of Parks and Recreation (DPR) series 523 forms. They photographed site overviews and diagnostic artifacts, drew site sketch maps, compiled artifact and feature descriptions, and made observations on the terrain and ecology. Once a site was recorded, the team removed all flagging tape. Overall visibility in all of the surveyed areas was good, and work days were sunny and clear with occasional days with extremely high winds. Tetra Tech undertook no subsurface testing and collected no artifacts (Farmer et al. 2009, pp. 58–59).

During the second, third, and fourth intensive pedestrian archaeological surveys, 50 new cultural resources and 98 cultural isolates were found within 3,534.3 acres (Farmer et al. 2009). This total only includes sites found in the proposed project facility footprint and linear facilities corridor (and alternatives) areas. Sites found during the Class II survey are discussed in the “CHRIS Results” subsection above. The newly identified archaeological sites consisted of 26 prehistoric, 20 historic-period, and 2 multi-component archaeological sites, and 2 built environment resources. This total includes site P33-17977, which was originally recorded as an isolate. Staff has included it as a site here since it contains 11 sherds. The archaeological isolates consisted of 72 prehistoric items, primarily lithics, with occasional ground stone and ceramics. Twenty-six historic-period isolates were identified, mainly glass and metal. The prehistoric archaeological site types include lithic scatters of stone tool manufacturing and maintenance debris and potential temporary campsites. The historical archaeological site types consist of debris and refuse scatters. Many appear to be temporary camps associated with DTC/C-AMA maneuvers. The isolate types include prehistoric lithics and ceramics as well as historic-period refuse.

**Cultural Resources Table 7** summarizes sites found by other projects (n=34), sites found in Tetra Tech’s GSEP Class II survey (n=54), and sites found in Tetra Tech’s three GSEP Class III surveys (n=50). In total, 138 sites are included in this table. Two-hundred and twenty-four of the sites identified by McCarthy (1993), which staff considers to be within the ethnographic PAA, were not identified by Tetra Tech and so are not included in Table 7. Rather, see **Cultural Resources Table 8**, below.

In many cases, however, for the newly identified sites, site function and the time periods represented were unspecified, despite the presence of artifacts that could provide the relevant information. This was particularly the case for the historical archaeological sites. These issues were not resolved by Data Requests. Staff attempted to clarify some

of these issues with a more detailed inspection of all of the relevant site forms. The information in **Cultural Resources Table 7** was primarily generated by staff.

**CULTURAL RESOURCES Table 7**  
**Cultural Resources Identified by Tetra Tech**  
**Located in the GSEP PAA and Vicinity**

Resource	Description	When Found	Period/ Era	Location	Info Source
<u>Prehistoric</u>					
CA-Riv-0053T	Trail: 22+ km segment, leads from Colorado River to McCoy Spring around south and west side of McCoy Mountains, multiple associated sites and features.	Previously known	Prehistoric	In Ethnographic PAA	McCarthy 1993
CA-Riv-0132 (P33-00132)	Temporary Camp: McCoy Spring National Historic District, 40 acres, at spring, 18 trails, 3000+ rock art images, 1000+ artifacts, midden, rock rings, cleared circles.	Previously known	Prehistoric	In Ethnographic PAA	McCarthy 1986, 1993
CA-Riv-0260 (P33-00260)	Temporary Camp: 62 acres near lake edge, 1000+ artifacts, ceramics, lithics, ground stone, FAR. 5 concentrations, buried deposits, pot drops.	Previously known	Prehistoric	Linear Corridor	Ramirez 2008 (update)
CA-Riv-0663 (P33-00663)	Temporary Camp: 186 acres, 1000+ artifacts, lithics (jasper, quartzite, rhyolite, chert, and chalcedony) 1 Corner Notched projectile point fragment, 1 biface fragment, ceramics (Parker buffware and Tizon brownware, and greyware), mano and metate fragments some of green shale, FAR, and 1 rock alignment. May include CA-Riv-6900.	Previously known	Prehistoric	Linear Corridor	Palette et al., 1989 Farmer et al., 2010
P33-01216	Lithic Scatter: Widely dispersed, along maximal lake shoreline on gravel terrace, debitage 7 flakes of chert/jasper, 1 hammerstone/core.	Previously known	Prehistoric	Vicinity	McCarthy 1977
P33-01222	Temporary Camp: located near dry lake shore (n=100+), 7 loci of metates and manos, debitage of quartz and chalcedony cores and flakes. Site disturbed by ORV.	Previously known	Prehistoric	In Ethnographic PAA	Cook 1976
P33-01517	Lithic Scatter: Debitage of jasper and quartz.	Previously known	Prehistoric	Vicinity	Ritter 1975
P33-01543	Artifact Scatter: 3 metate fragments, 2 flakes.	Previously known	Prehistoric	Vicinity	Morim 1976
P33-01818	Ceramic Scatter: 53 sherds, Tumco Buff, pot drop	Previously known	Prehistoric	In Ethnographic PAA	Carrico 1980

Resource	Description	When Found	Period/ Era	Location	Info Source
P33-01840	Artifact Scatter: just south of I-10, 2 pot drops (n=71), 2 lithics, 1 ground stone fragment.	Previously known	Prehistoric	In Ethnographic PAA	Musser & Boyer 1976
P33-02157	Temporary Camp: along lake edge, near I-10, artifacts (n=30+), ceramic (buff/ Tizon brown ware), ground stone fragments (metates/manos), lithic flakes (quartz/green andesitic meta-volcanic).	Previously known	Prehistoric	In Ethnographic PAA	Cardenas 1981
CA-Riv-2159 (P33-02159)	Temporary Camp: (n=100s) with 5 loci, and 1 pot drop (n=7), along lake edge, lithics (flakes: rhyolite, basalt, chalcedony, agate, jasper, chert, granite, andesite) and ground stone (manos, metates, hammerstones).	Previously known	Prehistoric	In Ethnographic PAA	Cardenas 1981
P33-02206	Lithic Scatter: 6 flakes (chalcedony, quartz, opal), 1 quartzite cobble core.	Previously known	Prehistoric	Vicinity	Hammond 1981
P33-03129	Trail: 3.5 km long, leads to the southwestern side of the McCoy Mountains.	Previously known	Prehistoric	In Ethnographic PAA	McCarthy 1991
P33-03801	Ceramic Scatter: (n=5) Parker buffware sherds, pot drop	Previously known	Prehistoric	In Ethnographic PAA	Palette et al. 1989
P33-03802	Artifact Scatter: near lake shore, 1 metate fragment, 2 chalcedony flakes, 1 quartzite hammerstone, fractured cobbles, and possible green shale hearth feature.	Previously known	Prehistoric	Vicinity	Palette et al. 1989
P33-03808	Ceramic Scatter: (n=7) Tumco Red-on-buff sherds, pot drop	Previously known	Prehistoric	In Ethnographic PAA	Mooney & Associates 1990
P33-03809	Ceramic Scatter: (n=7+) Tumco buff sherds, pot drop	Previously known	Prehistoric	In Ethnographic PAA	Mooney & Associates 1990
CA-Riv-6170 (P33-08655)	Lithic Scatter: along dry lake shore, lithic debitage (quartzite, agate, chalcedony, chert, jasper), 1 chert Rose Spring projectile point (A.D. 200 to 1100), 1 point and drill fragment.	Previously known	Prehistoric	Vicinity	Mitchell 1998
CA-Riv-6900	Temporary Camp:(100+), lithics, ground stone. Possibly part of CA-Riv-0663.	Previously known	Prehistoric	Avoided	BLM 1977
CA-Riv-9032 (P33-17416)	Lithic Scatter: Debitage (n=14); two cores.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9033 (P33-17417)	Lithic Scatter: Debitage (n=39); two cores.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9036 (P33-17420)	Artifact Scatter: Debitage (n=3), mano, fire-affected rock (FAR).	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009

Resource	Description	When Found	Period/ Era	Location	Info Source
CA-Riv-9037 (P33-17421)	Temporary Camp: near lake shore, artifacts (n=17), lithics, ground stone, 1 brownware sherd, 5 concentrations of FAR.	GSEP Class II	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9038 (P33-17422)	Artifact Scatter: Debitage (n=7), FAR.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9039 (P33-17423)	Artifact Scatter: Debitage (n=3), and mano fragment.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9040 (P33-17424)	Lithic Scatter: Debitage (n=22), and flake tool.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9041 (P33-17425)	Lithic Scatter: Debitage (n=11), and core.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9042 (P33-17426)	Lithic Scatter: Debitage (n=2), core.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9043 (P33-17427)	Artifact Scatter: Debitage (n=7), core, ground stone.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9044 (P33-17428)	Artifact Scatter: Debitage (n=20+), and mano.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9045 (P33-17429)	Lithic Scatter: Debitage (n=4), and cores.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9046 (P33-17430)	Artifact Scatter: near lake shore (n=22), 2 ground stone, 2 FAR, 18 lithics	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9047 (P33-17431)	Lithic Scatter: Debitage (n=5)	GSEP Class II	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9048 (P33-17432)	Lithic Scatter: Debitage (n=10).	GSEP Class II	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9049 (P33-17433)	Artifact Scatter: Debitage (n=2), core, ground stone.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9050 (P33-17434)	Lithic Scatter: (n=3) Debitage.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9051 P33-17435	Lithic Scatter: (n=5),debitage and 1 core.	GSEP Class II	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9052 (P33-17436)	Artifact Scatter: Debitage (n=2), core, and ground stone.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9053 (P33-17437)	Lithic Scatter: Debitage (n=3), and cores.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9054 (P33-17438)	Lithic Scatter: Debitage (n=5).	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9055 (P33-17439)	Temporary Camp: near lake shore, artifacts (n=53) includingdebitage, ground stone, ceramic fragments, FAR <sup>10</sup> concentration.	GSEP Class II	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9056 (P33-17440)	Lithic Scatter: (n=5) Debitage, biface, and hammerstone.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9057 (P33-17441)	Artifact Scatter: Debitage (n=6), core, and metate fragment.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9060 (P33-17444)	Artifact Scatter: (n=6) 4 flakes, 1 metate fragment and 1 sherd.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9061 (P33-17445)	Lithic Scatter: Debitage (n=6).	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9062 (P33-17446)	Artifact Scatter: (n=16) Debitage and mano fragments.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009

<sup>10</sup> FAR is fire-affected rock—rock that shows evidence of having been in prolonged contact with fire.

Resource	Description	When Found	Period/ Era	Location	Info Source
CA-Riv-9064 (P33-17448)	Temporary Camp: near lake edge, artifacts (n=120+), 2 concentrations, 3 projectile points, 2 bifaces, 2 ground stone. Possibly Archaic period.	GSEP Class II	Prehistoric	In Ethno- graphic PAA	Farmer et al. 2009
CA-Riv-9065 (P33-17449)	Artifact Scatter: possible hearth with 20+ FAR, 2 metate fragments, and 2 chert flakes.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9066 (P33-17450)	Lithic Scatter: (n=8) lithic debitage.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9067 (P33-17451)	Lithic Scatter: (n=38) lithics, 1 possible Desert side notch projectile point, 1 biface. Probably part of CA-Riv-9068.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9069 (P33-17453)	Lithic Scatter: Debitage (n=10+).	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9070 (P33-17454)	Lithic Scatter: (n=3) Debitage, 1 core.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9071 (P33-17455)	Temporary Camp: 78 acres, 4 concentrations (n=250+), lithics, ceramics, ground stone, FAR.	GSEP Class II	Prehistoric	In Ethno- graphic PAA	Farmer et al. 2009
CA-Riv-9072 (P33-17456)	Temporary Camp: 350 acres, artifacts (n=1000+), debitage, Rose Spring projectile point (AD 200 to 1100), brownware sherds, FAR, ground stone. May be part of CA-Riv-9078.	GSEP Class II	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9073 (P33-17457)	Lithic scatter: (n=4), debitage and 1 tool.	GSEP Class II	Prehistoric	Linear Corridor	Farmer et al. 2009
CA-Riv-9075 (P33-17459)	Artifact Scatter: (n=7) debitage, 1 flake tool, 1 metate.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9076 (P33-17460)	Lithic Scatter: Debitage (n=5).	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9078 (P33-17462)	Temporary Camp: (n=3000+) artifacts, 2000 ground stone, lithics, FAR. Milling tool manufacturing? May be part of CA-Riv-9072.	GSEP Class II	Prehistoric	In Ethno- graphic PAA	Farmer et al. 2009
CA-Riv-9079 (P33-17463)	Temporary Camp: artifacts (n=500+), lithics, 5 ground stone, 1 marine clam shell fragment.	GSEP Class II	Prehistoric	In Ethno- graphic PAA	Farmer et al. 2009
CA-Riv-9080 (P33-17464)	Lithic Scatter: (n=4) Debitage.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9081 (P33-17465)	Lithic Scatter: (n=7) Debitage.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9083 (P33-17467)	Lithic Scatter: (n=6+) Debitage.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9084 (P33-17468)	Artifact Scatter: 17 acres, (n=96), 2 concentrations, lithic debitage and tools, 8 ground stone, 1 Olivella shell bead (1100 cal AD to Contact), 1 marine shell.	GSEP Class II	Prehistoric	In Facility Footprint	Farmer et al. 2009

<b>Resource</b>	<b>Description</b>	<b>When Found</b>	<b>Period/ Era</b>	<b>Location</b>	<b>Info Source</b>
CA-Riv-9206 (P33-17775)	Artifact Scatter: (n=5) Debitage, 1 mano	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9207 (P33-17776)	Lithic Scatter: Debitage (n=5), core.	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9208 (P33-17777)	Lithic Scatter: (n=8) Debitage, 1 core	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9209 (P33-17778)	Artifact Scatter: (n=24) lithics, and ground stone.	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9210 (P33-17779)	Artifact Scatter: (n=13) lithics and ground stone.	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9212 (P33-17781)	Lithic Scatter: (n=6) lithics, 1 Desert side-notched projectile point (AD 1100 to Contact).	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9215 (P33-17784)	Lithic Scatter: (n=25) lithics, 1 unidentified projectile point.	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9216 (P33-17785)	Artifact Scatter: near lake shore, (n=7), 2 concentrations, lithics, 1 mano, 1 biface.	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9217 (P33-17786)	Artifact Scatter: (n=3) 2 lithicdebitage, 1 brownware sherd.	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9218 (P33-17787)	Lithic Scatter: (n=3) 2 flakes, 1 scraper.	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9219 (P33-17788)	Lithic Scatter: (n=3) flakes	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9220 (P33-17789)	Artifact Scatter: (n=94) lithics, ground stone, Cottonwood leaf-shaped projectile point	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9221 (P33-17770)	Lithic Scatter: (n=8) Debitage.	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9222 (P33-17771)	Lithic Scatter: (n=4) Debitage.	GSEP Class III	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9223 (P33-17772)	Lithic Scatter: (n=20) Debitage.	GSEP Class III	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9226 (P33-17795)	Temporary Camp: near lake shore (n=100+), lithics, 3 brownware sherds, 70 FAR, ground stone.	GSEP Class III	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9227 (P33-17796)	Artifact Scatter: (n=18), lithics, brownware sherds (n=14) pot drop, 1 marine shell fragment	GSEP Class III	Prehistoric	Linear Corridor	Farmer et al. 2009
CA-Riv-9229 (P33-17798)	Artifact Scatter: Debitage (n=6); mano, metate fragment, cobble choppers	GSEP Class III	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9249 (P33-18003)	Ceramic Scatter: Brownware sherds (n=20) pot drop.	GSEP Class III	Prehistoric	Linear Corridor	Farmer et al. 2009
CA-Riv-9250 (P33-18004)	Artifact Scatter: (n=75) 1 concentration with 2 pot drops (33 and 29 sherds) Brownware sherds, 9 lithics, 3 FAR.	GSEP Class III	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9255 (P33-18009)	Artifact Scatter: (n=40+) artifacts, 10 Brownware "pot drop" sherds, 4 Brownware sherds, 3 Redware sherds, lithics, 3 FAR, 1 ground stone.	GSEP Class III	Prehistoric	Linear Corridor	Farmer et al. 2009

Resource	Description	When Found	Period/ Era	Location	Info Source
CA-Riv-9256 (P33-18010)	Lithic Scatter: Debitage (n=6), 1 biface fragment	GSEP Class III	Prehistoric	Linear Corridor	Farmer et al. 2009
CA-Riv-9257 (P33-18011)	Lithic Scatter: (n=4)debitage.	GSEP Class III	Prehistoric	Linear Corridor	Farmer et al. 2009
CA-Riv-9260 (P33-18014)	Artifact Scatter: (n=108+) artifacts, 100 Brownware "pot drop" sherds, 7 other Brownware sherds, 1 chert uniface.	GSEP Class III	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
P33-13599	Lithic Scatter: (n=2) tertiary jasper flakes	Previously known	Prehistoric	Vicinity	Mooney & Associates 2004
P33-17977	Ceramic Scatter: (n=11) Brownware sherds pot drop	GSEP Class III	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
P33-17998	Artifact Scatter: (n=4) 2 flakes, 2 FAR	GSEP Class III	Prehistoric	Linear Corridor	Farmer et al. 2009
CA-Riv-9034 (P33-17418)	Artifact Scatter: (n=7) lithics, 1 mano fragment.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
CA-Riv-9068 (P33-17452)	Artifact Scatter: artifacts (n=60),debitage, 2 ground stone, 8 lithic tools. Probably part of CA-Riv-9067.	GSEP Class II	Prehistoric	Avoided	Farmer et al. 2009
P33-01131	Artifact Scatter: Widely dispersed low density pot drop: 50 Tizon brownware sherds, 1 mano, 1 core fragment.	Previously known	Prehistoric	In Ethnographic PAA	Dittman 1981
<u>Historic-Period</u>					
P33-01132	Hopkins Well Site, constructed in 1910.	Previously known	Historic	Vicinity	Metcalf 1982, Cowan 1976
P33-01483	Historic Feature: Military mound, horseshoe-shaped, low earth mound. (1940s)	Previously known	Historic	Vicinity	Crowley 1978
P33-13597	Refuse Scatter	Previously known	Historic	Vicinity	Mooney & Associates 2004
P33-13598	Refuse Scatter: (n=8+) WW II era cans.	Previously known	Historic	Linear Corridor	Mooney & Associates 2004
P33-13655	Historic Feature and Refuse Scatter: Possible WW II foxholes and cans (1940s)	Previously known	Historic	Avoided	Mooney & Associates 2004
P33-14146	Refuse Scatter	Previously known	Historic	Vicinity	Mooney & Associates 2005
P33-14170	Refuse Scatter	Previously known	Historic	Vicinity	Mooney & Associates 2005
P33-14171	Two-Track Road	Previously known	Historic	Vicinity	Mooney & Associates 2005

Resource	Description	When Found	Period/ Era	Location	Info Source
P33-17326	Refuse Scatter	Previously known	Historic	Vicinity	ICF Jones & Stokes 2008
CA-Riv-9035H (P33-17419)	Refuse Scatter: Cans, bottle glass, misc.	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9059H (P33-17443)	Refuse Scatter: Can scatter. Prehistoric FDIA-Iso-10 recorded within site boundaries.	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9063H (P33-17447)	Refuse Scatter: Cans, spoon (military), pliers.	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9074H (P33-17458)	Refuse Scatter: WW II era cans and bottles.	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9077H (P33-17461)	Refuse Scatter: Cans and bottles (1940s).	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9203H (P33-17772)	Refuse Scatter: Pull-tab aluminum cans, food cans, bottle (1954-pres)	GSEP Class III	Historic	In Facility Footprint and Linear Corridor	Farmer et al. 2009
CA-Riv-9204H (P33-17773)	Refuse Scatter: Can scatter, bottles (1932-1953)	GSEP Class III	Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9211H (P33-17780)	Refuse Scatter: Cans, bottle glass, 1934 penny	GSEP Class III	Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9213H (P33-17782)	Refuse Scatter: Approximately 60 cans.	GSEP Class III	Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9214H (P33-17783)	Refuse Scatter: Approximately 10 cans.	GSEP Class III	Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9225H (P33-17794)	Refuse Scatter: 7 cans, mess-kit fork (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9228H (P33-17797)	Refuse Scatter: 10 cans, bottle base (1938-1951), bottle base (1916-1931), razor blade, glass fragments (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9230H (P33-17799)	Historic Feature and Refuse Scatter: stake alignment and 30+ C-ration cans, 13 other cans (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9245H (P33-17999)	Refuse Scatter: 8 cans, "New Texaco Motor Oil" can (c. 1937), 1 "Dietz All Weather" kerosene construction flare, Aladdin Industries "Aladdins Economy Thermos Bottle"	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9246H (P33-18000)	Refuse Scatter: 1 metal shoe last, 2 small donkey/pony shoes, 1 brass compass w/plastic lens, 5 C-ration cans, 1 Prince Albert style tobacco tin, 1 white milk glass jar w/metal lid embossed Mentholatum/ Reg/ Trade/ Mark (c.1960-post)	GSEP Class III	Historic	Avoided	Farmer et al. 2009



Resource	Description	When Found	Period/ Era	Location	Info Source
CA-Riv-9248H (P33-18002)	Refuse Scatter: 8 .30 caliber machine gun cartridges (stamped base 1938 and 1940), 12 gauge shotgun shell brass, 1 coffee can "Nescafe" (c. 1940s-1960s), 13 cans, automobile leaf spring,, razor blade, metal fragments (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9251H (P33-18005)	Refuse Scatter: 2 .30 caliber machine gun cartridges (stamped base 1940), 1 threaded lid coffee can, 2 C-ration cans, 1 pocket knife, 3 cans, bailing wire (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9252H (P33-18006)	Refuse Scatter: 1 amber glass beer bottle (Anchor Hocking post 1937), 4 C-ration cans, 7 sanitary cans (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9253H (P33-18007)	Refuse Scatter: 1 C-ration can, 6 sanitary cans, 1 large beverage can, glass fragment (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9254H (P33-18008)	Refuse Scatter: cans (N=12)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9258H (P33-18012)	Refuse Scatter: 61 C-ration cans, 7 soluble coffee cans, 72 cans, 1 .30 caliber machine gun cartridge (stamped base 1940), glass bottle fragments (Owens Illinois c. 1929-1957), 7 coffee cans external thread lid (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9259H (P33-18013)	Historic Feature: Stake Alignments: (n=2) (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9261H (P33-18015)	Refuse Scatter: 6 C-ration cans, 1 soluble coffee can, 1 tobacco tin (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9262H (P33-18016)	Refuse Scatter: 80 C-ration cans, 4 soluble coffee cans, 1 military mess fork stamped "US", 1 tobacco tin (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9263H (P33-18017)	Refuse Scatter: 17 C-ration cans, 1 cone-top can, 6 tobacco tins, 1 boot sole, 1 gas tank cap, 1 clear glass bottle (Owens Illinois c. 1929-1959), 1 large bolt, 1 D-size battery (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009

<b>Resource</b>	<b>Description</b>	<b>When Found</b>	<b>Period/ Era</b>	<b>Location</b>	<b>Info Source</b>
<u>Dual-Component</u>					
P33-01516	Temporary Camp/Refuse Scatter: (n=1000+) along dry lake shoreline, ground stone, lithic scatter, thermal fractured rock. WW II military artifacts.	Previously known	Prehistoric /Historic	In Ethnographic PAA	Ritter 1975
CA-Riv-9205H (P33-17774)	Artifact Scatter/ Refuse Scatter: Debitage (n=4); mano, 2 metate fragments. Glass bottles (post 1945), auto parts (1930-1940), condensed milk cans.	GSEP Class II	Prehistoric /Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9058H (P33-17442)	Artifact Scatter/Refuse Scatter: near lake shore, (n=33) prehistoric artifacts, lithics, 11 ground stone, 4 buffware sherds. Historic-period cans and bottles (n=3+).	GSEP Class II	Prehistoric /Historic	Avoided	Farmer et al. 2009
CA-Riv-9082H (P33-17466)	Lithic Scatter/Refuse Scatter: Debitage (n=3). Cans (n=6)	GSEP Class II	Prehistoric /Historic	Avoided	Farmer et al. 2009
CA-Riv-9224 (P33-17793)	Temporary Camp/Refuse Scatter: Prehistoric (n=60+), 2 concentrations, FAR in 2 possible hearths, brownware pot drop (n=28+), 1 Desert Side-notched projectile point (AD 1100 to Contact), historic-period (n=6) .45 caliber bullets, mess-kit spoon stamped "US", C-ration coffee can, pocket knife. Possibly part of CA-Riv-260.	GSEP Class III	Prehistoric /Historic	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9247 (P33-18001)	Ceramic Scatter/Refuse Scatter: Brownware sherds (n=3), 4 C-ration cans, 13 sanitary cans, 1 nut and bolt, 1 clear glass jar – Armstrong Cork Company (c.1938 -1969)	GSEP Class III	Prehistoric /Historic	Avoided	Farmer et al. 2009
<u>Built Environment</u>					
No number	Blythe-Eagle Mountain Transmission Line	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009, app. F
No number	Wiley's Well Road	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009, app. F
<u>Unknown</u>					
P33-00144	No details on site record. Note: F.R. Johnson on map in Walker's possession.	Previously known	Unknown	Vicinity	Eberhart 1951

Resource	Description	When Found	Period/ Era	Location	Info Source
CA-Riv-0259 (P33-00259) or (P33-13656)	Prehistoric Rock Rings or WWII era foxholes with refuse scatter?	Previously known	Unknown	Linear Corridor	Gester 1965 Mooney & Associates 2004

Two-hundred and twenty-four of the sites identified by McCarthy (1993), which staff considers to be within the ethnographic APE, were not identified by Tetra Tech and so are not included in Table 7, above. These important sites are listed in **Cultural Resources Table 8**. Information regarding these sites was collected by Energy Commission staff from McCarthy's (1993) report but not the individual site forms.

**CULTURAL RESOURCES Table 8**  
**Cultural Resources Located by McCarthy in the Vicinity of GSEP**

Resource	Description
CA-Riv-0071	Ceramic Scatter: 33 ceramics along Halchidhoma Trail, CA-Riv-0053T, diagnostic ceramics and lithics collected.
CA-Riv-0132	Temporary Camp: Diagnostic ceramics, slate pendant and obsidian collected.
CA-Riv-0258	Trail
CA-Riv-0503	Petroglyphs: 48 images, heavily patinated possibly old. Near Destination Area C.
CA-Riv-0523	Petroglyphs: 13 images, Destination Area B, water tank, Trails 4680, 4685, 4686 lead here. Near smaller water tank 4699.
CA-Riv-0661	Geoglyph: horseshoe shaped, 20m N/S by 39m E/W, south of Halchidhoma Trail CA-Riv-0053T, south end of McCoy Mountains, near transmission line corridor.
CA-Riv-0662	Geoglyph: 2 half circles, 40 m N/s by 60 m E/W, south of Halchidhoma Trail CA-Riv-0053T, south end of McCoy Mountains, near transmission line corridor. Partially disturbed.
CA-Riv-0792	Petroglyphs: Near Destination Area D. Unknown number of petroglyphs. Couldn't relocate. Near the Halchidhoma Trail CA-Riv-0053T and trails 4704, and 4705.
CA-Riv-0896	Trail
CA-Riv-0980	Activity Area: 2 trails, petroglyphs, inscription "Watter in left hand gulch about 200 yds J B 1873." Alternate name "Palen Tank"?
CA-Riv-1127	Ceramic Scatter: 30 ceramics, along unknown trail.
CA-Riv-1128	Artifact Scatter: lithics, 3 metates, 21 ceramics, along Halchidhoma Trail CA-Riv-0053T.
CA-Riv-1129	Ceramic Scatter: 200 ceramics, along Halchidhoma Trail CA-Riv-0053T. Diagnostic ceramics collected.
CA-Riv-1130	Ceramic Scatter: 6 ceramics, along unknown trail.
CA-Riv-3095	Artifact Scatter: 9 metates, 5 ceramics, along unknown trail.
CA-Riv-3110	Trail: 2.6 km long segment, leads directly to McCoy Spring. Sites 3115, 3116, 4601 along it. Within 3km of McCoy Spring.
CA-Riv-3111	Trail: 3.4 km long segment, leads directly to McCoy Spring, sites 3118, 3119, 3120, 3122 along it. Within 3km of McCoy Spring.
CA-Riv-3112	Trail: 2.5 km long segment, leads directly to McCoy Spring, sites 3117, 3121, 4604 along it. Within 3km of McCoy Spring.
CA-Riv-3113	Trail: leads directly to McCoy Spring. Sites 3123, 3124, 3125, 3126, 3127, 3921, 3922, 3825, 4609 along it.
CA-Riv-3114	Trail: 4.2 km long segment, leads directly to McCoy Spring. Sites 3923 and 3924, along it. Within 3km of McCoy Spring.
CA-Riv-3115	Petroglyph: 1 image, along trail 3110 leading directly to McCoy Spring. Within 3km of McCoy Spring.
CA-Riv-3116	Petroglyph: 1 image, along trail 3110 leading directly to McCoy Spring. Within 3km of McCoy Spring.

<b>Resource</b>	<b>Description</b>
CA-Riv-3117	Temporary Camp: lithics, 4 metates, 3 petroglyphs, 5 rock cairns, 14 cleared circles, along trail 3112 leading directly to McCoy Spring. Other sites on same trail are 3121 and 4604. Within 3km of McCoy Spring.
CA-Riv-3118	Isolate:1 metate, along trail 3111 leading directly to McCoy Spring. Other sites along same trail are 3119, 3120, 3122. Within 3km of McCoy Spring.
CA-Riv-3119	Activity Area: 1 petroglyph, along trail 3111. Other sites along same trail are 3118, 3120, 3122. Within 3km of McCoy Spring.
CA-Riv-3120	Petroglyph:1 image, along trail 3111 leading directly to McCoy Spring. Other sites along same trail are 3118, 3119, 3122. Within 3km of McCoy Spring.
CA-Riv-3121	Ceramic Scatter: 25 ceramics, along trail 3112 leading directly to McCoy Spring. Other sites on same trail are 3117 and 4604. Within 3km of McCoy Spring.
CA-Riv-3122	Ceramic Scatter: 140 ceramics, along trail 3111 leading directly to McCoy Spring. Other sites along same trail are 3118, 3119, 3120. Within 3km of McCoy Spring.
CA-Riv-3123	Ceramic Scatter: 4 ceramics, along trail 3113 leading directly to McCoy Spring. Other sites along this trail are 3124, 3125, 3126, 3127, 3921, 3922, 3925, 4609. Within 3km of McCoy Spring.
CA-Riv-3124	Ceramic Scatter: 9 ceramics, along trail 3113 leading directly to McCoy Spring. Other sites along this trail are 3123, 3125, 3126, 3127, 3921, 3922, 3925, 4609. Within 3km of McCoy Spring.
CA-Riv-3125	Rock Cluster: 1 cluster, along trail 3113 leading directly to McCoy Spring. Other sites along this trail are 3123, 3124, 3126, 3127, 3921, 3922, 3925, 4609. Within 3km of McCoy Spring.
CA-Riv-3126	Isolate: 2 metates, along trail 3113 leading directly to McCoy Spring. Other sites along this trail are 3123, 3124, 3125, 3127, 3921, 3922, 3925, 4609. Within 3km of McCoy Spring.
CA-Riv-3127	Ceramic Scatter: 36 ceramics, along trail 3113 leading directly to McCoy Spring. Other sites along this trail are 3123, 3124, 3125, 3126, 3921, 3922, 3925, 4609. Within 3km of McCoy Spring.
CA-Riv-3128	Activity Area: 7 metates, 12 cleared circles, along unknown trail. Within 3km of McCoy Spring.
CA-Riv-3129	Trail: West of Halchidhoma Trail CA-Riv-0053T, intersects with trails 3130 and 4688. Near Destination Area B.
CA-Riv-3130	Trail: Intersects with Halchidhoma Trail CA-Riv-0053T from the west. Also with 3129 and 4691. Near Destination Area B.
CA-Riv-3145	Petroglyphs: 3 petroglyph images.
CA-Riv-3146	Petroglyphs: 8 petroglyph images.
CA-Riv-3147	Petroglyphs: 8 petroglyph images, unusual rectilinear or mazelike image.
CA-Riv-3148	Petroglyphs: 5 petroglyph images.
CA-Riv-3149	Activity Area: 1 metate, 2 petroglyph images. Tank, water source, west side of McCoy Mountains.
CA-Riv-3803	Trail: Parallels Halchidhoma Trail CA-Riv-0053T, to the south. On south end of McCoy Mountains near transmission line corridor.
CA-Riv-3890	Ceramic Scatter: 5 ceramics, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3891	Isolate: 1 metate, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3892	Isolate: 1 metate, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3893	Isolate: 2 metates, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3894	Isolate: 1 metate, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3895	Isolate: 1 metate, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3896	Isolate:1 metate, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3897	Petroglyph: 1 image, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3898	Activity Area: 1 metate, 4 petroglyphs, 1 rock cluster, 12 ceramics, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3899	Isolate:1 metate, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3900	Isolate:1 metate, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.

<b>Resource</b>	<b>Description</b>
CA-Riv-3901	Activity Area: 1 petroglyph, 20 ceramics, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3902	Activity Area: 1 metate, 1 petroglyph, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3903	Activity Area: 2 metates, 5 petroglyphs, 2 rock clusters, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3904	Activity Area: 7 metates, 2 petroglyphs, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3905	Artifact Scatter: 1 metate, 2 ceramics, along Halchidhoma Trail CA-Riv-0053T. Within 3km of McCoy Spring.
CA-Riv-3906	Temporary Camp: 8 metates, 41 petroglyph images including one rare mountain sheep, 6 ceramics. At intersection of trails 53 and 4572, near Destination Area A.
CA-Riv-3907	Isolate: 1 metate, along unknown trail.
CA-Riv-3908	Isolate: 1 metate, along unknown trail.
CA-Riv-3909	Isolate: 2 metates, along unknown trail.
CA-Riv-3910	Isolate: 1 metate, along unknown trail.
CA-Riv-3911	Isolate: 1 ceramic, along unknown trail.
CA-Riv-3912	Rock Cluster: 1 cluster, along unknown trail.
CA-Riv-3913	Ceramic Scatter: 3 ceramics, along unknown trail.
CA-Riv-3914	Ceramic Scatter: 64 ceramics, along unknown trail.
CA-Riv-3915	Artifact Scatter: 1 metate, 38 ceramics, along unknown trail.
CA-Riv-3916	Artifact Scatter: 1 metate, 15 ceramics, along unknown trail.
CA-Riv-3917	Activity Area: 6 rock rings. Near intersection of trails 4686 Halchidhoma Trail CA-Riv-0053T.
CA-Riv-3918	Artifact Scatter: 3 metates, 90 ceramics, along unknown trail.
CA-Riv-3919	Artifact Scatter: 1 metate, 10 ceramics, along unknown trail.
CA-Riv-3920	Ceramic Scatter: 60 ceramics, along unknown trail.
CA-Riv-3921	Ceramic Scatter: 3 ceramics, along trail 3113 leading directly to McCoy Spring. Other sites along this trail are 3123, 3124, 3125, 3126, 3127, 3922, 3925, 4609. Within 3km of McCoy Spring.
CA-Riv-3922	Ceramic Scatter: 13 ceramics, along trail 3113 leading directly to McCoy Spring. Other sites along this trail are 3123, 3124, 3125, 3126, 3127, 3921, 3925, 4609. Within 3km of McCoy Spring.
CA-Riv-3923	Isolate: 1 metate, along trail 3114 leading directly to McCoy Spring. Site 3924 also along this trail. Within 3km of McCoy Spring.
CA-Riv-3924	Artifact Scatter: lithics, 14 ceramics, along trail 3114 leading directly to McCoy Spring. Site 3923 also along this trail. Within 3km of McCoy Spring.
CA-Riv-3925	Ceramic Scatter: 23 ceramics, along trail 3113 leading directly to McCoy Spring. Other sites along this trail are 3123, 3124, 3125, 3126, 3127, 3921, 3922, 4609. Within 3km of McCoy Spring.
CA-Riv-3926	Ceramic Scatter: 75 ceramics, along unknown trail.
CA-Riv-3927	Military Camp and Refuse Scatter: WW II era, 120 cleared areas on desert pavement, cans, tent equipment, and bottles, DTC contributor.
CA-Riv-4501	Artifact Scatter: 3 metates, 5 ceramics, along unknown trail.
CA-Riv-4502	Artifact Scatter: lithics, 1 metate
CA-Riv-4503	Ceramic Scatter: 9 ceramics. along Halchidhoma Trail CA-Riv-0053T.
CA-Riv-4504	Ceramic Scatter: 66 ceramics, along Halchidhoma Trail CA-Riv-0053T.
CA-Riv-4505	Ceramic Scatter: 53 ceramics, along Halchidhoma Trail CA-Riv-0053T.
CA-Riv-4506	Artifact Scatter: 3 metates, 13 ceramics, along Halchidhoma Trail CA-Riv-0053T, Diagnostic ceramics collected.
CA-Riv-4507	Artifact Scatter: 1 metate, 13 ceramics, along Halchidhoma Trail CA-Riv-0053T,
CA-Riv-4508	Ceramic Scatter: 150 ceramics, along Halchidhoma Trail CA-Riv-0053T. Diagnostic ceramics collected.
CA-Riv-4509	Ceramic Scatter: 90 ceramics, along Halchidhoma Trail CA-Riv-0053T. Diagnostic ceramics collected.

<b>Resource</b>	<b>Description</b>
CA-Riv-4510	Artifact Scatter: 1 metate, 100 ceramics, along Halchidhoma Trail CA-Riv-0053T. Diagnostic ceramics collected.
CA-Riv-4511	Ceramic Scatter: 77 ceramics, along Halchidhoma Trail CA-Riv-0053T. Diagnostic ceramics and lithics collected.
CA-Riv-4512	Artifact Scatter: 2 metates, 47 ceramics, along Halchidhoma Trail CA-Riv-0053T. Diagnostic ceramics collected.
CA-Riv-4513	Ceramic Scatter: 100 ceramics, along Halchidhoma Trail CA-Riv-0053T.
CA-Riv-4514	Ceramic Scatter: 60 ceramics, along Halchidhoma Trail CA-Riv-0053T. Diagnostic ceramics collected.
CA-Riv-4515	Artifact Scatter: 1 metate, 65 ceramics, along Halchidhoma Trail CA-Riv-0053T Diagnostic ceramics collected.
CA-Riv-4516	Artifact Scatter: 1 metate, 41 ceramics, along Halchidhoma Trail CA-Riv-0053T.
CA-Riv-4517	Artifact Scatter: lithics, 50 ceramics, along Halchidhoma Trail CA-Riv-0053T. Diagnostic ceramics collected.
CA-Riv-4518	Trail: Short segment branching north off of Halchidhoma Trail CA-Riv-0053T in the direction of Destination Area C.
CA-Riv-4519	Trail: Leads to Destination Area C, water tank, 49 ceramics. Diagnostic ceramics collected. Also associated with trail 4703.
CA-Riv-4520	Artifact Scatter: lithics, 21 ceramics, along Halchidhoma Trail CA-Riv-0053T.
CA-Riv-4521	Artifact Scatter: 1 metate, 60 ceramics along Halchidhoma Trail CA-Riv-0053T.
CA-Riv-4522	Ceramic Scatter: 35 ceramics, along Halchidhoma Trail CA-Riv-0053T.
CA-Riv-4523	Artifact Scatter: 2 metates, 1 ceramic, along unknown trail.
CA-Riv-4524	Activity Area: 2 metates, 3 petroglyph images, 90 ceramics, along unknown trail.
CA-Riv-4525	Artifact Scatter: 3 metates, 80 ceramics, along unknown trail.
CA-Riv-4526	Ceramic Scatter: 26 ceramics, along unknown trail.
CA-Riv-4527	Artifact Scatter: lithics, 74 ceramics, along unknown trail.
CA-Riv-4528	Artifact Scatter: lithics, 65 ceramics, along unknown trail.
CA-Riv-4529	Isolate: 1 metate, along unknown trail.
CA-Riv-4530	Ceramic Scatter: 32 ceramics, along unknown trail.
CA-Riv-4531	Ceramic Scatter: 10 ceramics, along unknown trail.
CA-Riv-4532	Artifact Scatter: lithics, 3 ceramics, along unknown trail.
CA-Riv-4533	Artifact Scatter: lithics, 29 ceramics, along unknown trail.
CA-Riv-4534	Artifact Scatter: 1 metate, 55 ceramics, along unknown trail.
CA-Riv-4535	Artifact Scatter: lithics, 49 ceramics, along unknown trail.
CA-Riv-4536	Isolate: 1 metate, along unknown trail.
CA-Riv-4537	Ceramic Scatter: 34 ceramics, along unknown trail.
CA-Riv-4538	Isolate: 2 ceramics, along unknown trail.
CA-Riv-4539	Ceramic Scatter: 12 ceramics, along unknown trail.
CA-Riv-4540	Ceramic Scatter: 147 ceramics, along unknown trail.
CA-Riv-4541	Ceramic Scatter: 5 ceramics, along unknown trail.
CA-Riv-4542	Ceramic Scatter: 7 ceramics, along unknown trail.
CA-Riv-4543	Ceramic Scatter: 5 ceramics, along unknown trail.
CA-Riv-4544	Ceramic Scatter: 58 ceramics, along unknown trail.
CA-Riv-4545	Ceramic Scatter: 21 ceramics, along unknown trail.
CA-Riv-4546	Isolate: 1 metate, along unknown trail.
CA-Riv-4547	Artifact Scatter: lithics, 1 metate, 2 ceramics, along unknown trail.
CA-Riv-4548	Artifact Scatter: 4 metates, 47 ceramics, along unknown trail.
CA-Riv-4549	Ceramic Scatter: 21 ceramics. Diagnostic ceramics collected, along unknown trail.
CA-Riv-4550	Ceramic Scatter: 37 ceramics, along unknown trail.
CA-Riv-4551	Ceramic Scatter: 11 ceramics, along unknown trail.
CA-Riv-4552	Ceramic Scatter: 3 ceramics, along unknown trail.
CA-Riv-4553	Ceramic Scatter: 21 ceramics, along unknown trail.
CA-Riv-4554	Ceramic Scatter: 31 ceramics, along unknown trail.
CA-Riv-4555	Ceramic Scatter: 3 ceramics, along unknown trail.
CA-Riv-4556	Ceramic Scatter: 7 ceramics, along unknown trail.

<b>Resource</b>	<b>Description</b>
CA-Riv-4557	Ceramic Scatter: 3 ceramics, along unknown trail.
CA-Riv-4558	Ceramic Scatter: 11 ceramics, along unknown trail.
CA-Riv-4559	Ceramic Scatter: 69 ceramics, along unknown trail.
CA-Riv-4560	Ceramic Scatter: 14 ceramics, along unknown trail.
CA-Riv-4561	Ceramic Scatter: 3 ceramics, along unknown trail.
CA-Riv-4562	Ceramic Scatter: 61 ceramics, along unknown trail.
CA-Riv-4563	Ceramic Scatter: 4 ceramics, along unknown trail.
CA-Riv-4564	Ceramic Scatter: 11 ceramics, along unknown trail.
CA-Riv-4565	Ceramic Scatter: 60 ceramics, along unknown trail.
CA-Riv-4566	Ceramic Scatter: 23 ceramics, along unknown trail.
CA-Riv-4568	Trail: Short trail segment on the south end of McCoy Mountains, just southwest of geoglyph 661, and south of trails 3803 and the Halchidhoma Trail CA-Riv-0053T. Portions possibly disturbed by transmission line.
CA-Riv-4569	Temporary Camp: Destination Area A, water tank, west side of McCoy Mountains, trail segment, lithics, 2 metates, 7 petroglyph images, 1 cleared circle. Near other Area A site 3906. Trails 53, 4570, 4571, and 4572 lead to Area A.
CA-Riv-4570	Trail: leads to Destination Area A, temporary camp 4569, with trails 53, 4571, 4572.
CA-Riv-4571	Trail: leads to Destination Area A, temporary camp 4569, with trails 53, 4570, 4572.
CA-Riv-4572	Trail: leads to Destination Area A, temporary camp 4569, with trails 53, 4570, 4571. Adjacent to 4573.
CA-Riv-4573	Rock Ring: 1 ring, adjacent to trail 4572.
CA-Riv-4574	Cairn: 5 rock cairns, along unknown trail.
CA-Riv-4575	Cleared Circle: 1 circle, along unknown trail. Within 3km of McCoy Spring.
CA-Riv-4576	Cleared Circle: 1 circle, along unknown trail. Within 3km of McCoy Spring.
CA-Riv-4577	Activity Area: spring/seep, water tank, rock shelter, 40 petroglyphs, 7 metates, 5 ceramics. Within 3km of McCoy Spring.
CA-Riv-4578	Petroglyphs: 5 images. Within 3km of McCoy Spring.
CA-Riv-4579	Petroglyphs: 2 images. Within 3km of McCoy Spring.
CA-Riv-4580	Activity Area: 4 cleared circles, 5 metates. Within 3km of McCoy Spring.
CA-Riv-4581	Trail: 2.7 km segment, leading directly to McCoy Spring. Associated with sites 4583, 4584, 4585, 4599, 4600. Within 3km of McCoy Spring.
CA-Riv-4582	Trail: 1.7 km segment leading directly to McCoy Spring. Within 3km of McCoy Spring.
CA-Riv-4583	Ceramic Scatter: 9 ceramics, along trail 4581 leading directly to McCoy Spring. Associated with sites 4584, 4585, 4599, 4600. Within 3km of McCoy Spring.
CA-Riv-4584	Ceramic Scatter: 9 ceramics, along trail 4581 leading directly to McCoy Spring. Associated with sites 4583, 4585, 4599, 4600. Within 3km of McCoy Spring.
CA-Riv-4585	Ceramic Scatter: 4 ceramics, along trail 4581 leading directly to McCoy Spring. Associated with sites 4583, 4584, 4599, 4600. Within 3km of McCoy Spring.
CA-Riv-4586	Rock Ring: 1 ring. Within 3km of McCoy Spring.
CA-Riv-4587	Trail: 1.1 km segment leading directly to McCoy Spring. Within 3km of McCoy Spring.
CA-Riv-4588	Ceramic Scatter: 6 ceramics, along trail 4592 leading directly to McCoy Spring. Site 4593 also on trail. Within 3km of McCoy Spring.
CA-Riv-4589	Unknown: associated with trail 4612 leading to Quartz Hill Tank. Sites recorded along the trail 4606, 4608, 4610, and 4615. Within 3km of McCoy Spring.
CA-Riv-4590	Trail: leading to Quartz Hill Tank. Associated with sites 4601, 4606, 4607. Within 3km of McCoy Spring.
CA-Riv-4591	Trail: 2.0 km segment, leading directly to McCoy Spring. Intersects with 4596. Within 3km of McCoy Spring.
CA-Riv-4592	Trail: 3.1 km segment, leading directly to McCoy Spring. Sites 4588 and 4593 are along it. Within 3km of McCoy Spring.
CA-Riv-4593	Ceramic Scatter: unknown number at south end of trail 4593, which leads directly to McCoy Spring. Within 3km of McCoy Spring.
CA-Riv-4594	Trail: 1.2 km segment, trail leading directly to McCoy Spring. Associated with site 4595. Within 3km of McCoy Spring.
CA-Riv-4595	Ceramic Scatter: 9 ceramics, at south end of trail 4594 leading directly to McCoy Spring. Within 3km of McCoy Spring.

<b>Resource</b>	<b>Description</b>
CA-Riv-4596	Trail: 2.0 km segment, leading directly to McCoy Spring. Intersects with trail 4591. Associated with sites 4615 and 4616. Within 3km of McCoy Spring.
CA-Riv-4597	Activity Area: lithics, 5 metates, 4 petroglyphs, 1 rock ring. Within 3km of McCoy Spring.
CA-Riv-4598	Activity Area: lithics, 7 metates, 29 petroglyphs. Within 3km of McCoy Spring.
CA-Riv-4599	Activity Area: 6 metates, 34 petroglyphs, 1 ceramic, along trail 4581 leading directly to McCoy Spring. Associated with sites 4583, 4584, 4585, 4599, 4600. Within 3km of McCoy Spring.
CA-Riv-4600	Activity Area: 3 metates, 20 petroglyphs, along trail 4581 leading directly to McCoy Spring. Associated with sites 4583, 4584, 4585, 4599, 4600. Within 3km of McCoy Spring.
CA-Riv-4601	Temporary Camp: along trail 3110 leading directly to McCoy Spring. 16 metates, 17 petroglyphs, 1 rock ring, 1 cleared circle. Also along trail 4611, and 4590, leading to Quartz Hill Tank. Within 3km of McCoy Spring.
CA-Riv-4602	Activity Area: metate, 9 petroglyphs, along trail leading directly to McCoy Spring. Sites 4601, 4603, and 4604 also recorded along it. Within 3km of McCoy Spring.
CA-Riv-4603	Activity Area: 3 metates, 1 petroglyph, along trail 4611 leading directly to McCoy Spring. Sites 4601, 4602, and 4604 recorded along it. Within 3km of McCoy Spring.
CA-Riv-4604	Petroglyphs: 27 petroglyphs, along trail 3112 leading directly to McCoy Spring. Also along trail 4611. Within 3km of McCoy Spring.
CA-Riv-4605	Activity Area: 1 metate, 3 rock rings. Within 3km of McCoy Spring.
CA-Riv-4606	Activity Area: 1 rock ring, 12 cleared circles, along trails 4590 and 4612 leading to Quartz Hill Tank. Within 3km of McCoy Spring.
CA-Riv-4607	Activity Area: lithics, 3 metates, 1 petroglyph, along trail 4590 leading to Quartz Hill Tank. Associated with sites 4601, 4606. Within 3km of McCoy Spring.
CA-Riv-4608	Artifact Scatter: 9 metates, along trail 4612 leading to Quartz Hill Tank. Sites recorded along the trail 4589, 4606, 4610, and 4615. Within 3km of McCoy Spring.
CA-Riv-4609	Activity Area: 1 rock cairn, 2 ceramics, along trail 3113 leading directly to McCoy Spring. Other sites along this trail are 3123, 3124, 3125, 3126, 3127, 3921, 3922, 3925. Within 3km of McCoy Spring.
CA-Riv-4610	Activity Area: 8 metates, 2 petroglyphs, 20 ceramics, along trail 4612 leading to Quartz Hill Tank and trail 4614 leading to McCoy Spring. Within 3km of McCoy Spring.
CA-Riv-4611	Trail: 0.2 km long segment, leading directly to McCoy Spring. Sites 4601, 4602, 4603, 4604 recorded along it. Within 3km of McCoy Spring.
CA-Riv-4612	Trail: 0.2 km long segment, leading to Quartz Hill Tank. Sites recorded along the trail 4589, 4606, 4608, 4610, and 4615. Within 3km of McCoy Spring.
CA-Riv-4613	Trail: 0.1 km long segment leading directly to McCoy Spring. Site 4616 recorded along it. Within 3km of McCoy Spring.
CA-Riv-4614	Trail: 0.3 km long segment leading directly to McCoy Spring. Site 4610 recorded along it. Within 3km of McCoy Spring.
CA-Riv-4615	Artifact Scatter: 2 metates, 12 ceramics, along trail 4596 leading directly to McCoy Spring and trail 4612 leading to Quartz Hill Tank. Within 3km of McCoy Spring.
CA-Riv-4616	Activity Area: 1 metate, 1 petroglyph, along trails 4596 and 4613 leading directly to McCoy Spring. Within 3km of McCoy Spring.
CA-Riv-4617	Artifact Scatter: 7 metates. Within 3km of McCoy Spring.
CA-Riv-4618	Ceramic Scatter: 18 ceramics, along unknown trail. Within 3km of McCoy Spring.
CA-Riv-4680	Trail: leads to Destination Area B including water sources at 523 and 4699. Other trails leading to B are 4685, 4686.
CA-Riv-4681	Ceramic Scatter: 130 ceramics, along unknown trail.
CA-Riv-4682	Ceramic Scatter: 21 ceramics, along unknown trail.
CA-Riv-4683	Ceramic Scatter: 60 ceramics, along unknown trail.
CA-Riv-4684	Trail: small branch trail off 4680, near Destination Area B.
CA-Riv-4685	Trail: leads to Destination Area B including water sources at 523 and 4699. Other trails leading to B are 4680, 4686.
CA-Riv-4686	Trail leads to Destination Area B including water sources at 523 and 4699. Other trails leading to B are 4680, 4685.
CA-Riv-4687	Rock Ring: 1 ring, along unknown trail.
CA-Riv-4688	Trail: near Destination Area B. Intersects with trails 3129. Just south of 3130.



Resource	Description
CA-Riv-4689	Rock Cluster: 2 clusters, along unknown trail.
CA-Riv-4690	Ceramic Scatter: 32 ceramics, along unknown trail.
CA-Riv-4691	Trail: Very short, short-cut trail connecting trail 3130 with the Halchidhoma Trail, CA-Riv-0053T.
CA-Riv-4692	Ceramic Scatter: 7 ceramics, along unknown trail.
CA-Riv-4693	Ceramic Scatter: 35 ceramics, along unknown trail.
CA-Riv-4694	Activity Area: 2 petroglyph images, 1 rock cluster, along unknown trail.
CA-Riv-4695	Temporary Camp: trail segment, 2 metates, 120 petroglyph images, 1 rock ring.
CA-Riv-4696	Isolate: 1 metate, along unknown trail.
CA-Riv-4697	Trail: near Destination Area B.
CA-Riv-4698	Trail: near Destination Area B.
CA-Riv-4699	Activity Area: Destination Area B, water tank, western side of McCoy Mountains, trail segment, 2 metates, 19 petroglyph images, 150 ceramics. Near other Area B sites, 523 and 4700.
CA-Riv-4700	Activity Area: Destination Area B, trail segment, 7 petroglyph images. Near other Area B sites 523 and 4699.
CA-Riv-4701	Trail: Small trail segment east of but paralleling the Halchidhoma Trail, CA-Riv-0053T, at the south end of McCoy Mountains.
CA-Riv-4702	Trail: Small trail segment branching north off the Halchidhoma Trail CA-Riv-0053T at the south end of McCoy Mountains.
CA-Riv-4703	Trail: leads to Destination Area C, water tank. Associated with trail 4519.
CA-Riv-4704	Trail: leads to Destination Area D, water tanks. Associated with the Halchidhoma Trail CA-Riv-0053T and trail 4705.
CA-Riv-4705	Trail: leads to Destination Area D, water tanks. Associated with the Halchidhoma Trail CA-Riv-0053T and trail 4704.
CA-Riv-4706	Isolate: 1 metate, along unknown trail.

## Results of Geoarchaeological Investigations

The consultant for the applicant provided two geomorphological reports that summarize the geomorphology of the GSEP site footprint and linear facilities corridor on the basis of the extant geologic and soil science data for the region (Farmer et al. 2009, app. C) as well as field explorations (TTEC 2010e). As discussed in the “Geomorphology” subsection, above, six sedimentary units were identified during these investigations. The preliminary assessment for archaeological sensitivity of each of these units is presented below.

1. The Qw active stream wash deposits have a moderate potential for containing buried archaeological artifacts. However, the moderate-to-high-energy movement of water through these sediments would not be conducive to the preservation of archaeological materials and the spatial associations among them.
2. The Qs late Holocene-age, wind-deposited sand sheets are most commonly found to the south of the proposed GSEP site footprint often overlaying lake deposits (Ql). Staff considers this stratigraphic unit to have a moderate-to-high potential for containing buried archaeological deposits associated with human utilization of resources associated with Ford Dry Lake. Relatively low-energy alluvial and aeolian movement of sediments would be conducive to the preservation of archaeological materials and the spatial associations among them. Poorer preservation of these spatial associations is expected in sites located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash.

3. The Qal alluvium was deposited across most of the GSEP site footprint between 1,000 and 8,000 years ago, well within the human occupation of the region. This approximately 1-foot-thick layer was laid down by low-to-moderate-energy sheet wash and flood events. It is often covered by sand sheets 4 to 8 inches thick (Qsr). Staff considers this stratigraphic unit to have a moderate –to-high potential for containing buried deposits. The potential for buried deposits is expected to increase with proximity to the lake. Deposits formed by low- and moderate-energy sheet wash would be conducive to the preservation of archaeological materials and the spatial associations among them. Poorer preservation of these spatial associations is expected in sites located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash.
4. The ancient Qsr sand sheets were deposited between 1,000 to 7,000 years ago, within the human occupation of the region. This stratigraphic unit is common on the surface of the site footprint overlaying unit Qal in a layer 4 to 8 inches thick. Staff considers this stratigraphic unit to have a moderate-to-high potential for containing buried deposits. The potential for buried deposits is expected to increase with proximity to the lake. Relatively low-energy alluvial and aeolian movement of sediments would be conducive to the preservation of archaeological materials and the spatial associations among them. Poorer preservation of these spatial associations is expected in sites located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash.
5. The distinctly red Qoaf Pleistocene alluvial fan deposits were created between 12,000 and 20,000 years ago. They are present within 1 to 2 feet of the modern ground surface across most of the proposed GSEP site footprint. Staff considers this stratigraphic unit to have a low to moderate potential for archaeological materials on its upper surface. Because these deposits were formed prior to the human occupation of the region, the potential for containing buried cultural materials is considered low. The low-to-moderate-energy sheet wash and flood events on the surface of this stratigraphic unit would be moderately conducive to the preservation of archaeological materials and the spatial associations among them. Poorer preservation of these spatial associations is expected in sites located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash.
6. The Ql stratigraphic unit can be divided into two distinct groups, those deposited above the Qoaf alluvium and those deposited below the Qoaf alluvium. The lake deposits below the Qoaf alluvium were formed more than 12,000 years ago, prior to the human occupation of the area. As a result staff does not expect these lake sediments to contain cultural materials. Lake deposits above the Qoaf alluvium were formed during the human occupation of the area (Holocene period) and may contain cultural materials on the surface or buried by other lake deposits, Qal alluvium, or Qs sand dunes. Relatively low-energy alluvial movement of sediments would be conducive to the preservation of archaeological materials and the spatial associations among them. Poorer preservation of these spatial associations is expected in sites located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash. Preservation

may also be poor due to high-energy wave action along eastern shoreline as a result of strong winds from the west.

Several of the ancient shorelines have been associated with estimated dates, potentially giving clues to the ages of the sites that cluster along their edges. One of the latest Holocene shorelines is located at 373 and 374 feet in elevation and is estimated to be 12,000 years old. The shoreline between 367 and 370 feet in elevation appears to be between 8,000 and 12,000 years old, and the shoreline at 364 feet is estimated to be between 5,000 and 12,000 years old. The most recent shoreline is located at 360 feet and appears to have been created during the past few thousand years.

Overall, the majority of the proposed site footprint is covered in deposits of Holocene age. Staff considers these deposits to have a moderate-to-high potential to contain well-preserved, buried cultural materials. However, these materials would be expected within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. The highest density of sites is expected in association with ancient lakeshores reflecting human utilization of plant and animal resources flourishing near this desert water source. These sites are also expected to be the best preserved since the gentle slope would result in low-energy sheet wash. The exception is those sites located in the McCoy-Palen Mountain valley, where moderate-energy sheet wash may have caused disturbance and potentially more deeply buried sites. Some of these sites may be dated by their association with particular shorelines.

These geoarchaeological studies indicate that the areas of highest archaeological sensitivity are located in the southeastern part of the GSEP site footprint, near the ancient shores of Ford Dry Lake.

### **Results of Windshield Survey for Built-Environment Resources**

The applicant also sought to identify standing structures that would be 45 years of age or older in 2010 (Farmer et al. 2009, app. F). The built-environment inventory covered the PAA of the linear facilities and a 0.5-mile survey buffer. In consultation with Energy Commission staff, it was determined that a built-environment survey was not required for the plant facility PAA since no historical architectural resources were identified within several miles of the site footprint. Fieldwork was conducted in July of 2009, resulting in the identification of two linear built-environment resources along the proposed linear facilities corridor. The historian for the applicant identified and recorded portions of the Blythe-Eagle Mountain Transmission Line and Wiley's Well Road within the built-environment study area, but did not evaluate them for their eligibility to be listed on the National Register of Historic Places (NRHP) or CRHR.

### **Summary of Identified Cultural Resources in the GSEP PAAs and Vicinity**

Overall, previous projects and the cultural resources surveys of the applicant have identified a total of 538 cultural resources within the PAAs and in the near vicinity (**Cultural Resources Tables 7 and 8**). These resources include 362 archaeological sites, 177 archaeological isolates, and 2 linear built-environment resources.

The prehistoric resources include 318 archaeological sites, with 6 additional multi-component sites containing prehistoric components, and 141 isolated artifacts. These sites primarily consist of trails, trail-associated ceramic scatters and petroglyphs, sparse artifact scatters, and possible temporary campsites. Ethnographic sources suggest that portions of the Mojave Desert distant from water sources were primarily used for travel and ritual activities rather than for the collection of resources (Cleland 2005). These activities are associated with trails, trail-associated ceramic scatters, and petroglyphs. The sparse artifact scatters are primarily prehistoric flakes and cores. These tend to blend into the prehistoric isolates, which are also predominantly lithics, forming a landscape with regular but diffuse evidence of prehistoric human activities. These activities appear to be related to stone tool manufacturing and maintenance, possibly tied to the collection of wild resources.

Interestingly, travel-related sites were not present in the proposed site footprint and linear facilities corridor, but they are well preserved in desert pavement especially along the foothills of the McCoy Mountains. Ethnographic sources and other archaeological projects in the region mention prehistoric trails leading to McCoy Spring National Historic District, at least four other natural “tanks” within the McCoy Mountains, and along the I-10 corridor (Johnson and Johnstone 1957; McCarthy 1993). Road construction in this corridor may well have destroyed evidence of the prehistoric trail that preceded the modern transportation routes and associated natural gas and electric lines. McCarthy’s (1993) work at McCoy Spring suggests that prehistoric trails potentially crossed the proposed site footprint and linear facilities corridor. However, these trails are easiest to see on landforms with desert pavement, which are rare in the GSEP site footprint. Linear alignments of deliberate “pot drops” (isolated scatters of sherds from a single pot, possibly associated with sacred activity) (Sutton et al. 2007) and artifact scatters consisting of only ceramics (McCarthy 1993) are both indications of nearby trails. Clear evidence of trails was not identified in the GSEP site footprint, its linear facilities corridor, or its immediate vicinity. However, secondary indications, such as pot drops, were found during archaeological survey, and multiple recorded trails run in the direction of the GSEP site footprint (McCarthy 1993, Fig. 10).

Through its analysis, staff believes the 248 trails and trail-associated sites described above contribute to the Prehistoric Trails Network Cultural Landscape (PTNCL), a potentially NRHP- and CRHR-eligible cultural landscape whose boundaries have yet to be determined but which include the McCoy Spring National Register District, Ford Dry Lake, and the trails leading between them and other important destinations, such as the Colorado River to the east and Corn Springs to the west. Sites that are contributors to the PTNCL are both archaeological and ethnographic resources.

Sites with features and the densest concentrations of artifacts appear to be located along these trails, at water sources, and around the edges of Ford Dry Lake. Most archaeologists have referred to large sites at water sources as temporary camps. Clearly the lake edge would have been an attractive place to camp when traveling, an excellent place to collect resources when water was temporarily present, and a possible permanent village location when water was present for long periods. The lack of midden on the surface of any of the recorded lake shore sites suggests that these sites had short-term, resource-gathering, resource-processing, and residential functions. As many of these sites have ground stone, the temporary camps appear to date after the Paleo-

Indian period. Further, most of the sites also have ceramics, suggesting that they have components from the Late Prehistoric period (Sutton et al. 2007). These lakeside camps are also possible contributors to the PTNCL.

The historic-period resources include 34 archaeological sites, with 6 additional multi-component sites containing historic-period components, and 36 isolated artifacts. Most of these sites and artifacts reflect movement through the area by automobile and military maneuvers associated with the DTC/C-AMA. These sites are primarily debris scatters. Some are mainly domestic debris and may have been dumped by passing travelers or off-road vehicle drivers. Others are a mix of domestic military debris, suggesting they are the remains of temporary military camps that were part of the DTC/C-AMA. Occasional military features such as earthen mounds and possible foxholes have also been noted. The historic-period isolates reflect these same kinds of activities. Other known, common historic-period activities, including mining and ranching, are not well represented.

Through its analysis, staff believes the World War II-Era DTC/C-AMA sites described above contribute to a potentially eligible cultural landscape (historic district) whose boundaries include all of the proposed GSEP's PAAs.

Two linear built-environment resources were identified within the proposed linear facilities corridor: Blythe-Eagle Mountain Transmission Line and Wiley's Well Road. The transmission line is associated with regional population growth during the 1950s. Wiley's Well Road is associated with transportation and regional mining efforts, beginning in the 1860s and continuing until the 1960s.

To summarize, Tetra Tech reported that 17 sites were previously recorded within 2 miles of the GSEP site footprint and 20 sites were previously recorded within 1 mile of the transmission line. As a result of their Class II and Class III surveys for GSEP, Tetra Tech reported identifying an additional 103 sites, totaling 140 sites in the project vicinity (Farmer et al 2009).

Energy Commission staff came to different conclusions. After a number of communications between Tetra Tech and Energy Commission staff (CEC 2009a, CEC 2009c, CEC 2009f), staff concluded that a total of 362 sites were located in the vicinity of GSEP (**Cultural Resources Tables 7 and 8**). Eighteen of these resources are in the GSEP vicinity but would not be impacted by the project. In addition, 52 of these resources have been avoided by NextEra through changes in the size and shape of the GSEP facility footprint, as well as the route of the linear corridor. The remaining 295 resources would be subject to either direct or indirect impacts from GSEP. Forty-three resources—24 within the site footprint and 19 within the linear corridor—would be subject to direct impacts. At least 248 additional resources associated with the PTNCL in the ethnographic PAA would be subject to indirect impacts. These resources include 224 sites identified by McCarthy and 24 sites identified by previous researchers in the GSEP vicinity. Three resources identified by previous researchers were also identified by McCarthy, and are therefore only counted once. These resources are summarized below in **Cultural Resources Table 9**.

**CULTURAL RESOURCES Table 9**  
**Summary of Cultural Resources in and Near GSEP PAAs and their Locations**

	<b>Prehistoric Sites</b>	<b>Historic Sites</b>	<b>Multi-Component</b>	<b>Unknown Sites</b>	<b>Built Environment</b>	<b>Total Resources</b>
<b>Vicinity</b>	7	7	1	1	2	18
<b>Avoided</b>	35	14	4	0	0	53
<b>Site Footprint</b>	19	4	1	0	0	24
<b>Linear Corridor</b>	9	9	0	1	0	19
<b>Ethno-graphic PAA</b>	248	NA	NA	NA	NA	248
<b>Total Resources</b>	318	34	6	2	2	<b>362</b>

### **C.3.5 CRHR EVALUATIONS OF CULTURAL RESOURCES**

Energy Commission staff evaluated cultural resources in the GSEP inventory (except isolates) according to CEQA guidelines. In a prior effort to compress the evaluation process and coordinate with BLM as they fulfill their obligations under NEPA and Section 106 of the NHPA, in the Staff Assessment/Draft Environmental Impact Assessment (SA/DEIS) staff developed an alternative evaluation process, discussed below, where all impacted resources were assumed to be eligible and therefore subject to avoidance or mitigation through data recovery. Staff made this assumption to allow GSEP certification review to proceed more rapidly. Therefore, in the current document, staff determinations of eligibility and staff determinations of impacts are inherently tied together. In the following section, the guidelines and process used by staff to evaluate resources is summarized. This summary is followed by detailed descriptions and evaluations of each resource organized by type, including prehistoric, historic-period, dual-component, built-environment, and cultural landscapes.

#### **C.3.5.1 DETERMINING THE HISTORICAL SIGNIFICANCE OF CULTURAL RESOURCES**

CEQA requires the Energy Commission, as the lead state agency for the GSEP, to evaluate the historical significance of cultural resources by determining whether they meet several sets of specified criteria. Under CEQA, the definition of a historically significant cultural resource is that it is eligible for listing in the 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 requirements 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 the

agency's determination is supported by substantial evidence in light of the whole record" (Cal. Code Regs., tit. 14, § 15064.5(a)). The term, "historical resource," therefore, indicates a cultural resource that is historically significant and eligible for the CRHR.

Consequently, under the CEQA Guidelines, to be historically significant, a cultural resource must meet the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old,<sup>11</sup> a resource must meet at least one (and may meet more than one) of the following four 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 significant in our past;
- Criterion 3, embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values; or
- Criterion 4, has yielded, or may be likely to yield, information important to 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)).

Additionally, cultural resources listed in or formally determined eligible for the National Register of Historic Places (NRHP) and California Registered Historical Landmarks numbered No. 770 and higher are automatically listed in the CRHR and are therefore also historical resources (Pub. Resources Code, § 5024.1(d)). Even if a cultural resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows a lead agency to make a determination as to whether it is a historical resource (Pub. Resources Code, § 21084.1).

### **C.3.5.2 APPROACHES TO CRHR ELIGIBILITY EVALUATIONS**

Under CEQA, only CRHR-eligible cultural resources that the proposed project could potentially impact need be considered in staff's recommendations for mitigation measures for project impacts. Consequently, staff seeks CRHR eligibility recommendations for those cultural resources subject to possible project impacts. The existing documentation for previously known cultural resources may include CRHR eligibility recommendations, and the applicant's cultural resources consultants may make CRHR eligibility recommendations for newly identified cultural resources they discover and record in their project-related surveys.

To determine which of the cultural resources in the project's inventory are eligible for the CRHR, staff usually obtains additional data on the resources likely to be impacted by the proposed project. Staff typically concludes all investigations necessary to identify, evaluate the CRHR eligibility of, and assess a proposed project's impacts to the cultural

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<sup>11</sup> The Office of Historic Preservation's Instructions for Recording Historical Resources (1995) endorses recording and evaluating resources over 45 years of age to accommodate a potential five-year lag in the planning process.

resources in a project's areas of analysis prior to the Energy Commission certification of the project. Where CRHR-eligible cultural resources are impacted, the conclusion of these investigations prior to certification enables staff to develop refined measures to mitigate significant impacts.

With the submission to the Energy Commission in August, 2009, of near simultaneous applications from five large solar power projects on BLM-managed lands, all having a very short time frame in which to qualify for American Recovery and Reinvestment Act (ARRA) funds, staff developed a more accelerated approach to the pre-certification review of cultural resources. Accepted by the BLM, the State Historic Preservation Officer (SHPO), and the Energy Commission legal department, this approach, in November, 2009, was offered exclusively to the applicants for four of these projects: Genesis Solar Energy Project, Blythe Solar Power Project, Palen Solar Power Project, and Ridgecrest Solar Power Project, and in December, 2009, the applicants for these four projects, including GSEP, accepted this approach.

With this approach, staff expected to ensure the thorough consideration and treatment of all of the identified resources through consultation among all stakeholders and execution of a Programmatic Agreement (PA)<sup>12</sup>, which staff subsequently would incorporate, by reference, into the final Energy Commission-BLM joint document, the Supplemental Staff Analysis/Final Environmental Impact Statement. The primary benefit of this approach was , where cultural resources are many and project impacts are wide-scale, a substantial reduction, prior to certification, of time spent data-gathering for evaluations and of time spent writing cultural resources evaluation assessments.

In staff's GSEP SA/DEIS, under this approach, staff did not evaluate the historical significance of each individual resource, but, rather, assumed that all of the known resources were eligible for the NRHP and the CRHR, with the exception of any resources for which staff had sufficient information in hand to determine the resource's ineligibility for either register. Additionally, staff assumed that the project's impacts to all assumed register-eligible resources would have to be mitigated by means of avoidance or data recovery.

The BLM decided in April, 2010, to produce final environmental documents for the GSEP, the Blythe Solar Power Project, the Palen Solar Power Project, and the Ridgecrest Solar Power Project separate from those of the Energy Commission. Consequently, the Energy Commission, no longer bound by the BLM's need for long public review periods, decided to issue its final documents for the projects considerably earlier than had originally been scheduled. Together these two decisions foreclosed

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<sup>12</sup> In accordance with 36 CFR § 800.14(b), PAs are used for the resolution of adverse effects to cultural resources for complex project situations and when effects on historic properties(resources eligible for or listed in the NRHP) cannot be fully determined prior to approval of an undertaking. The BLM will prepare a PA in consultation with the ACHP, the SHPO, the Energy Commission, interested Native American groups, and the public at large (including tribal governments as part of government to government consultation). The PA will govern the conclusion of the identification and evaluation of historic properties (eligible for the NRHP) and historical resources (eligible for the CRHR), as well as the resolution of any significant effects that may result from the proposed or alternative actions. Historic properties and historical resources are significant prehistoric and historic cultural resources as determined by Energy Commission and BLM staff.



Energy Commission cultural resources staff's plan, under the approach discussed above, to incorporate into the BLM's PA the GSEP impact mitigation measures required under CEQA. Instead, staff has written and will recommend to the GSEP Siting Committee GSEP conditions of certification to provide for the project impact mitigation staff has identified as necessary.

At this time it is uncertain whether BLM's PA will require a conventional NRHP- and/or CRHR-eligibility assessment phase for all or part of the GSEP cultural resources inventory, but this possibility has caused staff to reconsider its recommended field protocols under staff's current approach, so as to incorporate register-eligibility assessment. In anticipation of BLM's possible change of approach, and wanting to facilitate an easier reconciliation between the requirements of the Commission's conditions of certification and those of the BLM's PA, Energy Commission staff has included in its recommended conditions of certification the register-eligibility assessment of each cultural resource, but not as a separate phase. Rather, staff has provided for register-eligibility assessment in an abbreviated form, known in Cultural Resources Management practice as a "compressed Phase II-Phase III." Essentially this means each archaeological site would be re-visited once, fully recorded (if this was not already done), and tested for its information values ("Phase II"). If those meet the criteria for NRHP and/or CRHR eligibility, data recovery ("Phase III") would ensue during the same visit.

In the case of GSEP, all sites staff assumed to be CRHR eligible are sites whose existing information led staff to believe they would only require Phase II-level work. Sites that staff determined eligible are sites whose existing information led staff to the preliminary conclusion that both Phase II- and Phase III-level work would be required.

If buried deposits are not present at an archaeological site, the field portion of data recovery will be considered complete at that site, and ground disturbance by the applicant may begin in that location prior to the completion of a formal cultural resources report. The Cultural Resources Monitoring and Mitigation Plan (CRMMP) (**CUL-5**) will contain detailed plans for the compressed Phase II-Phase III activities at each site.

The compressed Phase II-Phase III protocol differs only slightly from the "phased" protocol staff expected to recommend under the approach employed in the SA/DEIS, as originally presented to the GSEP applicant. The original protocol also would have entailed a single site visit for the conduct of progressively more data-extractive activities until a representative sample of the data that make the site register-eligible was achieved. The compressed Phase II-Phase III protocol just adds a field determination of register-eligibility, based on a list of established criteria, and a brief consultation with the CEC and BLM by telephone. In contrast, if BLM's PA includes a conventional Phase II NRHP-eligibility assessment, field teams would

- go into the field and re-visit all sites,
- test them for information values,
- leave the field,
- write a report with recommendations on each site's eligibility and a proposal of data recovery procedures,

- receive concurrence or arrive at agreement on eligible sites and data recovery procedures, and
- return to the field to undertake data recovery.

One of the biggest costs of cultural resources is getting “geared up”: marshalling staff, renting equipment, arranging lodging, traveling to the location, etc. For the compressed Phase II-Phase III protocol, gearing up would only have to happen once, which saves time and money. Moreover, at the discretion of the archaeologist, the excavation of buried features (a Phase III activity) could begin prior to the completion of determining the extent of the site (a Phase II activity) to further accelerate the process of data recovery.

Consequently, staff believes this modification to the previous approach will not increase the cost of the recommended mitigation or require more time to complete. Making this change to the previous approach is justified to have conditions that can more readily be reconciled with BLM’s requirements in their PA.

One final aspect of staff’s register-eligibility assessment is which register, the NRHP or the CRHR, staff considered in making GSEP cultural resources evaluations. For the SA/DEIS, staff considered both because, under NEPA and Section 106, BLM must consider NRHP eligibility, while Energy Commission staff must make CRHR eligibility determinations to identify historical resources for CEQA purposes. For this RSA, staff is not required to make NRHP determinations for CEQA purposes. But for some cultural resources located within GSEP’s PAAs, staff has opted to consider NRHP eligibility because the federal guidelines for NRHP eligibility for some kinds of resources are more developed than state guidance. This is the case for cultural landscapes and for Traditional Cultural Properties, both of which are important resource types in the GSEP cultural resources inventory. Moreover, once a resource has been listed in or formally determined eligible for the NRHP, it is automatically listed on the CRHR, and thus is a historical resource under CEQA. Staff’s determinations of NRHP eligibility in this document should be considered as recommendations. Final NRHP determinations will be made by BLM staff.

### **C.3.5.3 NRHP AND CRHR EVALUATIONS AND DESCRIPTIONS OF CULTURAL RESOURCES IN THE GSEP PAAS**

Energy Commission staff did not evaluate all 365 known resources for eligibility for listing on the NRHP and CRHR. Instead, staff assumed that all sites that would be impacted would be eligible (see previous subsection). As a result, staff focused its evaluation efforts on the 43 resources expected to be directly impacted by GSEP. The goal of this evaluation was to determine if any of these 43 resources were not eligible so avoidance or mitigation would be unnecessary. Staff then briefly reviewed the 322 remaining resources to determine if they were potential contributors to the PTNCL. All 224 resources identified by McCarthy, and an additional 24 resources identified by other researchers, were identified as contributors. These 248 resources were considered to be both archaeological and ethnographic resources within the boundaries of the GSEP ethnographic PPA and potentially subject to indirect impacts. These resources were evaluated as a group rather than individually. Many of these PTNCL contributors are located within the boundaries of the McCoy Spring National Register District. The

district is the only cultural resource in the vicinity of the GSEP that is already listed on both the NRHP and the CRHR, for its contribution to Mojave Desert prehistory under NRHP Criterion D. In all, staff has assumed that these 248 resources are eligible for listing on the NRHP and CRHR as contributors to PTNCL. Some of the sites may be individually eligible as well.

Tetra Tech evaluated 103 other known and newly identified sites and recommended that four resources (CA-Riv-0663, CA-Riv-9072, CA-Riv-9224, CA-Riv-9255) may be eligible for listing in the NRHP and the CRHR. Although Tetra Tech was aware of the existence of the McCoy Spring National Register District, the district and its contributors were not identified as potentially subject to effects from GSEP.

Staff's evaluations for the NRHP and the CRHR are broken down according to site type: prehistoric, historic, dual component, built environment, and cultural landscapes. Of the 43 individual resources and 2 landscapes (including 248 PTNCL contributors) evaluated, Energy Commission staff recommends that:

- 15 resources (all prehistoric) are not eligible;
- 24 resources be assumed eligible (including CA-Riv-9255), under CRHR Criterion 4;
- the PTNCL (and its 248 contributors) be assumed eligible under NRHP Criteria A and D
- the DTCCL be assumed eligible under NRHP Criterion D;
- 4 individual resources are eligible (CA-Riv-0260, CA-Riv-0663, CA-Riv-9072 and Wiley's Well Road), under CRHR Criterion 4; and
- the portions of the two linear built-environment resources within the built-environment PAA not be considered eligible for listing in the CRHR. Other portions of one of them, Wiley's Well Road, however, should be considered eligible

The descriptions and evaluations of the 43 individual resources and 2 cultural landscapes are presented below. Staff used information from a number of sources including archaeological research, preliminary technical reports (Farmer et al. 2009 and app. G, DPR 523 forms; TTEC 2010e), email correspondence, and discussions that were held at workshops on December 31 in 2009 and January 6, April 19, and April 23, in 2010.

### **Prehistoric Archaeological Resources Evaluations and Descriptions**

Staff evaluated 27 individual prehistoric archaeological resources that would be subject to direct impacts from GSEP, and recommends that 15 are not eligible, 9 should be assumed eligible, and 3 are eligible. The characteristics of the eligible and assumed eligible sites are included in **Cultural Resources Table 10**. Six of these sites are potential contributors to the PTNCL. An additional 248 potential contributors to the PTNCL would be subject to indirect impacts from GSEP. These indirect impacts are evaluated for the landscape as a whole.

**CULTURAL RESOURCES Table 10**  
**Summary of NRHP- and CRHR-Eligible Prehistoric Cultural Resources for Which**  
**Avoidance or Mitigation of Project Impacts Would Be Required**

	<b>Temporary Camp</b>	<b>Artifact Scatter</b>	<b>Lithic Scatter</b>	<b>Ceramic Scatter</b>	<b>Total</b>
<b>PTNCL Contributor Direct Impact</b>	3	2	0	1	6
<b>Prehistoric Other</b>	0	5	1	0	6
<b>Total</b>	3	7	1	1	<b>12</b>

**CA-Riv-0260 (P33-00260)**

This site is an oblong prehistoric archaeological deposit approximately 250,000 square m (61.8 acres) in area. The surface component of the site measures approximately 500 m from east to west and 500 m from north to south. It is located on the south edge the linear facilities corridor approximately 0.2 miles north of I-10. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface consists of an open exposure and a well stabilized sand sheet. The site was originally recorded in 1965 and updated in 1981, 1989, and 2008. The site was apparently not revisited by the archaeologist for the applicant. These multiple visits suggest that despite disturbance by at least three separate roads, a utility line, and an underground pipeline the site retains good integrity and the potential to contain subsurface deposits.

The site includes a low to moderate density artifact scatter with three artifact concentrations along the southern edge of the site. It appears to consist of at least 1,000 artifacts, including prehistoric lithics, ceramics, groundstone, and FAR (fire-affected rock—rock that shows evidence of having been in prolonged contact with fire). Two possible hearths and a pot drop were also noted in 1989. Artifacts are eroding out of deflated areas, suggesting part of the site remains intact and subsurface. The actual depth of the site has not been determined, however.

Concentration 1 measures 15 m from east to west and 25 m from north to south. It consists of more than 500 sherds, 80 pieces of debitage, and 40 lithic tools. Concentration 2 is located approximately 30 m to the east of Concentration 1. It measures 40 m from east to west and 20 m from north to south. More than 400 sherds, 20 pieces of debitage, and 40 pieces of groundstone were noted here. Concentration 3 is located approximately 25 m northwest of Concentration 2. It consists of a tight grouping of artifacts within a 1-m<sup>2</sup> area. More than 100 sherds, 20 pieces of debitage, and 20 pieces of groundstone were noted here. One or more of these concentrations may include single broken ceramic vessels, or pot drops. Staff notes that pot drops in non-random patterns have been associated with trails along main travel routes as well as trails that approach springs and tanks (Schaefer and Laylander 2007, p. 254). No evidence of a trail was noted near this site, but the close presence of prehistoric trails known to follow the I-10 corridor, McCoy Spring, and Ford Dry Lake itself, suggest that ceremonial pot drops may be present in the vicinity. These patterns are discussed in

more detail, below, under “Summary of NRHP- and CRHR-Eligible Cultural Resources for the Genesis Solar Energy Project.”

The more particular physical context for site CA-Riv-0260 is uncertain as the site is located in an area not examined in detail by the geomorphologist (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). However, surface indications suggest that the site appears to include the lake deposits of the QI unit as well as the Holocene sand sheet of the Qsr unit. The possibility of buried cultural resources within the Qsr unit is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. Subsurface materials that offer the potential to yield information important to prehistory or history appear to be present here.

Previous researchers suggest that the site served as a prehistoric temporary camp, but did not provide any suggestions about its age. Staff notes that the presence of ceramics is generally consistent with the Late Prehistoric period (1100 cal BC to Contact). Ramirez et al. (2008) recommend that this site be found eligible for listing in the NRHP under Criterion D. They note that the artifacts at the site appear to have well preserved spatial relationships, include datable materials, and include sufficient quantity of artifacts to allow statistically significant research. In addition previous research in the region suggests that the presence of pot drops within the boundaries of larger prehistoric sites indicates the presence of a trail. As a large, residential site adjacent to a water source and associated with pot drops, this site may be a contributor to the PTNCL. The above considerations lead staff to recommend that site CA-Riv-0260 (P33-00260) is eligible for listing in the CRHR under Criterion 4, because the resource has yielded and has potential to yield information important to the middle-to-late prehistory of the Mojave Desert.

### **CA-Riv-0663 (P33-00663)**

This site is an oblong prehistoric archaeological deposit approximately 753,600 square m (186.2 acres) in area. The surface component of the site measures approximately 2400 m from east to west and 400 m from north to south. It is located on the linear facilities corridor approximately 0.5 miles north of I-10, and appears to completely surround a historic-period dry well. Soils on the present site surface range from very fine to fine sand to very fine to medium sandy silt with small and medium gravels. Vegetation varies on site from none to patches of Creosote bush scrub and low annual grasses. Artifacts are eroding out of deflated areas, suggesting that some of the site remains intact and subsurface. The actual depth of the site has not been determined, however.

The site was originally recorded in 1974 and updated in 1976, 1989, and 2010. These visits identified the site as a low to moderate density prehistoric artifact scatter consisting of thousands of artifacts, several deflated hearths, and at least four artifact concentrations. It is possible that CA-Riv-6900, located immediately to the south, may be another loci of CA-Riv-0663. Overall, pottery scatters at the site are characterized as small, localized pot drops of both buffware and brownware. Staff notes that pot drops in

non-random patterns have been associated with trails along main travel routes as well as trails that approach springs and tanks (Schaefer and Laylander 2007, p. 254). No evidence of a trail was noted near this site, but the close presence of prehistoric trails known to follow the I-10 corridor, McCoy Spring, and Ford Dry Lake itself, suggest that ceremonial pot drops may be present in the vicinity. These patterns are discussed in more detail in subsection “Summary of NRHP- and CRHR-Eligible Cultural Resources for the Genesis Solar Energy Project.” All stages of lithic reduction are represented at the site, with secondary flakes the most common, followed by primary flakes. Lithic material types noted include quartzite, rhyolite, chert, and chalcedony. Milling equipment noted includes manos made of granite and metates of greenish shale (Pallette et al. 1989).

Three artifact concentrations—1, 2 and 4—are located in the southwest portion of the site. Concentration 1 consists of fragments of tabular shale (FAR) and chalcedony debitage measuring 30 m from east to west and 70 m from north to south. Concentration 2 is similar to Concentration 1, but has a higher debitage density in an area measuring 30 m from east to west and 60 m from north to south. A fourth concentration, number 3, occupies the west bank of an arroyo at the eastern edge of the site. It measures 50 m from east to west and 40 m from north to south. This area contains a 2 m long rock alignment, 2 buffware sherds, 2 Tizon Brownware sherds, 3 pieces of groundstone, and an unspecified amount of debitage. Concentration 4 is located at the south edge of the site, in an area measuring 8 m from east to west and 6 m from north to south. Five pieces of groundstone, an unspecified number of buffware sherds, and a concentration of FAR were noted in this location. The site was revisited by Tetra Tech during the GSEP linear corridor survey in the winter of 2010. Their survey found that the site boundary extended to the north. In this area they found chert, quartz, and quartzite debitage, ceramic fragments, groundstone, and FAR.

The more particular physical context for site CA-Riv-0663 is uncertain as the site is located in an area not examined in detail by the geomorphologist (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). However, surface indications suggest that the site appears to include the lake deposits of the QI unit as well as the Holocene sand sheet of the Qsr unit. The possibility of buried cultural resources within the Qsr unit is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. Subsurface materials that offer the potential to yield information important to prehistory or history appear to be present here.

Previous researchers suggest that the site served as multiple overlapping prehistoric shoreline campsites and activity areas, potentially dating to multiple time periods (Pallette et al. 1989). The groundstone implements present may be indicative of the expansion of milling technology in the Amargosa II and III phases of the Late Archaic time period (4,000 to 1,500 BP), when collector type adaptive strategies were more firmly in place. The prehistoric ceramics, including Tizon Brownware and Lower Colorado Buffware, date to the Late Prehistoric Period (1100 cal BC to Contact).

Tetra Tech recommends that this site be found eligible for listing in the NRHP under Criterion D. They note that the artifacts at the site appear to have well preserved spatial relationships, include datable materials, and include sufficient quantity of artifacts to allow statistically significant research. In addition previous research in the region suggests that the presence of pot drops within the boundaries of larger prehistoric sites indicates the presence of a trail. As a large, residential site adjacent to a water source and associated with pot drops, this site may be a contributor to the PTNCL. The above considerations lead staff to recommend that site CA-Riv-0663 (P33-00663) is eligible for listing in CRHR under Criterion 4, because the resource has yielded and has potential to yield information important to the middle-to-late prehistory of the Mojave Desert.

### **CA-Riv-9047 (P33-17431)**

This site is an oblong prehistoric archaeological deposit approximately 2,025 square m (0.5 acre) in area. It is located near the southern boundary of the site footprint. The long axis of the deposit parallels a north-south trending ephemeral wash cutting through the sand and gravel of the site surface. The predominant vegetation on the site appears to be Mojave creosote bush scrub. Other information about the physical character of the site surface is unspecified. The surface component of the site measures approximately 62 m from north to south and 35 m from east to west. It consists of a sparse scatter of 5 artifacts which includes 1 cortical and 3 interior flakes of quartz and 1 cortical flake of chert. Further character of the artifacts at this site is unreported. The depth of the site deposit is undetermined.

The more particular physical context for site CA-Riv-9047, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be the edge of the oldest lakeshore (Ql) where it intersects with the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit. The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no age or functional interpretation for the site, but suggest that the dearth of cultural constituents indicates that prehistoric activity at the site was very brief in duration. The archaeologists recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9047 (P33-17431) is not eligible for listing in the CRHR.

### **CA-Riv-9048 (P33-17432)**

This site is an oblong prehistoric archaeological deposit oriented north-south approximately 2,025 square m (0.5 acre) in area. It is located near the southern boundary of the site footprint. The predominant vegetation on the site appears to be Mojave creosote bush scrub. Other information about the physical character of the site surface is unspecified. The surface component of the site measures approximately 78 m from north to south and 31 m from east to west. It consists of a sparse scatter of 10 lithic artifacts which includes 3 chert flakes, 1 chalcedony flake, 1 rhyolite flake, 3 quartz flakes, and 2 quartzite flakes. The depth of the site deposit is undetermined.

The more particular physical context for site CA-Riv-9048, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be edge of the oldest lakeshore (Ql) where it intersects with the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit. The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no age or functional interpretation for the site. The archaeologists recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9048 (P33-17432) is not eligible for listing in the CRHR.

### **CA-Riv-9051 (P33-17435)**

This site is an oblong prehistoric archaeological deposit oriented northwest-southeast approximately 810 square m (0.2 acre), in area. The deposit is near the southern boundary of the site footprint. The predominant vegetation on the site appears to be Mojave creosote bush scrub. Other information about the physical character of the site surface is unspecified. The surface component of the site measures approximately 49 m from northwest to southeast and 19 m from northeast to southwest. It consists of a low density scatter of 5 prehistoric artifacts including 3 chert cortical flakes, 1 quartzite interior flake and 1 multi-directional chert core. The presence of a chert core and similar chert flakes raised the possibility that this site was potentially a single-use lithic work station. However, an in-field refit analysis revealed that none of the chert debitage co-joined with one another, or with the core. The depth of the site deposit is undetermined.

The more particular physical context for site CA-Riv-9051, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see



“Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no age or alternative functional interpretation for the site. Further, the archaeologists recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9051 (P33-17435) is not eligible for listing in the CRHR.

#### **CA-Riv-9072 (P33-17456)**

This site is an oblong prehistoric archaeological deposit approximately 15,246,000 square m (350 acres) in area. It is located in the southwest corner of the site footprint. Only a small portion of the east end of the site overlaps with the proposed GSEP facility footprint. Multiple minor seasonal drainages run from north to south through the site. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface consists of a mosaic of desert pavement interspersed with sand and gravel alluvium. The surface component of the site measures approximately 1,820 m from east to west and 980 m from north to south. The site was originally recorded during the Class II survey. Its boundaries were subsequently enlarged when it was revisited during the Class III survey.

The site includes a low to moderate density artifact scatter and three artifact concentrations. Due to the size of the site the total number of artifacts was estimated. It appears to consist of at least 1,000 artifacts, predominantly prehistoric lithics. The lithic material types present include chert, jasper, quartzite, and crystalline quartz. The lithic scatter is sparse but is characterized by intermittent pockets of elevated artifact density which could represent intensified activity areas or, given the dynamic landform (e.g. sheet flow, seasonal drainages, to erosion), an increased surface visibility. All stages of reduction were in abundant evidence, suggesting that a full range of lithic industry (from testing/procurement to biface/tool manufacture and finishing) was practiced here. At least 12 lithic tools were identified including 1 black chert Rose Spring projectile point, 1 chert Cottonwood Triangular point, 2 quartz bifaces, 3 stage-1 black chert bifaces, 1 chert scraper, 2 chert cores, 2 quartzite cores, and an unknown number of core and flake-based tools. Other artifacts noted at the site included 33 quartzite metates or metate fragments, 5 quartzite manos, and 1 fragment of marine clam shell (species unknown). No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

Two artifact concentrations were noted in the western half of the site and a third along the north central site boundary. Concentration 1 consists of 10 brownware sherds within a 4-m<sup>2</sup> area. Nine body sherds and 1 base sherd were noted. Concentration 2 is located 10 m to the south of Concentration 1. This concentration consists of 11 brownware sherds within a 2-m<sup>2</sup> area. Nine body sherds, 1 neck sherd, and 1 rim sherd were observed. Four additional sherds were noted several m to the south. The archaeologists for the applicant suggest that both of these concentrations represent single, broken ceramic vessels, or pot drops. Staff notes that pot drops in non-random patterns have been associated with trails along main travel routes as well as trails that approach springs and tanks (Schaefer and Laylander 2007, p. 254). No evidence of a trail was noted near this site, but the close presence of prehistoric trails known to follow the I-10 corridor, McCoy Spring, and Ford Dry Lake itself, suggest that ceremonial pot drops may be present in the vicinity. These patterns are discussed in more detail in subsection Summary of NRHP- and CRHR-Eligible Cultural Resources for the Genesis Solar Energy Project.” Concentration 3 is a deflated hearth with approximately 21 pieces of fire-affected rock (FAR); it was identified within a north-south trending seasonal drainage. The hearth measures 98 centimeters (cm) from northeast to southwest and 68 cm southeast to northwest. In addition, two quartzite choppers, seven quartzite hammerstones, a rhyolite dome scraper, and an unmodified fragment of marine clam shell were observed.

The more particular physical context for site CA-Riv-9072, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to include the lake deposits of the Ql unit between the 377-foot shoreline and the 370–373-foot shoreline as well as the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the Qal and Qsr units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is located in an area characterized by low-energy sheet wash which is conducive to the preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant do not specify a function for the site. They do suggest that the presence of ceramics is generally consistent with the Late Prehistoric (1100 cal BC to Contact). The presence of a Cottonwood Triangular projectile point supports this suggestion. Staff notes that the presence of a Rose Spring projectile point may indicate that this was a multi-component site. The Rose Spring style is associated with the Rose Spring complex which dates between cal AD 200 and cal AD 1100 (Sutton et al. 2007, p. 236). Sites from this time are often found near springs, along washes, and sometimes on lakeshores, and can include evidence of intensive occupation such as house remains.

The archaeologists for the applicant recommend that this site be found eligible for listing in the NRHP under Criterion D. They note that the artifacts at the site appear to have well preserved spatial relationships, include datable materials, and include sufficient quantity of artifacts to allow statistically significant research (Farmer et al. 2009, p. 88). In addition previous research in the region suggests that the presence of pot drops within the boundaries of larger prehistoric sites indicates the presence of a trail. As such, this site may be a contributor to the PTNCL. The above considerations lead staff to recommend that site CA-Riv-9072 (P33-17456) is eligible for listing in the CRHR under Criterion 4, because the resource has yielded and has potential to yield information important to the middle-to-late prehistory of the Mojave Desert.

### **CA-Riv-9073 (P33-17457)**

This site is an oblong prehistoric archaeological deposit approximately 602 square feet (0.014 acres) in area. It is located near the southwest border of the proposed GSEP linear facilities corridor approximately 2.3 miles directly north of I-10. An intermittent drainage is located to the northwest of the site. The present site surface is a slightly elevated northeast-to-southwest-trending desert pavement. Further information about the present site surface is unspecified. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 17 m from northeast to southwest and 4 m from northwest to southeast. This sparse scatter of 4 prehistoric artifacts includes 1 quartzite primary flake, 1 retouched chert flake, 1 chert interior flake, and 1 chert flake tool. All of the artifacts are wind or water worn, suggesting great age. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9073, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in an area noted for low-energy sheet wash which may have resulted in correspondingly good preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no age or functional interpretation for the site. They further recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9073 (P33-17457) is not eligible for listing in the CRHR.

### **CA-Riv-9084 (P33-17468)**

This site is an irregularly shaped prehistoric archaeological deposit approximately 1,219,680 square m (28 acres) in area. It is located on the southern boundary of the site

footprint. Two minor seasonal drainages run from north to south through the northern portion of the site. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface consists of a mosaic of desert pavement interspersed with sand and gravel alluvium. The surface component of the site measures approximately 38 m from east to west and 70 m from north to south. The site was originally recorded during the Class II survey. Its boundaries were subsequently enlarged when it was revisited during the Class III survey. It includes a light scatter of prehistoric artifacts and two artifact concentrations in the northern part of the site. In total, it appears that 96 artifacts were present. Artifact totals for each concentration and for the site as a whole were difficult to calculate using the information provided by the archaeologists for the applicant.

Concentration 1 is an amorphous scatter of artifacts located in the central part of the site. It measures 81 m by 81 m and includes 55 predominately interior and cortical flakes of crystalline quartz, basalt, quartzite, chert, jasper, and chalcedony. Concentration 2 is located at the north end of the site 255 m northeast of Concentration 1. This feature measures 10 m by 6 m and consists of 5 chert, crystalline quartz, quartzite, and basalt flakes. The presence of a “historical military part” was noted west of Concentration 2 on the site sketch map. Further information about this artifact was not specified. The remainder of the site is covered with a light scatter of artifacts which include 21 flakes, 2 complete quartzite manos, 3 complete metates (2 possible schist, 1 rhyolitic), 3 metate fragments (1 quartzite, 2 rhyolitic), 1 piece of marine shell, 1 Olivella shell bead, 1 crystalline quartz block core, 1 quartzite multi-directional core, 1 jasper multi-directional core 1 quartz biface, and 1 quartz biface fragment. Overall, interior flakes comprised the greatest share of the debitage (at 50 percent), while shatter and cortical flakes together make up about 38 percent of the scatter, indicating that primary and secondary flake production were the principal activities. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9084, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant note that one function of the site may have been stone tool manufacture and repair. Staff adds that the presence of ground stone suggests that food processing also took place here possibly indicating the site was a temporary camp. The archaeologists for the applicant further suggest that Concentrations 1 and 2 may represent two separate activity loci. It is unclear if they consider the ground stone scatter in the southern part of the site a possible third activity locus. The temporal relationships between the various parts of the site are unclear.

However, the archaeologists for the applicant mention that the presence of ground stone indicates that at least some of the deposit was created during or after the Late Archaic period (8000 to 6000 cal BC). In addition, the Olivella shell bead in the northeastern corner of the site links it to the Late Prehistoric (1100 cal AD to Contact) period.

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The rationale may be tied to the sparse character of the surface assemblage and the apparent absence of materials that would clarify the temporal relationships between the site components, indicating that the site does not have the potential to yield information important to prehistory. Without primary field data on the presence of a subsurface component for the site, staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9084 (P33-17468) be assumed eligible for listing in the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9206 (P33-17775)**

This site is an oblong prehistoric archaeological deposit oriented north-south approximately 161 square m (0.04 acres), in area. The deposit is in the southeastern portion of the site footprint near the southern boundary, 116 m north of CA-Riv-9205/H (P33-17773). The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface consists of sandy and gravelly soils with numerous small ephemeral dry channels traversing the area. The surface component of the site measures approximately 11 m from east to west and 25 m from north to south. Observed surface cultural constituents consist of 1 cortical quartzite flake, 2 interior chert flakes, 1 chalcedony flake, and 1 granitic mano fragment. There was apparently no evidence of a subsurface deposit at the site, but its actual depth is undetermined.

The more particular physical context for site CA-Riv-9206, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest that the presence of ground stone at the site may indicate a date of as early as the Late Archaic times (8000 to 6000 cal BC) or as late as the Late Prehistoric (1100 cal BC to Contact). However, they provide no functional interpretation for the site. Further, they recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. Considering the sparse character of the surface assemblage and the apparent absence

of materials that would facilitate the placement of the deposit more specifically in time, the site does not appear to have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9206 (P33-17775) is not eligible for listing in the CRHR.

### **CA-Riv-9207 (P33-17776)**

This site is a trapezoidal prehistoric archaeological deposit approximately 2,711 square m (0.7 acres) in area. It is located in the southeastern portion of the site footprint near the southern boundary, approximately 40 m north of CA-Riv-9206 (P33-17775). The present site surface consists of relatively flat sandy and gravelly soils with numerous small erosion channels. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 86 m from east to west and 73 m from north to south. This light scatter of 8 artifacts includes 4 chert cortical flakes, 1 quartzite cortical flake, 1 quartzite core, 1 chert tested cobble, and 1 soluble coffee can. The artifact scatter appears to be primarily a surface deposit, but its actual depth is undetermined.

The more particular physical context for site CA-Riv-9207, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be edge of the oldest lakeshore (Ql) where it intersects with the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The function of the site is unspecified, however the archaeologists for the applicant note that the prehistoric lithic artifacts appear to be randomly scattered across the surface rather than clustered into tight loci. This pattern suggests that the site did not serve as a flint-knapping location. The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. They also recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9207 (P33-17776) is not eligible for listing in the CRHR.

### **CA-Riv-9208 (P33-17777)**

This site is an oblong prehistoric archaeological deposit approximately 647 square m (0.2 acres) in area. It is located in the southeastern portion of the site footprint near the

southern boundary, approximately 86 m north of CA-Riv-92010 (P33-17778). The present site surface consists of relatively flat sandy and gravelly soils with numerous small erosion channels. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 25 m from east to west and 24 m from north to south. This light scatter of 8 prehistoric artifacts includes 4 chert cortical flakes, 1 quartzite cortical flake, 1 chalcedony cortical flake, 1 jasper cortical flake, and 1 chalcedony core. No evidence of a subsurface deposit was noted, but the actual depth of the site is undetermined.

The more particular physical context for site CA-Riv-9208, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be located on the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant do not specify the function of the site however they note that the prehistoric lithic artifacts appear to be randomly scattered across the surface rather than clustered into tight loci. This pattern suggests that the site did not serve as a flint-knapping location. The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. The archaeologists recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9208 (P33-17777) is not eligible for listing in the CRHR.

### **CA-Riv-9209 (P33-17778)**

This site is an oblong prehistoric archaeological deposit approximately 7,689 square m (2 acres) in area. It is located in the southeastern portion of the site footprint near the southern boundary, approximately 86 m south of CA-Riv-9208 (P33-17777). The present site surface consists of relatively flat sandy and gravelly soils, with numerous small erosion channels. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 85 m from east to west and 100 m from north to south. This light scatter of 24 prehistoric artifacts includes 7 interior flakes and 1 cortical flake of chert, 1 interior flake of quartz, 1 piece of chalcedony shatter, 3 interior flakes of jasper, 4 cortical flakes of quartzite, 2 multi-directional chert cores, 1 quartzite hammer stone, and 4 quartz monzonite metate fragments. The scatter appears to be primarily a surface deposit with some partial

subsurface artifacts, most likely the result of the movement of wind and waterborne sediment.

The more particular physical context for site CA-Riv-9209, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant do not specify a function for the site. They do suggest that the presence of ground stone is generally consistent with a Late Archaic period occupation (8000 to 6000 cal BC), but do not explain why this site could not also be consistent with other time periods when ground stone was used, such as the Late Prehistoric (1100 cal BC to Contact). Further, they recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The rationale may be tied to the sparse character of the surface assemblage indicating that the site does not have the potential to yield information important to prehistory. Without primary field data on the presence of a subsurface component for the site, staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9209 (P33-17778) be assumed eligible for listing in the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9210 (P33-17779)**

This site is an irregularly shaped prehistoric archaeological deposit approximately 1,982 square m (0.5 acres) in area. It is located in the southeastern portion of the site footprint near the southern boundary, approximately 95 m south of CA-Riv-9209H (P33-17778). The present site surface consists of a slightly elevated terrace of alluvium, with patches of desert pavement. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 50 m from east to west and 90 m from north to south. This sparse scatter of 13 prehistoric artifacts includes 10 lithic flakes, 2 monzonite metate fragments, and 1 depleted chalcedony core with cortex. The scatter appears to be primarily a surface deposit, but the actual depth of the site is undetermined.

The more particular physical context for site CA-Riv-9210, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is



undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. They further recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit more specifically in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9210 (P33-17779) is not eligible for listing in the CRHR.

### **CA-Riv-9212 (P33-17781)**

This site is an oblong prehistoric archaeological deposit approximately 202 square m (0.06 acres) in area. It is located near the center of the southeastern portion of the proposed site footprint, approximately 50 m north of CA-Riv-9211H (P33-17780). The present site surface consists of sandy and gravelly soils within a minor dune and pan like area. A minor dry wash runs parallel to the long axis of the site and numerous small ephemeral dry channels traverse the area. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 32 m from north to south and 8 m from east to west. This sparse scatter of 6 prehistoric artifacts includes 1 interior chert flake, 2 quartzite cortical flakes, 1 rhyolite tested cobble, 1 chalcedony core with cortex, and 1 Desert Side Notched chert projectile point. No evidence of a subsurface deposit was noted, but the actual depth of the site is undetermined.

The more particular physical context for site CA-Riv-9212, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be located on the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. However, the presence of a Desert Side Notched projectile point suggests that the site dates to the Late Prehistoric period (cal AD 1100 to

European contact) (Sutton et al. 2007, p. 236). They further recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage seems to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9212 (P33-17781) is not eligible for listing in the CRHR.

### **CA-Riv-9215 (P33-17784)**

This site is an irregularly shaped prehistoric archaeological deposit approximately 14,568 square m (3.6 acres) in area. It is located near the southwest corner of the southeastern portion of the proposed site footprint, north of CA-Riv-9220 (P 33-17789). A large unnamed dry wash apparently crosses the site, however the location of the wash is not marked on the sketch map. The present site surface is described as consisting of sand and gravel. Further information about the condition of the present site surface is unspecified. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 129 m from east to west and 169 m from north to south. This sparse scatter of 25 prehistoric artifacts includes 21 lithic flakes, 1 chert projectile point shoulder and base fragment (concave base, undetermined chronology), 1 biface fragment, 1 rhyolite tested cobble, and 1 6-sided quartz crystal were observed. The scatter appears to be primarily a surface deposit, but the actual depth of the site is undetermined.

The more particular physical context for site CA-Riv-9215, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. They further recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The rationale may be tied to the sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time, indicating that the site does not have the potential to yield information important to prehistory. Without primary field data on the presence of a subsurface component for the site, staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9215 (P33-17784) be assumed eligible for listing in the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9216 (P33-17785)**

This site is an oblong prehistoric archaeological deposit approximately 16,511 square m (4 acres) in area. It is located along the western boundary of the southeastern portion of the proposed site footprint, approximately 205 m west of CA-Riv-9209 (P33-17778). A large unnamed dry wash apparently crosses the site, however the location of the wash is not marked on the site map. The present site surface is relatively flat and consists of the sand and gravel. Evidence of aeolian (wind-produced) processes is also present, including lag deposits and small mounds of sand next to creosote bushes. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 83 m from east to west and 317 m from north to south. Overall this site consists of approximately 78 prehistoric and 2 historic-period artifacts. Scattered across the site are 46 lithic flakes, 3 tested cobbles (1 chalcedony, 2 quartzite), 1 exhausted chert core, and 1 granitic mano. Two isolated cans, one soluble coffee can and one rectangular oil can (puncture opened) were also noted. One concentration of 27 prehistoric artifacts is present at the southern end of the site: it measures 15 m from east to west by 35 m from north to south. This concentration consists of approximately 25 flakes, 1 quartzite hammerstone, and 1 possible quartz crystal biface fragment. Both within the concentration and across the site in general, lithic flakes are primarily interior and cortical flakes of a broad range of materials including basalt, chert, chalcedony, quartzite, quartz crystal, and jasper. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9216, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. However, the presence of ground stone at the site may indicate that it dates to between the Late Archaic (8000 to 6000 cal BC) and the Late Prehistoric (1100 cal BC to Contact) periods. Further, a high density lithic concentration suggests that stone tool production and/or maintenance took place in this location. The broad mix of activities taking place at this site, including food preparation and tool production and/or maintenance, suggests that it may have functioned as a temporary camp.

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The rationale may be tied to the sparse character of the surface assemblage and the

apparent absence of materials that would facilitate the placement of the deposit more specifically in time, indicating that the site does not have the potential to yield information important to prehistory. Without primary field data on the presence of a subsurface component for the site, staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9216 (P33-17785) be assumed eligible for listing in the CRHR under Criterion 4, for the purpose of the present analysis.

#### **CA-Riv-9217 (P33-17786)**

This site is an oblong prehistoric archaeological deposit approximately 971 square m (0.3 acres) in area. In contrast to other sites in the proposed site footprint, its long axis runs from east to west rather than from north to south. It is located near the center of the southeastern portion of the site footprint, approximately 40 m south of CA-Riv-9212 (P33-17781). The present site surface is relatively flat and consists of sand and gravel. Small, dry seasonal drainages are present to the east on west of the site. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 58 m from east to west and 21 m from north to south. This sparse scatter of 3 prehistoric artifacts includes 1 black chert interior flake, 1 red quartzite cortical flake, and 1 brownware pottery sherd. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9217, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be located on the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. However, the presence of ceramics at the site may indicate that it dates to the Late Prehistoric (1100 cal BC to Contact) period. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage seems to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9217 (P33-17786) is not eligible for listing in the CRHR.

### **CA-Riv-9218 (P33-17787)**

This site is an oblong prehistoric archaeological deposit approximately 161 m (0.04 acres) in area. It is located near the center of the southeastern portion of the site footprint, approximately 153 m east of CA-Riv-9219 (P33-17788). The present site surface is relatively flat and consists of sand and gravel alluvium. A small, dry seasonal drainage running from north to south cuts across the southern end of the site. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 13 m from east to west and 17 m from north to south. This sparse scatter of 3 prehistoric artifacts includes 1 chert interior flake, 1 cortical quartzite flake, and 1 chert bifacial scraper. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9218, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be located on the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit more specifically in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9218 (P33-17787) is not eligible for listing in the CRHR.

### **CA-Riv-9219 (P33-17788)**

This site is an oblong prehistoric archaeological deposit approximately 404 square m (0.1 acres) in area. It is located near the center of the southeastern portion of the site footprint, approximately 153 m west of CA-Riv-9217 (P33-17786). A small, dry seasonal drainage running from north to south cuts across the site in an unspecified location. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 43 m from northeast to southwest and 17 m from northwest to southeast. This sparse scatter of 3 prehistoric chert artifacts includes 2 cortical flakes and 1 interior flake. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9219, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be located on the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9219 (P33-17788) is not eligible for listing in the CRHR.

#### **CA-Riv-9220 (P33-17789)**

This site is an irregularly shaped prehistoric archaeological deposit approximately 38,162 square m (9.4 acres) in area. It is located along the southern boundary of the northwestern portion of the site footprint, approximately 171 m south of CA-Riv-9215 (P33-17784). A small, dry seasonal drainage running from north to south cuts across the site in an unspecified location. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium with subdued bar and swale topography. The surface component of the site measures approximately 221 m from east to west and 199 m from north to south. This scatter of 94 prehistoric artifacts includes 92 flakes, 1 brown chert projectile point (Cottonwood Leaf-shaped), and 1 quartz monzonite metate fragment. In general, lithic flakes are primarily interior and cortical flakes of chert and quartzite. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9220, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the Ql unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless,

subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. However, the presence of ground stone and a diagnostic projectile point suggest several possibilities for its age and function. The prehistoric use of milling equipment in the Mojave Desert has a broad temporal range, between the Late Archaic (8000 to 6000 cal BC) and the Late Prehistoric (1100 cal BC to Contact) periods. Several kinds of leaf shaped points have been used in the region over time, however. Cottonwood Leaf-shaped points tend to be smaller (approximately 3 cm in length) and some scholars associate them with the Late Cottonwood phase (AD 1840 to 1900) in the northwest Mojave Desert (Moratto 1984, p. 376). Other scholars associate leaf-shaped points primarily with the Pinto Complex of the Middle Holocene (7000 to 3000 cal BC) (Sutton et al. 2007, p. 236). These early artifacts tend to be larger (approximately 5 cm in length), like the chert projectile point found at CA-Riv-9220. The broad mix of activities taking place at this site, including food preparation and possibly tool production and/or maintenance, suggests that it may have functioned as a temporary camp.

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The rationale may be tied to the sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit more specifically in time, indicating that the site does not have the potential to yield information important to prehistory. Without primary field data on the presence of a subsurface component for the site, staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9220 (P33-17789) be assumed eligible for listing in the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9221 (P33-17770)**

This site is a trapezoidal shaped prehistoric archaeological deposit approximately 1,618 square m (0.4 acres) in area. It is located near the southwest corner of the southeastern portion of the site footprint, approximately 160 m west of CA-Riv-9215 (P33-17784). Numerous minor seasonal drainages run across the site. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium with subdued bar and swale topography. The surface component of the site measures approximately 33 m from east to west and 58 m from north to south. This sparse scatter of 8 prehistoric artifacts includes 5 chert cortical flakes, 1 chert pressure flake, 1 chert interior flake, and 1 cortical quartz crystal flake. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9221, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the Q1 unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological

Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9221 (P33-17790) is not eligible for listing in the CRHR.

### **CA-Riv-9222 (P33-17771)**

This site is an oblong prehistoric archaeological deposit oriented east/west and with an area of approximately 1902 square m (0.5 acres). It is located in the northwestern corner of the southeastern portion of the site footprint approximately 722 m northeast of CA-Riv-9223 (P33-17772). Numerous minor seasonal drainages run across the site. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium with subdued bar and swale topography. The surface component of the site measures approximately 60 m from east to west and 39 m from north to south. This sparse scatter of 4 prehistoric artifacts includes 2 chert cortical flakes, 1 chert interior flake, and 1 quartz cortical flake. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9222, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be located on the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is located in an area characterized by low-energy sheet wash which is conducive to the preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association or functional interpretation for the site. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this



recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9222 (P33-17791) is not eligible for listing in the CRHR.

### **CA-Riv-9223 (P33-17772)**

This site is a triangular shaped prehistoric archaeological deposit 3,327 square m (0.8 acres) in area. It is located near the western border of the southeastern portion of the site footprint approximately 722 m southwest of CA-Riv-9222 (P33-17771). Numerous minor seasonal drainages run across the site and the immediate vicinity. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium with subdued bar and swale topography. The surface component of the site measures approximately 79 m from east to west and 75 m from north to south. This sparse scatter of 20 quartz prehistoric artifacts includes 13 interior flakes and 3 cortical flakes. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9223, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be located on the Holocene sand sheet of the Qsr unit and the Holocene alluvium of the Qal unit (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within these units is expected to be moderate within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The potential for artifacts within the Qoaf alluvial deposits, in consideration of the apparent Pleistocene age of those deposits, is considered slight. This site is located in an area characterized by low-energy sheet wash which is conducive to the preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest that the site represents single flint-knapping episode. However, no temporal association is suggested for the site. The archaeologists for the applicant further recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The rationale may be tied to the sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time, indicating that the site does not have the potential to yield information important to prehistory. Without primary field data on the presence of a subsurface component for the site, staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9223 (P33-17792) be assumed eligible for listing in the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9227 (P33-17796)**

This site is a triangular shaped prehistoric archaeological deposit more than 3 acres (130,680 square feet) in area. It is located on the northeastern border of the proposed

GSEP linear facilities corridor approximately 1.5 miles directly north of I-10. Several small north/south trending drainages cut through the site in unspecified locations. Further information about the present site surface is unspecified. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 176 m from east to west and 111 m from north to south. This sparse scatter of 18 prehistoric artifacts includes 14 brownware pottery sherds (body, rim, and neck), 1 split chert cobble, 1 chert cortical flake, 1 chert biface thinning flake, and 1 marine shell fragment (species unknown). The marine shell was found in the northern portion of the site. It exhibited polish, but the source of the abrasion, either human or natural, was undetermined. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9227, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in an area noted for high-energy wave action which may have resulted in correspondingly poor preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest the presence of ceramics at the site may indicate that it dates to the Late Prehistoric (1100 cal BC to Contact) period. However, they provide no functional interpretation for the site. The presence of body, rim, and neck sherds suggests that these ceramic artifacts may represent a disturbed pot drop. Pot drops in non-random patterns have been associated with trails along main travel routes as well as trails that approach springs and tanks (Schaefer and Laylander 2007, p. 254). No evidence of a trail was noted near this site, but the close presence of prehistoric trails known to follow the I-10 corridor, McCoy Spring, and Ford Dry Lake itself, suggest that ceremonial pot drops may be present in the vicinity. The chert artifacts, suggest that that lithic tool manufacture or maintenance took place in this location. The temporal relationship between these two activities is uncertain, however.

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The rationale may be tied to the sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time, indicating that the site does not have the potential to yield information important to prehistory. Without primary field data on the presence of a subsurface component for the site, staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to prehistory. In addition, the presence of a pot drop suggests that this site may be a contributor to the PTNCL. Staff therefore recommends that site CA-Riv-9227 (P33-17796) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9249 (P33-18003)**

This is an oblong prehistoric artifact scatter measuring 2,347 square m (0.96 acre) in area. It is located along the proposed GSEP linear corridor. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface consists of silty fine to very coarse sand with small to medium size dense and massive gravels. The dimensions of the surface component of the site provided on the site form were inaccurate. This site consists of a sparse scatter of 21 prehistoric artifacts and 3 historic/modern artifacts. The prehistoric component consists of 20 granitic-tempered brownware sherds and 1 piece of debitage. These sherds appear to be part of a single broken ceramic vessel, or pot drop. The historic-period component consists of 1 modern airplane part, 1 metal pocket watch face, and 1 can. None of these artifacts appear to be related to each other. The pocket watch face and the can may be historic-period artifacts, sufficient information about these artifacts was not provided to determine their age. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9249H, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit near the 370-to-373 foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is located in an area characterized by low-energy sheet wash which is conducive to the preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest the presence of ceramics at the site may indicate that it dates to the Late Prehistoric (1100 cal BC to Contact) period. However, they provide no functional interpretation for the site. Staff notes that pot drops in non-random patterns have been associated with trails along main travel routes as well as trails that approach springs and tanks (Schaefer and Laylander 2007, p. 254). No evidence of a trail was noted near this site, but the close presence of prehistoric trails known to follow the I-10 corridor, McCoy Spring, and Ford Dry Lake itself, suggest that ceremonial pot drops may be present in the vicinity. These patterns are discussed in more detail, below, under “Summary of NRHP- and CRHR-Eligible Cultural Resources for the Genesis Solar Energy Project.”

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP. They argue that the sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time, suggests that the site does not have the potential to yield information important to prehistory. Without primary field data on the presence of a subsurface component for the site, staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to prehistory. In addition, the presence of a pot drop suggests that this site may be a contributor to the PTNCL. Staff therefore recommends that site CA-Riv-9249 (P33-18003) be assumed eligible for

listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9255 (P33-18009)**

This site is an irregular shaped prehistoric archaeological deposit 1.73 acres (7,001 square feet) in area. It is located along the proposed GSEP linear facilities corridor approximately 1 mile directly north of I-10. Further information about the present site surface is unspecified. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The surface component of the site measures approximately 75 m from east to west and 151 m from north to south. The site consists of a sparse scatter of more than 40 prehistoric artifacts and a single artifact concentration. Concentration 1 consists of 5 to 10 granitic-tempered brownware sherds that appear to be partially buried. Several of the sherds are vertical and are aligned in an arc, suggesting that a whole or partially whole vessel was left here. Other ceramics at the site include 4 brownware sherds and 3 redware sherds. The lithics tools present include 1 quartz biface fragment and 1 granitic core. Other lithics include 20 pieces of debitage primarily of black chert but also quartzite, chalcedony, quartz crystal, and jasper. Also present was 1 quartzite metate, 1 quartzite hammerstone, 1 split cobble, and 3 pieces of FAR. The presence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9255, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit near the 370-to-373 foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is located in an area characterized by low-energy sheet wash which is conducive to the preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. The partially buried brownware vessel suggests that additional subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest the presence of ceramics at the site may indicate that it dates to the Late Prehistoric (1100 cal BC to Contact) period. However, they provide no functional interpretation for the site. Staff notes that pot drops in non-random patterns have been associated with trails along main travel routes as well as trails that approach springs and tanks (Schaefer and Laylander 2007, p. 254). No evidence of a trail was noted near this site, but the close presence of prehistoric trails known to follow the I-10 corridor, McCoy Spring, and Ford Dry Lake itself, suggest that ceremonial pot drops may be present in the vicinity. These patterns are discussed in more detail below, under Summary of NRHP- and CRHR-Eligible Cultural Resources for the Genesis Solar Energy Project.”

Tetra Tech recommends that this site be found eligible for listing in the NRHP under Criterion D. They note that the artifacts at the site appear to have well preserved spatial relationships and there appears to be evidence of a subsurface deposit. Without primary field data on the presence of a subsurface component for the site, staff cannot evaluate

the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to prehistory. In addition, the presence of a pot drop suggests that this site may be a contributor to the PTNCL. Staff therefore recommends that site CA-Riv-9255 (P33-18009) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9256 (P33-18010)**

This site is an irregularly shaped prehistoric archaeological deposit with an area of approximately 1,173 square m (.29 acres). It is located along the GSEP linear corridor. An unnamed large dry wash and several northeast/southwest trending minor seasonal washes cross site in an unspecified locations. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium with subdued bar and swale topography. The surface component of the site measures approximately 60 m from northeast to southwest and 32 m from southeast to northwest. This sparse scatter of 7 prehistoric artifacts includes 6 cortical flakes and a quartz crystal biface fragment. Debitage material types include chert, quartzite, chalcedony, and jasper. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9256, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370–373-foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in an area noted for low-energy sheet wash which may have resulted in correspondingly good preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association for the site, but do suggest that it may have served as a short-term, expedient lithic production site. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9256 (P33-18010) is not eligible for listing in the CRHR.

### **CA-Riv-9257 (P33-18011)**

This site is an oblong prehistoric archaeological deposit with an area of approximately 242 square m (0.06 acres). It is located along the GSEP linear corridor. Several northeast/southwest trending minor seasonal washes cross site in an unspecified locations. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium surrounded by low lying coppice dunes. The surface component of the site measures approximately 60 m from northeast to southwest and 32 m from southeast to northwest. This sparse

scatter of 4 prehistoric artifacts includes 2 quartzite cortical flakes, 1 black chert flake fragment, and 1 biface thinning flake of unspecified material. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

The more particular physical context for site CA-Riv-9257, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370-to–373 foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The archaeologists for the applicant suggest no temporal association for the site, but do suggest that it may have served as a short-term, expedient lithic production site. Tetra Tech further recommends that this site be found ineligible for listing in the NRHP. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that site CA-Riv-9257 (P33-18011) is not eligible for listing in the CRHR.

## **Historical Archaeological Sites Evaluations and Descriptions**

Staff evaluated 13 historic-period archaeological resources, and 1 resource of unknown age. The unknown resource is likely to be historic. Staff recommends that all 14 resources should be assumed eligible for listing in the CRHR. All evaluated resources are also potential contributors to the DTCCL.

### **P33-13598**

This site is clearly within the GSEP linear corridor however Tetra Tech did not provide an updated site record. The following discussion is based on the report and site forms by Mooney and Associates (Eckhardt et al. 2004). It is unclear if a trinomial has been assigned to this site. Maps provided by CHRIS do not clarify this issue. The site may have been destroyed by transmission line construction in the area.

This oblong historic-period refuse deposit approximately 170 square m (0.04 acres) in area. It is located at the southern end of the GSEP linear corridor. An existing Southern California Edison transmission line crosses the center of the site. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium. Further details about the site surface are unspecified. Based on the site map, the surface component of the site measures approximately 10 m from east to west and 17 m from north to south. This site consists of a sparse scatter of 3 small can clusters and 8 food and beverage cans and a double-edge razor blade. The can assemblage is reported to include 1 soluble coffee tin, 1 evaporated milk can, several cylindrical key-wind meat tins, and sanitary vegetable and

beverage containers. The contents of the individual can clusters are unspecified. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

Artifact types and chronological indicators suggest that the refuse scatter is military in type, dating from the 1940s suggesting that this site may be a contributing element to the DTCCL. However, Mooney and Associates note that the artifacts at the site have been rearranged by erosion, and therefore offer poor potential to yield information important to history. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site P33-13598 be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-0259 (P33-13656)**

This site is clearly within the GSEP linear corridor, however Tetra Tech did not provide an updated site record. The following discussion is based on Mooney and Associates report and site record (Eckhardt et al. 2004). This site was originally recorded in 1965 by Gessler as a prehistoric habitation site containing at least 5 housepits. Eckhardt and his colleagues provide a convincing argument that these previous researchers misidentified the site type.

This round historic-period refuse deposit and feature cluster is approximately 4356 square m (1.08 acres) in area. It is located at the eastern end of the GSEP linear corridor and northeast of the Wiley's Well Road Rest Area. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium. Further details about the site surface are unspecified. Based on the site record, the surface component of the site measures approximately 66 m from east to west and 66 m from north to south. This site consists of at least 5 low-bermed earthen features that appear to be WW II era foxholes, and a widely spread light-density artifact scatter. The artifacts present at the site in 2004 include several worn and discarded tank track treads made of vulcanized rubber, a military field communication-wire spool, several types of tin cans, and a "Melo-Paya" glass bottle. No evidence of a subsurface deposit was noted, but the actual depth of the site has not been determined.

Feature types, artifact types, and chronological indicators suggest that the site is military in origin, dating from the 1940s. As such, this site may be a contributing element to the DTCCL. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-0259 (P33-13656) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9063H (P33-17447)**

This site is an oblong historic-period refuse deposit approximately 4,950 square m (1.22 acres) in area. It is located along the GSEP linear corridor, south of CA-Riv-9203H. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of a mosaic of undulating desert floor alluvium and loosely consolidated desert pavement. Further details about the site surface are unspecified. The surface component of the site measures approximately 50 m from east to west and 99 m from north to south. This site consists of a sparse scatter of more than 15 metal artifacts. The assemblage is reported to include over 10 food cans with key-wind removal, 1 condensed milk can, 1 portion of tea can, 1 can opener, 1 US military issue spoon, and 1 pair of heavily rusted steel pliers.

In addition to the field investigation, the archaeologists for the applicant also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic-period dwellings and/or structures on or within several miles of CA-Riv-9063H. The specific documentary sources examined for this site were unspecified. Artifact types and chronological indicators suggest that the refuse scatter is military in origin, dating from the 1940s. As such, this site may be a contributing element to the DTCCCL. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9063H (P33-17447) be assumed eligible for listing in the NRHP under Criterion D and the for CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9203H (P33-17772)**

This site is an oblong historic-period refuse deposit approximately 21,084 square m (5.2 acres) in area. It is located near the southeast corner of the southeastern section of the proposed site footprint, within and adjacent to a northeast/southwest trending seasonal dry wash. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium. Further details about the site surface are unspecified. The surface component of the site measures approximately 100 m from east to west and 370 m from north to south. This site consists of a sparse scatter of more than 84 food and beverage cans, can fragments, glass bottles, and plastic. The can assemblage is reported to include 3 hole-in-top cans (knife- or ice-pick-opened), 3 church-key-opened beverage cans, 50 14.5-ounce food cans (round, key-opened or knife-cut-opened), 2 aluminum pull-tab cans (ring pull tab, c. 1965–1975), 3 15-ounce food cans (opened with a rotary can opener), 1 36-ounce can, and more than 20 can fragments. The glass assemblage is reported to include 1 clear glass condiment bottle with an “I within an O” Owens-Illinois (c. 1954–present) maker’s mark embossed on the base. Finally, 1 yellow plastic tape dispenser was also noted.

In addition to the field investigation, the archaeologists for the applicant also examined historic maps, BLM records, and other historic documents. They found no evidence of



any historic-period dwellings and/or structures on or within several miles of CA-Riv-9203H (P33-17772). The specific documentary sources examined for this site were unspecified. Artifact types and chronological indicators suggest that the refuse scatter is domestic in type, most likely from a single dumping episode, and dating from the mid-1950s to the mid-1970s. This trash deposit could be the result of recent historic activities such as sheep and cattle ranching, “Desert Strike” military training (1960s), and off-highway-vehicle recreational use. The archaeologists for the applicant propose that the source of trash was not associated with a specific homestead, individual, or group but do not discuss which aspects of the site lead them to this conclusion.

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The resolution of the documentation for the deposit makes it difficult to assess the actual date range that it represents, and therefore its potential association with important historic themes. The information present suggests that this site consists of a single episode of domestic trash disposal to sometime after 1950. However, the details provided by the archaeologists for the applicant do not rule out the possibility that this is a dual component site which includes a deposit associated with the DTCCCL. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9203H (P33-17772) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9204H (P33-17773)**

This site is an oblong historic-period refuse deposit approximately 3,156 square m (0.8 acres) in area. It is located near the southern boundary of the southeastern section of the proposed site footprint. Seasonal drainages were noted to the east and west of the site at unspecified distances. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium. Further details about the site surface are unspecified. The surface component of the site measures approximately 97 m east to west and 30 m north to south. This site consists of a sparse can scatter and two artifact concentrations approximately 88 m apart. Concentration 1 is located within the eastern portion of the site and measures approximately 20 m by 20 m. It consists of 8 hole-in-top cans with their tops cut off and 1 soluble coffee can. Concentration 2 is within the western portion of the site, 88 m west of Concentration 1. It measures approximately 12 m by 10 m and consists of 7 hole-in-top cans with the tops cut off and 1 machine-made, external-thread-lipped, clear glass jar, with “14 over 3824” Knox Glass Bottle Co. (c. 1932–1953) maker’s mark embossed on bottom. The remainder of the site includes a light scatter of 7 hole-in-top cans. In total, 24 historic-period artifacts were identified at the site. The site appears to be primarily a surface deposit with some partial subsurface artifacts, but the actual depth of the site has not been determined.

In addition to the field investigation, the archaeologists for the applicant also examined historic maps, BLM records, and other historic documents. They found no evidence of

any historic-period dwellings and/or structures on or within several miles of CA-Riv-9204H (P33-17773). The specific documentary sources examined for this site were unspecified. Artifact types and chronological indicators suggest that the refuse scatter is domestic in type, most likely from a single dumping episode, and dating from the mid 1930s to early 1950s. Additionally, the artifacts appear to represent common domestic food and/or military issue rations (e.g., the soluble coffee can).

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, arguing that these items are unlikely to yield information important to the historic development of the region. They further point out that the artifacts at the site have been rearranged by erosion, and therefore do not offer the potential to yield information important to history. The resolution of the documentation for the deposit makes it difficult to assess the actual date range that it represents, and therefore its potential association with important historic themes. However, the information that is present suggests that this site may be a contributing element to the DTCCL. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9204H (P33-17773) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

#### **CA-Riv-9211H (P33-17780)**

This site is a triangular-shaped historic-period refuse deposit approximately (808 square m (0.2 acres) in area. It is located near the center of the southeastern section of the proposed site footprint. Several seasonal drainages were noted to pass through the site in unspecified locations. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium. Further details about the site surface are unspecified. The surface component of the site measures approximately 37 m from east to west and 37 m from north to south. This site consists of a sparse scatter of 25 cans, bottles, and related fragments. The can assemblage includes 1 aluminum beverage can (pull tab, c. 1962–1978), 3 round key-opened food cans (key winder inscribed “ESTAB. 95 9/PACKED”), 1 large food can (46 ounces), and 1 small food can (12 ounces). The glass assemblage includes 1 clear glass “Coca Cola” bottle body and base fragment with an embossed base (Owens-Illinois c. 1929 to approximately 1959), 1 brown glass bottle embossed base (Owens-Illinois c. 1929 to approximately 1959), and 15 brown and clear glass bottle fragments. In addition, 1 crown bottle cap and 1 1934 American “wheat” penny were also noted. The site appears to be primarily a surface deposit, but the actual depth of the site has not been determined.

In addition to the field investigation, the archaeologists for the applicant also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic-period dwellings and/or structures on or within several miles of CA-Riv-9211H (P33-17780). The archaeologists for the applicant could not associate the source of trash with a specific homestead and/or individual or group. The specific documentary sources examined for this site were unspecified. Artifact types and chronological

indicators suggest that the refuse scatter is domestic in type, dating from the mid-1930s to the mid-1970s. Refuse could be associated with World War II training activities, and/or the combination of recent historic activities such as sheep and cattle ranching, “Desert Strike” military training (1960s), and off-highway-vehicle recreational use.

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The resolution of the documentation for the deposit makes it difficult to assess the actual date range that it represents, and therefore its potential association with important historic themes. However, the information that is present suggests that this site may be a contributing element to the DTCCL (Historic District). Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9211H (P33-17780) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9213H (P33-17782)**

This site is an oblong historic-period refuse deposit approximately 7,487 square m (1.9 acres) in area. It is located on the eastern boundary of the southeastern section of the proposed site footprint. A north-south trending seasonal drainage passes through the western half of the site. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is described as sand and gravel alluvium. Further details about the site surface are unspecified. The surface component of the site measures approximately 117 m from east to west and 90 m from north to south. This site consists of a sparse scatter of 58 metal artifacts including 40 round, key-opened food cans (16 ounce), 10 condensed milk cans (14.5 oz, church-key-opened), 4 rectangular food cans, 2 soluble coffee cans, 1 one-gallon-size gas can, and 1 key winder inscribed “ESTAB. 95 9/PACKED.” The site appears to be primarily a surface deposit with some partially buried artifacts, but the actual depth of the site has not been determined.

In addition to the field investigation, the archaeologists for the applicant also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic-period dwellings and/or structures on or within several miles of CA-Riv-9213H (P33-17782). The specific documentary sources examined for this site were unspecified. Artifact types and chronological indicators suggest that the refuse scatter is domestic in type, probably from a single dumping episode. In addition, the artifacts appear to represent common domestic food and/or military issue rations (e.g. soluble coffee can, key-wind-opened cans). The date range for these artifacts and the kind of activities that might have resulted in their disposal, are unspecified.

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, arguing that these items are unlikely to yield information important to the historic development of the region. They further point out that the artifacts at the site have been rearranged by erosion and therefore do not appear to be associated with

events that made a significant contribution to our history, or associated with the life of a significant person, and do not exhibit characteristics that would yield important information to history. The resolution of the documentation for the deposit makes it difficult to assess the actual date range that it represents and therefore its potential association with important historic themes. However, the information that is present suggests that this site may be a contributing element to the DTCCL (Historic District). Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9213H (P33-17782) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9214H (P33-17783)**

This site is an irregularly shaped historic-period refuse deposit approximately 2,832 square m (0.7 acres) in area. It is located in the center of the northwestern section of the proposed site footprint. Several small seasonal drainages pass through the site in unspecified locations. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is described as sand and gravel alluvium alternating with hardpan. Further details about the site surface are unspecified. The surface component of the site measures approximately 49 m from east to west and 69 m from north to south. This site consists of a sparse scatter of 34 metal and glass artifacts. The metal assemblage includes 15 hole-in-top cans (12 ounce), 15 24-ounce cans (opened with a rotary can opener), 1 pocket tobacco can, 1 metal chain link/hook, and 1 cylindrical container top etched "The J.B. Williams Co./Eft. 1850/Glastonbury Conn. U.S.A." (possible shaving stick or talcum powder, c. 1853–1956). The glass assemblage consists of a single broken brown glass jar embossed "Vaseline/ Cheesebrough/ New York." The site appears to be primarily a surface deposit with some partially buried artifacts, but the actual depth of the site has not been determined.

In addition to the field investigation, the archaeologists for the applicant also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic-period dwellings and/or structures on or within several miles of CA-Riv-9214H (P33-17783). The specific documentary sources examined for this site were unspecified. Artifact types and chronological indicators suggest that the refuse scatter is domestic in type, probably from a single dumping episode. In addition, the artifacts appear to represent common domestic food and/or military issue rations. The date range for these artifacts and the kind of activities that might have resulted in their disposal, are unspecified.

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, arguing that these items are unlikely to yield information important to the historic development of the region. They further point out that the artifacts at the site have been rearranged by erosion, and therefore do not appear to be associated with events that made a significant contribution to our history, or associated with the life of a significant person, and do not exhibit characteristics that would yield important information to history. The resolution of the documentation for the deposit makes it

difficult to assess the actual date range that it represents, and therefore its potential association with important historic themes. However, the information that is present suggests that this site may be a contributing element to the DTCCCL (Historic District). Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9214H (P33-17783) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9228H (P33-17797)**

This site is a roughly circular historic-period refuse deposit approximately 2,827 square m (0.06 acres) in area. It is located on the eastern boundary of the proposed linear facilities corridor approximately 1.5 miles directly north of I-10. A north-south trending seasonal drainage is located in an unspecified location within the site. The predominant vegetation on the site appears to be Mojave creosote bush scrub. No details about the present site surface were provided. The surface component of the site measures approximately 64 m from east to west and 60 m from north to south. This site consists of a sparse scatter of 21 metal and glass artifacts. The metal assemblage at the site includes 6 sanitary cans (crimp seam), 1 hole-in-top sanitary can, 1 rectangular can (possibly for olive oil, with crimp seam, base embossed "URUGUAY"), 1 key-wind-opened can (embossed "ESTAB.315/PACKED/2"), 1 painted can (crimp seam, body painted with "NES", snap/friction lid imprinted "Keep Tightly Closed"), and 1 GEM BLADE razor blade ("PAT 1739280" c. 1929 and later). The glass assemblage includes 5 aqua Coca Cola bottle fragments (1 base embossed "SAN BERNARDINO CALIF" and "BOTTLE PAT. D 105529," c. 1938–1951), and 5 or more clear glass bottle fragments including a base fragment with an "S"-in-star marker's mark (Southern Glass Company, Vernon, CA; c. 1916–1931). The site appears to be primarily a surface deposit, but the actual depth of the site has not been determined.

The archaeologists for the applicant do not propose a date range for this deposit or associated activities that might have resulted in its placement within the proposed site footprint. The archaeologists for the applicant further recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The resolution of the documentation for the deposit makes it difficult to assess the actual date range that it represents, and therefore its potential association with important historic themes. Staff notes that these artifacts date to within the period of significance for the DTCCCL (Historic District), 1942 to 1944, suggesting that this site may be a contributing element to the district. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9228H (P33-17797) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4, for the purpose of the present analysis.

### **CA-Riv-9245H (P33-17999)**

This site is an oblong historic-period refuse deposit approximately 13,500 square m (3.34 acres) in area. It is located along the GSEP linear corridor, north of the Blythe-Eagle Mountain Transmission Line. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium, cut by a north/south trending seasonal wash in an unspecified location. Further details about the site surface are unspecified. The surface component of the site measures approximately 125 m from northwest to southeast and 108 m from southwest to northeast. This site consists of a sparse scatter of 14 metal artifacts. The assemblage is reported to include 6 10-12 oz. crimped seam sanitary food cans (2 knife opened, 4 can opener), 3 ration cans, 1 key open can (smashed), 1 quart motor oil crimped seam can ("New Texaco Motor Oil" c. 1937), 1 metal thermos ("Aladdin's Economy Thermos Bottle"), and 1 kerosene lantern/flare ("Dietz All Weather" and "PAT JUN 16-31 and JUN 16-32"). The site appears to be primarily a surface deposit, but the actual depth of the site has not been determined.

In addition to the field investigation, the archaeologists for the applicant also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic-period dwellings and/or structures on or within several miles of CA-Riv-9245H (P33-17999). The specific documentary sources examined for this site were unspecified. Tetra Tech suggests that the artifacts at this site are associated with the construction of the Blythe-Eagle Mountain Transmission Line (c. late 1950s) or of the I-10 (c. late 1960s completed by 1972) during the late 1950s or early 1960s. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, possibly related to the age of the deposit.

The resolution of the documentation for the deposit makes it difficult for staff to assess the actual date range that it represents, and therefore its potential association with important historic themes. The information present suggests that this site consists of one or more episodes of trash disposal dating to sometime after 1937. The site may well be associated with the construction of the Blythe-Eagle Mountain Transmission Line or the I-10. However, the details provided by the archaeologists for the applicant do not rule out the possibility that this is a multi-component site which includes a deposit associated with the DTCCL. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9245H (P33-17999) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4 and the CRHR, for the purpose of the present analysis.

### **CA-Riv-9248H (P33-18002)**

This site is a crescent shaped historic-period refuse deposit approximately 6,879 square m (1.7 acres) in area. It is located along the GSEP linear corridor. No vegetation was noted on site except for small patches of low annual grasses. The site surface is characterized by low-energy sheet wash and minor seasonal washes trending from northeast to southwest. The site has been disturbed by modern off-road vehicles and

the installation of a modern metal post and a 3-foot long piece of wood lath. Further details about the site surface are unspecified. The surface component of the site measures approximately 252 m from east to west and 353 m from north to south. This site consists of a sparse scatter of 31 artifacts, mainly metal but also including glass and plastic. The can assemblage is reported to include 1 coffee can (12 oz, external thread lid, machine produced, "NESCAFE" and "USA No.1154" c. 1940s-1960s), 4 sanitary cans (12 oz., machine crimped, punctured open, beverage), 3 cans (16 oz, food, machine crimped, round cut can opener), 1 can (14.5-15 oz. oval, e.g. sardines, pull tab or key open), 1 can (40oz, juice, punctured open), 4 cans (smashed, unknown type), 1 coffee can lid ("salt" etched on top), and 1 can lid (embossed "Keep Tightly Closed"). The gun related assemblage included 8 machine gun cartridges (.30 caliber, blank, M1909, "F A 38" and "F A 40", c. 1938 and 1940) and 1 12-gauge shot gun shell base. Other metal artifacts include 1 piece of flat metal, 1 metal wire fragment, 1 automotive leaf spring, and 1 razor blade. Also present was 1 clear glass fragment and 1 green plastic fragment. The site appears to be primarily a surface deposit, but the actual depth of the site has not been determined.

In addition to the field investigation, the archaeologists for the applicant also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic-period dwellings and/or structures on or within several miles of CA-Riv-9248H. The specific documentary sources examined for this site were unspecified. Artifact types and chronological indicators suggest that the refuse scatter is military in origin, dating from the 1940s. In particular, the bullet blanks suggest a military training exercise indicating that this site may be a contributing element to the DTCCCL. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9248H (P33-18002) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4 and the CRHR, for the purpose of the present analysis.

#### **CA-Riv-9251H (P33-18005)**

This site is a crescent shaped historic-period refuse deposit approximately 3,197 square m (0.24 acres) in area. It is located along the GSEP linear corridor. No vegetation was noted on site except for small patches of low annual grasses. The site surface is characterized by mixed alluvial and Aeolian deposits near a Ford Dry Lake shoreline. Minor seasonal washes trending from northeast to southwest cross the site in unspecified locations. The surface component of the site measures approximately 61 m from east to west and 28 m from north to south. This site consists of a sparse scatter of 8 metal artifacts and 1 chert flake. The metal assemblage is reported to include 2 machine gun cartridges (.30 caliber, blank, M1909, "F A 40", c. 1940), 1 Nescafe coffee can (external thread lid, machine produced), 3 food cans (16 oz, smashed, can opener), 2 military ration cans (10-12 oz, key opened), 1 pocket knife, and 1 fragment of bailing wire. The site appears to be primarily a surface deposit, but the actual depth of the site has not been determined.

In addition to the field investigation, Tetra Tech also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic-period dwellings and/or structures on or within several miles of CA-Riv-9251H (P33-18005). The specific documentary sources examined for this site were unspecified. Artifact types and chronological indicators suggest that the refuse scatter is military in origin, dating from the 1940s. In particular, the bullet blanks suggest a military training exercise indicating that this site may be a contributing element to the DTCCL. The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9251H (P33-18005) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4 and the CRHR, for the purpose of the present analysis.

### **CA-Riv-9254H (P33-18008)**

This site is a triangular shaped historic-period refuse deposit approximately 2,347 square m (0.58 acres) in area. It is located along the GSEP linear corridor. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of sand and gravel alluvium, cut through the center by a northeast/southwest trending seasonal drainage. Recent off-road vehicle tracks (motorcycle or dirt bike) were noted within the site limits. The surface component of the site measures approximately 257 m from northeast to southwest and 179 m from southeast to northwest. This site consists of 20 metal artifacts and 1 clear glass fragment. Concentration 1 is located in the center of the site and measures 7.3 m by 32.3 m. It consists of 11 ration cans (machine crimped, key opened, 10 oz), 3 can lids, and 1 ration can (8-10 oz, machine crimped, key opened). The remaining artifacts form a light scatter across the site. These include 2 sanitary beverage cans (10-12 oz, emergency water, punctured), 3 food cans (8-10 oz, machine crimped, key open), and 1 clear glass fragment. The site appears to be primarily a surface deposit, but the actual depth of the site has not been determined.

In addition to the field investigation, Tetra Tech also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic dwellings and/or structures on or within several miles of CA-Riv-9254H (P33-18008). The specific documentary sources examined for this site were unspecified. The archaeologists for the applicant do not propose a date range for this deposit or associated activities that might have resulted in its placement within the proposed GSEP linear corridor. The archaeologists for the applicant further recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The resolution of the documentation for the deposit makes it difficult to assess the actual date range that it represents, and therefore its potential association with important historic themes. However, this site may be a contributing element to the DTCCL. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site



sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9254H (P33-18008) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4 and the CRHR, for the purpose of the present analysis.

### **CA-Riv-9258H (P33-18012)**

This site is a long, thin, historic-period refuse scatter 9,307 square m (2.3 acres) in area. It is located along the GSEP linear corridor south of I-10 and west of Wiley's Well Road. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of stable and active sand dunes, disturbed by off-road vehicle tracks, modern trash, a modern gas line, two roads, a cement marker, and a USGS Marker (Section 32/33). The surface component of the site measures 298 m from east to west and 107 m from north to south. It consists of approximately 150 historic-period artifacts in five concentrations, with a light scatter of artifacts surrounding them. The artifacts are primarily metal cans with some pieces of glass. The scatter appears to be primarily a surface deposit with occasional artifacts buried by active sand dunes.

Concentration 1 is located in the eastern portion of the site, east of the gas line. It measures 20.4 m by 9.4 m and consists of 11 metal cans. These artifacts include 3 soluble coffee cans (friction lid), 4 ration cans (10-12 oz, /crimped seams/key open), and 4 food cans (16 oz, crimped seams/food/round cut can opener opened). Concentration 2 is located in the eastern portion of the site, just west of the gas line. It measures 13.4 m by 7.6 m and consists of 8 metal cans. These artifacts include 7 ration cans (10-12 oz, /crimped seams/key open), and 1 food can (16 oz, crimped seams/cross cut opened). Concentration 3 is located in the western half of the site near the southern site boundary. It measures 15.2 m by 13.7 m and consists of approximately 48 artifacts. These artifacts include 30-40 food cans (32 oz, crimped seams/round cut can opener opened), 7 coffee cans (12 oz, external thread lid, machine produced, "NESCAFE" type c. 1940s-1960s), and 1 clear glass bottle neck and base fragment (jug, single finger hole neck with external thread lip and metal cap, base Maker's mark Owens Illinois Glass Company, c. 1929-1957). Concentration 4 is located in the western half of the site, immediately north of Concentration 3. It measures 17.1 m by 15.2 m and consists of 26 metal cans. These artifacts include 20 ration cans (10-12 oz, /sanitary/crimped seams/ punctured/beverage e.g. emergency water), 5 food cans (16 oz, crimped seams/round cut can opener opened), and 1 soluble coffee can (friction lid). Concentration 5 is located in the western half of the site, northwest of Concentration 4. It measures 12.2 m by 9.1 m and consists of approximately 35 metal cans. These artifacts include 20-30 ration cans (10-12 oz, /crimped seams/key open), 3 soluble coffee cans (friction lid), 1 beverage can (12 oz, crimped seams/church key open), and 1 aluminum pull-top can.

These five concentrations are surrounded by a light scatter of 23 artifacts. These artifacts include 16 ration cans (12 oz, /sanitary/crimped seams/key opened), 3 ration cans (10-12 oz, /sanitary/crimped seams/punctured/beverage e.g. emergency water), 2 soluble coffee cans (friction lid), 2 other cans (14.5-15 oz., oval/machine crimped/key opened), 1 beverage can (46 oz./crimped seams/juice), and 1 machine gun cartridge (.30 mm caliber, blank, M1909, "F A 40", c. 1940).

In addition to the field investigation, Tetra Tech also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic-period dwellings and/or structures on or within several miles of CA-Riv-9258H (P33-18012). The specific documentary sources examined for this site were unspecified. Artifact types and chronological indicators suggest that the refuse scatter is military in origin, dating from the 1940s. In particular, the bullet blanks suggest a military training exercise indicating that this site may be a contributing element to the DTCCL. The site may also be associated with other construction projects such as Operation Desert Strike (c. 1964) and the construction of the I-10 corridor and the Southern California Gas (c.1960s) line.

Tetra Tech recommends that this site be found ineligible for listing in the NRHP, because of poorly preserved spatial associations of artifacts that are essential to reconstruct the behavior of people who made, used, or discarded archaeological materials. Staff needs further primary field data on the integrity of the deposit and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), in order to determine the potential of this site to yield information important to history. Staff therefore recommends that site CA-Riv-9251H (P33-18005) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4 and the CRHR, for the purpose of the present analysis.

### **CA-Riv-9259H (P33-18013)**

This site consists of two unusual alignments of metal posts which may date to the WWII era. The site measures 1,092 square m (0.27 acres) and is located along the GSEP linear corridor south of I-10 and west of Wiley's Well Road. The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is composed of stable and active sand dunes, disturbed by off-road vehicle tracks and modern trash. The surface component of the site measures 33.5 m from northeast to southwest and 5.2 m from southeast to northwest. The number of posts present in each feature is uncertain. The site form, the photographs, and the site map provide contradictory information. For the purposes of this evaluation, staff assumes that the site map, which has the largest number of stakes, is correct.

Alignment 1 is an 26.8-m-long alignment of metal posts oriented from northwest to southeast. This feature is located east of Alignment 2. Twenty-eight posts form 14 rows of two posts each. The distance within each pair is approximately 1–2 feet. The distance between each pair is approximately the same distance. Each post projects 6–12 inches above the current ground surface, which is an active sand dune. Each post has a square, flat shaft at the top end with an opening measuring about  $\frac{1}{4}$  x  $\frac{1}{4}$  inch. The top opening appears designed to accept something but nothing was found in or around the stake. Alignment 2 is an 11.9-m-long alignment of 13 metal posts oriented from northwest to southeast. Twelve of the posts form six rows of two posts each. The distance within each pair is approximately 1–2 feet. The distance between each pair is approximately the same distance. Each post projects 10–12 inches above the current ground surface. The thirteenth post is located at the northwest end of Alignment 2, in the northernmost position. It is almost entirely covered by sand. Each post has a square, flat shaft at the top end, with an opening measuring about  $\frac{1}{4}$  x  $\frac{1}{4}$  inch. The top opening appears designed to accept something, but nothing was found in or around the

stake. These two features seem to have the same function, but their slightly different orientation suggests that they may have been constructed and used at different times.

Sites CA-RIV-9230H (approximately 1 mile southeast) and site P33-14152 (approximately 2 miles southwest) both contain similar post alignments. P33-14152 was identified during the field surveys for the Blythe Energy Transmission Line Project (BEPTL). The metal posts were recorded as a possible DTC/C-AMA era feature possibly serving as a temporary barrier, as part of a communicative relay system, or to simulate some sort of explosive device (Carrico et al. 2006). This site was determined not to be eligible for listing in the NRHP and the CRHR. While staff agrees that these two sites are not eligible individually, staff considers P33-14152 and CA-RIV-9230H to be contributing elements to the DTCCL. As such, they are eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4 and the CRHR.

Since the original recording of P33-14152, various explosive experts from the US Army Corps of Engineers examined detailed written descriptions and photographs of the metal posts. They concluded that the posts did not appear to be explosive devices (Chris Dalu, personal communication 2008). Due to the unknown nature of the posts, a Tetra Tech explosive expert (UXO Technician III) performed a field inspection of the posts at P33-14152 for the BEPTL project on December of 2008. He suggested that the jagged edges of the posts indicate that they were ripped by low grade explosives such as black powder. He also proposed that the posts served as sand anchors for defensive or minefield-type fencing. Rommel “stakes” would be used for this purpose in firmer soils; however, sandy soils such as those present at this site would require the use of a more effective anchoring system (Keller 2008). Other researchers (Chris Dalu, personal communication 2008) suggest that the posts were “Krypton” light devices that were used to signal aircrafts during night missions in the Palo Verde Area during the DTC/C-AMA World War II training activities. The lights would mark the location of “bomb drop zones”, serving as a reference point for identifying a targets location (Patton 1942). The archaeologists for the applicant do not suggest which of these potential site functions they think is most likely.

The archaeologists for the applicant recommend that this site be found ineligible for listing in the NRHP. Tetra Tech suggests that the integrity of this site is poor because of drifting sand. Staff does not concur. The elements of the two features appear to be *in situ*. Therefore, staff considers site integrity to be good. The resolution of the documentation for the two alignments and the lack of datable artifacts associated with these features makes it difficult to assess the actual date range that they represent, and therefore their potential association with important historic themes. However, the presence of similar features nearby with clear associations with WWII era artifacts, suggests that this site may be a contributing element to the DTCCL. Without further primary field data on the possible function of these features during World War II maneuvers (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that they may retain the potential to yield information important to history. In fact, historic-era features are rare in the GSEP region. In addition, the function of these features is still unknown, and therefore every example has the potential to provide important clues. Staff recommends that site CA-Riv-9259H (P33-18013) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4 and the CRHR, for the purpose of the present analysis.

## **Multiple-Component Archaeological Sites Evaluations and Descriptions**

Staff evaluated one multiple-component archaeological site and recommended that it should be assumed eligible for listing in the CRHR. The historic component of this site is also a potential contributor to the DTCCL.

### **CA-Riv-9205H (P33-17773)**

This is an oblong dual component site measuring 3,844 square m (1 acre) in area. It is located near the southern boundary of the southeast portion of the proposed GSEP site footprint, approximately 116 m south of CA-Riv-9204H (P33-17773). The predominant vegetation on the site appears to be Mojave creosote bush scrub. The present site surface is a slightly raised alluvial terrace of desert pavement. The surface component of the site measures approximately 66 m from east to west and 100 m from north to south.

The more particular physical context for site CA-Riv-9205H, extrapolating information from **Cultural Resources Figure 1** to the location of the site, appears to be within the lake deposits of the QI unit between the 377-foot shoreline and the 370-to-373 foot shoreline (see “Present Process Geomorphology” and “Results of Geoarchaeological Investigations” subsections, above). The possibility of buried cultural resources within the lake deposits is expected to be moderate. However, the depth of these deposits is undetermined. This site is also located in the valley between the McCoy Mountains and Palen Mountains where steeper slopes result in higher-energy sheet wash and in correspondingly poorer preservation of the spatial associations that reflect the behavior of people who made, used, or discarded archaeological materials. Nonetheless, subsurface materials that offer the potential to yield information important to prehistory or history may be present here.

The prehistoric component consists of a light scatter of 8 prehistoric artifacts in the southern portion of the site. The artifacts present include 1 obsidian interior flake, 3 cortical chert flakes, 1 interior basalt flake, 2 quartz monzonite metate fragments, and 1 quartzite mano fragment. This component appears to be primarily a surface deposit, but its actual depth has not been determined.

The historic-period component forms a refuse concentration in the central portion of the site measuring 20 m from east to west and 37 m from north to south. The metal assemblage consists of 50 hole-in-top cans (16 oz, condensed milk, hole-punched), 5 crown bottle caps, 1 smashed metal box, 1 car lamp mount (etched “S+M Lamp Co./MADE IN USA/Los ANGELES/No. 28”), and 1 1983 American penny. The glass assemblage includes more than 50 clear glass bottle fragments (inc. 2 jar rims), more than 20 brown glass bottle fragments (6 bases and 1 jar with maker’s mark). Also present were 5 milky white ceramic dish fragments (melted). This component appears to be primarily a surface deposit, but its actual depth is unknown.

In addition to the field investigation, the archaeologists for the applicant also examined historic maps, BLM records, and other historic documents. They found no evidence of any historic dwellings and/or structures on or within several miles. The specific documentary sources examined for this site were unspecified. Artifact types and

chronological indicators suggest that the refuse scatter is domestic in type, probably from a single dumping episode between the 1920s and 1960s. In addition, the artifacts appear to represent common domestic food and/or military issue rations. The kind of activities that might have resulted in the disposal of these artifacts, are unspecified.

The archaeologists for the applicant suggest no age or functional interpretation for the prehistoric component of this site. However, staff notes that the presence of ground stone may indicate a date of as early as the Late Archaic times (8000 to 6000 cal BC) or as late as the Late Prehistoric (1100 cal BC to Contact). The archaeologists recommend that this site be found ineligible for listing in the NRHP, but do not state their reasons for this recommendation. The sparse character of the surface assemblage and the apparent absence of materials that would facilitate the placement of the deposit in time seem to indicate that the site does not have the potential to yield information important to prehistory. Staff therefore recommends that the prehistoric component of site CA-Riv-9205 (P33-17431) is not eligible for listing in the NRHP or the CRHR.

The archaeologists for the applicant further recommend that the historic-period component should also be found ineligible for listing in the NRHP as it does not appear to be associated with events that made a significant contribution to our history, or with the life of a significant person, and does not exhibit characteristics that would yield additional important information to history. The resolution of the documentation for the deposit makes it difficult to assess the actual date range that it represents, and therefore its potential association with important historic themes. Staff notes that these artifacts date to within the period of significance for the DTCCL (Historic District), 1942 to 1944, suggesting that this site may be a contributing element to the district. Without further primary field data on the integrity of the deposit, possible use of these artifacts during World War II maneuvers, and potential evidence of characteristic military-style trash disposal practices (Bischoff 2000), staff cannot evaluate the site sufficiently to reasonably dismiss the possibility that it may retain the potential to yield information important to history. Staff therefore recommends that site CA-Riv-9205 (P33-17797) be assumed eligible for listing in the NRHP under Criterion D and for the CRHR under Criterion 4 and the CRHR, for the purpose of the present analysis.

## **Cultural Landscape Evaluations and Descriptions**

A cultural landscape consists of “geographic area, including both natural and cultural resources, associated with a historic event, activity or person” (NPS 1996). The National Park Service has defined four overlapping categories of cultural landscapes: historic designed, historic vernacular, historic site, and ethnographic. Historic designed landscapes are deliberate artistic creations, reflecting recognized styles, and are often associated with important builders, building trends, or events in the history of the construction of these kinds of landscapes. Historic vernacular landscapes illustrate people’s values and attitudes towards the land and reflect patterns of settlement, use, and development over time. Historic sites are significant for their associations with important events, activities, and persons. Existing features and conditions are defined and interpreted in terms of what happened there at particular times in the past. Finally, ethnographic landscapes can be spaces rather than things that can be owned. These spaces or places are given meaning through their association with local and regional histories, cultural identities, beliefs, and behaviors. Ethnographic landscapes can

include horizons, unmarked spiritual corridors, and places of connection between the earth's surface and the upper and lower realms. While these kinds of landscapes are often associated with Native Americans, they can be associated with any cultural group or belief system. Cultural landscapes can be determined eligible and nominated for inclusion on the NRHP as either sites or districts. As such, these landscapes can be contiguous or noncontiguous (Evans et al. 2001; NPS 1996).

Staff has identified resources which are contributing elements to two cultural landscapes within the GSEP PAAs. The Prehistoric Trails Network Cultural Landscape has 6 potential contributors within the GSEP facility footprint and linear corridor; 24 potential contributors among the sites identified by Tetra Tech in their CHRIS, Class II, and Class III surveys; and 224 (McCarthy 1993) additional potential contributors identified by Energy Commission staff within the ethnographic PAA. The Desert Training Center California-Arizona Maneuver Area (DTC/C-AMA) Cultural Landscape has 14 potential contributors within the GSEP facility footprint and linear corridor and 19 potential contributors among the sites identified by Tetra Tech in their CHRIS, Class II, and Class III surveys. Each landscape is evaluated for eligibility for listing on the CRHR and NRHP, below.

### **The Prehistoric Trails Network Cultural Landscape**

Energy Commission staff here proposes the designation of a noncontiguous cultural landscape (historic district) that incorporates prehistoric archaeological sites associated with the Halchidhoma Trail (CA-Riv-0053T), referred to here as the Prehistoric Trails Network Cultural Landscape (PTNCL). This landscape consists of important destinations in the Colorado Desert near Blythe, California, the network of trails that tie them together, and the features and sites associated with the trails. Six sites, located within the GSEP facility footprint and linear corridor, are potential PTNCL contributors that would be subject to direct impacts. Thirty additional sites identified by Tetra Tech and 224 sites identified by staff are located within the GSEP ethnographic PAA and would be subject to indirect impacts (**Cultural Resources Tables 7 and 8**).

In the 1990s McCarthy (1993) and a group of volunteers recorded 20 km of the Halchidhoma Trail (CA-Riv-0053T) as it curves around the southern and western side of the McCoy Mountains leading from the Blythe Intaligos (geoglyphs) to McCoy Spring (CA-Riv-0132). They identified 227 trail-associated sites and subsidiary trails associated with the Halchidhoma Trail. McCarthy's report provides the basis for preliminary definitions of the boundaries, thematic associations, property types, and significance period of the PTNCL. The boundaries of this cultural landscape would need to be refined as additional pieces are identified, but in broad terms the boundary extends along the length of the historically known route of the Halchidhoma Trail, from where it begins near Blythe at the Colorado River, continuing to the west through the Chuckwalla Valley towards modern Los Angeles, with a suggested width of 10 m. The period of significance would also need to be refined, but it appears that the prehistoric trail systems of southern California were used for thousands of years. Therefore, as a preliminary measure, Energy Commission staff defines the period of significance as the entire prehistoric and early historic periods. The thematic associations may also need to be expanded in the future, but currently include travel, trade, and ritual. Resource

exploitation, particularly the collection of stone tool and ground stone raw materials, is also an important theme.

Characteristic site types for the PTNCL have been described by archaeologists working in the Colorado and Mojave Deserts for decades. Although the discussion here relies on McCarthy (1993), numerous other descriptions that are just as useful are available (Apple 2005; Cleland 2005). The following list is not comprehensive; it should be added to as needed as new patterns are discovered. The PTNCL site types are divided into three categories: *destinations*, *trails*, and *trail-associated* sites or features.

*Destinations* primarily include water sources, but also include residential, religious, and resource-collection sites. Water-oriented destinations include natural features such as rivers, springs, lakes, rainwater tanks, as well as man-made wells. Residential sites include villages and camps with evidence of a full range of activities. Religious sites include geoglyphs and petroglyphs. The importance of particular destinations is indicated by the web of multiple trails that converge on certain places, often mountain passes or water sources.

*Trails* can either be created by the movement of traveling feet or formally constructed. They average 30 cm in width and can be traced for many km, interrupted only by gullies and washes. Trails are usually the shortest and most convenient routes from one point on the landscape to another.

*Trail-associated sites or features* could include: concentrations of ceramics/pot drops, cleared circles, rock rings, rock clusters, rock cairns, rock alignments, petroglyphs, and geoglyphs. When the trail itself is not preserved, its route can often be approximately traced by distinctive patterns of trail-associated sites and features.

The foundation of this cultural landscape is the 227 sites recorded by McCarthy (1993). Only three of these 227 sites were identified by Tetra Tech in their survey of previous research in the region (CA-Riv-0053T, CA-Riv-0132, and CA-Riv-3129). The largest of these sites, and the prehistoric focus of the entire region, is McCoy Spring National Register District (CA-Riv-0132). The site is located on the west side of the McCoy Mountains approximately 5 miles from the Wiley's Well Road Rest Area. This resource is already listed on the NRHP and the CRHR. It was nominated in the 1980s under NRHP Criterion D (similar to CRHR Criterion 4) for its ability to provide information important to the prehistory of the Mojave Desert. At this site, thousands of petroglyph elements are found on scattered outcrops, talus, and float boulders at the inflection of the bajada and the mountain face. The bajada is dissected by one major and several minor arroyos. Within an alcove in the largest arroyo is a small spring that was the focus of prehistoric Native American activity. Present-day vegetation is part of the creosote bush scrub plant community. Also present at the site is a midden deposit with ceramics, lithics, and ground stone. Portions of at least eighteen prehistoric trails and a prehistoric camp site with sleeping circles are also present. One historic-period feature is noted—an access road associated with nearby mining activities and historic cross-country automobile travel.

The significance of the site has been primarily associated with the petroglyphs. Present here are at least 2,141 boulders with over 3,360 rock art panels and at least 7,500

individual design elements, forming the largest concentration of petroglyphs in the region. No other recorded site within the region approaches the density, number, and aesthetic value of the petroglyphs found within the immediate area of McCoy Spring. Two important styles are represented at the site, the Great Basin Abstract style and the Colorado Desert Representational style (Hedges 1973). Also important is the presence of a midden deposit at this site. Stratified refuse deposits are rare in the region, and, as a result, each one of them holds the potential of yielding unique information on the prehistory of the California desert. At the time of the nomination, the site integrity was good and vandalism was minimal. Protection of the site has been aided by the erection of a fence in the 1970s and an aluminum barrier across the road and major wash to prevent vehicle access to the petroglyphs.

Four other important prehistoric destinations were identified by McCarthy (1993) in the McCoy Mountains. These water tanks (CA-Riv-0523, CA-Riv-3149, CA-Riv-4569, and CA-Riv-4699) share many features with McCoy Springs: they are along the main Halchidhoma Trail (CA-Riv-0053T), they are the focus of multiple smaller trails, and rock art is found there.

Other cultural resources should be added to the list of contributors as a connection to the Halchidhoma Trail or the web of associated smaller trails can be demonstrated. Energy Commission staff identified potential contributors to the PTNCL using the following criteria:

1. The site consists entirely of prehistoric ceramics;
2. The site contains a concentration of ceramics similar to a “pot drop”;
3. An existing trail leads in the direction of a site;
4. The site is near a steady supply of water;
5. The site is large, has evidence of a broad range of activities, and otherwise has evidence it was a habitation site; and/or
6. The site is a trail.

Energy Commission staff recommends that the PTNCL is eligible for listing on the NRHP under Criteria A and D and for the CRHR under Criteria 1 and 4.

Under Criteria A/1, a resource is eligible if it is associated with “events that have made a significant contribution to the broad patterns of our history”. In the context of a Native American site where its importance is not recorded in written form, National Register Bulletin 38 (NPS 1998, pp. 12–13) makes it clear that the word “our” refers to the group that finds the property significant and “history” includes both traditional oral and written history. Important events can include specific events, or repetitive trends. Places referred to in Native American oral histories and creation stories, therefore, are potentially eligible.

Native American groups in the Mojave Desert consistently accord mythological importance to springs, petroglyph sites, and particularly trails systems. Trails across the



desert mark the locations of travels of ancestral groups as they migrated to the confluence of the Gila and Colorado Rivers. Trails also facilitate dream travel to these places and the times when events mentioned in story and song occurred (Cleland 2005, p. 132). The particular trail that forms the connecting link for this cultural landscape, the Halchidhoma Trail (CA-Riv-0053T), is well known from multiple historical and ethnographic sources. It was an essential trade, transportation, and ritual route for Native American peoples and early European visitors in the Colorado Desert during prehistoric and historic times. This route was an essential connection between the Pacific Coast and the Southwestern deserts of Arizona and New Mexico.

Energy Commission staff considers the resources that make up the PTNCL to be significant under NRHP Criterion A (CRHR Criteria 1), for their ties to important events in American history. However, most property types associated with the PTNCL exist today as archaeological resources, such as petroglyphs, pot drops, cleared circles, and webs of intersecting trails. These sites are also considered register-eligible under Criterion D/4 for their ability to yield information important in history and prehistory.

Six sites, located within the GSEP facility footprint and linear corridor, are potential PTNCL contributors expected to be subject to direct impacts. Three of these sites are considered eligible, and the 3 others are assumed eligible, for inclusion in the NRHP. The remaining 248 sites are located within the GSEP ethnographic PAA and are expected to be subject to indirect impacts. All of these sites are eligible for listing in the NRHP as contributors to the PTNCL (**Cultural Resources Tables 8 and 11**).

**CULTURAL RESOURCES Table 11**  
**Potential Contributors to the Prehistoric Trails Network Cultural Landscape**  
**in the Vicinity of the GSEP**

Resource	Description	When Found	Period/ Era	Location	Info Source
<u>Prehistoric</u>					
CA-Riv-0053T	Trail: 22+ km, leads from Colorado River to McCoy Spring around south and west side of McCoy Mountains, multiple associated sites and features.	Previously known	Prehistoric	In Ethnographic PAA	McCarthy 1993
CA-Riv-0132 (P33-00132)	Temporary Camp: McCoy Spring National Historic District, 40 acres, at spring, 18 trails, 3000+ rock art images, 1000+ artifacts, midden, rock rings, cleared circles.	Previously known	Prehistoric	In Ethnographic PAA	McCarthy 1986, 1993
CA-Riv-0260 (P33-00260)	Temporary Camp: 62 acres near lake edge, 1000+ artifacts, ceramics, lithics, ground stone, FAR. 5 concentrations, buried deposits, pot drops.	Previously known	Prehistoric	Linear Corridor	Ramirez 2008 (update)
CA-Riv-0663 (P33-00663)	Temporary Camp: 186 acres, 1000+ artifacts, lithics (jasper, quartzite, rhyolite, chert, and chalcedony) 1 Corner Notched projectile point fragment, 1 biface fragment, ceramics (Parker buffware and Tizon brownware, and greyware), mano and metate fragments some of green shale, FAR, and 1 rock alignment. May include CA-Riv-6900.	Previously known	Prehistoric	Linear Corridor	Palette et al., 1989 Farmer et al., 2010
P33-01222	Temporary Camp: located near dry lake shore (n=100+), 7 loci of metates and manos, debitage of quartz and chalcedony cores and flakes. Site disturbed by ORV.	Previously known	Prehistoric	In Ethnographic PAA	Cook 1976
P33-01818	Ceramic Scatter: 53 sherds, Tumco Buff, pot drop	Previously known	Prehistoric	In Ethnographic PAA	Carrico 1980
P33-01840	Artifact Scatter: just south of I-10, 2 pot drops (n=71), 2 lithics, 1 ground stone fragment.	Previously known	Prehistoric	In Ethnographic PAA	Musser & Boyer 1976
P33-02157	Temporary Camp: along lake edge, near I-10, artifacts (n=30+), ceramic (buff/ Tizon brown ware), ground stone fragments (metates/manos), lithic flakes (quartz/green andesitic meta-volcanic).	Previously known	Prehistoric	In Ethnographic PAA	Cardenas 1981

Resource	Description	When Found	Period/ Era	Location	Info Source
CA-Riv-2159 (P33-02159)	Temporary Camp: (n=100s) with 5 loci, and 1 pot drop (n=7), along lake edge, lithics (flakes: rhyolite, basalt, chalcedony, agate, jasper, chert, granite, andesite) and ground stone (manos, metates, hammerstones).	Previously known	Prehistoric	In Ethnographic PAA	Cardenas 1981
P33-03129	Trail: 3.5 km long, leads to the southwestern side of the McCoy Mountains.	Previously known	Prehistoric	In Ethnographic PAA	McCarthy 1991
P33-03801	Ceramic Scatter: (n=5) Parker buffware sherds, pot drop	Previously known	Prehistoric	In Ethnographic PAA	Palette et al. 1989
P33-03808	Ceramic Scatter: (n=7) Tumco Red-on-buff sherds, pot drop	Previously known	Prehistoric	In Ethnographic PAA	Mooney & Associates 1990
P33-03809	Ceramic Scatter: (n=7+) Tumco buff sherds, pot drop	Previously known	Prehistoric	In Ethnographic PAA	Mooney & Associates 1990
CA-Riv-6900	Temporary Camp: (100+), lithics, ground stone. Possibly part of CA-Riv-0663.	Previously known	Prehistoric	In Ethnographic PAA	BLM 1977
CA-Riv-9037 (P33-17421)	Temporary Camp: near lake shore, artifacts (n=17), lithics, ground stone, 1 brownware sherd, 5 concentrations of FAR.	GSEP Class II	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9055 (P33-17439)	Temporary Camp: near lake shore, artifacts (n=53) including debitage, ground stone, ceramic fragments, FAR concentration.	GSEP Class II	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9064 (P33-17448)	Temporary Camp: near lake edge, artifacts (n=120+), 2 concentrations, 3 projectile points, 2 bifaces, 2 ground stone. Possibly Archaic period.	GSEP Class II	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9071 (P33-17455)	Temporary Camp: 78 acres, 4 concentrations (n=250+), lithics, ceramics, ground stone, FAR.	GSEP Class II	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9072 (P33-17456)	Temporary Camp: 350 acres, artifacts (n=1000+), debitage, Rose Spring projectile point (AD 200 to 1100), brownware sherds, FAR, ground stone. May be part of CA-Riv-9078.	GSEP Class II	Prehistoric	In Facility Footprint	Farmer et al. 2009
CA-Riv-9078 (P33-17462)	Temporary Camp: (n=3000+) artifacts, 2000 ground stone, lithics, FAR. Milling tool manufacturing? May be part of CA-Riv-9072.	GSEP Class II	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9079 (P33-17463)	Temporary Camp: artifacts (n=500+), lithics, 5 ground stone, 1 marine clam shell fragment.	GSEP Class II	Prehistoric	In Ethnographic PAA	Farmer et al. 2009

Resource	Description	When Found	Period/ Era	Location	Info Source
CA-Riv-9226 (P33-17795)	Temporary Camp: near lake shore (n=100+), lithics, 3 brownware sherds, 70 FAR, ground stone.	GSEP Class III	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9227 (P33-17796)	Artifact Scatter: (n=18), lithics, brownware sherds (n=14) pot drop, 1 marine shell fragment	GSEP Class III	Prehistoric	Linear Corridor	Farmer et al. 2009
CA-Riv-9249 (P33-18003)	Ceramic Scatter: Brownware sherds (n=20) pot drop.	GSEP Class III	Prehistoric	Linear Corridor	Farmer et al. 2009
CA-Riv-9250 (P33-18004)	Artifact Scatter: (n=75) 1 concentration with 2 pot drops (33 and 29 sherds) Brownware sherds, 9 lithics, 3 FAR.	GSEP Class III	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
CA-Riv-9255 (P33-18009)	Artifact Scatter: (n=40+) artifacts, 10 Brownware "pot drop" sherds, 4 Brownware sherds, 3 Redware sherds, lithics, 3 FAR, 1 ground stone.	GSEP Class III	Prehistoric	Linear Corridor	Farmer et al. 2009
CA-Riv-9260 (P33-18014)	Artifact Scatter: (n=108+) artifacts, 100 Brownware "pot drop" sherds, 7 other Brownware sherds, 1 chert uniface.	GSEP Class III	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
P33-17977	Ceramic Scatter: (n=11) Brownware sherds pot drop	GSEP Class III	Prehistoric	In Ethnographic PAA	Farmer et al. 2009
P33-01131	Artifact Scatter: Widely dispersed low density pot drop: 50 Tizon brownware sherds, 1 mano, 1 core fragment.	Previously known	Prehistoric	In Ethnographic PAA	Dittman 1981
<u>Dual-Component</u>					
P33-01516	Temporary Camp/Refuse Scatter: (n=1000+) along dry lake shoreline, ground stone, lithic scatter, thermal fractured rock. WW II military artifacts.	Previously known	Prehistoric /Historic	In Ethnographic PAA	Ritter 1975
CA-Riv-9224 (P33-17793)	Temporary Camp/Refuse Scatter: Prehistoric (n=60+), 2 concentrations, FAR in 2 possible hearths, brownware pot drop (n=28+), 1 Desert Side-notched projectile point (AD 1100 to Contact), Historic (n=6) .45 caliber bullets, mess-kit spoon stamped "US", C-ration coffee can, pocket knife. Possibly part of CA-Riv-260.	GSEP Class III	Prehistoric /Historic	In Ethnographic PAA	Farmer et al. 2009

Energy Commission staff concludes that GSEP impacts to the established contributors to this register-eligible cultural landscape, if unavoidable, must be mitigated.

## Desert Training Center California-Arizona Maneuver Area

Energy Commission staff here proposes the designation of a contiguous cultural landscape (historic district) that incorporates historical archaeological sites (**Cultural Resources Table 12**) associated with Gen. Patton's World War II Desert Training Center California-Arizona Maneuver Area (DTC/C-AMA) (DTCCL) in the Chuckwalla Valley and on the Palo Verde Mesa. This landscape extends beyond the GSEP archaeological PAA, but has 14 potential contributors within the GSEP facility footprint and linear corridor. These sites are expected to be subject to direct impacts from GSEP. An additional 19 potential DTCCL contributors were identified by Tetra Tech in their CHRIS, Class II, and Class III surveys, but the applicant expects that these sites would not be impacted by the project.

**CULTURAL RESOURCES Table 12**  
**Potential Contributors to the DTC/C-AMA Cultural Landscape**  
**in the GSEP PAAs**

Resource	Description	When Found	Period/ Era	Location	Info Source
<u>Historical</u>					
P33-01483	Historic Feature: Military mound, horseshoe-shaped, low earth mound. (1940s)	Previously known	Historic	Vicinity	Crowley 1978
P33-13598	Refuse Scatter: (n=8+) WW II era cans.	Previously known	Historic	Linear Corridor	Mooney & Associates 2004
P33-13655	Historic Feature and Refuse Scatter: Possible WW II foxholes and cans (1940s)	Previously known	Historic	Avoided	Mooney & Associates 2004
CA-Riv-9035H (P33-17419)	Refuse Scatter: Cans, bottle glass, misc.	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9059H (P33-17443)	Refuse Scatter: Can scatter. Prehistoric FDLA-Iso-10 recorded within site boundaries.	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9063H (P33-17447)	Refuse Scatter: Cans, spoon (military), pliers.	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9074H (P33-17458)	Refuse Scatter: WW II era cans and bottles.	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9077H (P33-17461)	Refuse Scatter: Cans and bottles (1940s).	GSEP Class II	Historic	Avoided	Farmer et al. 2009
CA-Riv-9203H (P33-17772)	Refuse Scatter: Pull-tab aluminum cans, food cans, bottle (1954-pres)	GSEP Class III	Historic	In Facility Footprint and Linear Corridor	Farmer et al. 2009
CA-Riv-9204H (P33-17773)	Refuse Scatter: Can scatter, bottles (1932-1953)	GSEP Class III	Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9211H (P33-17780)	Refuse Scatter: Cans, bottle glass, 1934 penny	GSEP Class III	Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9213H (P33-17782)	Refuse Scatter: Approximately 60 cans.	GSEP Class III	Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9214H (P33-17783)	Refuse Scatter: Approximately 10 cans.	GSEP Class III	Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9225H (P33-17794)	Refuse Scatter: 7 cans, mess-kit fork (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009

Resource	Description	When Found	Period/ Era	Location	Info Source
CA-Riv-9228H (P33-17797)	Refuse Scatter: 10 cans, bottle base (1938-1951), bottle base (1916-1931), razor blade, glass fragments (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9230H (P33-17799)	Historic Feature and Refuse Scatter: stake alignment and 30+ C-ration cans, 13 other cans (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9245H (P33-17999)	Refuse Scatter: 8 cans, "New Texaco Motor Oil" can (c. 1937), 1 "Dietz All Weather" kerosene construction flare, Aladdin Industries "Aladdins Economy Thermos Bottle"	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9246H (P33-18000)	Refuse Scatter: 1 metal shoe last, 2 small donkey/pony shoes, 1 brass compass w/plastic lens, 5 C-ration cans, 1 Prince Albert style tobacco tin, 1 white milk glass jar w/metal lid embossed Mentholatum/ Reg/ Trade/ Mark (c.1960-post)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9248H (P33-18002)	Refuse Scatter: 8 .30 caliber machine gun cartridges (stamped base 1938 and 1940), 12 gauge shotgun shell brass, 1 coffee can "Nescafe" (c. 1940s-1960s), 13 cans, automobile leaf spring, razor blade, metal fragments (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9251H (P33-18005)	Refuse Scatter: 2 .30 caliber machine gun cartridges (stamped base 1940), 1 threaded lid coffee can, 2 C-ration cans, 1 pocket knife, 3 cans, bailing wire (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9252H (P33-18006)	Refuse Scatter: 1 amber glass beer bottle (Anchor Hocking post 1937), 4 C-ration cans, 7 sanitary cans (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9253H (P33-18007)	Refuse Scatter: 1 C-ration can, 6 sanitary cans, 1 large beverage can, glass fragment (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9254H (P33-18008)	Refuse Scatter: cans (N=12)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9258H (P33-18012)	Refuse Scatter: 61 C-ration cans, 7 soluble coffee cans, 72 cans, 1 .30 caliber machine gun cartridge (stamped base 1940), glass bottle fragments (Owens Illinois c. 1929-1957), 7 coffee cans external thread lid (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009

Resource	Description	When Found	Period/ Era	Location	Info Source
CA-Riv-9259H (P33-18013)	Historic Feature: Stake Alignments: (n=2) (1940s military?)	GSEP Class III	Historic	Linear Corridor	Farmer et al. 2009
CA-Riv-9261H (P33-18015)	Refuse Scatter: 6 C-ration cans, 1 soluble coffee can, 1 tobacco tin (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9262H (P33-18016)	Refuse Scatter: 80 C-ration cans, 4 soluble coffee cans, 1 military mess fork stamped "US", 1 tobacco tin (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
CA-Riv-9263H (P33-18017)	Refuse Scatter: 17 C-ration cans, 1 cone-top can, 6 tobacco tins, 1 boot sole, 1 gas tank cap, 1 clear glass bottle (Owens Illinois c. 1929-1959), 1 large bolt, 1 D-size battery (1940s military?)	GSEP Class III	Historic	Avoided	Farmer et al. 2009
<u>Dual-Component</u>					
P33-01516	Temporary Camp/Refuse Scatter: (n=1000+) along dry lake shoreline, ground stone, lithic scatter, thermal fractured rock. WW II military artifacts.	Previously known	Prehistoric /Historic	In Ethnographic PAA	Ritter 1975
CA-Riv-9205H (P33-17774)	Artifact Scatter/ Refuse Scatter: Debitage (n=4); mano, 2 metate fragments. Glass bottles (post 1945), auto parts (1930-1940), condensed milk cans.	GSEP Class II	Prehistoric /Historic	In Facility Footprint	Farmer et al. 2009
CA-Riv-9082H (P33-17466)	Lithic Scatter/Refuse Scatter: Debitage (n=3). Cans (n=6)	GSEP Class II	Prehistoric /Historic	Avoided	Farmer et al. 2009
CA-Riv-9224 (P33-17793)	Temporary Camp/Refuse Scatter: Prehistoric (n=60+), 2 concentrations, FAR in 2 possible hearths, brownware pot drop (n=28+), 1 Desert Side-notched projectile point (AD 1100 to Contact), Historic (n=6) .45 caliber bullets, mess-kit spoon stamped "US", C-ration coffee can, pocket knife. Possibly part of CA-Riv-260.	GSEP Class III	Prehistoric /Historic	Avoided	Farmer et al. 2009
CA-Riv-9247 (P33-18001)	Ceramic Scatter/Refuse Scatter: Brownware sherds (n=3), 4 C-ration cans, 13 sanitary cans, 1 nut and bolt, 1 clear glass jar – Armstrong Cork Company (c.1938 -1969)	GSEP Class III	Prehistoric /Historic	Avoided	Farmer et al. 2009
<u>Unknown</u>					
CA-Riv-0259 (P33-00259) or (P33-13656)	Prehistoric Rock Rings or WWII era foxholes with refuse scatter?	Previously known	Unknown	Linear Corridor	Gester 1965 Mooney & Associates 2004

The BLM has nominated this district to the NRHP several times. Each time the nomination was rejected mainly because the resource was not yet 50 years old at the time of the nomination. As part of the nomination process, BLM sponsored a detailed archaeological study of the resource which resulted in the publication of a cultural context (Bischoff 2000). Staff notes that the resource is currently more than 50 years old and proposes to accept the boundary, thematic associations, property types, and significance period as laid out in Bischoff's context (2000). The relevant themes include U.S. Preparation for World War II, U.S. Military Training, Gen. George S. Patton, Jr., and Gen. Walton Walker. Depots, airfields, ranges, bivouacs, maneuver areas, camps, and hospitals are among some of the property types included in the district. Following Bischoff (2000), the significance period is preliminarily defined as 1942–1944.

Energy Commission staff recommends that DTCCL is eligible for listing on the NRHP under Criterion D (CRHR Criterion 4). The DTC/C-AMA was the largest and the only such military training facility in American military history. The training that took place here undoubtedly helped to win World War II. Most property types associated with the DTC/C-AMA, across the full extent of the resource, exist today as archaeological resources, such as refuse deposits, tank tracks, foxholes, and bivouacs. These sites would be considered primarily eligible under NRHP Criterion D (CRHR Criterion 4) for their ability to yield information important in history.

Military records report that the Chuckwalla Valley and portions of the proposed project's PAAs were primarily used as maneuver areas, campsites, and small group training areas. Here soldiers practiced desert survival and infiltration techniques. The remains of these smaller exercises are undoubtedly more ephemeral than those involving 15,000 men, however, evidence may still be present. Artifacts and features associated with them would most likely be shell casings, grenade containers, foxholes, C-ration cans, and other refuse (Bischoff 2000, p. 116). Wiley's Well was used as a campsite on multiple occasions. The presence of water at the site undoubtedly contributed to its importance. During maneuvers in 1943, the signal company's pigeon detachment set up a false camp at Wiley's Well, fooling the opposing side into thinking that there was a full headquarters at the camp (Bischoff 2000, p. 117). Evidence of these specific activities may still be present within the GSEP site footprint.

Fourteen historic-period archaeological sites and 1 dual-component site, identified within the GSEP site footprint and the linear facilities corridor, are potentially contributing elements to the DTCCL. The information provided in the AFC was not sufficient to allow staff to determine the eligibility of these resources. Therefore, staff recommends that these sites, as contributors to the DTCCL, be assumed eligible for inclusion in the NRHP and the CRHR. Staff also recommends that impacts to them, if unavoidable, be mitigated by data recovery.

### **C.3.5.3 Built-Environment Resource Evaluations and Descriptions**

To staff it appears that two linear built-environment resources in the proposed GSEP built-environment PAA may be impacted by the project. These resources include a historic-period road and a historic-period electric transmission line. Descriptions and evaluations of the NRHP and CRHR eligibility of the two resources are presented below. The historian for the applicant recorded these two resources but did not provide



any recommendations regarding their eligibility for listing on the NRHP or CRHR (Farmer et al. 2009, app. F).

### **Wiley's Well Road**

Wiley's Well Road is a historic-period road that consists of both an unimproved dirt two-track owned and maintained by the BLM and a 40-foot-wide, two-lane paved road owned and maintained by Riverside County. Transportation infrastructure associated with this road appears to include Wiley's Well, the I-10 overcrossing, Wiley's Well Road Rest Area, and possibly McCoy Spring. The road intersects with the proposed GSEP linear facilities corridor in two places, south of I-10 and near the Wiley's Well Road Rest Area. The paved portion of the road begins at Wiley's Well Road Rest Area, on the north side of I-10, and crosses I-10 heading south to Chuckwalla State Prison. The unimproved portion of the road extends north from Wiley's Well Road Rest Area between the Palen and McCoy Mountains in the direction of McCoy Spring and the abandoned mining town of Midland. A number of roads intersect near the Midland ghost town site, and the route of the road beyond this area is unclear. South of the Chuckwalla State Prison, the unimproved section of the road continues for 9 miles until it intersects with the old Bradshaw Trail. This is the location of Wiley's Well, which is currently a BLM campground and rock-hounding site. The road continues south through BLM-managed land towards the Salton Sea.

Wiley's Well Road appears on historic maps in the 1930s after improvements were made to U.S. Highway 60-70, which it intersects. During this period, Wiley's Well Road was an unimproved dirt and gravel road. Historic maps indicate that by 1951 Wiley's Well Road had been improved and was a graded dirt road for the first five miles south of Highway 60-70 and continued southerly as an unimproved road. The road was improved when it was extended north, past Highway 60-70, to connect with roads that traversed the Palen and McCoy Mountains in the direction of McCoy Spring and the mining town of Midland. Improvements were again made to Wiley's Well Road in 1969 when part of the alignment of Highway 60-70 became I-10 when that freeway was constructed. Wiley's Well overcrossing was constructed over both eastbound and westbound lanes of I-10, and a portion of Wiley's Well Road was paved; the remainder was left as a dirt road. In 1987, Wiley's Well Road was again improved when Chuckwalla State Prison was constructed. The prison can be accessed from Wiley's Well Road and is to the southwest of the Wiley's Well Road interchange with I-10. The alignment of Wiley's Well Road has remained the same over time (Farmer et al. 2009, app. F).

Wiley's Well Road is associated with three historic migrations tied to mining discoveries in southern California and nearby parts of Arizona. First, this road is important as an offshoot of the Bradshaw Trail. This was an overland stage route pioneered by William Bradshaw in 1862 connecting San Bernardino, via San Gorgonio Pass, Palm Springs, and the north shore of the Salton Sea, eventually reaching the Colorado River near Blythe. This route followed traditional Indian trails and was used between 1862 and 1877 to transport miners and other passengers to the gold fields at La Paz (Ehrenberg), Arizona. A second mining boom in the Blythe area began in 1907. Wiley's Well Road was named for A. P. Wiley, storekeeper and postmaster in Palo Verde (just south of Blythe). Wiley financed miners prospecting in the area and in 1907 financed an

expansion of the well first established 1896 by a stagecoach company using the Bradshaw Trail. The well was used by cattle ranchers, prospectors, and early automobile travelers until the rapidly falling water table made the water difficult to access and too salty to drink (Farmer et al. 2009, app. F). Around this same time, gypsum was found in the McCoy Mountains. A mining town, Midland, was established here. From 1925 to the 1960s, Midland was a company town owned by the U.S. Gypsum Co. The company harvested vast amounts of gypsum from the area. At its peak, the town had a population of approximately 1,000. The improvements to Wiley's Well Road in the 1940s and 1950s appear to extend the road past McCoy Spring to Midland.

Based on the information above, staff concludes that Wiley's Well Road is associated with important historic trends in regional community and economic development and is therefore eligible for listing on the CRHR under Criterion 1. There appear to be two periods of significance. The first period is 1862 to 1877, when the road was associated with the Bradshaw Trail and the gold mines in La Paz, Arizona. The second period of significance was between 1907 and the 1960s when the road was a transportation corridor to the gypsum mines of Midland. During both of these periods the road was an unimproved, dirt two-track road crossing a relatively empty and forbidding desert. As such, staff suggests that the paved sections of Wiley's Well road and their associations with the rest area, I-10, and Chuckwalla State Prison do not retain integrity of setting, integrity of feeling, or integrity of association. However, the unimproved sections of Wiley's Well Road do appear to retain the integrity of the original, rural desert, two-track road. Only these unimproved sections of the road are therefore eligible for listing on the CRHR under Criterion 1.

Wiley's Well Road does not appear to be eligible for listing on the CRHR under any other criteria. Although the well was named after A. P. Wiley and the road after the well, the road gets its main significance from its association with the Bradshaw Trail and the mining boom in La Paz, rather than an association with this individual. Therefore, the road does not appear to be eligible for listing on the CRHR under Criterion 2. According to the documentation provided by the historian for the applicant, both the unimproved dirt and paved portions of the road were built using standard construction techniques. Therefore the road does not appear to embody a distinctive type, period, or method of construction, and is not eligible for listing on the CRHR under Criterion 3. Finally, the road and its associated transportation infrastructure are also not eligible for the CRHR under Criterion 4 because they do not appear to contain important scientific data related to our history.

### **Blythe-Eagle Mountain Transmission Line**

The 161-kV Blythe-Eagle Mountain Transmission Line runs 52.1 miles from Blythe-Eagle Mountain Substation to Dunes Substation in Blythe. It was built in the 1950s using H-frame wood poles, some of which were replaced in 2002. This linear resource intersects with the proposed linear facilities corridor where the transmission line cuts diagonally to the north avoiding the Wiley's Well Road Rest Area.

The present electrical transmission line system operates in the 220–500-kV range. These lines move bulk power into and around the system to high-voltage substations in

the area, where the power is converted down to sub-transmission levels of 115–33 kV. Before 1913, the highest voltage lines in the Los Angeles area were operated in the 10–75-kV range. Some of the earliest distribution lines were built to serve rural communities. During the 1930s any circuits built were those that extended lines previously constructed in the 1920s. Many of these lines focused on following railroad spur lines and existing distribution lines to growing communities. During the late 1920s, the Colorado River Valley, where the study area is located, was provided with electricity by Southern Sierras Power and its subsidiaries. With the end of WW II, a boom in population occurred throughout the state. New industries and new residents came to California, including thousands of military men and their families. As populations grew, more utility customers were added, prompting Southern California Edison and other electrical companies to expand their services. This growth meant that more lines were constructed and extended. In the 1950s, when the Blythe-Eagle Mountain transmission line was constructed, Blythe had a large population, due to its fertile agricultural lands and the advent of the railroad and the automobile, which brought new residents to the area. In 1940 the population of Blythe was approximately 2,350, and by 1950 the population was over 4,000 (Farmer et al. 2009, app. F).

Typically, electrical transmission and distribution facilities that are evaluated CRHR-eligible achieve that status by way of their association with other historically significant facilities (that is, eligibility under Criterion 1). Borrowed from telegraph transmission technology, wood-pole support structures such as those used in the 161-kV Blythe-Eagle Mountain Transmission Line have been used for electrical transmission or distribution lines from the outset, and the technology has changed very little. The common and non-distinctive nature of wood-pole transmission or distribution line structures disqualify them as potentially CRHR-eligible under Criterion 3, being purely functional and utilitarian in use and common in appearance. A wood-pole transmission or distribution line could, however, be significant under Criterion A and/or Criterion B by way of an association with a significant facility (Taylor 2005).

Staff concludes that the 161-kV Blythe-Eagle Mountain Transmission Line is not eligible for inclusion in the CRHR. Evaluated under Criterion 1, this linear resource is not associated with events that have made a significant contribution to broad patterns in our history. Rather it represents a common trend within the context of residential development of the United States after World War II. Research did not indicate that this transmission line was associated with any historically significant persons, and so it does not appear to be eligible under Criterion 2. Under Criterion 3, this transmission line does not embody a distinctive type, period, or method of construction. Instead, it represents a fairly standardized type and construction method shared with telegraph lines. This resource is also not eligible under Criterion 4 because it is unlikely to yield information important to history.

### **Summary of NRHP- and CRHR-Eligible Cultural Resources for the Genesis Solar Energy Project**

Forty-three individual resources were identified within the GSEP PAAs. Staff recommends that 15 of the prehistoric archaeological resources in the GSEP plant footprint and linear facilities corridor are not eligible for listing on the NRHP and the

CRHR. These sites are all extremely small artifact scatters that appear to be random collections of isolates.

There are presently 24 further resources in the proposed GSEP site footprint and linear facilities corridor that staff assumes are eligible for listing in the CRHR for the purpose of the present siting case. These resources include 9 prehistoric sites, 14 historical archaeological sites, and the historic-period component of 1 multi-component site. Six of the prehistoric sites within the GSEP footprint and linear facilities corridor may be contributing elements to the PTNCL. All 15 of the historical archaeological sites have the potential to be contributing elements to the Desert Training Center California-Arizona Maneuver Area Cultural Landscape (Historic District).

Staff recommends that 6 of these 43 resources are eligible for listing on the NRHP and the CRHR. These resources are, consequently, historical resources for the purposes of CEQA. They include:

1. DTCCL (Historic District),
2. PTNCL (248 additional resources with indirect impacts)
3. Archaeological Resource CA-Riv-0260 (contributor to PTNCL),
4. Archaeological Resource CA-Riv-0663 (contributor to PTNCL),
5. Archaeological Resource CA-Riv-9072 (contributor to PTNCL), and
6. Built-environment Resource Wiley's Well Road.

The eligible portion of the Wiley's Well Road is not within the built-environment PAA, and is therefore the applicant expects that it would not be impacted.

By benefit of the Energy Staff's recommendations, these assumed-eligible and recommended-eligible resources are historical resources under CEQA, and the consideration of the character of the impacts of the proposed project on them is a requisite part of the present analysis. A program to mitigate those impacts is presented below.

## **C.3.6 ASSESSMENT AND MITIGATION OF IMPACTS**

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Having identified cultural resources that are recommended as eligible for either or both the NRHP and the CRHR, staff then identified GSEP impacts to those resources and assessed the severity of them.

### **C.3.6.1 METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE OF IMPACTS TO HISTORICAL RESOURCES**

Under CEQA, "a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment" (Pub. Resources Code, § 21084.1). Thus, staff analyzes whether a proposed project would cause a substantial adverse change in the significance, that is,

the CRHR eligibility, of all historical resources identified in the Cultural Resources Inventory as CRHR eligible. The degree of significance of an impact depends on:

- The cultural resource impacted;
- The nature of the resource's historical significance;
- How the resource's historical significance is manifested physically and perceptually;
- Appraisals of those aspects of the resource's integrity that figure importantly in the manifestation of the resource's historical significance; and
- How much the impact will change those integrity appraisals.

Staff usually applies the above criteria to power plant projects, but, under the approach staff employed for the SA/DEIS, all GSEP project-related direct, indirect, and cumulative construction impacts to known cultural resources located in the PAAs that the Energy Commission staff did not determine to be ineligible for either the NRHP or the CRHR were assumed to be significant. Staff, however would not assume that all direct, indirect, and cumulative construction impacts to yet-to-be-discovered cultural resources would be significant, but would be assessed at the time of discovery, applying the above criteria. Staff recommends that these impacts be avoided or mitigated by means of data recovery.

### **C.3.6.2 CONSTRUCTION IMPACTS TO NRHP- AND CRHR-ELIGIBLE CULTURAL RESOURCES**

To determine the GSEP's impacts, staff developed a concept of the area in which cultural resources would be impacted by the project as one large, three-dimensional spatial block—an "impact block," entailing the full extent of the project's below-grade impacts (inclusive of all foundations and trenches) and above-grade impacts (inclusive of all above-ground facilities), and delimiting both the project's physical impacts to surficial and buried cultural resources and perceptual impacts to the settings of built-environment resources. Staff has assumed that all cultural resources located within the impact block would be significantly impacted by the project and that these impacts are significant, unavoidable, and would require mitigation.

Staff asked NextEra to provide graphical representations of their potential "impact block," and received two figures showing the anticipated disturbance below ground and the anticipated aboveground intrusion into the flat landscape. From these (TTEC 2010c, Sheets 1-6), staff concludes that:

- General cutting and filling would disturb the overall GSEP plant site to a maximum depth of 2 feet.
- In the solar array fields, GSEP collector foundation excavations would cause ground disturbance down to an unspecified depth, and the collectors would intrude into the flat landscape to a maximum height of 25 feet.
- In the power blocks, GSEP equipment foundation excavations would cause ground disturbance down to a maximum depth of 25 feet, and the equipment would intrude into the flat landscape to a maximum height of 75 feet.

- Along the linear facilities corridor, GSEP natural gas pipeline trench excavations would cause ground disturbance down to a maximum depth of 10 feet. The transmission line supports would cause ground disturbance down to a depth of 15 feet and create an intrusion into the flat landscape to a maximum height of 75 feet.

From this, staff has determined that all archaeological resources—recommended and/or assumed register-eligible, known and possibly yet to be discovered during construction, and located within the GSEP’s impact block—would be significantly impacted by the GSEP’s construction.

Staff has concluded that the proposed project has the potential to directly and indirectly impact two cultural landscapes staff considers eligible for the NRHP and CRHR. Direct impacts in the form of complete destruction of six resources are expected for PTNCL contributors within the GSEP facility footprint and linear corridor. Indirect impacts including, but not limited to increased vandalism, is expected for 248 PTNCL contributors within the GSEP viewshed (including the McCoy Spring National Register District). These indirect impacts may negatively affect the integrity the location, setting, and feeling of the contributors and are therefore significant. Staff also concludes that the proposed project may directly impact 13 historic-period resources, 1 dual-component resource, and 1 unknown cultural resource that are potential contributing elements to the World War II Desert Training Center California-Arizona Maneuver Area (DTC/C-AMA) Cultural Landscape (DTCCL).

Staff has also concluded that the GSEP would directly impact 6 prehistoric resources that are assumed eligible for the NRHP and the CRHR, but are not contributors to the PTNCL or the DTCCL.

In contrast, staff found that the integrity of setting and integrity of feeling of all known built-environment resources, recommended register-eligible and located within the GSEP’s impact block, would not be significantly impacted and adversely affected by the erection of the GSEP.

Finally, staff concludes that the GSEP construction impacts, when combined with impacts from past, present, and reasonably foreseeable projects, contribute in a small but significant way to the cumulatively considerable adverse impacts for cultural resources at both the local I-10 Corridor and regional levels. While staff’s **CUL-1** and **CUL-2** would reduce the cumulative impacts to the greatest extent possible, the impacts would still be cumulatively considerable.

A summary of the known register-eligible cultural resources staff has identified as subject to direct GSEP impacts are presented in **Cultural Resources Table 13**.

**CULTURAL RESOURCES Table 13**  
**NRHP- and CRHR-Eligible Known Cultural Resources Subject to Direct Project Impacts**

<b>Resource</b>	<b>Resource Description</b>	<b>CRHR Eligibility</b>
<b>Cultural Landscapes</b>		
DTC/C-AMA Cultural Landscape	World War II era Refuse Scatters and Features: includes 14 historic-period sites, 1 dual component site, and 1 unknown site listed below. Other contributors outside of GSEP PAAs .	Assumed Eligible
Prehistoric Trails Network Cultural Landscape	Prehistoric Trails and associated sites: Includes 248 sites in the GSEP ethnographic PAA including McCoy Spring National Register District (CA-Riv-0132), and 6 sites listed below. Other contributors outside of GSEP PAAs.	Assumed Eligible
<b>Prehistoric Archaeological Resources</b>		
CA-Riv-0260	Temporary Camp: 62 acres, artifacts (n=1000+), features. PTNCL contributor.	Eligible
CA-Riv-0663	Temporary Camp: 186 acres, artifacts (n=1000+), features. PTNCL contributor.	Eligible
CA-Riv-9072	Temporary Camp: 350 acres, artifacts (n=1000+), features. Rose Spring projectile point (AD 200 to 1100). PTNCL contributor.	Eligible
CA-Riv-9084	Artifact Scatter: 17 acres, artifacts (n=96), lithics, ground stone, 1 marine shell, and 1 Olivella shell bead (1100 cal AD to Contact).	Assumed Eligible
CA-Riv-9209	Artifact Scatter: 2 acres, artifacts (n=24), 7 debitage, 4 ground stone fragments, 1 core.	Assumed Eligible
CA-Riv-9215	Artifact Scatter: 3.6 acres, artifacts (n=25), 10 debitage, 1 projectile point (no ID).	Assumed Eligible
CA-Riv-9216	Artifact Scatter: 4 acres, near lake shore, 2 concentrations, artifacts (n=45), lithics, groundstone.	Assumed Eligible
CA-Riv-9220	Artifact Scatter: 9.4 acres, artifacts (n=94), lithics, 1 projectile point tip, 1 Cottonwood leaf-shaped projectile point, 1 metate fragment.	Assumed Eligible
CA-Riv-9223	Lithic Scatter: 1 acre, debitage (n=20).	Assumed Eligible
CA-Riv-9227	Artifact Scatter: 3 acres, artifacts (n=18), pot drop brownware sherds (n=14), 1 marine shell fragment. Possible PTNCL contributor.	Assumed Eligible
CA-Riv-9249	Ceramic Scatter: 1 acre, brownware sherds (n=21), pot drop. Possible PTNCL contributor.	Assumed Eligible
CA-Riv-9255	Artifact Scatter: 1.7 acres, artifacts (n=40), 1 concentration, brownware pot drop (n=10), FAR, groundstone. Possible PTNCL contributor.	Assumed Eligible
<b>Historical Archaeological Resources</b>		
P33-13598	Refuse Scatter: 0.04 acres, cans (n=8). Possible contributor to DTCCCL.	Assumed Eligible
CA-Riv-9063H	Refuse Scatter: 1.22 acres, artifacts (n=15). Possible contributor to DTCCCL.	Assumed Eligible

<b>Resource</b>	<b>Resource Description</b>	<b>CRHR Eligibility</b>
CA-Riv-9203H	Refuse Scatter: 5.2 acres, artifacts (n=84), food and beverage cans, can fragments, glass bottles, and plastic. Dual component? Post 1950? Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9204H	Refuse Scatter: 1 acre, cans and bottles (1932-1953). Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9211H	Refuse Scatter: 0.2 acres, cans and glass bottles, 1934 penny. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9213H	Refuse Scatter: 2 acres, (n=60) cans. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9214H	Refuse Scatter: 0.7 acres, (n=10) cans. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9228H	Refuse Scatter: 0.06 acres, 10 cans, bottle base (1938-1951), bottle base (1916-1931), razor blade, glass fragments. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9245H	Refuse Scatter: 3.3 acres, (n=14), cans, thermos, flare. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9251H	Refuse Scatter: 0.2 acres, (n=9) cans, machine gun cartridges, pocket knife, bailing wire. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9254H	Refuse Scatter: 0.6 acres, (n=21) cans. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9258H	Refuse Scatter: 2.3 acres, (n=150+) cans, glass bottles, machine gun cartridges, 5 artifact concentrations. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9259H	Feature: 0.3 acres, 2 stake alignments. Possible contributor to DTCCL.	Assumed Eligible
<b>Dual-Component Resources</b>		
CA-Riv-9205H	Refuse Scatter/Lithic Scatter: 1 acre, Prehistoric (n=8) lithics and groundstone. Historic (n=100+) cans, glass (post 1945), auto parts (1930-1940). Possible contributor to DTCCL.	Assumed Eligible
<b>Unknown</b>		
CA-Riv-0259 (P33-00259) Or (P33-13656)	Features: 1 acre, Prehistoric rock rings or WWII era foxholes with refuse scatter? 2004 visit suggests this site is a possible contributor to DTCCL.	Assumed Eligible
<b>Built-Environment Resources</b>		
No Number	Blythe-Eagle Mountain Transmission Line	Not Eligible
No Number	Wiley's Well Road	Eligible

The applicant's and staff's recommended mitigation measures for GSEP's construction impacts to NRHP-eligible and CRHR-eligible resources are discussed in detail below.

### **C.3.6.3 OPERATION IMPACTS AND MITIGATION**

With respect to direct impacts, if, during operation of the GSEP, the project owner should plan any changes or additions entailing significant amounts of ground disturbance, the project owner would have to petition the Energy Commission to review the environmental impacts of those activities and approve the plan. Cultural resources staff would then determine if previously undisturbed sediments would be affected by the planned activities and, if so, recommend the application of existing conditions or devise new ones to mitigate any impacts to significant known or newly identified cultural



resources. Consequently, at this time staff has recommended no conditions of certification addressing operation direct impacts.

For indirect impacts, however, during operation of the GSEP, cultural resources on and in the immediate vicinity of the project site may experience increased vandalism, illegal collection of artifacts, and/or destruction of resources by vehicles traveling on the site, as a result of improved access due to the project's construction. For known sites adjacent to the GSEP boundaries, staff has recommended conditions of certification to mitigate these potential impacts in **CUL-13** and **CUL-14**. **CUL-13** requires that the project owner mark the boundary around each adjacent site, including a buffer zone, and then set aside each bounded area as an environmentally sensitive area that would not be subject to disturbance during the life of the project. **CUL-14** requires a surface collection be done in each adjacent site. All diagnostic artifacts and features must be mapped using the latest technology with sub-meter accuracy, such as UTM 11 North or California Teale Albers. The CRRMP will include a detailed discussion of the specific equipment and methods used. In particular, any post-processing of the data will be described. The artifacts will be collected and curated.

#### **C.3.6.4 PROJECT CLOSURE AND DECOMMISSIONING IMPACTS AND MITIGATION**

Cultural resources within the proposed GSEP site footprint and linear facilities corridor are most likely present within the first 2 feet below the current ground surface (see "Present Process Geomorphology" and "Results of Geoarchaeological Investigations" subsections, above). The construction of GSEP is expected to destroy all known and unknown cultural resources within the site footprint and most of the linear facilities corridor. Therefore the closure and decommissioning of the proposed project is unlikely to cause additional impacts to known or previously unknown cultural resources. However, sites within the linear facilities corridor and near the boundary of the proposed project footprint may still exist after GSEP construction and associated archaeological data recovery. These sites could be impacted by activities associated with project closure and decommissioning.

As for any changes or additions to the GSEP during operation, as discussed above, the project owner, prior to any decommissioning activities, would petition the Energy Commission to review and approve a decommissioning plan, and cultural resources staff would then determine if previously undisturbed sites or sediments would be affected by the decommissioning. If so, staff could then recommend conditions to mitigate any decommissioning impacts to significant known or newly identified cultural resources. Consequently, at this time staff has recommended no conditions of certification addressing decommissioning impacts.

#### **C.3.6.5 CUMULATIVE IMPACTS AND MITIGATION**

This section evaluates the potential for GSEP, and other solar and development projects within the vicinity of GSEP, to have cumulative impacts to cultural resources. As discussed previously, individually minor but collectively significant actions (usually in the form of ground disturbance) may have a cumulatively considerable impact on cultural resources. These impacts may result in a substantially adverse change in the

significance of a resource, potentially jeopardizing its eligibility for listing on the NRHP and CRHR.

For the cultural resources cumulative analysis, the regional scope was defined at two levels: local and regional. At the local level, the geographic area considered for cumulative impacts on cultural resources is a loosely defined area on either side of I-10 between Desert Center and Blythe in eastern Riverside County, hereafter referred to as the I-10 Corridor. This corridor overlaps to a large extent with BLM's California Desert Conservation Area. The Corridor does not have strictly defined boundaries, and therefore does not have an area. However, the area is broadly equivalent to a 4-mile-wide strip (2 miles to either side of I-10) and 48 miles long, between Blythe and Desert Center (**Cumulative Impacts Figure 2**). The area of this strip is 192 square miles (122,440 acres).

Although the total number of cultural resources present in this area is unknown, a rough order of magnitude estimate can be derived (see **Cultural Resources Table 14**) based on recent surveys related to three proposed solar power projects (Genesis Solar Energy Project, Palen Solar Power Project and Blythe Solar Power Project) which surveyed a total of 19,184 acres. These projects recorded 329 sites, indicating that the Corridor has an average site density of 0.017 cultural resources per acre, and 0.003 potentially eligible resources per acre. This figure suggests that the Corridor originally contained approximately 2,081 cultural resources, 367 of which may have been eligible for the NRHP and the CRHR.

**CULTURAL RESOURCES Table 14**  
**Cumulative Analysis Results: Estimated Number of Cultural Resources Per Acre**

Location	Acres	Number of Known Cultural Resources	Number of Potentially Eligible Cultural Resources
Genesis PAAs Blythe PAAs Palen PAAs	19,184	329 = Average Density of 0.017 sites per acre	58 = Average Density of 0.003 sites per acre
		<b>Estimated Number of Cultural Resources (Acres x 0.017)</b>	<b>Estimated Number of Potentially Eligible Cultural Resources (Acres x 0.003)</b>
I-10 Corridor	122, 440	2, 081	367
Southern California Desert Region	11,000,000	187,000	33,000
<b>Existing Projects I-10 Corridor</b>			
Chuckwalla Valley Prison and Ironwood Prison	1,720	29	5
I-10 Freeway	2,328	40	7
Devers-Palo Verde 1 Transmission Line	350	6	1
Kaiser Eagle Mountain Mine	3,500	59	10
Subtotal	7,898	133	23
<b>Reasonably Foreseeable Future Projects I-10 Corridor</b>			
13 Solar Projects and Chuckwalla Raceway	47,591	809	143
4 New Transmission Lines	465	17	1
Subtotal	48,056	816	144
<b>Reasonably Foreseeable Future Projects Southern California Desert Region</b>			
Solar Projects	567,882	9,654	1,704
Wind Projects	433,721	7,373	1,301
Subtotal	1,001,606	17,027	3,005

At the regional level, the geographic area considered for cumulative impacts on cultural resources is defined as the desert areas of southeastern California, southern Nevada, and western Arizona, as shown on **Cumulative Impacts Figure 1** (Regional Renewable Applications). In broad terms, the area covered in this analysis includes the 25-million-acre California Desert Conservation Area. Unlike other parts of California that were more densely occupied in prehistory, little is known about the cultural resources of the desert region examined for this cumulative study. According to the CHRIS only 20 percent of Riverside and San Bernardino counties have been surveyed for cultural

resources. These studies have resulted in the identification and documentation of more than 20,000 cultural resources. These results suggest that there is a high potential to discover previously unknown resources within the cumulative study region.

A detailed discussion of the cumulative project impacts on all environmental resources was provided in Section B.3. To review, this cumulative analysis for the proposed project was based upon:

- Renewable energy projects on BLM, state, and private lands, as shown on **Cumulative Figure 1** and in **Cumulative Tables 1A and 1B**. Although not all of those projects are expected to complete the environmental review processes, or be funded and constructed, the list is indicative of the large number of renewable projects currently proposed in California.
- Foreseeable future projects in the immediate vicinity of the I-10 Corridor Area, as shown on **Cumulative Impacts Figure 2**, I-10 Corridor Existing and Future/Foreseeable Projects, and **Cumulative Tables 2 and 3**. Table 2 presents existing projects in this area and Table 3 presents future foreseeable projects in the I-10 Corridor Area. Both tables indicate project name and project type, its location and its status.

### **Impacts of Existing Projects**

Cultural resources staff's analysis of cumulative impacts of existing projects emphasized those projects and developments listed in **Cumulative Table 2** that are expansive and have disturbed the most acreage. Many of these projects were completed prior to the existence or regular enforcement of state and federal cultural resource laws. As such, the actual number of cultural resources within each project area and the number of resources destroyed by the project, is unknown. The following calculations are estimates.

#### **I-10 Corridor**

At the regional level, the construction of Chuckwalla Valley and Ironwood State Prisons probably caused the most disturbance in the Corridor. Together these projects have disturbed approximately 1,720 acres of culturally sensitive desert. This cumulative analysis suggests that 29 sites were destroyed during this project, 5 of which may have been eligible for the NHRP and the CRHR.

The construction of I-10, a four-lane divided highway, with associated bridges, off-ramps, and berm system, also resulted in significant ground disturbance in the Corridor. Assuming a width of a minimum of 200 feet and a length of 48 miles, within the I-10 Corridor this project disturbed approximately 10,137,600 square feet (2,328 acres). This analysis suggests that 40 sites were destroyed during this construction, 7 of which were eligible for the NHRP and the CRHR.

Another linear project within the Corridor was the Devers-Palo Verde Transmission Line, a 500-kV transmission line paralleling I-10. The disturbance caused by the construction of transmission lines is generally less than the disturbance caused by freeway construction. However, each line has an associated access road. Based on the construction of the access road and excluding the transmission tower pads, a width of

20 feet for each project and a length of 48 miles was assumed for this analysis. A similar calculation was made for the Blythe-Eagle Mountain Transmission Line and a natural gas line, both of which were constructed parallel to I-10. This analysis estimates that during the construction of these three linear projects, approximately 350 acres were disturbed, and 6 cultural resources were destroyed, 1 of which was likely to be eligible for the NHRP and the CRHR.

Finally, the mining activities at the Kaiser Eagle Mountain Mine may have disturbed more than 3,500 acres. Several plans for the use of this disturbed area have been proposed, but, from the perspective of cultural resources, new projects would be unlikely to cause more damage than has already occurred.

In total, together, the larger of the ground-disturbing projects within the I-10 Corridor disturbed at least 7,898 acres, or 6.4 percent of the Corridor. One hundred and thirty-three of the estimated 2,081 cultural resources were likely destroyed by these projects. Of the 367 cultural resources that would have been eligible for the NHRP and the CRHR, 23 would have been destroyed. Overall, previous projects in the I-10 Corridor do not appear to have a significant adverse affect on the cultural resources. However, certain site types, particularly those associated with dry lakes may have been disproportionately affected. A more detailed cumulative analysis would be needed to determine if this was the case.

### **Southern California Desert Region**

Within the larger Southern California Desert Region, the most intensive use of the desert and concomitant disturbance of cultural resources has been on designated military installations (e.g., Edwards Air Force Base, Fort Irwin, Twentynine Palms Marine Corps Base, Chocolate Mountain Naval Aerial Gunnery Range) (**Cumulative Impacts Figure 1**) during Gen. Patton's military training from 1942 to 1944, and during later training maneuvers in May, 1964, throughout the I-10 Corridor.

Cultural resources in the Southern California Desert Region have been primarily impacted by past and currently approved projects through the ground disturbance that is required for construction of buildings, facilities, roads, and other infrastructure. Military training operations have been the most destructive, particularly at bombing ranges.

In the case of military installations and maneuvers, however, avoidance of substantial adverse changes to CRHR- and NRHP-eligible cultural resources has been accomplished through deliberate project planning. Likewise, the severity of impacts to previously unknown cultural resources have been reduced to less-than-significant by implementing mitigation measures requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance or data recovery for resources evaluated to be CRHR-eligible.

Some of the physical evidence of military training exercises at the regional level are at least 50 years old and are therefore potentially CRHR- and NRHP-eligible cultural resources. This is particularly the case for historic-period cultural resources associated with the DTCCL described in detail in previous subsections. The use of heavy equipment and vehicles and the construction of camps, bunkers, and other features

throughout the desert undoubtedly destroyed a number of prehistoric sites. In their place, we have a potential historic military district, with many individual resources that are known to be, or have the potential to be CRHR- or NRHP-eligible. Previous development within the region has already destroyed a number of DTCCL sites.

### **Impacts of Reasonably Foreseeable Future Projects**

Cultural resources are also expected to be affected by the following reasonably foreseeable future projects. As detailed in **Cumulative Impacts Table 3** and shown in **Cumulative Impacts Figure 1**, the future construction of residences and infrastructure in the local and regional cumulative analysis study areas will undoubtedly result in impacts to cultural resources. Undoubtedly, some of the projects included in this analysis will not be built. This analysis estimates the maximum number of cultural resources that may be destroyed.

#### **I-10 Corridor**

Numerous other projects are proposed and under consideration along the I-10 Corridor. Staff assumes that the 13 proposed solar projects and Chuckwalla Raceway project would destroy all of the cultural resources within the proposed project limits for the purposes of this cumulative analysis. As discussed above, transmission lines are considered to have a smaller effect on cultural resources. Using the same conservative figures used previously, the 4 new transmission lines proposed for the I-10 Corridor would affect an area 20 feet wide and 48 miles long for each project. In total these linear projects would disturb 465 acres.

Together these reasonably foreseeable future projects would disturb 48,056 acres, or 39 percent of the total I-10 Corridor. This cumulative analysis suggests that these projects would destroy 816 cultural resources, 144 of which were CRHR- and NRHP-eligible.

#### **Southern California Desert Region**

Much of the Southern California Desert Region analyzed for this cumulative analysis consists of the California Desert Conservation Area (CDCA). Eleven million acres of the 25-million-acre CDCA is managed by the BLM. Although there are undoubtedly other projects that have been proposed for this region, the projects proposed for construction within the BLM California Desert District make a reasonable proxy for patterns across the large area. Solar projects occupying 567,882 acres and wind projects occupying 433,721 acres have been proposed for this region, consisting of nearly 4percent of CDCA.

Although the cultural resources density per acre is unknown for this entire region, the density proposed for the I-10 Corridor serves as a reasonable minimum. The disturbance of 1 million acres would result in the destruction of at least 17,000 cultural resources, 3,000 of which were CRHR- and NRHP-eligible. If all of this construction took place, the majority of the projects would undergo CEQA and/or NEPA review. Cultural resources that could not be avoided would be tested to evaluate significance, and significant sites would be subject to historical documentation or data recovery excavations to mitigate impacts. Although these measures would reduce most individual site impacts to less-than-significant levels, archaeological excavation and analysis

cannot recover all the scientific values of a site. Based on the above, the cumulative loss of approximately 17,000 cultural resources is considered a significant impact that cannot be mitigated to less-than-significant levels.

Construction of the solar and wind projects proposed throughout this region would result in substantial changes in the setting, feeling, and association of the areas in which they are constructed. These kinds of damages may be especially severe for traditional use areas and traditional cultural properties. Potential impacts would include direct impacts in the form of physical disturbance or alteration as a result of construction activity or indirect impacts in the form of diminished visual character of traditional use areas due to the presence of industrial structures.

### **Contribution of the Genesis Solar Energy Project to Cumulative Impacts**

The development of the GSEP is expected to result in permanent adverse impacts to cultural resources related to construction activities. However, these impacts would be expected to contribute only a small amount to the possible permanent cumulative impacts related to cultural resources because relatively few resources may be eligible for the CRHR or NRHP. GSEP would have a significant direct impact on 27 historically significant archaeological resources and significant indirect impact on 248 contributors to one of the two historically significant cultural landscapes identified as present in the GSEP region. These impacts include direct impacts to 6 prehistoric-to-historic-period Native American archaeological sites; direct impacts to 6 and indirect impacts to 248 prehistoric-to-historic-period Native American archaeological sites that are potential contributing elements of the PTNCL; and direct impacts to 15 sites that are potential contributing elements of the DTCCCL.

If the proposed conditions of certification **CUL-1** through **CUL-17** are properly implemented, the proposed GSEP would result in a less-than-significant impact on known and newly found archaeological resources, including the PTNCL and the DTCCCL. However, the indirect impacts to the ethnographic aspects of the 248 potential contributing elements to the PTNCL have not yet been determined. These impacts and the necessary mitigation measures must be determined by the BLM through consultation with Native American groups in the Section 106 process and formalized in a PA.

The GSEP construction impacts, when combined with impacts from past, present, and reasonably foreseeable projects, contribute in a small but significant way to the cumulatively considerable adverse impacts for cultural resources at both the local I-10 Corridor and regional levels. This analysis estimates that more than 800 sites within the I-10 Corridor, and 17,000 sites within the Southern California Desert Region, will potentially be destroyed. Mitigation can reduce the impact of this destruction, but not to a less-than-significant level.

Staff acknowledges that this is an unusual conclusion. The reason these cumulative impacts cannot be mitigated to a less-than-significant level is because these resources will be changed permanently. Unlike biological resources, a cultural resource cannot recover. Significant direct physical impacts to cultural resources often result in the

complete destruction of the resource. Mitigation of some of these impacts involves the collection of information or “data recovery”. This analysis and interpretation of the data collected through archaeology teaches us about the lives of historic people. This knowledge of American history enriches the lives of the general public. Therefore, although an important resource is lost forever, some of the information about that resource is retained. This allows us to argue that these significant impacts can be mitigated. However, although mitigation measures can reduce many individual site impacts to less-than-significant levels, archaeological excavation and analysis cannot recover all the scientific values of a site.

As an inherently destructive science, archaeology must walk a fine line between destruction and preservation. Some questions about the lives of people in the past can only be answered through excavation, which results in the destruction of the site excavated. But archaeological techniques improve rapidly, increasing the amount of information we might gather dramatically. Portions of sites must be preserved so they can be analyzed using these future, as-yet undeveloped, techniques.

No professionally agreed-upon limits for this balance between destruction and preservation exist. General professional archaeological opinion considers the proportion of certain site types that still exist when determining the cumulative impacts and possible public benefits of a project. If only a few such sites still exist undisturbed, then their destruction would be considered a significant impact that cannot be mitigated to less-than-significant levels. General professional opinion also considers the constant ground disturbance associated with modern development to have a devastating cumulatively considerable effect on cultural resources. Indeed, at some point in the near future all prehistoric resources may be destroyed; a kind of cultural resource extinction.

It is both politically and professionally difficult for archaeologists to point out these patterns. So, although these cultural resources trends are well known in the profession, they have rarely resulted in CEQA and NEPA documents where impacts have been considered cumulatively considerable and impossible to mitigate to less-than-significant levels, even though it would have been appropriate.

### **Summary of Cumulative Impacts**

The GSEP impacts, when combined with impacts from past, present, and reasonably foreseeable projects, contribute in a small but significant way to the cumulatively considerable adverse impacts for cultural resources at both the local I-10 Corridor and regional levels.

The majority of the proposed future projects examined in this analysis would likely undergo CEQA and/or NEPA review. Sites that could not be avoided would be tested to evaluate significance. Register-eligible sites would be subject to historical documentation or data recovery excavations to mitigate impacts. Although these measures would reduce most individual site impacts to less than significant levels, archaeological excavation and analysis cannot recover all the scientific values of a site.

This analysis estimates that more than 800 sites within the I-10 Corridor, and 17,000 sites within the Southern California Desert Region, will potentially be destroyed. The



destruction of cultural resources and cultural landscapes results in the loss of information, but also to irreparable damage to cultural and spiritual values. In terms of the loss of information mitigation can reduce the impact of this destruction, but not to a less-than-significant level. In terms of cultural and spiritual impacts, the nature of these impacts and potential mitigation measures can only be determined by members of the community who value the resources and landscapes, in this case Native Americans. Because only they can suggest possible mitigation, if any, this cumulatively considerable impact may be unmitigatable.

To reduce as much as possible the region-wide, significant cumulative impact that staff has identified from its analysis, staff recommends that GSEP be required to contribute to the funds established to document and nominate, to the NRHP, if appropriate, the PTNCL and the DTCCL (**CUL-1** and **CUL-2**).

Despite the correct implementation of the mitigation measures outlined here, GSEP's incremental contribution to cumulative impacts to cultural resources would nonetheless be cumulatively considerable. Staff acknowledges that this is an unusual conclusion when compared to previous CEQA documents.

### **C.3.6.6 APPLICANT'S RECOMMENDED MITIGATION MEASURES**

Tetra Tech provided recommendations for mitigation in their revised survey report (Farmer et al. 2009, p. 88). They found that four of the cultural resources within the GSEP PAAs—CA-RIV-0663, CA-Riv-9255, CA-RIV-9072, and CA-RIV-9224H—are potentially eligible for the NRHP under Criterion D. They recommend that test excavation programs be conducted at these four sites in order to mitigate potential adverse impacts. If any of these sites should prove to have extensive buried deposits they recommend that the project could be redesigned to avoid the site or that suitable data recovery measures could be taken. Further details of these data recovery measures were not provided.

Despite being informed in writing by the Energy Commission and BLM that some of the GSEP sites were considered eligible for the NRHP and the CRHR as contributors to either the PTNCL or DTCCL, Tetra Tech did not discuss these issues in their revised reports. Instead Tetra Tech concluded that the remaining archaeological sites appear to be of an ephemeral nature and/or have been disturbed by sheet erosion.

### **C.3.6.7 ENERGY COMMISSION-RECOMMENDED MITIGATION OF SIGNIFICANT IMPACTS**

BLM cultural resources staff is in the process of making evaluations of those cultural resources that GSEP could impact. BLM staff at this time is also in the process of formal consultation under NRHP Section 106 to develop a Programmatic Agreement (PA), as allowed under 36 CFR § 800.14(b). PAs are used for the resolution of adverse effects for complex project situations and when effects on resources eligible for or listed in the NRHP cannot be fully determined prior to approval of an undertaking.

As a result of the anticipated significant effects of the proposed action on cultural resources and the large geographic extent of the GSEP area of potential effects, BLM staff is preparing a PA in consultation with the Advisory Council on Historic

Preservation, the State Historic Preservation Officer, the Energy Commission, interested Native American groups, (including tribal governments as part of government-to-government consultation) and the public at large. The PA will govern the conclusion of the identification and evaluation of cultural resources subject to GSEP impacts, as well as the resolution of any significant effects on historic properties (significant prehistoric and historic cultural resources, as determined by BLM staff) that may result from the proposed or alternative project construction and operation activities. Treatment plans for historic properties that cannot be avoided by project construction will also be developed in consultation with stakeholders, as stipulated in the PA.

The final version of the GSEP PA will be executed no later than the BLM's signing of the Record of Decision for the Right-of-Way grant for the project. When the PA is executed and fully implemented, BLM will have fulfilled the requirements of NEPA and Section 106 of the NHPA.

The mitigation measures that Energy Commission staff recommends below reflect staff's assessment of what constitutes appropriate mitigation, under CEQA, for GSEP's identified impacts to register-eligible cultural resources. Staff recommends that the BLM adopt comparable mitigation in the Historic Property Treatment Plan, a document associated with the BLM's GSEP PA, in order to ensure that the project's impacts to cultural resources are mitigated in a way that meets both federal and state requirements.

GSEP is the first of a series of large energy projects proposed for the southern California Desert to near the end of the Energy Commission's permitting process. Many things have been unusual about these projects. For cultural resources some of the important differences have included the high speed of the permitting process, the large size of the project areas, the small amount of information regarding the cultural resources in the region, and the large number of future or concurrent projects proposed for the area overall. These factors have influenced the way the Energy Commission cultural resources staff has strategized the recommended mitigation of significant impacts for projects in the southern California Desert.

Mitigating project impacts to cultural resources to a less-than-significant level is generally couched in terms of recovering data that would be lost when the resources are destroyed. A loss of a CRHR-eligible cultural resource is assumed to be a loss to the public of valuable information about the past. For the successful mitigation of a lost built-environment resource, the recovered data must stand in place of the lost resource. For the successful mitigation of an archaeological resource, the recovered data must be pertinent to answering questions important in history or prehistory. For built-environment resources, data recovery can entail detailed recordation of all aspects of the physical structure of the resource and documentation of it from historical resources. Archaeological sites are methodically excavated, deposits recorded and photographed, artifacts identified and dated, and samples of various materials are scientifically analyzed. Data recovery as a mode of mitigating impacts to a traditional cultural property (TCP) to a less-than-significant level is more problematic and may not be possible or appropriate. Mitigation of impacts to a TCP must be determined with the input of the group that values it, on a case-by-case basis.

For the purposes of recommending mitigation of GSEP impacts to cultural resources that is adequate for CEQA, under the present modification of the approach staff employed for the SA/DEIS, staff applies performance standards in three contexts with respect to archaeological sites:

1. Adequacy of the applicant's or owner's cultural resources consultant's evaluation-phase field work (for Phase II discussion, see "Approaches to CRHR Eligibility Evaluations," above);
2. Qualification of the resource for either the CRHR or NRHP (for criteria, see "Determining the Historical Significance of Cultural Resources," above); and
3. Adequacy of the applicant's or owner's cultural resources consultant's data recovery phase field work (Phase III discussion, see "Approaches to CRHR Eligibility Evaluations," above).

The performance standards staff applies to the adequacy of evaluation-phase field work include acquisition of complete and accurate data that:

- Documents the horizontal and vertical extent of the site;
- Documents homogeneity vs. heterogeneity in material culture;
- Documents homogeneity vs. heterogeneity in the differential distribution of the material culture;
- Documents the depositional character of the sediments in the deposits and the differential distribution of the sediments of the deposits;
- Documents the integrity of the deposits and the associations among the sediments and the artifacts; and
- Documents site taphonomy (contemporaneous and post-depositional forces affecting site structure).

The performance standards for determining resource eligibility are the criteria under which a cultural resource qualifies for inclusion in the CRHR and are presented above, in the subsection headed, "Determining the Historical Significance of Cultural Resources."

The performance standards staff applies to the adequacy of data-recovery-phase field work include acquisition of a statistically significant sample of the full range of data sets pertinent to the questions about history or prehistory that the site holds and that make the site CRHR-eligible

These three sets of performance standards are expressed and detailed in staff's recommended conditions of certification. Staff's performance standards are manifested in various ways in the conditions of certification. Required approval of staff for project-proposed personnel and for various research plans will result in staff's performance standards for both evaluation-phase and data-recovery-phase adequacy. Specific field methods are required that will also result in meeting staff's performance standards for both evaluation-phase and data-recovery-phase adequacy. Required consultation with

staff by the applicant's or owner's cultural resources consultants will result in the performance standards for resource eligibility (e.g., does a resource qualify for the CRHR) being met.

If the applicant's or owner's cultural resources consultants meet staff's performance standards, as detailed in the cultural resources conditions of certification, then significant impacts to cultural resources would be reduced to a less-than-significant level through a program of data recovery, resource registration, and public outreach, and the loss to the public of the values inherent in these resources would be adequately mitigated.

### **Staff's Recommended Conditions of Certification**

Staff has concluded that it can best fulfill its responsibilities under CEQA by designing dual-level strategies to mitigate cumulative impacts on the regional level and project-specific direct and indirect impacts on the project level. For the region-wide mitigation of cumulative impacts, rather than hiring multiple companies to produce reports in isolation from each other, with results that are difficult to compare and synthesize, staff's recommended mitigation, coordinated among three projects to start, will standardize terminologies, increase statistical sample sizes, and focus research questions. Staff thinks this will improve the quality and utility of the information collected, as well as save money and time for all involved. Energy Commission staff will save time by creating overarching mitigation measures that will serve for the present projects and be adaptable to later projects in the same region, leaving staff more time to focus on the unique resources specific to each individual project and PAA. A more regional approach is also an advantage for BLM, since they manage this land at a regional scale. In discussions about the PAs that BLM is developing, a representative of the state Office of Historic Preservation has stated repeatedly that the Office would like to see a landscape approach to the cultural resources of the region. Staff sees regional mitigation as an advantage for the project owners as well, as it will allow the pooling of their resources, thereby reducing their overall cultural resources impact mitigation costs.

To start, staff intends to coordinate the cultural resources mitigation of the shared cumulative impacts of three solar projects proposed by NextEra and Solar Millennium for areas north of the I-10 corridor between Blythe and Desert Center: Genesis Solar Energy Project, Blythe Solar Power Project, and Palen Solar Power Project. If this coordination proves successful, staff intends to expand the number of projects and project owners involved as they enter the permitting process. The three initial projects share two broad types of cultural resources: prehistoric trails and destination sites associated with the PTNCL and historical military training sites associated with the DTCCCL (defined in detail above). Seventy-five percent or more of the sites that will be impacted by these three projects are potential contributing elements to these two NRHP- and CRHR-eligible landscapes. At the time of the publication of this document, staff has identified only two shared landscapes which will structure the coordinated cultural resources mitigation for these three projects. Other landscapes or themes may be identified later and incorporated by future project owners as appropriate.

Practically speaking, what staff recommends is shared staffing of the recommended regional-level cultural resources mitigation of cumulative impacts, and, necessarily,

shared funding of this staffing. Staff recommends five cultural resources specialists to be shared by the three solar projects: PTNCL Principal Investigator(PI)-Prehistoric Archaeologist, PTNCL Ethnographer, PTNCL Ethnohistorian, DTCCL Principal Investigator(PI)-Historian and DTCCL Historical Archaeologist. All five specialists would be senior professionals in their subfield, qualified according to the Secretary of the Interior's Standards, acknowledged experts in the Southern California Desert region, and have demonstrated experience in synthetic writing. The PTNCL PI-Prehistoric Archaeologist and the DTCCL PI-Historian would also have to have large-scale project management experience.

Compensation for these specialists and the costs for their expenses and deliverables would be divided among the project owners in direct proportion to the number of acres each project would enclose or otherwise disturb. Staff feels that the number of acres disturbed is the most equitable measure of impacts to cultural resources for all three projects. Each project area has a different relative density of archaeological sites, but the number of buried archaeological sites for each is unknown. So the site counts may change dramatically and unexpectedly during future archaeological exploration and construction. In addition, the nature of direct and indirect impacts to regional ethnographic resources in the PTNCL has not yet been determined by local Native American community members. Given the sacred nature of these landscapes, places potentially as important as Mount Sinai, where the Ten Commandments were given to Moses, some of these impacts may be considered severe and difficult or impossible to mitigate to less-than-significant levels.

Considering these unknown and unquantifiable factors, staff considers the number of acres disturbed by each project to be a reasonable and concrete proxy. Conditions of Certification **CUL-1** and **CUL-2** require the GSEP project owner to contribute \$35 per acre for the PTNCL and \$25 per acre for the DTCCL to a special Energy Commission fund to finance the documentation and possible NRHP nomination of the PTNCL and DTCCL. Staff arrived at these amounts by estimating what the cost of each program would be, including overhead costs (\$400,000 for the PTNCL, \$300,000 for the DTCCL), dividing that by the total number of acres the projects together would disturb or enclose (1,890 for GSEP, 7,030 for Blythe Solar Power Plant, and 2,970 for Palen Solar Power Plant; total=11,890), and rounding to the nearest \$5.00.

Staff is recommending identical conditions for the project owners of the Blythe Solar Power Project, and the Palen Solar Power Project. Any additional coordination among project owners that can be negotiated, beyond that specified here, is welcomed and encouraged. Also, it is possible for applicants for all three projects to make their contributions to the PTNCL and DTCCL funds prior to certification so that the research on the two landscapes might begin as soon as possible and the preliminary results of that research that are specifically needed to conduct the required data recovery activities might be available when the projects are ready to initiate those activities and have BLM's approval to do so. Pre-certification contributions to the two funds would not affect a project's certification prospects in any way. The applicants making such contributions would do so, at their own risk, as a means of advantaging their schedule.

The two landscape documentation and possible nomination programs are also identical for the three projects. These programs are detailed below. Although staff at this time

does not have the details worked out, it is staff's intention to enable the sharing of costs for these two programs with future projects under Energy Commission jurisdiction that would contribute to the cumulative impacts to cultural resources in the region, and also with any contemporaneous and future projects not under Energy Commission jurisdiction that contribute to the cumulative impacts to cultural resources in the region.

## **Mitigation of Cumulative Impacts to Cultural Landscapes (CUL-1 and CUL-2)**

### ***PTNCL Documentation and Possible NRHP Nomination Program***

Energy Commission staff will engage a prehistoric archaeologist to serve as the principal investigator (PI) and prehistoric archaeologist for the following research on the PTNCL. The PTNCL PI-Prehistoric Archaeologist must have the following qualifications:

1. At a minimum, an M.A. in anthropology, with a specialization in archaeology;
2. Education and training that meet the U.S. Secretary of the Interior's Professional Qualifications Standards for Prehistoric Archaeology, as published in Title 36, Code of Federal Regulations, part 61;
3. A background in anthropology and archaeology, with at least 10 years of full-time archaeological resources mitigation and field experience in Southern California;
4. Demonstrated ability to conduct and report on archaeological research; and
5. At least three years of full-time professional experience managing large cultural resources projects in California.

Staff is recommending identical conditions for the project owners of the Blythe Solar Power Project, and the Palen Solar Power Project. Any additional coordination among project owners that can be negotiated, beyond that specified here, is welcomed and encouraged. Also, applicants may make their contributions to the PTNCL and DTCCCL funds prior to certification. This would allow staff to initiate the research on the two landscapes as soon as possible, so that the preliminary results of that research that would specifically be needed to conduct the required data recovery activities would be available when the projects are ready to initiate those activities and have the BLM's and the CPM's approval to do so. Pre-certification contributions to the two funds would not affect a project's certification prospects in any way. The applicants making such contributions would do so, at their own risk, as a means of advantaging their schedule.

Under **CUL-4** for each project, the project owners will provide to the PTNCL PI-Prehistoric Archaeologist, the PTNCL Ethnographer, the PTNCL Ethnohistorian, and the PTNCL Geoarchaeologist copies of the AFC, data responses, confidential cultural resources documents, and the Revised Staff Assessment (RSA) and RSA Errata for the project.

#### **A. Ethnographic Study**

The PTNCL PI-Prehistoric Archaeologist will obtain the services of an ethnographer to serve as the PTNCL Ethnographer. The PTNCL Ethnographer must meet the NPS standards for Anthropologist/Applied Ethnographer (GS-190, 11-12 or 13-15) and have

already-established, long-term relationships with Native American groups whose traditional territories are in or near the Chuckwalla Valley and Palo Verde Mesa. The PTNCL PI-Prehistoric Archaeologist will submit the resume of the proposed PTNCL Ethnographer to staff for review and approval and to the BLM Palm Springs Office archaeologist for review and comment.

The PTNCL PI-Prehistoric Archaeologist will direct the PTNCL Ethnographer to:

1. Develop an ethnographic context for the PTNCL from ethnohistoric and ethnographic records and sources;
2. Develop an informant list: The PTNCL Ethnographer has the final choice, but must include representatives from the groups that have expressed concerns about the projects: the Quechan Tribe, the Chemehuevi Reservation, the Cabazon Band of Mission Indians, the Aqua Caliente Band of Mission Indians, the San Manuel Band of Mission Indians, the Twentynine Palms Band of Mission Indians, La Cuna de Aztlan Sacred Sites Protection Circle, the Fort Mojave Indian Tribe, and the Colorado River Indian Tribes. Other Native Americans identified by the BLM Palm Springs Field Office archaeologist will also be included;
3. Develop interview questions about the PTNCL and potential traditional cultural properties (TCPs);
4. Submit the draft ethnographic context, informant list, and interview questions to staff for review and approval and to the BLM Palm Springs archaeologist for review and comment;
5. Using the approved informant list and questions, interview local Native American community members about the landscape and pay each an honorarium for their participation, amount to be reviewed and approved by staff.;
6. Escort, at PTNCL fund expense, to important, probable, known PTNCL contributors, such as springs, petroglyph sites, geoglyphs, and major trail segments, those members who want to visit them to determine if the Blythe, Genesis, and Palen projects would have any significant effects, from the perspective of the Native Americans, and what options for mitigation the Native Americans consider available. Pay each an honorarium for their participation, amount to be reviewed and approved by staff;
7. Alternatively and/or as additionally, photograph or simulate the viewsheds from important PTNCL contributors, such as springs, petroglyph sites, geoglyphs, and major trail segments and show them to interested Native American community members to determine if the three projects would have any significant effects, from the perspective of the Native Americans, and what options for mitigation the Native Americans consider available. Pay each an honorarium for their participation, amount to be reviewed and approved by staff;
8. Compile location data on PTNCL elements from ethnographic information, draft a map showing all these elements, and draw a provisional boundary for the PTNCL from the ethnographic perspective, with written justification for the boundary.

9. Compile interview transcripts and draft preliminary conclusions identifying TCPS and providing Native Americans' assessment of project impacts on these TCPs and their recommendations for mitigation measures for these impacts, with photos and maps as appropriate;
10. Assist interested Native Americans in adding the TCPs to the NAHC Sacred Sites list;
11. Set up an opportunity for Native Americans to write about or be recorded relating their knowledge, experience, and perspective on the PTNCL. Pay each an honorarium for their participation, amount to be reviewed and approved by staff;
12. Collaborate with the GSEP Project Prehistoric Archaeologist and the GSEP Project Ethnographer to develop a monitoring plan for the PTNCL cultural resources subject to indirect GSEP construction impacts; and
13. Submit products of 1, 7, 8, and 9 to the PTNCL PI-Prehistoric Archaeologist.

The PTNCL PI-Prehistoric Archaeologist will provide products of 1, 7, and 8 to the three project CRSs.

The PTNCL PI-Prehistoric Archaeologist will provide the product of 9 to the BLM Palm Springs Field Office archaeologist.

The PTNCL PI-Prehistoric Archaeologist will submit the draft PTNCL ethnographic documentation to staff for review and approval and to the BLM Palm Springs Field Office archaeologist for review and comment.

The PI-Prehistoric Archaeologist will arrange for the donation of \$20,000 from the PTNCL fund to the non-profit organization, the Cultural Conservancy, in support of the Salt Song Trail Project.

#### B. Ethnohistorical Study:

The PTNCL PI-Prehistoric Archaeologist will obtain the services of an ethnohistorian to serve as PTNCL Historian (PH). The PTNCL Ethnohistorian will meet the the U.S. Secretary of the Interior's Professional Qualifications Standards for Historian, with demonstrated experience in ethnohistory. The resume of the proposed PTNCL Ethnohistorian will be submitted to staff for review and approval.

The PTNCL PI-Prehistoric Archaeologist will direct the PTNCL Ethnohistorian to:

1. Develop an annotated bibliography to establish the context, themes, contributing resource types, period of significance, and boundaries for the PTNCL;
2. Write the context and define the themes, contributor resource types, and period of significance;
3. Compile a list of known contributors, with a description and individual map plot of each, and a PTNCL map showing all contributors;



4. Plot, describe, and justify the boundaries of the PTNCL from the ethnohistorical perspective; and
5. Submit products of 2, 3, and 4 to PTNCL PI-Prehistoric Archaeologist.

The PTNCL PI-Prehistoric Archaeologist will provide products of 2, 3, and 4 to the three project CRSs.

The PTNCL PI-Prehistoric Archaeologist will submit the draft PTNCL ethnohistorical documentation to staff for review and approval and to the BLM Palm Springs Field Office archaeologist for review and comment.

#### C. Geoarchaeological Study:

The PTNCL PI-Prehistoric Archaeologist will obtain the services of a geoarchaeologist to serve as PTNCL Geoarchaeologist (PG). The PG's training and background must meet the U.S. Secretary of Interior's Professional Qualifications Standards for Prehistoric Archaeology, as published in Title 36, Code of Federal Regulations, part 61, and show the completion of graduate-level coursework in geoarchaeology or Quaternary science. The resume of the proposed PG will be submitted to staff for review and approval.

The PTNCL PI-Prehistoric Archaeologist will direct the PG to:

1. Develop a geoarchaeological context, including reconstruction of the regional paleoenvironment, with lake fluctuations, over the past 14,000 years;
2. Compile a trans-regional landform map;
3. Correlate trans-regional sites types with landforms;
4. Assign known sites to landforms for all three projects;
5. Attempt to predict on the basis of 4 where in the Chuckwalla Valley and on the Palo Verde Mesa additional sites of the several types may be found;
6. Conduct field studies [none envisioned yet];
7. Monitor during construction; and
8. Submit products 1–4 to PI-Prehistoric Archaeologist.

The PTNCL PI-Prehistoric Archaeologist will provide products 1–4 to the three CRSs.

The PTNCL PI-Prehistoric Archaeologist will submit the draft PTNCL geoarchaeological documentation, the trans-regional landform map, the trans-regional correlation of site types to landforms to staff for review and approval and to the BLM Palm Springs Field Office archaeologist for review and comment.

#### D. Archaeological Study:

The PTNCL PI-Prehistoric Archaeologist will:

1. Synthesize the present state of knowledge of prehistory in the Chuckwalla Valley and Palo Verde Mesa and identify significant gaps in this knowledge, based on all pertinent literature, including published monographs and papers, unpublished reports in the files of the CHRIS and the BLM's Palm Springs Field Office, and on consultation with archaeologists actively conducting research in this region, particularly those based in academia;
2. Develop a comprehensive prehistoric context for the PTNCL;
3. From the prehistoric context and the literature synthesis, identify and describe the full range of archaeological resources known for the PTNCL and posit any additional resources that, while not known, are strongly suggested by the context and synthesis;
4. From the prehistoric context and the literature synthesis, formulate specific research questions
  - a. To fill significant gaps in our knowledge of the prehistory of this area,
  - b. Answerable with data from known archaeological resources, and
    - i. Specify what kinds of resources have the relevant data
  - c. To determine the presence or absence of additional archaeological resources not presently known but likely
    - i. Specify the methods for making this determination.
5. Develop criteria for definitively attributing archaeological sites to the PTNCL based on archaeological traits;
6. Compile location data on known PTNCL archaeological elements, draft detailed GIS-based maps of trails and the various site types and their spatial distributions, and draw on a map a provisional boundary for the PTNCL from the archaeological perspective, with a written justification for the boundary;
7. In collaboration with the BLM Palm Springs Field Office, hire the GIS Technician of their choice to identify, digitize, and enter into the BLM's existing cultural resources GIS database, data related to all archaeological sites not in the database.

The PTNCL PI-Prehistoric Archaeologist will provide products of 1–6 to the three project CRSs.

The PTNCL PI-Prehistoric Archaeologist will submit the draft PTNCL prehistoric archaeological documentation to staff for review and approval and to the BLM Palm Springs Field Office archaeologist for review and comment.

E. Possible NRHP nomination of the PTNCL:

After all data recovery for the three projects is completed and reported, the PTNCL PI-Prehistoric Archaeologist will confer with the PTNCL Ethnographer and the PTNCL Ethnohistorian to decide if the PTNCL is eligible for the NRHP, and, if so, the three will collaborate on a NRHP nomination for the PTNCL under Criteria A and D. If the PTNCL PI-Prehistoric Archaeologist, the PTNCL Ethnographer, and the PTNCL Ethnohistorian agree that a PTNCL nomination is appropriate, the nomination will include:

1. Definition of resource;
2. PTNCL probable contributing resource types, known and as-yet-unknown
  - a. trail segments and trail-related features (pot-drops, rock cairns, lithic scatters)
  - b. features (hearths, other)
  - c. springs
  - d. resource areas and associated features (quarries, plant foods/materials)
  - e. camps
  - f. habitation areas
  - g. burial areas
  - h. petroglyphs (hunting blinds?)
  - i. geoglyphs (sacred places?)
  - j. other;
3. Prehistoric, ethnohistorical, and ethnographic background and context;
4. Justification of eligibility;
5. Period of significance and justification for POS;
6. Identification of contributors, map of archaeologically confirmed sites, and site descriptions of all;
7. Identify contributors as TCPs, with the permission of Native Americans, if the community representatives determine any of the contributors to be TCPs;
8. Definition of boundaries, with map depicting trail network and nodes, as identified through historical, ethnographic, and archaeological research; and
9. Provision for adding additional contributing resources to the district as further survey is done.

The PTNCL PI-Prehistoric Archaeologist will submit the draft nomination to staff for review and approval and to the BLM Palm Springs Field Office archaeologist for review and comment.

The PTNCL PI-Prehistoric Archaeologist will submit the staff-approved PTNCL NRHP nomination to the State Historical Resources Commission, to initiate the process of formal consideration by the Keeper of the National Register, and track and facilitate the review of the nomination to acceptance, including required revisions and additions, or final rejection.

If the PTNCL PI-Prehistoric Archaeologist, the PTNCL Ethnographer, and the PTNCL Ethnohistorian agree that a PTNCL nomination is not appropriate, the PTNCL PI-Prehistoric Archaeologist will write and submit to staff a summary of the evidence justifying that conclusion.

#### F. Management Plan and Information Dissemination:

The PTNCL PI-Prehistoric Archaeologist will set up some kind of BLM management status for the PTNCL (hopefully NRHP eligibility, but other status may be necessary):

1. For managing known, unimpacted resources, and
2. For adding further contributing resources to the district as further survey done.

The PTNCL PI-Prehistoric Archaeologist will consult with BLM to determine ways of implementing the mitigation measures, if any, proposed by Native Americans in Task A for indirect impacts to resources determined to qualify under Criterion A and located outside of the boundaries of the three projects.

The PTNCL PI-Prehistoric Archaeologist will collaborate with the PTNCL Ethnographer and the PTNCL Ethnohistorian to prepare a research paper, interpreting the implications of the PTNCL data for our understanding of the prehistory of the Mojave Desert, and submit it to a peer-reviewed journal.

The PTNCL PI-Prehistoric Archaeologist will obtain the services of an exhibit preparer and direct the preparer to craft materials, such as an instruction module for use in local school districts and or a display for existing public interpretation venues at local museums, that interpret the PTNCL for the public, based on the data compiled by the PTNCL PI-Prehistoric Archaeologist, the PTNCL PE, and the PTNCL PH. The PTNCL PI-Prehistoric Archaeologist will arrange for the materials to be used and displayed.

#### ***DTCCCL Documentation and Possible NRHP Nomination Program***

The DTCCCL program will have a historian for a principal investigator, who will collaborate with a historical archaeologist in the tasks of documenting and nominating the DTCCCL to the NRHP. The DTCCCL Historical Archaeologist will also train the individual project historical archaeologists and their crews in the accurate and consistent field identification and recording of historic-period artifacts, with an emphasis on those associated with the DTC/C-AMA. The funding for this program would utilize the

same mechanism and contribution basis as the above PTNCL fund, as provided in **CUL-2**.

Energy Commission staff will engage a historian to serve as the principal investigator (PI) and historian for the following research on the DTCCL. The DTCCL PI-Historian must have the following qualifications:

1. At a minimum, an M.A. in history, with a specialization in World War II military history.
2. Education and training that meet the U.S. Secretary of the Interior's Professional Qualifications Standards for Historian, as published in Title 36, Code of Federal Regulations, part 61;
3. Demonstrated ability to conduct and report on historical research; and
4. At least three years of full-time professional experience managing research projects.

The DTCCL PI-Historian will propose and engage the DTCCL Historical Archaeologist, manage and coordinate the research activities required in this condition, report on progress to staff, and complete Task A. Staff will have final decisionmaking authority regarding budget and technical cultural resources matters.

Under **CUL-4** for each project, the project owners will provide to the DTCCL PI-Historian and Historical Archaeologist copies of the AFC, data responses, confidential cultural resources documents, and the Revised Staff Assessment (RSA) and RSA Errata for the project.

A. Historical Study:

The DTCCL PI-Historian will:

1. Develop an annotated bibliography, including oral history sources, to establish the context, themes, contributing resource types, material culture, period of significance, and boundaries for the DTCCL (contact staff for some local oral history sources);
2. Create a time line of DTC/C-AMA activities across the entire maneuver area, including Arizona;
3. Write the context, emphasizing material culture, and define the themes, contributor resource types, and period of significance;
4. Produce a general map of the historical DTC/C-AMA;
5. Compile a detailed map charting the maneuvers conducted on each of the three project sites (GSEP, Blythe Solar Power Plant, and Palen Solar Power Plant);
6. Compile a list of known DTCCL contributors, with a description and individual map plot of each, and a DTCCL map showing all contributors; and

7. Plot, describe, and justify the boundaries of the DTCCCL from the historical perspective.

The DTCCCL PI-Historian will provide the products of 2 through 6 to the three project CRSs.

The DTCCCL PI-Historian will submit the draft DTCCCL historical documentation to staff for review and approval and to the BLM Palm Springs Field Office archaeologist for review and comment.

## B. Historical Archaeological Study

The DTCCCL PI-Historian will obtain the services of a historical archaeologist to serve as DTCCCL Historical Archaeologist. The DTCCCL Historical Archaeologist's training and background must meet the U.S. Secretary of Interior's Professional Qualifications Standards for Historical Archaeology, as published in Title 36, Code of Federal Regulations, part 61. The resume of the DTCCCL historical archaeologist must demonstrate familiarity with the artifacts, environmental modifications (deliberate and incidental, including tank tracks), and trash disposal patterns associated with World War II land-based army activities, and knowledge of the full range of late nineteenth and early-to-mid-twentieth-century domestic can, bottle, and ceramic diagnostic traits. The resume of the proposed DTCCCL Historical Archaeologist will be submitted to staff for review and approval.

The DTCCCL PI-Historian will direct the DTCCCL Historical Archaeologist to:

1. Synthesize the present state of knowledge of DTCCCL historical archaeology in the Chuckwalla Valley and Palo Verde Mesa and identify significant gaps in this knowledge, based on all pertinent literature, including published monographs and papers, unpublished reports in the files of the CHRIS and the BLM's Palm Springs Field Office, and on consultation with archaeologists actively conducting research in this region, particularly those based in academia;
2. Develop a comprehensive historic-period archaeological context for the DTCCCL;
3. Have low-altitude aerial photography of the Chuckwalla Valley and Palo Verde Mesa flown, and analyze the results for evidence of larger-scale DTCCCL (or other historic-period) activities and any unrecognized site types; if any such sites are identified within the project areas of the GSEP, Blythe Solar Power Project, or Palen Solar Power Project, notify the appropriate CRS(s) and have these resources recorded and added to the project's cultural resources inventory;
4. From the historical archaeological context, the literature synthesis, and the aerial photography, identify and describe the full range of archaeological resources known for the DTCCCL and posit any additional resources that, while not known, are strongly suggested by the context and synthesis;
5. From the historical archaeological context and the literature synthesis, formulate specific research questions:
  - a. To fill significant gaps in our knowledge of the DTCCCL history of this area

- b. Answerable with data from known archaeological resources
    - i. Specify what kinds of resources have the relevant data
  - c. To determine the presence or absence of additional archaeological resources not presently known but likely
    - i. Specify the methods for making this determination
  - d. To definitively distinguish Desert Strike sites from DTC/C-AMA sites
    - i. Army records for locations of Desert Strike activities may facilitate eliminating some ambiguous sites not in those locations as Desert Strike sites;
6. Develop criteria for definitively attributing archaeological sites to the DTCCL based on archaeological traits;
  7. Compile location data on known DTCCL archaeological elements, draft detailed GIS-based maps of the various site types and their spatial distributions, and draw on a map a provisional boundary for the DTCCL from the archaeological perspective, with a written justification for the boundary;
  8. Train the Project Historical Archaeologists for the GSEP, Blythe Solar Power Plant Project. and Palen Solar Power Plant Project to correctly and consistently identify and record the historic-period military and domestic artifacts likely to be encountered on the these project sites and assist them in the development of field recording forms for these artifacts and sites; and
  9. Assist the Project Historical Archaeologists for the GSEP, Blythe Solar Power Plant Project. and Palen Solar Power Plant Project to train their field crews to correctly and consistently identify and record the historic-period military and domestic artifacts likely to be encountered on the these project sites and to correctly and completely fill out the field forms developed for historic-period sites.

The DTCCL PI-Historian will provide the products of 1–8 to the three project CRSs.

The DTCCL PI-Historian will submit the draft DTCCL historic-period archaeological documentation to staff for review and approval and to the BLM Palm Springs Field Office archaeologist for review and comment.

#### C. Possible NRHP nomination of the DTCCL:

After all data recovery for the three projects is completed and reported, the DTCCL PI-Historian will confer with the DTCCL Historical Archaeologist to decide if the DTCCL is probably eligible for the NRHP, and, if so, the two will collaborate on a NRHP nomination for the DTCCL under Criterion D. If the DTCCL PI-Historian and the DTCCL Historical Archaeologist agree that a DTCCL nomination is appropriate, the DTCCL nomination will include:

1. Definition of the resource;

2. DTCCCL probable contributing resource types, known and as-yet-unknown:
  - a. tank tracks
  - b. refuse (primarily food can) scatter
  - c. refuse (other activities, e.g., auto-related; ± food) scatter
  - d. multiple-episode refuse dump
  - e. foxhole/temporary defensive position
  - f. temporary camp-related (cleared areas for tents)
  - g. semi-permanent camp-related (paths, activity areas, varied shelter sizes and shapes)
  - h. features (hearths, other)
  - i. other;
3. Historical background and context;
4. Justification of eligibility;
5. Period of significance and justification for POS;
6. Identification of contributors, map of archaeologically confirmed sites, and site descriptions of all;
7. Definition of boundaries, as identified through historical and archaeological research; and
8. Provision for adding additional contributing resources to the district as further survey is done.

The DTCCCL PI-Historian will submit the draft nomination to staff for review and approval and to the BLM Palm Springs Field Office archaeologist for review and comment.

The DTCCCL PI-Historian will submit the staff-approved DTCCCL NRHP nomination to the State Historical Resources Commission, to initiate the process of formal consideration by the Keeper of the National Register, and track and facilitate the review of the nomination to acceptance, including required revisions and additions, or final rejection.

If the DTCCCL PI-Historian and the DTCCCL Historical Archaeologist agree that a DTCCCL nomination is not appropriate, the DTCCCL PI-Historian will write and submit to staff a summary of the evidence justifying that conclusion.

#### D. Management Plan and Information Dissemination:

The DTCCCL PI-Historian will set up some kind of BLM management status for the DTCCCL (hopefully NRHP eligibility, but some other protective status may be necessary):

1. For managing known, unimpacted resources
2. For adding further contributing resources to the district as further survey is done



The DTCCCL PI-Historian will collaborate with the DTCCCL Historical Archaeologist to prepare a research paper, interpreting the implications of the DTCCCL data for our understanding of WWII combat training history, and submit it to a peer-reviewed journal.

The DTCCCL PI-Historian will create or direct the creation of an provide an instruction module for use in local school districts, based on the data compiled by the DTCCCL PI-Historian and the DTCCCL Historical Archaeologist. The PI-Historian will also obtain the services of an exhibit preparer and direct the preparer to craft materials and/or a display for existing public interpretation venues at local museums (such as the nearby George S. Patton Memorial Museum or Wiley's Well rest area), that interpret the DTCCCL for the public, based on the data compiled by the DTCCCL PI-Historian and the DTCCCL Historical Archaeologist. The DTCCCL PI-Historian will arrange for the materials to be used and displayed.

The DTCCCL PI-Historian will also explore other modes of public dissemination of DTCCCL data and propose these, with budgets, to staff. Some possibilities are noted here, but the PI-Historian's proposals should not be limited to these.

A DTCCCL website and chatroom for WWII veterans and history buffs to acquire and exchange information.

A hiking or off-road-vehicle trail connecting DTCCCL archaeological remains of particular interest (and where artifacts of archaeological interest are no longer present), such as the more permanent camps and air bases. This trail and a map of it providing GPS coordinates, descriptions, historical information, and historic-period photographs could be developed with BLM and made available to visitors. A model for such a trail is the California Backcountry Discovery Trails system.

An over-flight video, with a narration identifying and providing the history of the DTCCCL contributors that are better observed from the air, such as the airbases, interspersed with historic-period film footage of related DTCCCL activities.

### **Prehistoric Trails Network Cultural Landscape, Project-Specific Mitigation for GSEP Impacts to Contributors**

The PTNCL and its potential contributors are both archaeological and ethnographic resources. As such, the impacts to these resources must be evaluated by different kinds of specialists. The specialists will have individual and shared responsibilities, which are detailed above.

This process will begin with the PTNCL PI-Prehistoric Archaeologist writing an overarching prehistoric context for the Chuckwalla Valley and Palo Verde Mesa region, with specific emphasis on the PTNCL. This context will formally define the landscape boundaries, thematic associations, property types, and significance period by building up on the preliminary definitions provided by staff above. This context will include a synthesis of previous research in the area and, among other things, result in detailed GIS-based maps of trails and the various site types and their spatial distributions. In addition, the specialist will arrange and synthesize the results of a regional paleo-environmental reconstruction including lake fluctuations covering the last 14,000 years.

This specialist will also refine the research questions that will be addressed, the specific data sets needed to answer these questions, mitigation measures for the relevant site types, and the analytical standards that will be met. Until these refinements take place, research and mitigation will be modeled on McCarthy's (1993) report, under the guidance of BLM and Energy Commission archaeologists. This specialist will ensure that the work on prehistoric sites at all three solar project sites is consistent, and of high quality. They will also facilitate data sharing between different projects, project owners, and companies, if necessary.

The PTNCL Ethnographer will be in charge of identifying impacts to PTNCL ethnographic resources, through research and consultation with Native Americans, and for planning mitigation for these impacts. This specialist will have demonstrated experience as an ethnographer and have already established long-term relationships with Native American groups whose traditional territories are near to the project areas. This individual will develop a historic and ethnographic context for the PTNCL from historical, ethnohistoric, and ethnographic records and sources, including interviews with local Native American community members. The PTNCL Ethnographer will also organize site visits by interested individuals to important PTNCL locations such as springs, petroglyph sites, geoglyphs, and major trail segments (as described in **CUL-16**). It is hoped that these visits and the resulting conversations will determine if the three projects would have any significant impacts on the PTNCL ethnographic resources, from the perspective of the Native Americans, and what options for mitigation the Native Americans consider available. The Native American groups to be consulted by the PTNCL Ethnographer should include at a minimum representatives from the Quechan Tribe, the Chemehuevi Reservation, the Cabazon Band of Mission Indians, the Aqua Caliente Band of Mission Indians, the San Manuel Band of Mission Indians, the Twentynine Palms Band of Mission Indians, La Cuna de Aztlan Sacred Sites Protection Circle, the Fort Mojave Indian Tribe, and the Colorado River Indian Tribes. The PTNCL Ethnographer will be in charge of coordinating with the BLM during their Section 106 process consultation with Native Americans to facilitate Energy Commission and BLM coordination.

The PTNCL Historian/Ethnohistorian will develop an annotated bibliography to establish the context, themes, contributing resource types, period of significance, and boundaries for the PTNCL from historical records and non-ethnographic accounts of Native Americans in the Chuckwalla Valley from the time of Spanish exploration to the present. Using data from the most pertinent sources, this specialist will write a historic context and define the themes, contributor resource types, and period of significance for the possible NRHP nomination of the PTNCL. The specialist will also compile a list of known PTNCL contributors, with a description and individual map plot of each, and a PTNCL map showing all contributors and plot, describe, and justify the boundaries of the PTNCL from the ethnohistorical perspective.

The PTNCL PI-Prehistoric Archaeologist, PTNCL Historian/Ethnohistorian, and PTNCL Ethnographer will communicate frequently and share information as they write their contexts. The final documents will share concepts and terminology. If all specialists agree that the PTNCL is probably eligible for listing on the NRHP, they will jointly write a nomination form under Criteria A and D and list the resources that they have identified from all three projects as contributors. Resources will be identified as contributors or

non-contributors on the basis of the contexts developed by the specialists and on the basis of the data recovered from each potential contributor during the evaluation and data recovery activities that staff has recommended for each known resource that would be impacted by the GSEP and the other two projects. The evaluation of each resource as a potential PTNCL contributor would suffice as well to evaluate it as an individual resource if the PTNCL specialists should agree that the PTNCL is not eligible for listing on the NRHP.

The PTNCL documentation and possible NRHP nomination program includes two additional mitigation measures for GSEP's contribution to the significant cumulative impact staff identified. First, the PTNCL fund would contribute money for the BLM Palm Springs Field Office to hire a GIS Technician to digitize and input data into their existing GIS database from DPR 523 forms for 2,500 archaeological sites of BLM's choice. This would ameliorate the current situation, in which the majority of the previously identified cultural resources managed by the BLM's Palm Springs Field Office have not been entered into their existing GIS database. The lack of an up-to-date digital database for the cultural resources of the region hampers planning efforts for local, state, and federal agencies and makes it difficult for them to meet their obligations under NEPA, CEQA, and Section 106 of the NHPA. Updating this database is central to BLM managing known PTNCL contributors that are not subject to project impacts at this time and additional contributors to the PTNCL as they are identified in subsequent surveys.

Second, the PTNCL fund would make a donation of \$20,000 to the Cultural Conservancy in support of the Salt Song Trail Project. The Cultural Conservancy is a Native American nonprofit organization dedicated to the preservation and revitalization of indigenous cultures and their ancestral lands. The Salt Song Trail project is an oral history and education project recording Colorado River Native American origin and migration stories centered on ancient trail systems, of which the PTNCL is a part.

### **DTC/C-AMA Cultural Landscape, Project-Specific Mitigation for GSEP Impacts to Contributors**

The DTCCCL and its potential contributors will be defined and impacts to these resources will be evaluated by two specialists: a DTCCCL PI and Historian and a DTCCCL Historical Archaeologist. The responsibilities of each specialist are outlined below.

The DTCCCL PI-Historian will be a specialist in World War military history who will write a context for the DTCCCL expanding upon but not duplicating the efforts of Bischoff (2000 and 2009). The context will emphasize material culture, create a timeline of activities across the entire maneuver area and result in detailed maps that focus on the three project areas and the maneuvers that took place in each. This specialist will also conduct oral history interview with veterans and synthesize previously recorded interviews.

The DTCCCL Historical Archaeologist will be a specialist in the identification, analysis and interpretation of the artifacts, environmental modifications (e.g. tank tracks), and trash disposal patterns associated with the early phases of WWII land-based army activities. In addition, the specialist will be knowledgeable of the full range of late nineteenth and early-to-mid-twentieth-century can, bottle, and ceramic diagnostic traits.

As some of these skills are rare, the DTCCL Historical Archaeologist will be responsible for training the field crews with the above skills so they can accurately complete in-field artifact analyses. The specialist will also be responsible for accurately and consistently determining if each GSEP site is associated with the DTCCL, or some other historic time period such as pre-1940s mining and ranching. This specialist will also ensure that the field work on the historic-period archaeological sites at all three solar project sites is consistent, and of high quality. This person will also facilitate data sharing between different projects, project owners, and companies, if necessary.

Together, the DTCCL PI-Historian and the DTCCL Historical Archaeologist will write a context that: refines the research questions that will be addressed, identifies the specific data sets needed to answer these questions, develops mitigation measures for the relevant site types, and establishes the analytical standards that will be met. Until these refinements take place, research and mitigation will be modeled on Bischoff's (2000 and 2009) context, under the guidance of BLM and Energy Commission archaeologists.

Finally, if both DTCCL specialists agree that the DTCCL is probably eligible for listing on the NRHP, they will jointly write a nomination form under Criterion D and any other Criterion they think is appropriate. The nomination will list the resources that they have identified from all three projects as contributors and non-contributors on the basis of the contexts developed by the specialists and on the basis of the data recovered from each potential contributor during the evaluation and data recovery activities that staff has recommended for each known resource that would be impacted by the GSEP and the other two projects. The evaluation of each resource as a potential DTCCL contributor would suffice as well to evaluate it as an individual resource if the DTCCL specialists should agree that the DTCCL is not eligible for listing on the NRHP.

### **Mitigation for GSEP Impacts to Individual Cultural Resources**

Construction-related activities associated with the GSEP project have the potential to cause significant direct impacts to 27 individual cultural resources. These direct impacts are expected to involve the destruction of the portions of each site within the GSEP facility footprint or linear corridor. Twelve prehistoric resources will be subject to direct impacts. Six of these resources are potential contributing elements to the PTNCL. Fourteen historic-period archaeological sites and 1 multi-component site are potential contributing elements to the DTCCL. Two hundred and fifty-four additional prehistoric sites are present within the GSEP ethnographic PAA and are potentially subject to significant indirect impacts.

The following discussion of the resolution of significant impacts is organized by time period and association with one of the two cultural landscapes. Within each of the two landscapes, sites are further grouped by the kind of mitigation required by the amount of information we have about each site and its location within the GSEP site facility footprint and linear corridor.

### ***Mitigation for GSEP Impacts to Prehistoric Sites***

Staff's mitigation measures for 12 GSEP prehistoric sites have been divided into two parts: a discussion of mitigation measures for assumed-eligible prehistoric sites that do not appear to be part of the PTNCL, and a discussion of mitigation measures for those

sites that do appear to be part of the landscape and are therefore eligible as contributors to an assumed-eligible landscape. The mitigation for potential contributors to the PTNCL is further divided into mitigation for direct impacts and mitigation for indirect impacts.

***Mitigating Impacts to Assumed-Eligible Prehistoric Sites Not Associated with a Cultural Landscape***

Construction activity on the main GSEP plant site and the proposed linear alignments may cause the destruction of six prehistoric to historic-period Native American archaeological sites that are not associated with the PTNCL (**Cultural Resources Table 15**). The destruction of these sites through the construction of the proposed project would cause a substantial adverse change in the significance of these historical resources, and would, therefore, have a significant effect on the environment. Staff here recommends a program to reduce the significance of the loss of the resources, prior to the onset of any ground disturbance by the project owner within 30 m of the resource boundary. The loss of the resource represents a loss of information that it is in the public interest to preserve. The recommended program attempts to compensate the public for the loss of a unique body of information on the prehistory and early history of Native American life in the Chuckwalla Valley through the partial recovery and dissemination of that information.

**CULTURAL RESOURCES Table 15  
Prehistoric Sites for Which Mitigation of Project Impacts is Required**

<b>Resource</b>	<b>Resource Description</b>	<b>CRHR Eligibility</b>
CA-Riv-9084	Artifact Scatter: 17 acres, artifacts (n=96), lithics, ground stone, 1 marine shell, and 1 Olivella shell bead (1100 cal AD to Contact).	Assumed Eligible
CA-Riv-9209	Artifact Scatter: 2 acres, artifacts (n=24), 7 debitage, 4 ground stone fragments, 1 core.	Assumed Eligible
CA-Riv-9215	Artifact Scatter: 3.6 acres, artifacts (n=25), 10 debitage, 1 projectile point (no ID).	Assumed Eligible
CA-Riv-9216	Artifact Scatter: 4 acres, near lake shore, 2 concentrations, artifacts (n=45), lithics, groundstone.	Assumed Eligible
CA-Riv-9220	Artifact Scatter: 9.4 acres, artifacts (n=94), lithics, 1 projectile point tip, 1 Cottonwood leaf-shaped projectile point, 1 metate fragment.	Assumed Eligible
CA-Riv-9223	Lithic Scatter: 1 acre, debitage (n=20).	Assumed Eligible

Staff recommends implementation of a phased data recovery program at each of these sites that would partially mitigate their destruction by GSEP construction. The phases of mitigation that staff recommends would serve to recover information regarding the age and function of each of these sites. This will be accomplished through the development of a more complete inventory of the features and artifacts present.

The first phase of the mitigation program would be to determine if buried deposits are present at each site, as described in staff's recommended **CUL-10**. This process will

begin by augmenting the original site map to create a Trimble GPS map showing details of the nearby natural features such as seasonal drainages, the site boundaries, the location of each individual artifact, and the boundaries around any artifact concentrations. All artifacts will be collected after their location has been mapped, and returned to the laboratory for further analysis. The specific landform for each site and its relationship to specific ancient lakeshores of Ford Dry Lake will also be identified. If lakeshores are within 100 m of one of these sites they will be included in the new site map. At each site the archaeologists for the project owner will excavate a 1m by 1m unit reaching to the upper boundary of the Qoaf alluvium in the locations of highest artifact density. If multiple artifact concentrations have been identified, one excavation unit will be placed in the center of each concentration. The horizontal limits of the site will be further explored by excavating test units down to the upper boundary of the Qoaf alluvium with a hand auger at four spots equally spread around the exterior edge of each site. If no buried deposits or additional features are identified during the excavations described above, then the data potential of these sites will be considered exhausted thereby reducing the loss of these resources to less-than-significant levels.

However, if buried deposits or additional features are identified at any of these six sites, then the second phase of the mitigation program will begin. This kind of mitigation is described in detail in staff's recommended **CUL-11** and below.

Buried deposits would require further excavation to define the horizontal and vertical limits of the site. In particular, it would determine what archaeological features are present, including their numbers, location, and layout. Staff recommends that any data recovery involving mechanical subsurface sampling be supervised by a project director with demonstrated experience supervising large excavation projects where mechanical excavation was an essential part of the project (as described in **CUL-3**). As prehistoric structures, pits, and water features (i.e. wells, reservoirs, and canals) are often subtle and difficult to identify in backhoe trench walls, this project director should also have demonstrated experience with Sonoran Desert archaeology in depositional contexts. Staff further recommends that this subsurface sampling be conducted mechanically by an experienced archaeologist/backhoe operator team (as described in **CUL-3**).

Staff recommends a mitigation program what would partially mitigate the destruction of buried archaeological deposits in this Sonoran Desert lakeside context (**CUL-11**). A series of backhoe trenches placed at systematic intervals across each site with lengths that will allow a sampling percentage of 10 percent of the portion of the site expected to be destroyed. A trenching plan will be developed by the project owner in consultation with the Energy Commission's Compliance Project Manager (CPM). Staff recommends 10-m-to-50-m spaced trenches oriented north-south as an initial step, unless site specific conditions suggest better results using a different arrangement. Backhoe trenches will be 2 feet wide and generally dug to depths no greater than 5 feet to conform to OSHA standards. If a depth greater than 5 feet is required to investigate archaeological features, said trenches will either be stepped or hydraulic shoring will be utilized to comply with OSHA regulations. Trench walls will be scraped with hand tools to provide a clear exposure of subsurface cultural remains. Archaeological features identified in trench walls will be marked and assigned a number. A trench record form will be completed for each trench that includes its essential characteristics: (trench number, length, width, and depth), the locations and types of archaeological features,

the stratigraphy and characteristics of exposed sediments, and locations of disturbances such as tree roots or animal burrows.

Features located during trenching will be documented through standardized forms, scaled profile drawings, plan view maps, and photographs. Between 50 and 100 percent of the features identified in the trenches will be fully or partially excavated depending on their state of preservation and presence or absence of chronological materials. These proportions will be negotiated between the project owner and CPM on a site-by-site basis depending on the nature of the features identified, their rarity, and their information potential. Buried features will be excavated by hand or mechanically “stripped” with a backhoe bucket by removing sterile overburden until 20 cm above the limits of the feature as identified in the trench. The remainder of the feature will be excavated by hand using the standard archaeological methods as outlined by the California SHPO.

Samples such as flotation, pollen, and charcoal would be collected from appropriate contexts. Artifacts such as lithics, ceramics, groundstone, and shell will be subject to the professionally appropriate laboratory analyses and curation. The age and function of each site will be determined if possible.

All information collected during this excavation program will be analyzed and included in the overall synthetic report written by the project owner regarding the data recovery phases of the archaeological work for GSEP (**CUL-6**).

Finally, if buried deposits are present, staff recommends two additional mitigation measures in order to offset the loss of information that the above field investigations alone cannot mitigate. One measure is the preparation and publication of a peer-reviewed journal article to inform the professional archaeological community of these prehistoric Native American sites and to interpret their role in the prehistory of the Mojave Desert. A second measure is the preparation and presentation of materials that interpret these sites so that the public derives a direct and relatively immediate benefit from the degradation of their environment. Potential public interpretation efforts may include the preparation of an instruction module for use in local school districts, or the preparation of a display for existing public interpretation venues such as Wiley’s Well Road Rest Area.

Upon the completion of the data recovery, analyses, report writing, and dissemination of information to the public and interested professionals, a statistically valid sample of the unique information contained within these buried archaeological resources will have been recovered, thereby reducing the loss of these resources to less-than-significant levels.

### ***Mitigating Impacts to Assumed-Eligible Prehistoric Sites Identified as PTNCL Contributors***

Construction activity on the main GSEP plant site and the proposed linear alignments may cause the destruction of six prehistoric to historic-period Native American archaeological sites that are associated with the PTNCL (**Cultural Resources Table 16**). Three of these sites are small pot drops and three are large temporary camps.

**CULTURAL RESOURCES Table 16**  
**Potential Contributors to the Prehistoric Trails Network Cultural Landscape**  
**for Which Mitigation of Direct Project Impacts is Required**

<b>Resource</b>	<b>Resource Description</b>	<b>CRHR Eligibility</b>
<b>Cultural Landscapes</b>		
Prehistoric Trails Network Cultural Landscape	Prehistoric Trails and associated sites: Includes 248 sites in the GSEP ethnographic PAA including McCoy Spring National Register District (CA-Riv-0132), and 6 sites listed below. Other contributors outside of GSEP PAAs .	Assumed Eligible
<b>Prehistoric Archaeological Resources</b>		
CA-Riv-0260	Temporary Camp: 62 acres, artifacts (n=1000+), features. PTNCL contributor.	Eligible
CA-Riv-0663	Temporary Camp: 186 acres, artifacts (n=1000+), features. PTNCL contributor.	Eligible
CA-Riv-9072	Temporary Camp: 350 acres, artifacts (n=1000+), features. Rose Spring projectile point (AD 200 to 1100). PTNCL contributor.	Eligible
CA-Riv-9227	Artifact Scatter: 3 acres, artifacts (n=18), pot drop brownware sherds (n=14), 1 marine shell fragment. Possible PTNCL contributor.	Assumed Eligible
CA-Riv-9249	Ceramic Scatter: 1 acre, brownware sherds (n=21), pot drop. Possible PTNCL contributor.	Assumed Eligible
CA-Riv-9255	Artifact Scatter: 1.7 acres, artifacts (n=40), 1 concentration, brownware pot drop (n=10), FAR, groundstone. Possible PTNCL contributor.	Assumed Eligible

**PTNCL Pot Drops**

Sites CA-Riv-9227, CA-Riv-9249, and CA-RIV-9255 are small prehistoric pot drops associated with the PTNCL which are expected to be destroyed by the proposed GSEP construction. These sites are both archaeological and ethnographic resources. Archaeologically, these sites are important in that they may indicate the presence of a prehistoric trail that has since been destroyed or obscured by drifting sand. The type of ceramics found at each site may reveal when this prehistoric offering was made, while the materials of each pot may indicate the location where the pot was made. When considered alone, the information available from a pot drop site is not particularly valuable, but, these sites are an important part of the larger PTNCL. As such, each of these sites are considered by staff to be eligible for inclusion in the NRHP and the CRHR.

The potential destruction of these three sites as a result of the construction of the proposed project would cause a substantial adverse change in the significance of a historical resource, and would therefore have a significant effect on the environment. Staff here recommends a program to reduce the significance of the loss of these sites, prior to the onset of any ground disturbance by the applicant within 30 m of the boundary of each site boundary. The loss of these resources represents a loss of information that it is in the public interest to preserve. The recommended program,



attempts to compensate the public for the loss of a unique body of information on the prehistory and early history of Native American life in the Chuckwalla Valley through the partial recovery and dissemination of that information.

Staff recommends that the applicant conduct a mitigation program utilizing the first part of **CUL-10**, so that the pot drop site is mapped in detail, if necessary, and surface artifacts are collected after their locations are noted. The location of the pot drop site would then be added to the overall PTNCL map described in the PTNCL documentation and possible NRHP nomination program to determine if these pot drops indicate the presence of a new or already identified trail or destination. Finally, the ceramics collected would be identified to the most specific level possible for ware, type, and temper categories with tempers sourced using petrography where appropriate. The results would be compared to the results of other ceramic analyses from PTNCL and other regional sites. The results and interpretations of the analyses of these three sites would be included both in the appropriate GSEP archaeological data recovery report and in any synthetic reports or publications written by the PTNCL Prehistoric Archaeologist and/or PTNCL Ethnographer. Upon the completion of these analyses and reports the data potential of these sites will be considered exhausted, thereby reducing the loss of the archaeological information contained by these resources to less-than-significant levels.

All information collected during this excavation program will be analyzed and included in the overall synthetic report written by the project owner regarding the data recovery phases of the archaeological work for GSEP (**CUL-6**).

It is uncertain if any mitigation for the ethnographic aspects of these resources is appropriate. Staff hopes that BLM consultation with Native American groups during the Section 106 process, formalized in the PA, will provide some guidance.

#### PTNCL Temporary Camps

Sites CA-Riv-0260, CA-Riv-0663, and CA-RIV-9072 are large prehistoric temporary camps expected to be partially destroyed by the proposed GSEP construction. These sites appear to be multi-component, short-term residential areas occupied intermittently for thousands of years. Features such as the remains of residential structures, hearths, and wells may be present at these sites. Several prehistoric trails recorded by McCarthy (1993) appear to lead in the direction of these sites. As discussed above, each of these sites are considered by staff to be eligible for inclusion in the NRHP and the CRHR, both as individual sites and as potential contributors to the PTNCL as “destinations.”

The potential destruction of these sites as a result of the construction of the proposed project would cause a substantial adverse change in the significance of a historical resource, and would therefore have a significant effect on the environment. Staff here recommends a program to reduce the significance of the loss of these sites, prior to the onset of any ground disturbance by the applicant within 30 m of the boundary of each site boundary. The loss of these resources represents a loss of information that it is in the public interest to preserve. The recommended program attempts to compensate the public for the loss of a unique body of information on the prehistory and early history of Native American life in the Chuckwalla Valley through the partial recovery and dissemination of that information.

Staff recommends a program of mitigation to reduce the expected impacts listed above. Full data recovery (**CUL-10** and **CUL-11**) is recommended for those parts of each site within the site footprint or linear corridor that are expected to be destroyed. For the remainder of each site, staff recommends limited surface collection (**CUL-12**) and avoidance measures (**CUL-13**) to ensure that there would be no physical damage to the site as a result of construction, operation, or maintenance of the project.

Staff's avoidance measures are incorporated in staff's recommended **CUL-13**. Prior to the onset of ground-disturbing activities within 30 m of a site, the applicant would re-establish the boundary of each site, add a 10-m-wide buffer around the periphery of each boundary, and flag the resulting space in a conspicuous manner. The applicant would then ensure that a cultural resource monitor (CRM) would enforce avoidance of the flagged areas during GSEP construction. A further provision would be made to permanently mark the boundary around the site and the buffer and then set the bounded area aside as an environmentally sensitive area that would not be subject to disturbance during the life of the project.

Staff's surface collection mitigation measures are incorporated in staff's recommended **CUL-12**. All three sites contain artifacts that are of interest to the general public, which places them in danger of removal, particularly during construction activities but also during operation. In the case of these three sites, staff recommends that the best way to prevent vandalism is through surface collection. Prior to ground-disturbing activities, all diagnostic artifacts (including pot drops) will be mapped and collected. Further, additional surface collection transects, representing 10 percent of the portion of each site that is outside of the plant site boundary, and flagged for avoidance, will be judgmentally placed in areas of highest artifact density. All artifacts collected will be mapped and analyzed. This analysis will be incorporated into the data recovery report for each appropriate site.

Staff recommends data recovery for those portions of each site that will be destroyed as the result of GSEP construction during site grading, grubbing, and top-soil removal. The linear corridor alignment will pass close by the east and north sides of CA-Riv-0260. If this site can be avoided, then mitigation measures **CUL-12**, **CUL-13**, and **CUL-8** will be sufficient. However, the newly proposed secondary access road may bisect the site from north to south, destroying the part of the site within the road corridor. Data recovery would be required in this case. Similarly, the GSEP linear corridor passes close by the east and north edge of site CA-Riv-0663. Ultimately the corridor is expected to destroy the northern edge of the site. In addition, the secondary road may avoid site CA-Riv-0260 and bisect CA-Riv-0663 instead. Finally, the GSEP site footprint is expected to completely destroy the northeastern corner CA-Riv-9072. In addition, the preliminary design of the storm drainage system has an outlet near or within the CA-Riv-9072 that may result in impacts from erosion.

In each case, staff recommends that the project owner clearly mark the portion of each site that will be subject to ground disturbance. Staff here recommends that the project owner implement mapping and collection of all artifacts visible on the surface of the portion of the site that will be destroyed, as stipulated in **CUL-10**. Next staff recommends that mechanical subsurface sampling be conducted at sites CA-Riv-0260, CA-Riv-0663, and CA-Riv-9072, as described in staff's recommended **CUL-11**,

performed by a cultural resources monitor and a backhoe operator, with qualifications described in **CUL-3**, and supervised by the project prehistoric archaeologist, with qualifications described in **CUL-3**. Additionally, in **CUL-11**, staff recommends that the results of the data recovery at CA-Riv-0260, CA-Riv-0663, and CA-Riv-9072 be prepared in a paper and submitted for publication in a peer-reviewed professional archaeological journal. This paper should place these sites in the larger context of the region, particularly discussing their role in the PTNCL. The PTNCL Prehistoric Archaeologist and PTNCL Ethnographer will review and evaluate the paper prior to its submission for publication, ensuring its consistency with other products resulting from the PTNCL research program.

Upon the completion of the data recovery, analyses, report writing (**CUL-6**), and dissemination of information to the public and interested professionals, a statistically valid sample of the unique information contained within these archaeological resources will have been recovered, thereby reducing the partial loss of these resources to less-than-significant levels.

It is uncertain if any mitigation for the ethnographic aspects of these resources is appropriate. Staff hopes that BLM consultation with Native American groups during the Section 106 process and formalized in the PA, will provide some guidance.

#### ***Mitigation for GSEP Indirect Impacts to PTNCL Contributors***

Construction-related activities associated with the GSEP project have the potential to cause significant indirect impacts to the 248 potential contributors to the PTNCL that have been identified outside the GSEP site footprint and linear corridor, but within the ethnographic PAA. As discussed above, each of these sites are considered by staff to be eligible for inclusion in the NRHP and the CRHR as potential contributors to the PTNCL. All of these sites are both archaeological and ethnographic resources. As such, two distinct kinds of impacts and related mitigation are required. For archaeological resources the potential impacts are related to the loss of information. For ethnographic resources potential impacts are related to spiritual and religious issues. Ethnographic impacts and the severity of those impacts can only be identified by an expert in the behavior, beliefs, and knowledge germane to understanding the landscape's cultural significance. Only members of the community who value the resource culturally and/or spiritually, in this case Native Americans, can determine impacts and suggest possible mitigation. The indirect impacts to the PTNCL as a result of the construction of the proposed project would cause a substantial adverse change in the significance of a historical resource and would therefore have a significant effect on the environment. Staff here recommends a program to reduce these impacts.

The primary source of indirect impacts to potential contributors to the PTNCL is vandalism as a result of increased access. These contributors are present across much of the western flank of the McCoy Mountains, at varying distances from the GSEP site footprint and linear corridor. However, the easiest road access leading towards the McCoy Mountains is directly accessible from the planned GSEP staging area at Wiley's Well Road Rest Area. The proposed project would involve an average of 650 employees for 37 months (GSEP 2009a, p. 3-26). Traffic and off-road exploration of the areas surrounding the project site would undoubtedly increase. Improved accessibility

often results in vandalism, resulting in the partial loss of information that it is in the public interest to preserve.

Staff recommends three mitigation measures to address the issue of potential vandalism to PTNCL contributors. First, staff recommends, as described in **CUL-14**, the project owner build a standard BLM barbed-wire fence along the southern boundary of the Palen-McCoy Wilderness between the eastern edge of the GSEP site footprint to the McCoy Mountains where the wilderness boundary turns north. Gates will be built in several locations at the discretion of the BLM. This fence will serve to prevent vehicle access to the Palen-McCoy Wilderness, which at present is unimpeded.

Second, as described in **CUL-15**, staff recommends that the project owner build protective fences around geoglyphs CA-Riv-0661 and CA-Riv-0662. Geoglyphs are well known, but extremely rare sacred features for the Native American groups in the region. They are currently located along the Blythe-Eagle Mountain Transmission Line corridor, which includes a two-track road where local visitors could have already disturbed these features with their vehicles. This area is on BLM-managed land, but south of the Palen-McCoy Wilderness boundary. These fences should meet BLM standards and be modeled after the existing fences around the Blythe Intaligos.

Third, staff recommends the project owner develop an active monitoring program for the PTNCL, as described in **CUL-16**. The PTNCL Prehistoric Archaeologist and PTNCL Ethnographer should be involved in the design of this monitoring program. At a minimum, the monitor would be a qualified cultural resources monitor under **CUL-3**. However, if requested by local Native American groups, the monitoring team would also include a Native American representative. Monitoring efforts would focus on areas along the Halchidhoma Trail (CA-Riv-0053T), with a particular emphasis on petroglyph sites such as McCoy Springs National Register District. Monitoring in the Palen-McCoy Wilderness would take place on horseback, while monitoring outside of the wilderness area could use motorized vehicles.

Prior to the beginning of construction, monitors will visit the main sites to perform an initial evaluation. Monitors will be provided with a Trimble GPS containing site locations, descriptions of the artifacts present at each site, and detailed photographs taken by McCarthy's team during the original recording of these resources. During the GSEP construction a qualified cultural resources monitor would visit the site and examine it thoroughly for new vandalism, using the records contained in the Trimble to track the amounts and locations of the damage. All new vandalism would be photographed and mapped by the monitor when it is discovered. During the first six months of construction, monitoring visits will take place once a month. This schedule will be modified in response to increasing amounts of vandalism, as outlined in the plan written by the PTNCL Prehistoric Archaeologist and PTNCL Ethnographer. If increasing amounts of vandalism warrant it, a data recovery phase, in the form of the surface collection and analysis of artifacts may be initiated at the discretion of the PTNCL specialists.

All information collected during this monitoring program will be analyzed and included in the overall synthetic report written by the project owner regarding the data recovery phases of the archaeological work for GSEP (**CUL-6**). Further, if relevant, this information will be included in the possible formal nomination of the PTNCL to the

NRHP, which will be written by the PTNCL PI-Prehistoric Archaeologist, PTNCL Ethnographer, and PTCCCL Ethnohistorian.

The collection of important information and the protection of significant archaeological and ethnographic resources will result in reducing the indirect impacts of the GSEP project on the PTNCL to less-than-significant levels.

### ***Mitigation for GSEP Impacts to the DTC/C-AMA Cultural Landscape***

The 15 historic-period archaeological sites within the GSEP project area that are potential contributors to the DTCCL (**Cultural Resources Table 17**) are expected to be completely destroyed by the proposed GSEP construction. As a result of data insufficiencies in the site forms of these 15 sites, staff is uncertain if these sites are associated with the DTCCL. Data insufficiencies included site form recording inconsistencies between recorders, seeming incongruities in the co-occurrence of certain can types, and the lack of discussion of possible military uses of some artifacts. As a result staff was concerned as to whether dateable can and bottle traits were correctly identified in the field. Misidentification could have resulted in sites that may date to the DTC/C-AMA era (1942-1944) being incorrectly interpreted as dating to the mid-twentieth century. Misidentification would also result in multi-component sites with some cans ostensibly dating to the mid-twentieth-century and some to the DTC/C-AMA era having incorrect artifact counts if all the cans actually date to the DTC/C-AMA era. These uncertainties could contribute to problems in correctly determining contributors to an assumed-eligible DTC/C-AMA cultural landscape in two ways. First, it could result in not considering sites that could be contributors. Second, it could result in incorrect counts of artifacts and the subsequent disqualification of contributing elements when the basis for determination of contributors is the number of artifacts representing the period of significance.

Given these concerns, staff assumed that all historic period sites were eligible for listing on both the NRHP and CRHR for the purposes of the present siting case. The potential destruction of these 15 sites as a result of the construction of the proposed project would cause a substantial adverse change in the significance of what here is assumed to be a historical resource and would therefore have a significant effect on the environment. As such, these impacts, if unavoidable, must be mitigated.

**CULTURAL RESOURCES Table 17**  
**Potential Contributors to DTC/C-AMA Cultural Landscape for which Mitigation of Project Impacts Would Be Required**

<b>Resource</b>	<b>Resource Description</b>	<b>CRHR Eligibility</b>
<b>Cultural Landscapes</b>		
DTC/C-AMA Cultural Landscape	World War II-era Refuse Scatters and Features: includes 14 historic-period archaeological sites, 1 dual component site, and 1 unknown site listed below. Other contributors outside of GSEP PAAs.	Assumed Eligible
<b>Historical Archaeological Resources</b>		
P33-13598	Refuse Scatter: 0.04 acres, cans (n=8). Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9063H	Refuse Scatter: 1.22 acres, artifacts (n=15). Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9203H	Refuse Scatter: 5.2 acres, artifacts (n=84), food and beverage cans, can fragments, glass bottles, and plastic. Dual component? Post 1950? Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9204H	Refuse Scatter: 1 acre, cans and bottles (1932-1953). Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9211H	Refuse Scatter: 0.2 acres, cans and glass bottles, 1934 penny. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9213H	Refuse Scatter: 2 acres, (n=60) cans. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9214H	Refuse Scatter: 0.7 acres, (n=10) cans. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9228H	Refuse Scatter: 0.06 acres, 10 cans, bottle base (1938-1951), bottle base (1916-1931), razor blade, glass fragments. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9245H	Refuse Scatter: 3.3 acres, (n=14), cans, thermos, flare. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9251H	Refuse Scatter: 0.2 acres, (n=9) cans, machine gun cartridges, pocket knife, bailing wire. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9254H	Refuse Scatter: 0.6 acres, (n=21) cans. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9258H	Refuse Scatter: 2.3 acres, (n=150+) cans, glass bottles, machine gun cartridges, 5 artifact concentrations. Possible contributor to DTCCL.	Assumed Eligible
CA-Riv-9259H	Feature: 0.3 acres, 2 stake alignments. Possible contributor to DTCCL.	Assumed Eligible
<b>Dual Component Resources</b>		
CA-Riv-9205H	Refuse Scatter/Lithic Scatter: 1 acre, Prehistoric (n=8) lithics and groundstone. Historic (n=100+) cans, glass (post 1945), auto parts (1930-1940). Possible contributor to DTCCL.	Assumed Eligible

Resource	Resource Description	CRHR Eligibility
<b>Unknown</b>		
CA-Riv-0259 (P33-00259) Or (P33-13656)	Features: 1 acre, Prehistoric rock rings or WWII-era foxholes with refuse scatter? 2004 visit suggests this site is a possible contributor to DTCCL.	Assumed Eligible

Staff here recommends a program based on recommendations by Bischoff (2000, p. 135) to reduce the significance of the loss of these historic resources. This program must be complete prior to the onset of ground disturbance by the project owner. The loss of these resources represents a loss of information that is in the public interest to preserve. The recommended program, the details of which may be found in **CUL-17**, attempts to compensate the public for the loss of a unique body of information about World War II American military training for through the partial recovery and dissemination of that information.

Following Bischoff (2000, p. 135) staff recommends that the project owner hire a DTCCL Historian and DTCCL Historical Archaeologist, as detailed in the DTCCL documentation and possible NRHP nomination program. As discussed previously, these two specialists would collaborate in writing a historical context expanding on Bischoff's work and formally nominate DTCCL for listing on the NRHP

For the 15 potential contributors to the DTCCL subject to direct impacts by GSEP, staff recommends that in coordination with the archaeologist for the project owner, the DTCCL Historical Archaeologist would assist with field work, complete an artifact analysis, and write a final report. This recommended program is described in detail in staff's recommended **CUL-17**. In preparation for field work the DTCCL Historical Archaeologist would train the crew in World War II military artifact identification techniques. If the DTCCL Historical Archaeologist is unable to participate in the field work personally, an experienced historical archaeologist who has been trained by the specialist would lead field work at each site.

The 15 sites would be revisited and an infield artifact analysis would be completed. At a minimum this analysis would include point proveniencing, photographing, measuring the dimensions of all artifacts present. Types of seams and closures for each bottle and can would also be noted. Unusual or unidentifiable artifacts would be collected and submitted to the DTCCL Historical Archaeologist for further analysis. All artifacts may be collected if the DTCCL Historical Archaeologist so requests it. Bischoff notes that the burial of trash was common at the DTC/C-AMA (2000, p.135). Each site would be examined with a metal detector to determine if any buried deposits are present. If buried deposits are located, they would be excavated by an experienced historical archaeologist.

After the completion of the field work, the DTCCL Historical Archaeologist would review the data collected in the field, do an analysis, and write a report (**CUL-6**). The DTCCL Historical Archaeologist would determine if these sites are contributing elements the DTC/C-AMA. If so, the specialist would conduct historical research to identify which

specific maneuvers took place on the GSEP project area and as a result place the 15 archaeological sites into context with these historical events.

Finally, staff recommends that the results of the data recovery at these 15 historic WWII era sites be prepared in a paper and submitted for publication peer-reviewed professional archaeological journal as stipulated in **CUL-17**. This paper should place these sites in the larger context of the region, particularly discussing their role in the DTCCCL. The DTCCCL Historian and DTCCCL Historical Archaeologist will review and evaluate the paper prior to its submission for publication, ensuring its consistency with other products related to the DTCCCL.

Upon the completion of the data recovery, analyses, report writing and dissemination of information to the public and interested professionals, a statistically valid sample of the unique information contained within these archaeological resources will have been recovered, thereby reducing the loss of these resources to less-than-significant levels.

### ***Mitigation for GSEP Impacts to Built-Environment Resources***

#### **Wiley's Well Road**

No significant direct construction impacts to the eligible portions of Wiley's Well Road are presently confirmed. However, the GSEP linear facilities corridor has recently been redesigned. Possible project impacts to Wiley's Well Road need to be re-evaluated in the context of the new linear facilities corridor alignment. If the construction of the newly proposed GSEP linear facilities corridor would cause a substantial adverse change in the significance of Wiley's Well Road, then the severity of these impacts would need to be mitigated to less-than-significant levels.

### **Treatment of Discovery of Buried Archaeological Deposits**

Construction at the GSEP main site footprint, along the linear corridors, or along the secondary access road alignment, may cause partial destruction of significant and unknown buried archaeological deposits. Staff here recommends a construction monitoring program that provides for different monitoring protocols depending on two main landform designations and the type of construction taking place. The primary basis for the protocols is the geoarchaeology study completed by the project owner (see "Geoarchaeology" subsection above).

#### **Main Site Footprint**

The majority of the proposed site footprint is covered in deposits of Holocene age. Staff considers these deposits to have a moderate-to-high potential to contain well-preserved, buried cultural materials. However, these materials would be expected within approximately 2 feet of the modern ground surface, in sediments stratigraphically above the Qoaf alluvium. The majority of the sediments that have the potential to contain cultural materials will be disturbed during the grading and grubbing of the site. Staff recommends that the project owner actively monitor ground disturbance during grading until the upper surface of the Qoaf alluvium is reached. This protocol is described in **CUL-8**. The Qoaf alluvium dates to the Pleistocene epoch, largely predating the commonly acknowledged presence of humans in North America. Staff believes that construction monitoring through or beneath this alluvium would be largely unproductive.



However, any buried archaeological deposits that are found during the course of ground disturbance would be subject to the protocol in **CUL-11**.

If the Qoaf alluvium is not reached during grading, as may happen at the southern edge of the GSEP site footprint, then the active cultural resources monitoring must continue in these areas only, until the sterile Qoaf alluvium is reached.

### **Linear Corridor and Secondary Access Road**

The highest density of sites is expected in association with the Ford Dry Lake ancient lakeshore, reflecting human utilization of plant and animal resources flourishing near this desert water source. These sites are also expected to be the best preserved since the gentle slope would result in low-energy sheet wash, facilitating the burial of sites without a high degree of disturbance of anthropogenic materials. The GSEP linear access corridor and secondary access road are planned to pass by known sites that are eligible for the NRHP and CRHR (CA-Riv-0260 and CA-Riv-0663), and they will cut through primarily ancient lakeshore sediments likely to contain buried sites.

Staff recommends two kinds of monitoring during GSEP construction activities in these sensitive areas. First, during linear corridor and road grading, staff recommends active monitoring identical to that used for the main site footprint (**CUL-8**). During utility trenching, which is expected to reach a depth of 10 feet, staff recommends a monitoring protocol where the face of each trench is examined for features. As described in **CUL-3**, monitoring will be conducted by an archaeologist with demonstrated experience in identifying buried features in backhoe trench walls in Sonoran Desert depositional contexts. In addition, while the utility trench is open, the project owner will arrange for a geologist or geomorphologist to observe the exposed stratigraphy. This specialist will collect information and samples that will aid in the paleo-environmental reconstruction of Ford Dry Lake over the last 14,000 years, as specified in the PTNCL documentation and possible NRHP nomination program. Any buried archaeological deposits that are found during the course of ground disturbance would be subject to the discovery protocol in **CUL-11**.

## **C.3.7 NOTEWORTHY PUBLIC BENEFITS**

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In the case of the proposed GSEP, very little is known about the prehistory of the Mojave Desert. Even less is known in this specific area of the Mojave-Colorado desert interface area. All that is known comes primarily from surface manifestations of localized sites. Little to nothing has been done regarding the relationships between local sites, trails, quarries, and now ephemeral bodies of water (i.e. Lake Cahuilla, Ford Dry Lake, Palen Dry Lake) and the springs and oases along the I-10 corridor. Data recovery associated with the proposed project or its alternatives has the potential to contribute to our knowledge of the ancient peoples who lived near Ford Dry Lake. As such, data recovery may provide some public benefits in the form of information.

## **C.3.8 COMPLIANCE WITH LORS**

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If the conditions of certification above are properly implemented, the proposed GSEP would result in a less-than-significant impact on known and newly found archaeological

resources. However, impacts to ethnographic resources such as those in the PTNCL may result in significant unavoidable impacts that cannot be fully mitigated. In addition, despite the correct implementation of the mitigation measures outlined here, GSEPs incremental contribution to cumulative impacts to cultural resources would be cumulatively considerable.

Nonetheless, the project would be in compliance with the applicable state laws, ordinances, regulations, and standards listed in **Cultural Resources Table 1**.

The County of Riverside's General Plan has language promoting the general county-wide preservation of cultural resources. The Programmatic Agreement requires specific actions not just to promote but to effect historic preservation and mitigate impacts to all cultural resources in order to ensure NEPA and CEQA compliance. Consequently, if GSEP implements these conditions, its actions would be consistent with the general historic preservation goals of the County of Riverside.

### **C.3.9 RESPONSE TO AGENCY AND PUBLIC COMMENTS**

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Energy Commission staff has, as of the drafting of the present document, received one comment that explicitly relates to the analysis of cultural resources.

#### **PUBLIC COMMENT**

This comment is a submission by the California Unions for Reliable Energy (CURE), dated May 13, 2010:

“The SA/DEIS acknowledges that McCoy Spring may be a traditional cultural property, and therefore the Project may have a significant impact on “the integrity of association, setting, and feeling of this resource.” However, the SA/DEIS does not include an analysis of the Project’s potentially significant impacts to McCoy Spring. Rather, the SA/DEIS states that a determination on the issue will be included in a supplemental staff assessment, along with any necessary mitigation measures, because possible impacts must be considered from the perspective of Native Americans.

CURE is sensitive to the fact that further information could be obtained from Native Americans. However, information already exists that enables Staff to conduct the analysis and conclude that the impact will be significant. Furthermore, the SA/DEIS states that an ethnographer could formally evaluate McCoy Spring for its eligibility for listing as a traditional cultural property. Thus, the analysis can and must be performed, and included in a Revised SA that is circulated for public review and comment” (CURE 2010, p.14).

“The SA/DEIS also entirely fails to address cumulative impacts to cultural resources. The SA/DEIS states that it did not include a cumulative impact analysis for cultural resources because the data

compilation is incomplete. The SA/DEIS fails to comply with the requirements of CEQA” (CURE 2010, p. 15).

## **STAFF RESPONSE**

Staff agrees with CURE that a formal evaluation of McCoy Springs National Register District and other PTNCL contributors by Native Americans and/or an ethnographer would be ideal. Indeed, staff is uncertain why this evaluation was not suggested by Tetra Tech in 2007 when the GSEP cultural resources reviews were initiated. However, for federally funded projects where impacts and mitigation for cultural resources involves Native Americans, a formal government-to-government consultation process is required. This formal process often excludes state agencies such as the Energy Commission from active participation. This is particularly the case for the GSEP permitting process where the current Energy Commission staff assessment will be published prior to the completion of the PA and FEIS required under federal law. Staff is confident that BLM will provide appropriate mitigation in these documents.

CURE mentions that additional information about McCoy Springs National Register District “could” be obtained from Native Americans as part of staff’s evaluation of the impacts to this resource. Staff suggests that CURE has misunderstood this portion of cultural resource law. As mentioned in earlier parts of this document, impacts to an ethnographic resource or traditional cultural property and the severity of those impacts can only be identified by an expert in the behavior, beliefs, and knowledge germane to understanding the resource’s cultural significance. Only members of the community who value the resource culturally and/or spiritually, in this case Native Americans, can determine impacts and suggest possible mitigation. Therefore, additional information must be obtained from Native Americans. Consultation is a time-consuming process that cannot necessarily be forced to fit bureaucratic schedules.

CURE further suggests that “information already exists” that would allow staff to complete an analysis regarding the impacts to McCoy Spring National Register District. Staff did receive an expression of concern regarding impacts to McCoy Spring from Alfredo Acosta Figueroa, a member of the La Cuna de Aztlan Sacred Sites Protection Circle. However, staff does not consider a single response to be sufficient information to complete an analysis. This resource is undoubtedly important to many individuals and groups which may or may not agree with Mr. Figueroa. Further, agreement on the nature of the impacts and what should be done to mitigate them may not be undisputed. The negotiation of these issues is the purpose of the federal NHPA Section 106 process. The results of these negotiations will be included in BLM’s PA.

Staff has included a cumulative analysis in the present document. CURE and the public at large now have the opportunity to review and comment on the entire cultural resources management program and the complete analysis that is the basis for that program.

### **C.3.10 CONCLUSIONS AND RECOMMENDATIONS**

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Staff concludes that the proposed GSEP would have a significant direct impact on 27 register-eligible archaeological resources and significant indirect impact on 248 contributors to a register-eligible cultural landscape. These impacts include direct

impacts to 6 prehistoric-to-historic-period Native American archaeological sites; direct impacts to 6 and indirect impacts to 248 prehistoric-to-historic-period Native American archaeological sites that are potential contributing elements to the PTNCL; and direct impacts to 15 historic-period archaeological sites that are potential contributing elements to the DTCCL. Because the GSEP would impact contributors to the PTNCL and the DTCCL, it would also therefore impact these register-eligible resources.

To mitigate these impacts, staff recommends that the Commission adopt cultural resources Conditions of Certification **CUL-1** through **CUL-17**. **CUL-1** and **CUL-2** would fund programs to define, document, and nominate to the NRHP two cultural landscapes that GSEP shares with two other nearby solar projects, identifying specialists who would be hired to supervise the mitigation of GSEP's cumulative impacts to these resources and establishing a fund, to which multiple project owners will contribute, to hire these specialists. **CUL-3** through **CUL-17** would mitigate GSEP's direct and indirect impacts to the cultural resources specific to the project. **CUL-3** and **CUL-4** are administrative conditions that set out who the people would be who will implement the balance of the conditions, what are their qualifications and roles would be, and the information the project owner would supply them to help them fulfill those roles. **CUL-5** provides for the preparation and implementation of the Cultural Resources Monitoring and Mitigation Plan (CRMMP), which would structure and govern the implementation of the broader treatment program. **CUL-6** provides for the preparation of a final report to analyze, interpret, and document the ultimate results of the whole GSEP cultural resources management program. **CUL-7** would provide training of project personnel to identify, protect, and provide appropriate notice about known and new potential cultural resources in the project construction area. **CUL-8** and **CUL-9** would provide construction monitoring and cultural resources discovery protocols. **CUL-10** through **CUL-13** and **CUL-17** are treatment conditions for direct impacts to historic-period and prehistoric resources that would reduce the severity of GSEP impacts to less-than-significant.

The respective adoption and implementation of **CUL-14** through **CUL-16** would reduce some of the potential indirect impacts of the proposed project on PTNCL contributors to less-than-significant. However, as of the publication date of this document, the indirect impacts to the contributing elements of the PTNCL have only been partially identified. Other indirect ethnographic impacts can be identified only by members of the community who value the resources culturally and/or spiritually, in this case Native Americans. BLM is currently in the process of consulting with local Native American groups regarding impacts and potential mitigation for the GSEP project area. The results of these negotiations will be formalized in a Programmatic Agreement, as required by Section 106 of the NHPA. Therefore, staff's recommended conditions may be revised, based on BLM's finalized PA, which, it is anticipated, will address the issues of unidentified indirect impacts and appropriate ways to mitigate them, and coordinate Energy Commission and BLM cultural resources mitigation measures.

In conclusion, with the adoption and implementation of the entire complement of cultural resources conditions, Conditions of Certification **CUL-1** through **CUL-17**, the GSEP project would be in conformity with all applicable LORS. **CUL-1** and **CUL-2** would reduce the cumulative impacts to the greatest extent possible, but these impacts would nonetheless be cumulatively considerable. **CUL-3** through **CUL-17** would reduce the

direct impacts to less than significant. In addition, the impacts to ethnographic resources have not yet been evaluated. Consequently, staff does not know if these resources are significant, or if any mitigation is needed or appropriate. However, significant unavoidable indirect impacts to ethnographic resources that cannot be fully mitigated may be possible. Only with the resolution of those impacts in the BLM's Programmatic Agreement, reflecting Native American identification of additional indirect impacts and recommendation of appropriate mitigation of those impacts, would GSEP's indirect impacts be reduced to a level less than significant. This resolution cannot be guaranteed, however.

Energy Commission staff's recommended Conditions of Certification **CUL-1** through **CUL-17** reflect staff's assessment of what constitutes appropriate mitigation, under CEQA, for GSEP's identified impacts to register-eligible cultural resources. Staff recognizes that BLM's parallel process for resolving adverse effects (consultation resulting in a PA) is somewhat different from the CEQA process. Staff recommends that BLM incorporate staff's recommended conditions of certification into the GSEP PA and its associated plan documents to ensure that the project's impacts to cultural resources are mitigated in a way that meets both federal and state requirements.

### **C.3.11 RECOMMENDED CONDITIONS OF CERTIFICATION**

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#### **CUL-1 PREHISTORIC TRAILS NETWORK CULTURAL LANDSCAPE (PTNCL) DOCUMENTATION AND POSSIBLE NRHP NOMINATION**

The project owner shall contribute to a special fund set up by the Energy Commission to finance the completion of the PTNCL Documentation and Possible NRHP Nomination program presented in the Genesis Solar Energy Project Revised Staff Assessment.

The amount of the contribution shall be \$35 per acre that the project encloses or otherwise disturbs.

An additional contribution may be required to ensure the completion of the required documentation and possible NRHP nomination.

If a project is not certified, or if a project owner does not build the project, or if for some other reason deemed acceptable by the CPM, a project owner does not participate in funding the PTNCL documentation and possible NRHP nomination program, the other project owner(s) may consult with the CPM to adjust the scale of the PTNCL documentation and possible NRHP nomination program research activities to match available funding. A project owner that funds the PTNCL documentation and possible NRHP nomination program, then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.

**Verification:**

1. No later than 10 days after receiving notice of the successful transfer of funds to the Energy Commission's special PTNCL fund, the project owner shall submit a copy of the notice to the Energy Commission's Compliance Project Manager (CPM).

**CUL-2 DESERT TRAINING CENTER CALIFORNIA-ARIZONA MANEUVER AREA CULTURAL LANDSCAPE (DTCCL) DOCUMENTATION AND POSSIBLE NRHP NOMINATION**

The project owner shall contribute to a special fund set up by the Energy Commission to finance the completion of the Documentation and Possible NRHP Nomination program presented in the Genesis Solar Energy Project Revised Staff Assessment.

The amount of the contribution shall be \$25 per acre that the project encloses or otherwise disturbs.

An additional contribution may be required to ensure the completion of the required documentation and possible NRHP nomination.

If a project is not certified, or if a project owner does not build the project, or if for some other reason deemed acceptable by the CPM, a project owner does not participate in funding the DTCCL documentation and possible NRHP nomination program, the other project owner(s) may consult with the CPM to adjust the scale of the DTCCL documentation and possible NRHP nomination program research activities to match available funding. A project owner that funds the DTCCL documentation and possible NRHP nomination program, then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.

**Verification:**

1. No later than 10 days after receiving notice of the successful transfer of funds to the Energy Commission's special DTCCL fund, the project owner shall submit a copy of the notice to the CPM.

**CUL-3 CULTURAL RESOURCES PERSONNEL**

Prior to the start of ground disturbance (includes "preconstruction site mobilization," "ground disturbance," and "construction grading, boring, and trenching," as defined in the General Conditions for this project), the project owner shall obtain the services of a Cultural Resources Specialist (CRS), one or more alternate CRSs, if alternates are needed, and the four technical specialists identified below in this condition.

The CRS shall manage all cultural resources mitigation, monitoring, curation, and reporting activities in accordance with the Conditions of Certification (Conditions). The CRS shall have a primarily administrative and coordinating role for the GSEP project. The project owner shall ensure that the CRS implements the cultural resources conditions, providing for data recovery from known historical resources, and shall ensure that the CRS makes

recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be impacted in an unanticipated manner. The CRS may obtain the services of field crew members and cultural resources monitors (CRMs), if needed, to assist in mitigation, monitoring, and curation activities. No ground disturbance shall occur prior to CPM approval of the CRS and alternates, unless such activities are specifically approved by the CPM. Approval of a CRS may be denied or revoked for reasons including but not limited to non-compliance on this or other Energy Commission projects.

### **CULTURAL RESOURCES SPECIALIST**

The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS shall have the following qualifications:

1. A background in anthropology and prehistoric archaeology;
2. At least 10 years of archaeological resource mitigation and field experience, with at least 3 of those years in California; and
3. At least 3 years of experience in a decision-making capacity on cultural resources projects, with at least 1 of those years in California, and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

### **REQUIRED CULTURAL RESOURCES TECHNICAL SPECIALISTS**

The project owner shall ensure that the CRS obtains the services of a qualified prehistoric archaeologist to conduct the research specified in **CUL-10** and **CUL-12**. The Project Prehistoric Archaeologist's (PPA) training and background must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology, as published in Title 36, Code of Federal Regulations, part 61, and the resume of the PPA must demonstrate familiarity with the artifacts and environmental modifications (deliberate and incidental) associated with the prehistoric and protohistoric use of the Chuckwalla Valley.

The project owner shall also ensure that the CRS obtains the services of a senior supervisory archaeologist to conduct the research and activities specified in **CUL-11**. This archaeologist may be the PPA or a different individual, at the discretion of the CRS. The Project Senior Supervisory Archaeologist (PSSA) must have training and background that meets the U.S. Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology, as published in Title 36, Code of Federal Regulations, part 61. In addition this person shall have a resume that demonstrates experience in the archaeology of the Sonoran Desert, particularly in excavating prehistoric structures and other features preserved in depositional contexts and

experience supervising projects where mechanical excavation was an essential part of the project. This individual shall also meet OSHA standards as a “Competent Person” in trench safety. This individual will work closely with the backhoe operator described below, and the two shall constitute the archaeologist/backhoe-operator team needed for the activities specified in **CUL-11**.

The project owner shall ensure that the CRS obtains the services of a specialist backhoe operator to conduct the activities specified in **CUL-11**. This backhoe operator shall have a resume that demonstrates previous experience using a backhoe in coordination with an archaeologist. In addition the operator shall use a machine with a “stripping bucket” that is sensitive enough to remove even and consistent layers of sediment 5 cm thick.

The project owner shall ensure that the CRS obtains the services of a qualified ethnographer to conduct the research and activities specified in **CUL-16**, if one is not hired by the PTNCL PI for the overall duties as described in the PTNCL documentation and possible NRHP nomination program. The Project Ethnographer’s (PE) training and background must meet the NPS standards for Anthropologist/Applied Ethnographer (GS-190, 11-12 or 13-15). The PE must have already established long-term relationships with Native American groups whose traditional territories are near GSEP.

The project owner shall ensure that the CRS obtains the services of a qualified historical archaeologist to conduct the research specified in **CUL-17**. The Project Historical Archaeologist’s (PHA) training and background must meet the U.S. Secretary of Interior’s Professional Qualifications Standards for historical archaeology, as published in Title 36, Code of Federal Regulations, part 61. The resume of the PHA must demonstrate familiarity with the artifacts, environmental modifications (deliberate and incidental, including tank tracks), and trash disposal patterns associated with World War II land-based army activities, and knowledge of the full range of late nineteenth and early-to-mid-twentieth-century domestic can, bottle, and ceramic diagnostic traits.

The project owner shall ensure that the CRS obtains the services of a qualified geoarchaeologist to conduct the research specified in **CUL-8**, **CUL-10**, and **CUL-11**. The resume of the proposed Project Geoarchaeologist (PG) shall demonstrate that the PG’s training and background meet the U.S. Secretary of Interior’s Professional Qualifications Standards for prehistoric archaeology, as published in Title 36, Code of Federal Regulations, part 61, and show the completion of graduate-level coursework in geoarchaeology or Quaternary science.

The resumes of the CRS, alternate CRS, the PSSA, PPA, PE, PHA, and PG shall include the names and telephone numbers of contacts familiar with the work of these persons on projects referenced in the resumes and



demonstrate to the satisfaction of the CPM that these persons have the appropriate training and experience to undertake the required research.

### **FIELD CREW MEMBERS AND CULTURAL RESOURCES MONITORS**

CRMs and field crew members shall have the following qualifications:

1. A B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field, and one year experience monitoring in California; or
2. An A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years experience monitoring in California; or
3. Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of monitoring experience in California.
4. CRMs monitoring GSEP linear corridor and secondary road construction will also have demonstrated experience in identifying Sonoran desert prehistoric features such as structures, pits, canals, and wells in the walls of backhoe trenches.

#### **Verification:**

1. At least 180 days prior to the start of ground disturbance, the project owner shall submit the resumes for the CRS, the alternate CRS(s) if desired, the PSSA, the PPA, the PE (if needed), the PHA, and the PG to the CPM for review and approval.
2. At least 10 days prior to the start of data recovery on known archaeological sites, the project owner shall confirm in writing to the CPM that the approved CRS, the PSSA, the PPA, the PE (if needed), the PHA, and the PG will be available for on-site work and are prepared to implement the cultural resources Conditions **CUL-8**, **CUL-10**, **CUL-11**, **CUL-12**, and **CUL-17**.
3. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. If no alternate CRS is available to assume the duties of the CRS, a monitor may serve in place of a CRS so that ground disturbance may continue up to a maximum of 3 days without a CRS. If cultural resources are discovered then ground disturbance will remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.
4. At least 20 days prior to data recovery on known archaeological sites, the CRS shall provide a letter naming anticipated field crew members for the project and attesting that the identified field crew members meet the minimum qualifications for cultural resources data recovery required by this Condition.

5. At least 20 days prior to ground disturbance, the CRS shall provide a letter naming CRMs for the project and attesting that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this Condition.
6. At least 5 days prior to additional field crew members and CRMs beginning duties during the project, the CRS shall provide letters to the CPM identifying the new field crew members and CRMs and attesting to their qualifications.

**CUL-4 PROJECT DOCUMENTS FOR CULTURAL RESOURCES PERSONNEL**

Prior to the start of ground disturbance, the project owner shall provide the PTNCL PI, the DCTCL PI, the CRS, the PSSA, the PPA, the PE, the PHA, and the PG with copies of the AFC, data responses, confidential cultural resources documents, the Revised Staff Assessment (RSA), and the RSA Supplement/Errata, if any, for the project. The project owner shall also provide the CRS, the PSSA, the PPA, the PE, the PHA, the PG, and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and maps at an appropriate scale (e.g., 1:2400 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. Staff shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM.

If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS, the PSSA, the PPA, the PHA, the PG, and CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

**Verification:**

1. At least 210 days prior to the start of ground disturbance, the project owner shall provide the AFC, data responses, confidential cultural resources documents, the Revised Staff Assessment (RSA), and RSA Errata to the PTNCL PI and the DCTCL PI.
2. At least 165 days prior to the start of ground disturbance, the project owner shall provide the AFC, data responses, confidential cultural resources documents, the Revised Staff Assessment (RSA), and RSA Supplement/Errata to the CRS, if

needed, and to the PSSA, the PPA, the PHA, and the PG. The project owner shall also provide the subject maps and drawings to the CRS, PSSA, PPA, PE, PHA, PG, and CPM. Staff, in consultation with the CRS, PSSA, PPA, and PHA, will review and approve maps and drawings suitable for cultural resources monitoring and data recovery activities.

3. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS, PSSA, PPA, PHA, and CPM.
4. At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS, PSSA, PPA, PHA, PG, and CPM.
5. Weekly, during ground disturbance, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.
6. Within 5 days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

#### **CUL-5 CULTURAL RESOURCES MONITORING AND MITIGATION PLAN**

Prior to the start of ground disturbance, the project owner shall submit to the CPM for review and approval the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, with the contributions of the PSSA, the PPA, the PHA, PE, and the PG. The authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall specify the impact mitigation protocols for all known cultural resources and identify general and specific measures to minimize potential impacts to all other cultural resources, including those discovered during construction. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, the PSSA, the PPA, the PHA, the PE, the PG, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the elements and measures listed below.

1. The following statement shall be included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions of Certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the Conditions and their implementation. The conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources Conditions of Certification from the Commission Decision are contained in Appendix A."
2. The duties of the CRS shall be fully discussed, including coordination duties with respect to the completion of the Prehistoric Trails Network

Cultural Landscape (PTNCL) documentation and possible NRHP nomination program and the Desert Training Center California-Arizona Maneuver Area Cultural Landscape (DTCCL) documentation and possible NRHP nomination program, and oversight/management duties with respect to site evaluation, data collection, monitoring, and reporting at both known prehistoric and historic-period archaeological sites and any CRHR-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction.

3. A general research design shall be developed that:
  - a. Charts a timeline of all research activities, including those coordinated under the PTNCL and DTCCL documentation and possible NRHP nomination programs;
  - b. Recapitulates the paleoenvironmental, prehistoric, ethnohistoric, ethnographic, and historic contexts developed in the PTNCL and DTCCL documentation and possible NRHP nomination programs and adds to these the additional context of the non-military, historic-period occupation and use of the Chuckwalla Valley, to create a comprehensive historic context for the BSPP vicinity;
  - c. Poses archaeological research questions and testable hypotheses specifically applicable to the archaeological data sets known for the Chuckwalla Valley, based on the results of the research conducted under the PTNCL and DTCCL documentation and possible NRHP nomination programs and on the archaeological and historical literature pertinent to the Chuckwalla Valley; and
  - d. Clearly articulates why it is in the public interest to address the research questions that it poses.
4. Protocols, reflecting the guidance provided in **CUL-3**, **CUL-10**, **CUL-11**, **CUL-12**, **CUL-16**, and **CUL-17** shall be specified for the data recovery from known prehistoric and historic-period archaeological resources.
5. Artifact collection, retention/disposal, and curation policies shall be discussed, as related to the research questions formulated in the research design. These policies shall apply to cultural resources materials and documentation resulting from evaluation and data recovery at both known prehistoric and historic-period archaeological sites and any CRHR-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction. A prescriptive treatment plan may be included in the CRMMP for limited data types.
6. The implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post-ground-disturbance analysis phases of the project shall be specified.

7. Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team shall be identified.
8. The manner in which Native American observers or monitors will be included, in addition to their roles in the activities required under **CUL-1**, the procedures to be used to select them, and their roles and responsibilities shall be described.
9. All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts. These measures shall reflect the guidance provided in **CUL-13**.
10. The commitment to record on Department of Parks and Recreation (DPR) 523 forms, to map, and to photograph all encountered cultural resources over 50 years of age shall be stated. In addition, the commitment to curate all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery), in accordance with the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections*, into a retrievable storage collection in a public repository or museum shall be stated.
11. The commitment of the project owner to pay all curation fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project shall be stated. The project owner shall identify three possible curation facilities that could accept cultural resources materials resulting from BSPP cultural resources investigations.
12. The CRS shall attest to having access to equipment and supplies necessary for site mapping, photography, and recovery of all cultural resource materials (that cannot be treated prescriptively) from known CRHR-eligible archaeological sites and from CRHR-eligible sites that are encountered during ground disturbance .
13. The contents, format, and review and approval process of the final Cultural Resource Report (CRR) shall be described.

**Verification:**

1. At least 120 days prior to the start of ground disturbance, the project owner shall submit the CRMMP to the CPM for review and approval.
2. At least 90 days prior to the start of ground disturbance, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or

collected as a result of the archaeological investigations (survey, testing, data recovery).

3. At least 45 days prior to the initiation of ground disturbance, the project owner shall provide to the CPM a copy of a letter from a curation facility that meets the standards stated in the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections*, stating the facility's willingness and ability to receive the materials generated by GSEP cultural resources activities and requiring curation. Any agreements concerning curation will be retained and available for audit for the life of the project.

#### **CUL-6 CULTURAL RESOURCES REPORT (CRR)**

The project owner shall submit the final Cultural Resources Report (CRR) to the CPM for review and approval and to the BLM Palm Springs archaeologist for review and comment. The final CRR shall be written by or under the direction of the CRS. The final CRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, revised and final Department of Parks and Recreation (DPR) 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as appendices to the final CRR.

If the project owner requests a suspension of ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM and to the BLM Palm Springs archaeologist for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

#### **Verification:**

1. Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.
2. Within 180 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CRR to the CPM for review and approval and to the BLM Palm Springs Field Office archaeologist for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.
3. Within 10 days after the CPM and the BLM Palm Springs Field Office archaeologist approve the CRR, the project owner shall provide documentation to the CPM confirming that copies of the final CRR have been provided to the SHPO, the CHRIS, the curating institution, if archaeological materials were collected, and to the Tribal Chairpersons of any Native American groups requesting copies of project-related reports.

## **CUL-7 WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)**

Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The training shall be prepared by the CRS in consultation with local Native Americans and shall incorporate the traditions and beliefs of local Native American groups into the presentation. If consultation with local Native Americans is not possible, the CRS shall consult, instead, with an ethnographer, either the PTNCL Ethnographer or the GSEP PE, on the content of the presentation. The presentation may be conducted by any member of the archaeological team and a Native American, if possible (preferably the Native American serving as a construction monitor under **CUL-8**), and may be presented in the form of a video. A consulting fee or honorarium shall be negotiated with the local Native American consultants and presenter and paid to them for their participation. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Samples or visuals of artifacts that might be found in the project vicinity;
3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
5. A discussion of what local Native American beliefs are, how those beliefs are related to archaeological resources that may be found in the area, and the appropriate respectful behavior towards sacred places and objects;
6. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
7. Instruction that employees are to avoid areas flagged as sensitive for cultural resources;
8. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor

and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;

9. An informational brochure that identifies reporting procedures in the event of a discovery;
10. An acknowledgement form signed by each worker indicating that they have received the training; and
11. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

**Verification:**

1. At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval.
2. At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.
3. Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.

**CUL-8 CONSTRUCTION MONITORING PROGRAM**

Staff expects the Qoaf alluvium to be reached during grading across most of the site. The project owner shall ensure that the CRS, alternate CRS, or CRMs monitor full time all ground disturbance, if allowed by the BLM, until the CRS, alternate CRS, or CRMs certify that the **sterile Qoaf alluvium** has been reached. This will include ground disturbance at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas, to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner.

During utility trenching along the linear corridor, which is expected to reach a depth of 10 feet, the face of each trench shall be examined for features. As described in **CUL-3**, monitoring will be conducted by a CRM with demonstrated experience in identifying buried features in backhoe trench walls in Sonoran Desert depositional contexts. In addition, while the utility trench is open, the owner shall arrange for a geoarchaeologist with qualifications described in **CUL-3** to observe the exposed stratigraphy. This specialist shall collect information and samples that will aid in the paleo-environmental reconstruction of Ford Dry Lake over the last 14,000 years, as



specified in the PTCNL documentation and possible NRHP nomination program funded under **CUL-1**.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of the earth-removing activities in the areas specified in the previous paragraph, for as long as the activities are ongoing. Where excavation equipment is actively removing dirt and hauling the excavated material farther than 50 feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no farther than fifty feet from the location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material.

In the event that the CRS believes that the required number of monitors is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the number of monitors shall be provided to the CPM for review and approval prior to any change in the number of monitors.

The project owner shall obtain a Native American monitor to monitor ground disturbance if local Native American groups so request. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. Staff will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the Conditions and/or applicable LORS. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resources monitoring and mitigation activities, including PTNCL sites monitoring, with Energy Commission technical staff.

Cultural resources monitoring activities, including PTNCL sites monitoring, are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions.

Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

**Verification:**

1. At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log.
2. Within 15 days of receiving from a local Native American group a request that a Native American monitor be employed, the project owner shall submit a copy of the request and a copy of a response letter to the group notifying them that a Native American monitor has been employed and identifying the Native American monitor.
3. Monthly, while monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP.
4. At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.
5. Daily, as long as no cultural resources are found, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an e-mail or in some other form of communication acceptable to the CPM.
6. At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting.

7. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the Chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.
8. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information.

**CUL-9 AUTHORITY TO HALT CONSTRUCTION; TREATMENT OF DISCOVERIES**

The project owner shall grant authority to halt ground disturbance to the CRS, alternate CRS, PSSA, PPA, PHA, PG, PE, and the CRMs in the event of a discovery of a cultural resource over 50 years of age, or younger if determined to be exceptionally significant by the CPM. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event that a cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the CPM), or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting, as provided in other conditions, shall continue during the project's ground-disturbing activities elsewhere. The halting or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:

1. The CRS has notified the project owner and the BLM Palm Springs Field Office archaeologist, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e., work stoppage or redirection), a recommendation of CRHR eligibility, and recommendations for data recovery from any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made.
2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery.
3. The CRS has completed field notes, measurements, and photography for a DPR 523 "Primary" form. Unless the find can be treated prescriptively, as specified in the CRMMP, the "Description" entry of the DPR 523 "Primary" form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM.

4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery plan, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed.

**Verification:**

1. At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, PSSA, PPA, PHA, PG, and CRMs have the authority to halt ground disturbance in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.
2. Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery.
3. Unless the discovery can be treated prescriptively, as specified in the CRMMP, completed DPR 523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.

**CUL-10 DATA RECOVERY FOR SMALL SITES**

Prior to the start of ground disturbance, within 30 meters of the site boundary of sites CA-Riv-9084, CA-Riv-9209, CA-Riv-9215, CA-Riv-9216, CA-Riv-9220, CA-Riv-9223, CA-Riv-9227, CA-Riv-9249, and CA-Riv-9255, the project owner shall ensure that the CRMMP includes a data recovery plan for these sites. The plan shall specify in detail the location recordation equipment and methods used and describe any post-processing of the data. The project owner shall then ensure that the CRS, the PSSA, the PPA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks:

1. Use location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers) to add to the original site maps the following features: seasonal drainages, site boundaries, location of each individual artifact, and the boundaries around individual artifact concentrations.;
2. Collects all artifacts after their locations are marked, and submits them for laboratory analysis;
3. Request the PG to identify the specific landform for each site and its relationship to specific ancient lakeshores of Ford Dry Lake. If a lakeshore

is present within 100 meters of the site boundary, it shall be included on the site map;

4. Excavate one 1-meter-by-1-meter unit in 10-centimeter levels until the unit reaches the top of the Qoaf alluvium, placing these units in the part of the site with the highest artifact density
5. Place one 1-meter-by-1-meter excavation unit, as described above, in the center of each concentration if multiple artifact concentrations have been identified;
6. Test the horizontal limits of the site by placing test units down to the upper boundary of the Qoaf alluvium with a shovel or hand auger, or other similar technique, at four spots equally spread around the exterior edge of each site;
7. Continue exploring the extent of the site using methods described in **CUL-11**, if features or other buried deposits are identified. Plans for this contingency shall be described in detail in the CRMMP. If no buried deposits are found, data recovery is complete;
8. Present the results of the **CUL-10** data recovery in a letter report by the PPA or CRS, which shall serve as a preliminary report. Letter reports may address one site, or multiple sites depending on the needs of the CRS. The letter report shall be a concise document that provides description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of excavation units including topographic contours and the site landforms;
9. Update the existing Department of Parks and Recreation (DPR) 523 site form for these sites, including new data on seasonal drainages, site boundaries, location of each individual artifact, the boundaries around individual artifact concentrations, and the landform; and
10. Present the final results of data recovery at these nine prehistoric sites in the CRR, as described in **CUL-6**.

**Verification:**

1. At least 90 days prior to ground disturbance, the project owner shall notify the CPM that data recovery for small sites has ensued.
2. Within one week of the completion of data recovery at a site, the project owner shall verify this by submitting a letter report written by the PPA or CRS for review and approval of the CPM. When the CPM approves the letter report, ground disturbance may begin at these site locations.

## **CUL-11 DATA RECOVERY FOR LARGE SITES WITH MECHANICAL EXCAVATION**

Prior to the start of ground disturbance, the project owner shall ensure that the CRMMP includes a plan to recover data from those parts of sites CA-Riv-0260, CA-Riv-0663, and CA-Riv-9072 that the project will directly impact. The plan shall specify in detail the location recordation equipment and methods used and describe any post-processing of the data. The project owner shall then ensure that the plan is implemented, if allowed by the BLM. The sub-surface data recovery plan at these three sites shall, at a minimum, include the following:

1. The research questions to be addressed by the data recovery at these three PTNCL contributors, based on the context written by the PTNCL PI-Prehistoric Archaeologist, PTNCL Ethnographer, and PTNCL Ethnohistorian, as described in **CUL-1**;
2. The flagging of the entire boundary of each site as required in **CUL-13**;
3. The accurate and conspicuous marking with lath and flagging of that portion of each site that is inside plant site boundaries and subject to destruction; this area shall constitute the study area for each site;
4. The detailed examination of the surface within each site study area;
5. The creation of a digital map using location recordation equipment using the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers); the map shall include at a minimum: the site boundary, local landforms, features, and the boundaries around artifact concentrations.; point proveniencing on the map of all artifacts shall be used unless, in cases of high artifact density, alternative methods can be negotiated with the CPM. After the location of each artifact is marked, it shall be collected for analysis; FAR (fire-affected rock—rock that shows evidence of having been in prolonged contact with fire) that is not also groundstone, may be counted and discarded;
6. The employment of an experienced archaeologist/backhoe operator team (as described in **CUL-3**) to conduct the mechanical excavation and subsurface sampling;
7. Field direction by the PSSA, with qualifications described in **CUL-3**, of any data recovery at these three sites or any other GSEP sites that require mechanical excavation;
8. The identification of any buried deposits, to be accomplished by placing a series of backhoe trenches in systematic intervals across each site. A trenching plan, developed by the PSSA and included in the **CUL-11** data recovery plan in the CRMMP, shall specify the location of the trenches and the strategy behind their placement at each site; at a minimum the trenching plan shall:

- a. Result in a 10 percent sample of the portion of the site expected to be destroyed, trench spacing between 10-m to 50-m, and a trench orientation from north-south, unless site specific conditions suggest better results using a different arrangement;
  - b. Use backhoe trenches two feet wide and generally dug to depths no greater than 5 feet to conform to OSHA standards;
  - c. Use stepped trenches or hydraulic shoring if a depth greater than 5 feet is required to investigate archaeological features, to comply with OSHA regulations;
  - d. Require trench walls to be scraped with hand tools to provide a clear exposure of subsurface cultural remains;
  - e. Require archaeological features identified in trench walls to be marked and assigned a number; and
  - f. Require the completion of a trench record form for each trench that includes its essential characteristics (trench number, length, width, and depth), the locations and types of archaeological features, the stratigraphy and characteristics of exposed sediments, and locations of disturbances such as tree roots or animal burrows.
9. The requirements that:
- a. All identified features shall be documented through standardized forms, scaled profile drawings, plan view maps, and photographs;
  - b. Between 50 and 100 percent of the features identified shall be fully or partially excavated, depending on their state of preservation and the presence or absence chronologically relevant materials;
  - c. The proportion of excavated features shall be negotiated between the owner and the CPM on a site-by-site basis, depending on the nature of the features identified, their rarity, and their information potential; and
  - d. Buried features shall be excavated by hand or by mechanical “stripping” with a backhoe bucket to remove sterile overburden until 20 centimeters above the limits of the feature, as identified in the trench wall, then excavating the remainder of the feature by hand, using the standard archaeological methods as outlined by the California SHPO; and
  - e. Samples such as flotation, pollen, and charcoal shall be methodically collected from appropriate contexts, and artifacts such as lithics, ceramics, groundstone, and shell shall be subject to the professionally appropriate laboratory analyses.
10. The determination of the age and function of each site, if possible;

11. A letter report, which shall serve as a preliminary report, written by the CRS, PSSA, and/or trench specialist submitted to the CPM that details what was found at each site, as follows:
  - a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and
  - b. The letter report shall be a concise document that provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of excavation units, including topographic contours and the site landforms.
12. The updating of the existing DPR 523 site forms for these sites, including new data on features, artifact analyses and the overall results of the data recovery and the landform;
13. The definitive determination as to whether the three sites evaluated are contributing elements to the PTNCL, made by the PTNCL PI using the data collected from the field work at these sites;
14. The completion of a final, comprehensive report, after all recovered data are analyzed, written by the CRS and/or the trench specialist, or under their direction;
15. The inclusion of the final version of this report in the CRR (**CUL-6**).
16. The inclusion of relevant portions of the information gathered at the three sites in the possible NRHP nomination for the PTNCL (**CUL-1**);
17. A paper, incorporating the final results of the surface collection at these sites (**CUL-12**) and the data from other PTNCL sites and placing the GSEP sites in the larger context of the region, to be submitted to a peer-reviewed archaeological journal;
18. Evaluation of the paper by the PI-Prehistoric Archaeologist, the PTNCL Ethnographer, and the CPM prior to its submission for publication; and
19. The pursuit by the CRS of the publication of this paper to its successful completion.

**Verification:**

1. At least 90 days prior to ground disturbance, the project owner shall notify the CPM that data recovery for large sites has ensued.
2. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.



3. Within 90 days of the submission of the draft CCR to the CPM, the project owner shall submit to the CPM for review and approval the draft of the required research paper, as reviewed and approved by the PTNCL PI-Prehistoric Archaeologist and the PTNCL Ethnographer.
4. Within 90 days following its publication in a peer-reviewed journal, the project owner shall submit for CPM review and approval a copy of the published paper.

## **CUL-12 SURFACE COLLECTION WITH SAMPLING FOR LARGE SITES**

Prior to the start of ground disturbance, the project owner shall ensure that the CRMMP includes a plan to recover data from those parts of sites CA-Riv-0260, CA-Riv-0663, and CA-Riv-9072 that the project will both directly and indirectly impact. The plan shall specify in detail the location recordation equipment and methods used and describe any post-processing of the data. The project owner shall then ensure that the plan is implemented, if allowed by the BLM. The surface data collection plan shall include, but is not limited to the following:

1. Marking the boundary for each site conspicuously as required in **CUL-13**;
2. Completing a surface collection in the part of each site that is inside the plant site boundaries, and thus subject to destruction, prior to ground disturbance in the area; all diagnostic artifacts and features shall be mapped using the latest technology with sub-meter accuracy, such as UTM 11 North or California Teale Albers. The artifacts will be collected and curated; if datable materials are present on the ground surface and in clear association with a feature, a sample of these materials shall be collected;
3. Completing additional surface collection transects or units, judgmentally placed in areas of highest artifact density, in total representing 10 percent of the overall site area outside of the plant site boundaries; the artifacts in these transects shall be mapped and then collected;
4. Analyzing the collected artifacts and the incorporate the results into the appropriate section of the CRR for each site;
5. Writing and submitting to the CPM a letter report by the CRS and PSSA, which shall serve as a preliminary report, that details what was found at each site Letter reports may address one site, or multiple sites depending on the needs of the CRS; the results of the surface collection may be incorporated into the results of the data recovery, required in **CUL-11**, at the same site, depending on the needs of the CRS;
6. Ensuring that the letter report is a concise document that provides description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a

map showing the location of collection units including topographic contours and the site landforms; and

7. Including the final results of the surface collection at these sites into the CRR required under **CUL-6**.

**Verification:**

1. At least 90 days prior to ground disturbance, the project owner shall notify the CPM that surface collection on sites CA-Riv-0260, CA-Riv-0663, and CA-Riv-9072 has ensued.
2. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the surface collection portion of data recovery at each site has been completed.

**CUL-13 FLAG AND AVOID**

Prior to the start of ground-disturbing activities within 30 meters of sites CA-Riv-0260, CA-Riv-0663, and CA-Riv-9072, the project owner shall reduce or avoid impacts to these sites, if allowed by the BLM, by:

1. Ensuring that a CRS, alternate CRS, PSSA, PPA, or CRM re-establish the boundary of each site, add a 10-meter-wide buffer around the periphery of each site boundary, and flag the resulting space in a conspicuous manner;
2. Ensuring that a CRM enforces avoidance of the flagged areas during GSEP construction;
3. Removing the boundary around each site after the completion of all construction activities, including landscaping;

**Verification:**

1. At least 15 days prior to the start of construction, the project owner shall submit for CPM review and approval a letter, with photographs and maps, evidencing the completion of the required boundary marking.
2. Within 90 days of the completion of plant construction, the project owner shall submit for CPM review and approval a letter, with photographs and maps, evidencing the removal of the boundary marking.

**CUL-14 PALEN-MCCOY WILDERNESS BOUNDARY FENCE CONSTRUCTION**

Prior to the start of ground disturbance, the project owner shall avoid or minimize impacts to PTNCL contributors located in the Palen-McCoy Wilderness, if allowed by the BLM, through the following measures:

1. Install permanent fencing, which meets Bureau of Land Management (BLM) standards. Unless otherwise specified by BLM, the fence shall be a "Typical Barbed Wire Fence (4-Wire)," as described in the BLM National Science and Technology Center Engineering Specifications standard fence drawings. This fence shall be installed along the southern border of the Palen-McCoy Wilderness, extending from the northeast corner of the

- GSEP facility security fence to the southeasternmost extent of the Wilderness;
2. Install gates along this fence, the number and technical specifications of which shall be determined by BLM; and
  3. Maintain the fence for the life of the project.

This condition shall be void if the BLM does not give the project owner permission to construct and maintain the fence.

**Verification:**

1. At least 30 days prior to any ground disturbance, the project owner shall submit for CPM review and approval a letter, with photographs and maps, evidencing the completion of the Palen-McCoy Wilderness boundary fence.
2. Annually, in the Annual Report, the project owner shall report on Palen-McCoy Wilderness boundary fence maintenance activities.

**CUL-15 GEOGLYPH FENCE CONSTRUCTION**

Prior to the start of ground disturbance, the project owner shall avoid or minimize impacts to PTNCL contributors CA-Riv-0661 and CA-Riv-0662, if allowed by the BLM, through the following measures:

1. Have the CRS, alternate CRS, PPA, or CRM re-establish the geoglyph boundaries;
2. Install permanent fencing, meeting BLM's standards around each site, 10 meters beyond the formal site boundary. Unless otherwise specified by BLM, the fence shall be a "Typical Barbed Wire Fence (4-Wire)," as described in the BLM National Science and Technology Center Engineering Specifications standard fence drawings.
3. Provide pedestrian access to each site, as determined by BLM; and
4. Maintain the fence for the life of the project.
5. This condition shall be void if the BLM does not give the project owner permission to construct and maintain the fence.

**Verification:**

1. At least 30 days prior to any ground disturbance, the project owner shall submit for CPM review and approval a letter, with photograph and maps, evidencing the completion of the geoglyph site fences.
2. Annually, in the Annual Report, the project owner shall report on the geoglyph site fences maintenance activities.

**CUL-16 PTNCL CULTURAL LANDSCAPE MONITORING PROGRAM**

Prior to the start of construction, and continuing until the end of construction, to minimize the indirect impact of potential increased vandalism to the PTNCL

and 248 of its probable contributors, the project owner shall ensure that the CRMMP includes a monitoring plan, written by the CRS, the PPA, and the PE, with the assistance of the PTNCL PI-Prehistoric Archaeologist and the PTNCL Ethnographer. The plan shall specify in detail the location recordation equipment and methods used and describe any post-processing of the data. The project owner shall ensure that the monitoring plan is implemented, if allowed by the BLM. The monitoring plan shall include, at a minimum, the following:

1. Consultation by the PE with local Native American groups to determine what indirect impacts they identify for the PTNCL, and what mitigation they recommend; these consultations shall include personal interviews and visits by Native Americans to PTNCL sites, if allowed by the BLM;
2. Coordination of this monitoring program with any ongoing monitoring of other PTNCL contributors in the Southern California Desert region;
3. A study by a qualified CRM to assess the pre-construction condition of the 248 PTNCL archaeological sites recorded by McCarthy's survey in the 1990s, using photographs taken by the McCarthy team when originally recording these resources, all relevant maps, descriptions of the artifacts and features, and location recordation equipment using the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers) and containing site locations, if allowed by the BLM;
4. Visits to and inspection once a month, with the approval of the BLM, during construction by a CRM (possibly accompanied by a Native American monitor) of archaeological sites identified by McCarthy's survey in the 1990s, to check for evidence of vandalism. Monitors shall be provided with all necessary equipment including:
  - a. A vehicle, horses for monitoring in the Wilderness, horse trailer, camping equipment, and supplies; and
  - b. Location recordation equipment using the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers), containing site locations, the CPM-approved pre-construction condition study, all relevant maps, descriptions of the artifacts and features, and photographs taken by the McCarthy team when originally recording these resources;
5. Mapping and photography of all new vandalism with location recordation equipment using the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers) and a daily log of the site visits and inspections, including observations on vandalism;
6. More frequent monitoring visits in response to vandalism with the consultation and approval of the CPM;
7. Initiation of a data recovery phase, in the form of surface collection and artifact analysis, if vandalism is observed, at the discretion of the CRS, the

PTNCL PI-Prehistoric Archaeologist, and the PTNCL Ethnographer, with the consultation and approval of the CPM, and with the approval of the BLM; the research design in the CRMMP shall govern the treatment, retention/disposal, and curation of any archaeological materials collected;

8. Formal recordation on DPR 523 forms of any new sites identified during monitoring and recordation of their boundaries, using location recordation equipment using the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers);
9. Fulfillment of any additional mitigation measures recommended by Native Americans, if feasible and approved by the BLM;
10. Participation of a Native American monitor in PTNCL site visits, if requested by local Native American groups. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. Staff shall either identify potential monitors or shall allow monitoring to proceed without a Native American monitor; and
11. Continuation of the monitoring of the PTNCL sites on an annual basis after construction is completed, for the life of the project.

CRMs shall keep a daily log of PTNCL site monitoring and any other cultural resources activities. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

In the event that the CRS believes that the current level of PTNCL monitoring is not appropriate, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The project owner shall provide to the Chairpersons of the Native American tribes or groups who requested such information the records and reports of any new resources identified during PTNCL site monitoring. In all cases where the new information entails site locations on BLM-managed lands, that information shall not be provided to anyone without the permission of BLM.

**Verification:**

1. At least 60 days prior to the start of construction, the project owner shall notify the CPM that the Native American consultation by the PE has been initiated.

2. At least 30 days prior to the start of construction, the project owner shall provide to the CPM and to the BLM Palm Springs Field Office archaeologist the results of the PE's consultation with local Native American groups concerning the impacts they identify for the PTNCL and what mitigation they recommend for these impacts.
3. At least 30 days prior to construction, the project owner shall submit for CPM review and approval a letter report, with photographs and maps, of the results of the condition study of PTNCL archaeological sites, documenting the conditions of these sites prior to the start of GSEP construction.
4. At least 30 days prior to construction, the project owner shall submit to the CPM a letter report outlining efforts to identify and coordinate with any other ongoing monitoring activities for PTNCL contributors in the Southern California Desert region.
5. At least 30 day prior to the start of construction, the project owner shall notify the CPM of the name of the Native American PTNCL monitor, if required.
6. No more than 15 days after the start of construction, the project owner shall notify the CPM that the monitoring visits and inspections have been initiated.
7. Daily, PTNCL CRMs shall keep a log of monitoring and other cultural resources activities. Copies of these daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM.
8. Monthly, while monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and including information derived from the monitoring logs of the PTNCL CRMs.
9. Within 5 days of the PTNCL monitor reporting vandalism at the PTNCL archaeological sites, the CRS, after consultation with the PTNCL PI-Prehistoric Archaeologist and the PTNCL Ethnographer, and after CPM consultation and approval, shall initiate data recovery at the vandalized site or sites, in the form of surface collection and artifact analysis. The research design in the CRMMP shall govern the treatment, retention/disposal, and curation of any archaeological materials collected.
10. At least 24 hours prior to implementing a proposed change in PTNCL monitoring frequency, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring frequency.
11. Within 30 days of the completion by the PTNCL monitor of DPR 523 forms for any new sites identified during monitoring, the CRS shall submit copies of the forms to the BLM Palm Springs Field Office archaeologist for review and comment.
12. No later than 60 days following the discovery of any new Native American cultural materials, the project owner shall submit to the CPM copies of the information

transmittal letters sent to the Chairpersons of the Native American tribes or groups who requested the information, if that transmittal was allowed by BLM.

13. Annually, in the Annual Report, the project owner shall report on the results of the annual monitoring of the PTNCL sites.

#### **CUL-17 HISTORIC-PERIOD SITE MAPPING AND IN-FIELD ARTIFACT ANALYSIS**

Prior to the start of ground disturbance, the project owner shall ensure that a data recovery plan for the 15 historic-period archaeological resources identified within the GSEP site footprint and linear corridor is included in the CRMMP. The project owner shall ensure that the plan is implemented. The plan must include, but is not limited to, the following:

1. The project owner as described in **CUL-5**. Research questions addressed by this field work shall be based upon the context written by the PI-Historian and the Historical Archaeologist of the DTCCCL documentation and possible NRHP nomination program.
2. The project owner shall hire a PHA with the qualifications described in **CUL-3** to supervise the field work.
3. The project owner shall ensure that, prior to beginning the field work, the PHA and all field crew members are trained by the DTCCCL Historical Archaeologist in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCCL PI-Historian and the DTCCCL Historical Archaeologist.
4. The project owner shall ensure that, prior to beginning the field work, the field crew members are also trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth-century can, bottle, and ceramic diagnostic traits.
5. The project owner shall ensure that all 15 historic-period archaeological sites shall be revisited by the field crew. Using location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers), the original site map shall be updated to include at minimum: landform features such as small drainages, the location of each artifact, and the limits of any artifact concentrations or other features.
6. The project owner shall ensure that an in-field analysis of all artifacts shall be completed. The dimensions of each artifact and feature shall be recorded. Types of seams and closures for each bottle and all cans shall be documented. Photographs shall be taken of any text or designs. Unusual or unidentifiable artifacts may be collected for further analysis, but otherwise artifacts shall not be collected.

7. The project owner shall ensure that each site shall be examined with a metal detector to determine if buried deposits are present. If such deposits are located, the size and shape of each feature shall be established and a sample of the materials each feature contains shall be excavated by a qualified historical archaeologist. Details for this contingency shall be outlined in the CRMMP.
8. The project owner shall ensure that the details of what is found shall be presented in a letter report from the CRS or PHA, which shall serve as a preliminary report, that details what was found at each site, as follows:
  - a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and
  - b. The letter report shall be a concise document that provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms.
9. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCCL Historical Archaeologist to assist in the determination of which, if any, of the 15 historic-period sites are contributing elements to the DTCCCL.
10. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervises the writing of a comprehensive final report. This report shall be included in the CRR (**CUL-6**). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCCL (funded by **CUL-2**).
11. The project owner shall ensure that the results of the field work shall be prepared in a paper, incorporating the data from other DTCCCL sites and placing the GSEP sites in the larger context of the region and of WWII, and submitted to a peer-reviewed archaeological journal.
12. The paper shall be evaluated by the DTCCCL PI-Historian, the DTCCCL Historical Archaeologist and the CPM prior to its submission for publication.
13. The CRS shall pursue the publication of this paper to its successful completion.

**Verification:**

1. At least 90 days prior to ground disturbance, the project owner shall notify the CPM that historic-period site mapping and in-field artifact analysis has ensued.
2. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the



CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.

3. Within 90 days of the submission of the draft CCR to the CPM, the project owner shall submit to the CPM for review and approval the draft of the required research paper, as reviewed and approved by the DTCCL PI-Historian and the DTCCL Historical Archaeologist.
4. Within 90 days following its publication in a peer-reviewed journal, the project owner shall submit for CPM review and approval a copy of the published paper.

### **C.3.12 REFERENCES**

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**CULTURAL RESOURCES LIST AND GLOSSARY**

**GENESIS Solar Energy Project**

ACC	Air-Cooled Condenser
Act	Warren-Alquist Act of 1974
AD	After the Birth of Christ
ACEC	BLM Area of Critical Environmental Concern
AFC	Application for Certification
APE	Area of Potential Effects, equivalent to PAA
BEPTL	Blythe Energy Project Transmission Line
BC	Before the Birth of Christ
BLM	Bureau of Land Management
cal	Radiocarbon (C14) dates that have been calibrated to compensate for fluctuating levels of atmospheric C14. Calibrated C14 dates correspond to calendar years. Calibrated dates are expressed as cal AD or cal BC, where "cal" indicates "calendar years" or "calibrated years."
CARE	Californians for Renewable Energy
CURE	California Unions for Reliable Energy
CA-Riv-#	Archaeological site numbers assigned by a CHRIS Information Center
CCS	Cryptocrystalline Silicate (rocks such as flint, chert, chalcedony, or jasper that contain a high percentage of silica [SiO <sub>2</sub> ], the primary compound that composes quartz.)
CDCA	California Desert Conservation Area, a land use planning unit defined by the BLM in 1980
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System

Conditions	California Energy Commission Conditions of Certification
CRHR	California Register of Historical Resources
Criterion/a	The criteria for listing in the CRHR (1-4) or NRHP (A-D), if met a resource can be considered historically significant
CRM	Cultural Resources Monitor
DEIS	Draft Environmental Impact Statement (NEPA)
DPR 523	Department of Parks and Recreation cultural resources inventory form
DTC/C-AMA	World War II Desert Training Center/California-Arizona Maneuver Area
DTCCCL	Desert Training Center/California-Arizona Maneuver Area Cultural Landscape
EIC	Eastern Information System, CHRIS, Department of Anthropology, University of California, Riverside
Eligible	A cultural resource need only be determined eligible for listing on the CRHR or the NRHP, using the criteria listed above, in order to be determined culturally significant
FAR	Fire-affected rock, rock that shows evidence of having been in prolonged contact with fire
FEIS	Final Environmental Impact Statement (NEPA)
Gen-Tie	Generation-tie, an intersection of two power transmission lines
GPS	Global Positioning System, a U.S. space-based global navigation satellite system
GSEP	proposed project, Genesis Solar Energy Project
Historical resource	A cultural resource that is historically significant and eligible for listing in the CRHR
Historic property	Federal language for all cultural resources that are historically significant and eligible for listing on the NRHP
I-10	Interstate 10



Integrity	The ability of a cultural resource to communicate its significance
kV	Kilovolts, 1000 volts
LORS	laws, ordinances, regulations, and standards
MLD	Most Likely Descendent, a term used to refer to who must be contacted when a an unmarked human skeleton is found
MOA	Memorandum of Agreement
MW	Megawatts
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission of California
NECO	Northern and Eastern Colorado Desert Coordinated Management, a multi-agency planning effort for the Sonoran Desert in California, amends the CDCA
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
ORBA	Off-Road Business Association
PA	Programmatic Agreement
PAA/Project Area of Analysis	The project site (see below) plus what additional areas staff defines for each project that are necessary for the analysis of the cultural resources that the project may impact.
Potentially eligible	A cultural resource that may be determined eligible for listing on the CRHR or NRHP after further archaeological study
Project Site	The bounded area(s) identified by the applicant as the area(s) within which they propose to build the project.
PTNCL	Prehistoric Trails Network Cultural Landscape
RSA	Revised Staff Assessment (Energy Commission, CEQA)

Section 106	Section 106 of the National Historic Preservation Act of 1966 requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The historic preservation review process is outlined in the regulations entitled "Protection of Historic Properties" (36 CFR Part 800).
SHPO	State Historic Preservation Officer
Significant	In order to be eligible for listing on the NRHP a cultural resource must be evaluated using the four criteria to determine if the resource is significant
SLF	Sacred Lands File at the NAHC
Staff	Energy Commission cultural resources technical staff
SA	Staff Assessment (Energy Commission, CEQA)
SSA/FEIS	Staff Supplemental Assessment/Final Environmental Impact Statement
TCP	Traditional Cultural Property, as described in the regulations for Section 106 of the NHPA, can be a site, structure, district, landscape, or natural feature that has traditional cultural significance, that is, significance based in the role the property plays in a community's historically rooted beliefs, customs, and practices.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
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**APPLICATION FOR CERTIFICATION FOR THE  
GENESIS SOLAR ENERGY PROJECT**

**Docket No. 09-AFC-8**

**PROOF OF SERVICE  
(Revised 6/7/10)**

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### DECLARATION OF SERVICE

I, Maria Santourdjian declare that on June 22, 2010, I served and filed copies of the attached Cultural Resources Section for Revised Staff Assessment for Genesis Solar Energy Project (09-AFC-8). The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:

[[http://www.energy.ca.gov/sitingcases/genesis\\_solar](http://www.energy.ca.gov/sitingcases/genesis_solar)].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

*(Check all that Apply)*

#### FOR SERVICE TO ALL OTHER PARTIES:

- sent electronically to all email addresses on the Proof of Service list;
- by personal delivery;
- by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "email preferred."

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- sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

**OR**

- depositing in the mail an original and 12 paper copies, as follows:

#### **CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 09-AFC-8  
1516 Ninth Street, MS-4  
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I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Originally Signed by \_\_\_\_\_  
Maria Santourdjian