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5.3 CULTURAL RESOURCES

5.3.1 Introduction

This Application for Certification (AFC) for the Rio Mesa Solar Electric Generating Facility (Rio Mesa SEGF or Project) has been prepared in accordance with the California Energy Commission's (CEC) Power Plant Site Certification Regulations (CEC-140-2008-001-REV1, current as of July 2008). In addition, this AFC includes elements necessary for the United States (U.S.) Bureau of Land Management (BLM) to permit the Project through the National Environmental Policy Act (NEPA). The "Applicant" for purposes of this AFC comprises Rio Mesa Solar I, LLC, Rio Mesa Solar II, LLC, and Rio Mesa Solar III, LLC, owners of the three separate solar plants and certain shared facilities being proposed. These three Delaware limited liability companies will hold equal one-third shares in the ownership of shared facilities and will separately own their respective plants. They are wholly owned by Rio Mesa Solar Holdings, LLC (a Delaware limited liability company) which is in turn wholly owned by BrightSource Energy, Inc. (BrightSource) a Delaware corporation and the ultimate parent company. The Applicant will use BrightSource's solar thermal technology for the Rio Mesa SEGF.

The proposed project site is situated on the Palo Verde Mesa in Riverside County, California, 13 miles southwest of the City of Blythe, and is located partially on private land and partially on public land administered by BLM. The project will include three solar concentrating thermal power plants and a shared common area to include shared systems. The first plant, a 250 megawatt (MW) (nominal) facility known as Rio Mesa I, will be constructed at the south end of the project and owned by Rio Mesa Solar I, LLC. The second plant, another 250 MW (nominal) facility known as Rio Mesa II, will be located in the central portion of the project site and owned by Rio Mesa Solar II, LLC. Rio Mesa III, a third 250MW (nominal) facility, will be constructed in the northern portion of the project site and owned by Rio Mesa Solar III, LLC. These three plants will be connected via a common overhead 220 kilovolt (kV) generator tie-line (gen-tie line) to the Southern California Edison (SCE) Colorado River Substation (CRS) approximately 9.7 miles to the north.

Each plant will utilize a solar power boiler (referred to as a solar receiver steam generator or SRSG), located on top of a dedicated concrete tower, and solar field based on proprietary heliostat mirror technology developed by BrightSource. The reflecting area of an individual heliostat (which includes two mirrors) is about 19 square meters (205 square feet [sq. ft.]). The heliostat (mirror) fields will focus solar energy onto the SRSG which converts the solar energy to superheated steam. In each plant, a Rankine cycle non-reheat steam turbine receiving this superheated will be directly connected to a rotating generator that generates and pushes the electricity onto the transmission system. Each plant will generate electricity using solar energy as its primary fuel source. However, auxiliary boilers will be used to operate in parallel with the solar field during partial load conditions and occasionally in the afternoon when power is needed after the solar energy has diminished to a level that no longer will support solar generation of electricity. These auxiliary boilers will also assist with daily start-up of the power generation equipment and night time preservation.

The following subsection provides information regarding the applicable laws, ordinances, regulations and standards (LORS) related to cultural resources and the environmental setting. This subsection addresses the impacts that could occur as a result of the construction and operation of the Project, the protection and

mitigation measures that can be used to avoid, minimize, or compensate for adverse impacts, when required, and a list of agency contacts and permits that will be required.

The following terms are used in this section:

- Project area refers to the study area, which includes the project site, laydown area, transmission and access road construction rights-of-way (ROWs), as well as the regulatory buffers surveyed both for archaeological and historic period architecture.
- Project site refers to the area in which the three solar plants will be located.
- Laydown refers to the area in which construction equipment and/or vehicles will be stored and/or maintained.
- Transmission line construction ROW refers to the area required to construct the gen-tie line.
- Access road construction ROW refers to the area required to construct the roadway improvements.
- Archaeological survey area includes the project site, laydown area, gen-tie line and access routes, plus an additional 200 feet around the project site and laydown area, a 650-foot buffer on either side of the gen-tie line, and a 50-foot buffer on either side of the access routes.
- Historic architecture survey area includes the project site, laydown area, gen-tie line, access routes, plus an additional one-half mile radius around the project site and transmission line corridors, and an additional 50 feet on either side of access roads.

Figures 5.3-1, 5.3-2 and 5.3-3 show the boundaries of the areas defined above.

5.3.2 Laws, Ordinances, Regulations, and Standards

Cultural resources are indirectly protected under the provisions of the Federal Antiquities Act of 1906 (16 U.S.C. §§ 431 *et seq.*) and subsequent related legislation, regulations, policies and guidance documents. Table 5.3-1 summarizes the applicable laws, ordinances, regulations and standards (LORS) related to the protection of cultural resources in California.

**Table 5.3-1
Laws, Ordinances, Regulations and Standards (LORS)**

LORS	Applicability	AFC Section Explaining Conformance
Federal		
National Environmental Policy Act (NEPA) 42 United States Code (U.S.C.) §§ 4321 <i>et seq.</i>	Requires Federal agencies to consider potential environmental impacts of projects with federal involvement and to consider appropriate mitigation measures.	5.3.2.1
Federal Land Policy Management Act (FLPMA) 43 U.S.C. §§ 1701 <i>et seq.</i>	Requires the Secretary of the Interior to manage public lands in a manner that will protect the quality of scientific, scenic, historical and archaeological values.	5.3.2.1
Archeology and Historic Preservation: Secretary of Interior's Standards and Guidelines 48 Code of Federal Regulations (CFR). 44716 (Sept. 29, 1983)	Provides a set of standards and guidelines for archaeology and historic preservation. These are considered to be the appropriate professional methods and techniques for the preservation of archaeological and historic properties. The Secretary's standards and guidelines are used by Federal agencies. The State Historic Preservation Office (SHPO) refers to these standards in its requirements for selection of qualified personnel and in the mitigation of potential impacts to cultural resources on public lands in California.	5.3.2.1
National Historic Preservation Act (NHPA) 16 U.S.C. §§ 470 <i>et seq.</i>	Establishes national policy of historic preservation; requires that Federal agencies consider effects to significant cultural resources (i.e., historic properties) prior to undertakings.	5.3.2.1
Section 106 of the Federal Guidelines 16 U.S.C. § 106 of the NHPA	Requires Federal agencies to take into account the effects of projects on historic properties (resources included in or eligible for the NRHP). It also gives the Advisory Council on Historic Preservation (ACHP) and SHPO an opportunity to consult. Federal agencies issuing permits for the Rio Mesa SEGF will be required to comply with NHPA requirements.	5.3.2.1
Executive Order 11593, "Protection of the Cultural Environment", May 13, 1971 (36 Federal Register 8921)	(1) Orders the protection and enhancement of the cultural environment through requiring Federal agencies by to administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations, (2) initiates measures necessary to direct their policies, plans and programs in such a way that federally owned sites, structures, and objects of historical, architectural or archaeological significance are preserved, restored and maintained for the inspiration and benefit of the people, and (3), in consultation with the ACHP (16 U.S.C. 4701), institute procedures to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures and objects of historical, architectural or archaeological significance.	5.3.2.1
Antiquities Act of 1906 (16 U.S.C. §§ 431-433)	Establishes criminal penalties to protect cultural resources on Federal lands.	5.3.2.1
Archaeological Resources Protection Act of 1979 (16 U.S.C. §§ 470aa-470mm)	Governs the collection of archaeological resources on public and Indian lands.	5.3.2.1
Native American Graves Protection and Repatriation	Defines "cultural items", "sacred objects", and "objects of cultural patrimony"; establishes an ownership hierarchy; provides for review;	5.3.2.1

**Table 5.3-1
Laws, Ordinances, Regulations and Standards (LORS)**

LORS	Applicability	AFC Section Explaining Conformance
Act (1990) (25 U.S.C. §§ 3001 <i>et seq.</i>)	allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for return of specified cultural items.	
American Indian Religious Freedom Act, 42 U.S.C. § 1996	Provides protection of exercise of Native American religious practices.	5.3.2.1
State		
Warren-Alquist State Energy Resources Conservation and Development Act, California Public Resources Code, §§ 25000, <i>et seq.</i>	Gives the California Energy Commission (CEC) licensing authority in lieu of state, regional, and local permits and requirements.	5.3.2.2
California Environmental Quality Act (CEQA) of 1970, Public Resources Code (PRC) §§ 21000 <i>et seq.</i> , as amended	Requires state and local agencies to identify and reduce, if feasible, the significant negative environmental impacts of land use decisions.	5.3.2.2
CEQA Guidelines, 14 CCR § 1427	Recognizes that California's archaeological resources are endangered by urban development; the Legislature finds that these resources need preserving; it is a misdemeanor to alter any archaeological evidence found in any cave, or to remove any such materials from a cave.	5.3.2.2
CEQA Guidelines, 14 CCR §15064.4(b)	Establishes mitigation measures related to impacts on historical resources.	5.3.2.2
CEQA Guidelines, 14 CCR §15064.5	Defines "historical resource," addresses reburial options for Native American remains, and presents the preferred mitigation of historical resources.	5.3.2.2
CEQA Guidelines: 14 CCR §15064.7	Encourages development of thresholds of significance and defines "cumulatively significant."	5.3.2.2
CEQA Guidelines: 14 CCR § 15126.4	Provides a discussion of significant environmental impacts.	5.3.2.2
CEQA Appendix G, Section V	Provides a checklist to assist in the identification of potential impacts to historical, cultural or paleontological resources.	5.3.2.2
PRC § 5020.1	Defines several terms including "historical resource" and "substantial adverse change."	5.3.2.2
PRC § 5024.1	Establishes California Register of Historic Resources (CRHR) and criteria for listing.	5.3.2.2
PRC § 5097.5	Makes the unauthorized removal or destruction of archaeological or paleontological resources on sites located on public land a misdemeanor.	5.3.2.2
PRC § 5097.98	Discusses the procedures that need to be followed upon the discovery of Native American human remains.	5.3.2.2
PRC §§ 5097.99, 5097.991	Establishes that removal of Native American grave artifacts or remains is a felony. Establishes that it is the policy of the state to repatriate Native American grave artifacts.	5.3.2.2

**Table 5.3-1
Laws, Ordinances, Regulations and Standards (LORS)**

LORS	Applicability	AFC Section Explaining Conformance
PRC §21083.2	Requires public agencies to evaluate impacts to cultural resources; provides guidance for evaluating and mitigating impacts; requires efforts be taken to preserve resources.	5.3.2.2
PRC § 21084.1	Establishes that a project that may cause a significant adverse change in a significant historical resource is a project that may be considered to have adverse effects on the environment.	5.3.2.2
Government Code (GC) § 6254, 6254.10, 65352.3, 65560, and 65562.5	Exempts from the California Public Records Act Native American graves, cemeteries, archaeological site information, and sacred places in the possession of the California Native American Heritage Commission (NAHC) and other state or local agencies.	5.3.2.2
Health and Safety Code (HSC) § 7050.5	Establishes that any person who knowingly mutilates, disinters, wantonly disturbs, or willfully removes any human remains in or from any location without authority of the law is guilty of a misdemeanor. It further defines procedures for the discovery.	5.3.2.2
HSC §§ 8010-8011	Provides consistent state policy to ensure that all California Indian human remains and cultural materials are treated with dignity and respect. The policy covers non-federally recognized tribes, as well as federally recognized groups.	5.3.2.2
Local		
Riverside County General Plan, Chapter 5, Open Space Policies 19.2-19.4	Provides that the County will promote the preservation of cultural and historic resources and promote Native American consultation.	5.3.2.3
Riverside County General Plan, Chapter 5, Open Space Policies 19.5-19.7	Calls for historic structure evaluation and enforcement of the Historic Building Code during development Projects.	5.3.2.3

- | | |
|--|---|
| ACHP = Advisory Council on Historic Preservation | HSC = Health and Safety Code |
| AFC = Application for Certification | LORS = Laws, ordinances, regulations and standards |
| CC = Civil Code | NAHC = California Native American Heritage Commission |
| CEC = California Energy Commission | NEPA = National Environmental Policy Act |
| CEQA = California Environmental Quality Act | PRC = Public Resources Code |
| CRHR = California Register of Historic Resources | SHPO = State Historic Preservation Office |
| FLMPA = Federal Land Management Policy Act | USC = United States Code |
| GC = Government Code | |

5.3.2.1 Federal

National Environmental Policy Act (42 U.S.C. §§ 4321 et seq.)

NEPA establishes a public, interdisciplinary framework for Federal agencies reviewing projects under their jurisdiction to consider environmental impacts. NEPA's basic policy is to assure that all branches of government give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment.

The Bureau of Land Management, as lead Federal agency for the Project, is responsible for preparation of an Environmental Impact Statement (EIS) in compliance with NEPA to evaluate the environmental

impacts of the portions of the Rio Mesa SEGF on federal lands. The Rio Mesa Solar III plant and the Project gen-tie line are located on lands administered and managed by the BLM. NEPA compliance is required for these portions of the Project through preparation of a Draft and Final EIS. BLM is also responsible for Native American consultation, including government to government consultation.

Federal Land Policy and Management Act (43 U.S.C. §§ 1701 et seq.)

The Federal Land Policy Management Act (FLMPA) require the U.S. Secretary of the Interior to retain and maintain public lands in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric water resources, and archeological values [§ 1701(a)(8)]; the Secretary, with respect to the public lands, shall promulgate rules and regulations to carry out the purposes of this Act and of other laws applicable to public lands (§ 1740).

Archeology and Historic Preservation: Secretary of Interior's Standards and Guidelines (48 Fed. Reg. 44716, Sept. 29, 1983)

Federal Guidelines for Historic Preservation Projects: The US Secretary of the Interior has published a set of *Standards and Guidelines for Archaeology and Historic Preservation*. These are considered to be the appropriate professional methods and techniques for the preservation of archaeological and historic properties. The Secretary's standards and guidelines are used by Federal agencies, such as the Forest Service, the Bureau of Land Management, and the National Park Service. The California State Historic Preservation Office (SHPO) refers to these standards in its requirements for selection of qualified personnel and in the mitigation of potential impacts to cultural resources on public lands in California.

National Historic Preservation Act (16 U.S.C. §§ 470 et seq.)

The National Historic Preservation Act (NHPA) establishes the nation's policy for historic preservation, and sets in place a program for the preservation of historic properties by requiring Federal agencies consider effects to significant cultural resources (i.e., historic properties) prior to undertakings

Section 106 of the Federal Guidelines (16 U.S.C. § 106)

Section 106 of the NHPA requires Federal agencies to take in to account the effects of projects on historic properties (resources included in or eligible for the National Register of Historic Places (NRHP). It also gives the Advisory Council on Historic Preservation (ACHP) and SHPOs an opportunity to consult. Federal agencies issuing permits for the Rio Mesa SEGF Project would be required to comply with NHPA requirements.

Executive Order 11593, "Protection of the Cultural Environment," May 13, 1971 (36 Federal Register, 8921)

This Executive Order requires (1) the protection and enhancement of the cultural environment through requiring Federal agencies by to administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations, (2) initiate measures necessary to direct their policies, plans and programs in such a way that federally owned sites, structures, and objects of historical,

architectural or archaeological significance are preserved, restored and maintained for the inspiration and benefit of the people, and (3), in consultation with the Advisory Council on Historic Preservation (16 U.S.C. 4701), institute procedures to assure that federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures and objects of historical, architectural or archaeological significance.

Antiquities Act of 1906 (16 U.S.C §§ 431-433)

This act establishes criminal penalties for unauthorized destruction or appropriation of “any historic or prehistoric ruin or monument, or any object of antiquity” on federal land.

Archaeological Resources Protection Act of 1979 (16 U.S.C. § 470aa-470mm)

This act provides protection of archaeological resources from vandalism and unauthorized collecting on federal land.

Native American Graves Protection and Repatriation Act (1990) (25 U.S.C. §§ 3001 et seq.)

Title 25, U.S.C. §§ 3001, et seq. defines "cultural items", "sacred objects", and "objects of cultural patrimony"; establishes an ownership hierarchy; provides for review; allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for return of specified cultural items.

American Indian Religious Freedom Act: 42 U.S.C. § 1996

This measure establishes a national policy to protect the right of Native Americans and other indigenous groups to exercise their traditional religions. Federal agencies issuing permits for the Rio Mesa SEGF would be required to comply with this Act if Native Americans identified issues regarding their right to exercise traditional religious practices.

5.3.2.2 State***Warren-Alquist Act***

The California Public Resources Code (PRC) establishes the CEC as the decision-making authority over land use decisions and environmental determinations during the Application for Certification process. This is in accordance with the Warren-Alquist Act, codified in §§ 25000 et seq. of the PRC. The CEC has exclusive jurisdiction over thermal power plant siting (50 MW or greater), including California Environmental Quality Act (CEQA) implementation. The Project will demonstrate conformity with state, regional, and local laws, including land use laws.

Under the Warren-Alquist Act, the CEC’s licensing process is legally equivalent to CEQA and is guided by CEQA regulations.

California Environmental Quality Act

The CEC will be the lead agency enforcing CEQA for the Project. Under California law, the CEC is responsible for reviewing the AFCs filed for projects, and also has the role of lead agency for the environmental review of these projects under CEQA (PRC, §§ 25500 et seq; PRC, §§21000 et seq.). The CEC conducts this review in accordance with the administrative adjudication provisions of the Administrative Procedure Act (5 United States Code, §§ 500 et. seq.) and its own regulations governing site certification proceedings (CCR, Title 20, §§ 1701 et seq.). These provisions require the staff to conduct an independent analysis of AFCs and prepare an independent assessment of a project’s potential environmental impacts, feasible mitigation measures, and alternatives as part of this process.

The CEC considers the Staff Assessment(s), along with the environmental analysis provided by the Applicant, as well as input from interested local, regional, State, and Federal agencies, interveners, and interested Native American tribes, in developing its final decision on whether to issue a license for a proposed project. The CEC has a certified regulatory program under CEQA that exempts the agency from having to draft an Environmental Impact Report (EIR) and, instead, requires a Final Staff Assessment (FSA), evidentiary hearings, and a decision based on the hearing record, which includes the staff’s and other parties’ assessments.

CEQA compliance for the Project will be achieved through a combined NEPA/CEQA document, which will be prepared jointly by the BLM and CEC.

CEQA Guidelines: Title 14 California Code of Regulations (CRR) § 1427

This section of CEQA recognizes that California’s archaeological resources are endangered by urban development; the Legislature finds that these resources need preserving; it is a misdemeanor to alter any archaeological evidence found in any cave, or to remove any such materials from a cave.

CEQA Guidelines: Title 14 CCR § 15064.4 subsection (b)

This section of CEQA defines “historical resource,” addresses reburial options for Native American remains, and presents the preferred mitigation of historical resources.

CEQA Guidelines: Title 14 CCR § 15064.5

This section of CEQA identifies which resources are considered cultural resources, as stated below.

- Resource(s) listed or eligible for listing on the California Register of Historical Resources (CRHR) (Title 14 CCR § 15064.5(a)(1).
- Resource(s) either listed in the NRHP or in a “local register of historical resources” unless “the preponderance of evidence demonstrates that it is not historically or culturally significant,” (Title 14 CCR §15064.5(a)(2)).
- Resources identified as significant in an historical resource survey meeting the requirements § 5024.1(g) of the Public Resources Code [Title 14 CCR §15065.5(a)(2)].

In addition, Subdivision (g) provides the following guidelines regarding historical surveys.

- A resource identified as significant in a historical survey may be listed in the CRHR if the survey meets all of the following criteria:
 - The survey has been or will be included in the State Historic Resources Inventory.
 - The survey and the survey documents were prepared in accordance with procedures and requirements of the California Office of Historic Preservation.
 - The resource is evaluated and determined by the California Office of Historic Preservation to have a significance rating of Category 1 to 5 on the Department of Parks and Recreation Historic Resources Inventory Form.
 - If the survey is five years or older at the time of its nomination for inclusion in the California Register, the survey is updated to identify historic resources that have become eligible or ineligible due to changed circumstances or further documentation and those which have been demolished or altered in a manner that substantially diminished the significance of the resource, and
 - resources identified by such surveys are presumed to be historically or culturally significant unless the preponderance of evidence demonstrates otherwise.
- A final category of “historical resources” may be determined at the discretion of the lead agency when:
 - 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, education, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record [Title 14 CCR § 15064.5(a)(3)].

If the CEQA review process identifies the existence of, or the probable likelihood of, Native American human remains within the project, the lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission (NAHC). The applicant may develop an agreement for the disposition of the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC (Title 14 CCR § 15064.5(d)).

§15124(b) addresses mitigation, and states that the preferred mitigation for historical resources is treatment in a manner consistent with Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. The preferred mitigation for archaeological sites is preservation in place.

CEQA Guidelines: Title 14 CCR § 15064.7 "Thresholds of Significance"

This section encourages agencies to develop thresholds of significance to be used in determining potential impacts and defines the term "cumulatively significant".

CEQA Guidelines: Title 14 CCR § 15126.4 "Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects", sub-section (b) "Mitigation Measures Related to Impacts on Historical Resources"

Subsection (b) discusses:

- impacts of maintenance, repair, stabilization, restoration, conservation, or reconstruction of a historical resource,
- documentation as a mitigation measure,
- mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible; data recovery must be conducted in accordance with an adopted data recovery plan.

CEQA Appendix G Section V

This appendix is a checklist that identifies potential impacts to historical, cultural, or paleontological resources. The checklist includes the following questions, which are used to determine if a potential project would:

- cause a substantial adverse change in the significance of a historical resource as defined in §15064.5;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5;
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; and/or
- disturb any human remains, including those interred outside of formal cemeteries.

Questions on the checklist are answered to assess whether impacts associated with a project would be potentially significant, less than significant with mitigation, less than significant, or have no impact. The final determination of project-related impacts is made by the lead agency on the project.

Public Resources Code § 5020.1

This section defines several terms, including those provided below.

- "Historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in

the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

- "Substantial adverse change" means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.

Public Resources Code § 5024.1

This section establishes the CRHR. A resource may be listed as a historical resource in the CRHR if it meets NRHP criteria or the following state criteria:

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

Public Resources Code § 5097.5

This section states that any unauthorized removal or destruction of archaeological or paleontological resources on sites located on public land is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the State, or any city, county, district, authority or public corporation, or any agency thereof.

Public Resources Code § 5097.98

This section discusses the procedures that need to be followed upon the discovery of Native American human remains. The NAHC, upon notification of the discovery of human remains by the Coroner, is required to notify those persons it believes to be most likely descended from the deceased Native American. It enables the descendant to inspect the site of the discovery of the Native American human remains and to recommend to the land owner (or person responsible for the excavation) means of treating, with dignity, the human remains and any associated grave goods.

Public Resources Code §§ 5097.99, 5097.991

These sections establish that it is a felony to obtain or possess Native American artifacts or human remains taken from a grave or cairn and sets penalties for these actions. The sections also mandate that it is the policy of the State to repatriate Native American remains and associated grave goods.

Public Resources Code § 21083.2

This section states that under CEQA, the lead agency is responsible for determining whether a project may have a significant effect on historical and archaeological resources. This section states that if the lead agency determines that the project may have a significant effect on "unique" archaeological resources, an

Environmental Impact Report shall be prepared to address these resources. A unique archaeological resource is an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that the resource meets one of the following criteria:

- contains information needed to answer important research questions and that a demonstrable public interest exists in that information;
- has a special and particular quality, such as being the oldest or best example of its type; and/or
- is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be taken to preserve these resources in place or provide mitigation measures. CEC licensing is a CEQA-equivalent process.

Public Resources Code § 21084.1

This section sets forth that a project that may cause a significant adverse change in a significant historical resource is a project that may be considered to have adverse effects on the environment. Historical resources not listed on the CRHR or other local lists may still be considered historical resources at the discretion of the lead agency on the project.

Health and Safety Code § 7050.5

This code establishes that if any person who knowingly mutilates, disinters, wantonly disturbs, or willfully removes any human remains in or from any location without authority of the law is guilty of a misdemeanor. It further defines procedures for the discovery and treatment of Native American remains.

Health and Safety Code §§ 8010-8011

This code is intended to provide consistent state policy to ensure that all California Indian human remains and cultural materials are treated with dignity and respect. The code extends policy coverage to non-federally recognized tribes, as well as federally recognized groups.

5.3.2.3 Local

Riverside County General Plan, Chapter 5 (Multipurpose Open Space Element), Open Space Policies 19.2-19.4

This portion of the Riverside County General Plan (RCGP) outlines policies intended to promote the preservation of cultural resources in the County of Riverside. Policies within this chapter identify the need for a review of project archaeological sensitivity, resource confidentiality, Native American consultation, and a report of findings.

Riverside County General Plan, Chapter 5 (Multipurpose Open Space Element), Open Space Policies 19.5-19.7

This portion of the RCGP outlines policies for the preservation of historic resources. Policies within this chapter identify the need for review of large development project proposals by the History Division of the Riverside County Regional Park and Open-Space District with respect to the potential destruction or preservation of historical sites. The chapter also calls for promotion of built environment preservation through application of the Historic Building Code and authorization of tax credits for historic building and structure retrofitting.

5.3.3 Affected Environment

The following paragraphs describe the environmental setting in which the Project is located.

5.3.3.1 Natural Environment

The following paragraphs describe the various components of the natural environment in which the Project is located.

Physiography and Geology

The project area is bounded to the northwest and west by the volcanic and plutonic rocks that form the Mule Mountains, to the north and south by an extension of the Chuckwalla Valley, and to the east by the broad floodplain of the Colorado River. The immediate project area is characterized by gently sloping alluvial fans that emanate from the Mule Mountains. Gullies and washes running approximately west to east dissect the site, primarily on the north and south sides. The rock outcrops of the Mule Mountains are heavily eroded and mantled by a Quaternary fan piedmont. By contrast the Colorado River floodplain is composed of more recent alluvial material deposited by the river. Between these two areas lies the Palo Verde Mesa, which is primarily composed of inset Pleistocene terraces of the Colorado River. All of these Quaternary landforms are comprised of numerous older remnants and more recent deposits of varying ages. Refer to Section 2.2 – Geoarchaeological Assessment of the *Cultural Resource Technical Report* (Under Confidential Filing) for a more in-depth assessment of the geology, soils, geomorphology, and potential for buried sites within the project area.

Climate and Hydrology

The project area is located in the Colorado River Hydrologic Region within the Palo Verde Hydrologic area. It is atop an alluvial fan with multiple ephemeral washes. These washes originate in the surrounding mountains and generally trend from west to east. The upstream tributary watershed to the site is approximately 50 square miles. The site lies on a mesa at higher elevation than the Colorado River floodplain. The area within the site is for the most part sparsely populated by desert vegetative brush with the exception of even more barren hilly areas located along the north-western boundary of the site. The Project and tributary area runoff discharges east through several ephemeral washes to Hodges Drain, which borders the east side of the project site. Hodges Drain conveys runoff approximately two miles south to the Palo Verde Outfall Drain. Runoff continues south approximately 6.5 miles to the Colorado

River. The flow rates, depths, and velocities associated with a 100-year storm indicate the potential for minor to moderate scour, erosion, and sedimentation within the washes during extreme flood events. No dams or levees are present upstream of the Project.

The project area has a typical southern California desert climate, with low humidity, mild winters, and hot summers. The average low temperature in December is 39.2 degrees Fahrenheit (°F), and the average high temperature in July is 108.5 °F. Annual rainfall averages 3.94 inches, falling both as cyclonic rainfall in the winter (December-February) and as monsoonal rainfall in the summer (August-September); however, total rainfall is highly variable from year to year. (Laylander and Schaefer 2010).

5.3.3.2 Regional Prehistoric Setting

The project area is situated within the Colorado Desert in a region in which few archaeological investigations were conducted until the 1970s. As archaeological excavations are completed over a more extensive portion of the desert, a clearer picture of the culture history of the Colorado Desert is beginning to emerge. As Schaefer and Laylander (2007:247) pointed out in a recent cultural landscape study of the prehistory of the Colorado Desert, the archaeology here is “embedded in a larger cultural context that includes the Mojave” and Sonoran Deserts, but with its own distinct archaeological manifestations. The cultural attributes that unify human behavior in these three deserts include adaptation to similar environments with comparable climate, topography, flora and fauna; a shared language phylum (Aztec-Tanoan); and genetic relatedness due to regular interaction through intermarriage, trade, ritual and war (Jorgensen 1980).

The course of prehistory in the area also was influenced throughout the Holocene by the Colorado River as it periodically inundated the Salton Trough and created Lake Cahuilla (Weide 1976; Schaefer and Laylander 2007). These events resulted in an increase in freshwater resources and created areas with a more fertile environment able to sustain larger populations. The most recent research indicates the occurrence of no fewer than three cycles of inundation and desiccation between approximately A.D. 1200 and 1600 (Schaefer and Laylander 2007). The chronology of the prior periods of inundation for Lake Cahuilla is less well known or understood. Understanding the larger cultural and natural context is useful for interpreting local cultural resources within the project area and aid determined if such resources can be associated with these broader environmental patterns.

In the 1920s, Malcolm Rogers conducted the most extensive archaeological survey and report of the Colorado Desert that has been conducted to date (Weide 1976). His theories on the periods he encountered at many of the sites are uncertain because most of the cultural material consisted of non-stratified surface remains, and, at that time, the artifact chronology was in the early stages of development (Rogers 1939). Several sites recorded have no artifact assemblage associated with them; they are merely cleared circles of about six feet in diameter and are sometimes defined by a low wall around the perimeter. Rogers interpreted these sites as “temporary bedding platforms.” These bedding platform features and other sites containing artifact assemblages of heavily patinated crude tools were the basis of Rogers’s suggestion that they were associated with a pre-projectile point culture (Pre-Paleoindian period). The absence of dateable material makes this hypothesis inconclusive.

Aside from the Pre-Paleoindian period, archaeological research in southern California since the late 1970s has resulted in the development of several chronological time periods for prehistoric desert groups

(Moratto 1984; Warren 1984). Cultural histories have been strengthened by cultural resource management projects and a few academic studies that have resulted in a large sample of radiocarbon-dated archaeological contexts, as well as the use of forager theory and lithic technology studies for their interpretation (Schaefer and Laylander 2007).

The temporal periods discussed below include the Paleoindian period, 12,000 to 7,000 B.P. (Late Pleistocene to Early Holocene); and the Archaic period, beginning between 8,000 and 7,000 B.P. (Mid Holocene) and (transitioning to) the Late Prehistoric period (Late Holocene) at approximately 3,000 B.P. Most local chronologies invoke an Intermediate Period between the Archaic and Late Prehistoric. The literature referenced here (Rogers 1939; Schaefer and Laylander 2007; Warren 1984; Weide 1976) has not clearly defined this Intermediate Period, other than to place it between approximately 500 B.C. to 500 A.D. (Justice 2002). A discussion of time and culture presented in the book *Stone Age Spear and Arrow Points of the Southwestern United States*, by Noel D. Justice, presents the Intermediate period as a time that witnessed the emergence of agricultural communities in the Southwest during what is referred to in that region as the Basketmaker III period (2002). Although specific dates are given for the beginning and end dates of each period, these dates are not static because technological innovations occurred at different times within this region. For example, the introduction of the bow and arrow closely coincided with the introduction of pottery, but their introduction does not appear to have occurred simultaneously throughout the region (Moratto 1984). Different interpretations of chronologies of the Colorado Desert posed by several researchers in the area are provided in Table 5.3-2, Colorado Desert Chronologies.

**Table 5.3-2
Colorado Desert Chronologies**

Date	Rogers' (1966) sequence for the Central Aspect	Warren's (1984) chronology for the Mojave Desert	Sutton's (1996) update of Warren's (1984) chronology	Hall's (2000) sequence for the Mojave Desert	Schaefer's (1994a) sequence for the Colorado Desert	A second sequence for the Colorado Desert (Altschul et al. 1994)	A second version of Rogers' cultural sequence (Weide 1976)	Weide's (1976) chronology for the Yuha Desert	Sequence for the Indian Hill Rockshelter site (McDonald 1992)
1850	Paiute and Mojave	Shoshonean / Protohistoric	Late Prehistoric	Tecopa	Late Prehistoric	Patayan I-III	Yuman I-III	Increased population growth	Late Prehistoric
1500	Prehistoric Yuman and Shoshonean Groups								
1000		Saratoga Springs	Rose Springs	Saratoga	Sporadic occupation				
500 AD	Basketmaker III and Pueblo II	Gypsum	Gypsum	Newberry		Late Archaic	Late Archaic	Amargosa	Very little archaeological remains, low population densities
0 BC	Amargosa								
1000		Pinto	Pinto	Pinto	Early Archaic	Pinto	Early Period I		
2000								Pinto	Pinto
3000		Pinto	Pinto	Pinto	Early Archaic				
4000	Pinto					Pinto	Pinto	Early Archaic	
5000		?	Lake Mojave	Lake Mojave	Lake Mojave				Paleoindian
6000	San Dieguito								
7000		San Dieguito	?	?	?	?	Pre-projectile point		
8000	?							?	?
9000		?	?	?	?	Pre-projectile point			
10000	?						?	?	?
11000		?	?	?	?	Pre-projectile point			
12000	?						?	?	?

Paleoindian Period "San Dieguito" (10,000 to 6,000 B.C.)

San Dieguito refers to the earliest (Archaic) period for the Colorado Desert region (Weide 1976). The start of the Paleoindian period is marked by increased rainfall and cooler temperatures that resulted in the formation of deep pluvial lakes and marshes in interior desert regions and offered a multitude of subsistence options. Around 11,000 B.P. (9,050 B.C.) temperatures increased and the lakes began to

recede (Moratto 1984); however, this recession was gradual and the pluvial lake environment remained in existence for several millennia, providing the context for the lifeways of the San Dieguito peoples.

These cultural patterns included developing methods of procuring foods and materials based on the plants and animals that lived around the lakes (Moratto 1984). Marshes in particular offered a variety of plants with edible seeds, roots, and stems. This habitat provided frogs, turtles, fish, and water rats and attracted ducks and other waterfowl, which provided meat and eggs. The tool kits for this period are characterized by a flaked stone industry and typically are defined as sites containing fluted points (Clovis and Folsom) initially referred to as the Western Pluvial Lakes Tradition. The projectile point types tend to be large, skillfully worked, and fluted. Such points would have been hafted to a spear and launched with an atlatl.

Although the work of Clovis and Folsom in the Colorado Desert has not yet been reported, early accounts of proposed Paleoindian Period sites have been reported adjacent to the west and south of the former shore of Lake Cahuilla. These sites exhibit a flaked-stone industry with an extensive number of tool forms, including ovate bifaces, chipped stone crescents (called amulets by Rogers), drills, cleavers, pulping planes, and keeled scrapers (Rogers 1939). Milling tools are conspicuously absent from these sites, implying that hard seeds were not included in the diet (Moratto 1984). The absence of projectile points in such contexts may merely indicate that these site types represent locales for the procurement of source material, expedient tool use and disposal, and early-stage bifacial reduction. Therefore, the reported Paleoindian Period sites within the Colorado Desert may represent a greater temporal span than originally thought.

There is very little evidence of human presence in the Colorado Desert in the Late Pleistocene and Early Holocene. This lack of evidence is in marked contrast to the well-documented use of the surrounding regions of the Mojave Desert and coastal southern California (Schaefer and Laylander 2007). Circumstances such as the ephemeral nature of settlement during the period, the instability of landforms, or research sampling bias may have contributed to this lack of evidence.

Archaic Period (6,000 B.C. to A.D. 500)

With an increase in temperature and the evaporation of the pluvial lakes during the early Holocene, it is believed that the population of the Colorado Desert likely dropped. The number of archaeological sites that have been found to date from this period continues to be limited; however, in ongoing studies in this region, a number of Archaic projectile points consistently are being found, which indicates that sparsely distributed groups were still present during this time.

The Pinto complex and the Amargosa complex are viewed as particular regional specializations of the existing hunter and gathering adaptations characteristic of the Archaic period (Campbell and Campbell 1935). Excavations conducted at several sites located in the Pinto Basin area of the Mojave Desert resulted in the discovery of the material culture ascribed to this period (Campbell and Campbell 1935). The Pinto complex is defined as having existed between 7,000 and 4,000 B.P (5050 to 2050 B.C.) (Moratto 1984). It is marked by the presence of large numbers of Pinto-style points, which are characterized as moderately large triangular dart points with straight to expanding stems with marked basal notches that produce an eared or flared appearance, and the introduction of a small, flat variety of millingstone (Moratto 1984).

A few Pinto-like points have been found in the Colorado Desert, such as one at the Split Mountain Sand Dune site. Because the stratum where the point was recovered was radiocarbon-dated to 770 B.P. (A.D. 1180), the point likely represents re-use by a later cultural group rather than the presence of Archaic Period cultural group. An important study of this complex took place at the Indian Hill rock shelter (CA-SDI-2537). This study seems to indicate a fairly stable use of the site with cached resources during seasonal visits (McDonald 1992). Similar slab-lined pits have been found in a rock shelter near Palm Springs (CA-RIV-45), which may suggest logistical foraging by mobile groups (Bean et al. 1995).

Pinto points have also been recorded at sites located along Lake Cahuilla and Colorado River relict terraces. The Truckhaven Man burial [radiocarbon date of 5,840 B.P. (3890 B.C.)] along with a quartz point of unspecified type from a stratum radiocarbon-dated 4,980 B.P. (3030 B.C.) [Weide 1976] suggest that the Colorado Desert region was not entirely unoccupied during the early and middle portions of the Archaic period; people may have been present only on a seasonal basis due to a lack of resources at certain times of the year (Fagan 2003).

The hard seeds of mesquite (*Prosopis juliflora*) and screwbean (*Prosopis pubescens*) and foods from other desert-adapted plants, such as various types of cactus and agaves, became staples of the Native American diet (Barker 1976). Groundstone tools, including manos, metates, mortars, and pestles, were developed to aid in the processing of these new foods, and are commonly found in artifact assemblages throughout the Mojave and Colorado deserts (Moratto 1984). In addition to stone tools, people of the Colorado Desert may have made wooden milling utensils and other artifacts of organic materials that are usually not preserved in the archaeological record. Ethnographic records show the use of wooden mortars and pestles, items such as hooked sticks for shaking mesquite pods down from trees, nets in which to collect cactus and then beat the plants against the ground to remove the needles, digging sticks used to excavate rodents from burrows or to dig up plants, and throwing sticks used to hunt hare and other small game (Barker 1976). These tool types likely persisted for millennia with little change in technology or style.

Recently, a number of late Archaic Period sites have been documented in the northern Coachella Valley (Love and Dahdul 2002). These sites show evidence of substantial occupation, with deeply buried midden deposits containing clay-lined features, cremations, hearths, and living surfaces. These sites contain milling equipment and the faunal assemblage is dominated by lagomorphs. These sites suggest a more sustained settlement type than previously known for the Archaic Period in the area and are likely related to high stands of Lake Cahuilla.

Late Prehistoric Period (A.D. 500 to Contact)

Recent research shows that around A.D. 1200, the Colorado River shifted course and refilled Lake Cahuilla (Schaefer and Laylander 2007). This refilled lake provided a stable year-round water supply in the Colorado Desert. People began to repopulate the Colorado Desert, some following the river on its route from the Colorado River Valley and some attracted from the Mojave Desert or the mountain ranges to the west (Moratto 1984, Weide 1976). Ceramic wares, which had been introduced centuries before in other areas, were brought into this region with the influx of people. Beginning around A.D. 870, Patayan I ceramic types, such as Colorado Beige, Colorado Red, and Black Mesa Buff, appears on the shoreline of Lake Cahuilla (Schaefer and Laylander 2007). The Lower Colorado Buff wares, in common use since A.D. 800, show new attributes around A.D. 1050, such as stucco finishes, recurved jar rims, and tab

handles on scoops. These attributes aid archaeologists in dating sites that appear in the area (Moratto 1984).

Late Period assemblages beginning circa A.D. 1250 are typified by the profusion of the Desert Side-notched and Cottonwood arrow points, which replaced the larger projectile point traditions of earlier eras (Jones et al. 2007). These smaller points indicate the introduction of the bow and arrow and the replacement of the atlatl (Moratto 1984). These projectile point types are common throughout California during this period and into the historic period (Justice 2002).

People began to occupy more permanent settlements and exploit different food sources at different times of the year because enough resources were present to provide year-round sustenance. Evidence of these settlements can be seen in coprolite analyses, which reveal the remains of plant and animal foods available during different seasons (Moratto 1984). Trade networks between coastal peoples and the occupants of the desert interior began to develop around A.D. 1000. This development is apparent in the archaeological record based on the exponential increase in shell beads within Colorado Desert sites (Fagan 2003).

Around A.D. 1400, the course of the Colorado River shifted eastward, and, as Lake Cahuilla gradually dried up, native peoples were confined to an ever decreasing fertile area (Moratto 1984). As the lake receded, surrounding areas experienced an increase in occupation as the population shifted to more abundant lands, such as the Colorado River Valley and mountains to the west of the Salton Trough (Weide 1976, Moratto 1984). People persevered in this desert environment, as evidenced by the presence of a series of stone-lined fish traps that marked the progress of the receding waterline (Moratto 1984). As subsistence resources disappeared along with the lake, people also attempted to rely on limited agriculture. As the aridity increased, the local inhabitants expanded their utilization of the resource base to include several hundred plants that were used for food manufacture and medicine (Fagan 2003). Evidence of water control techniques, such as the use of wells and springs for irrigation and the construction of reservoirs and ditches, is apparent (Weide 1976).

Materials used in projectile point production include chalcedony, chert, quartzite, quartz, fine-grained basalt, andesite, and obsidian. Isotropic materials, such as obsidian, were preferred sources for projectile points, and the receding shoreline of Lake Cahuilla exposed a local obsidian source, Obsidian Butte, which is located between 131 feet to 230 feet below sea level at the southern end of the Salton Sea. This lithic source was exposed intermittently during the Late Prehistoric period and subsequently was exploited for use in flaked stone tool manufacture. Although this local source of obsidian was available, its application to tool manufacture was supplementary and accounts for no more than 10 percent of debitage assemblages from montane and coastal southern California. Obsidian hydration dates for the source range from A.D. 1200 to 1800 (Laylander 1997).

5.3.3.3 Local Vicinity Prehistoric Setting

The following sections discuss the prehistoric setting in the vicinity of the project site.

Paleoindian Period “San Dieguito” (10,000 to 6,000 B.C.)

Reported Clovis sites are fairly numerous in the Mojave Desert, but they are scarce in the Colorado Desert, although occurrences in Pinto Basin, Ocotillo Wells, and the Yuha Desert have been reported (Rondeau et al. 2007, Laylander and Schaeffer 2010). Additionally, it should be noted that many of the reported Paleoindian sites have been recorded and interpreted in past years, somewhat erroneously, as being attributed to an early technological period, based on lithic tool types observed (large choppers, early-stage bifaces, etc.) based on degree of weathering and/or desert varnish of sites located on very old desert pavement surfaces. Current evidence, which takes into account natural geomorphic and desert pavement formation processes, lithic technology and settlement patterns, as well as the absence of conclusive testable data and fails to provide substantive data that can clearly place these sites within a Paleoindian context. As C. Stone notes, “artifacts on desert pavement may be recent” and “[d]esert varnish formation occurs at different rates in different localities, depending on local climatic and geologic conditions...in many areas of the lower Colorado region, varnish may form relatively rapidly” (Stone 1991, *cf.* Moore and Elvidge 1982). For example, a nearby previously recorded site (RIV-1814) was interpreted as Paleoindian Period (Eckert et al 2005). However, there is no conclusive, testable data that can be used from this site to confirm this time period.

Specific to the Lower Colorado River area and hence the current project area, and as presented in the Draft Chuckwalla Valley Prehistoric Trail Network Cultural Landscape (PTNCL) report, the Paleoindian Period – San Dieguito is correlated with the “Early Holocene Period” (Laylander and Schaefer 2010). Previous archaeological work regarding this period and its affiliated cultural patterns began with Malcolm Rogers and his interpretation of sites discovered through surveys in western San Diego County, and later excavations at sites such as the C. W. Harris site (Laylander and Schaefer 2010, *cf.* Roberts 1939, 1966). The cultural premise of Rogers’ interpretation involved the cultural phasing of these populations based upon the identification of specific tool kits and the technological improvement of that tool kit, as observed in the archaeological record. As summarized by Laylander and Schaefer, the cultural pattern present in the Colorado Desert during this period, as inferred from artifact assemblage and site associations is “represented by small, mobile bands exploiting both small and large game and collecting seasonally available wild plants” (2010).

Distribution of sites within the project area and its immediate environs during this period has likewise been interpreted; this research resulted in the conclusion that early Holocene settlement sites “may be found on any flat area, but the largest aggregations seem to occur on mesas and terraces overlooking large washes or the margins of lakes” (Laylander and Schaefer 2010). In particular reference to San Dieguito settlement patterns of the eastern Colorado Desert, an occupation model presented and tested by L. Pendleton revealed that settlement during this period was centered along the river floodplain and that the peripheral deserts capes set back from the river were only exploited to “take advantage of special resources within the foraging radius of logistically organized collecting groups” (Laylander and Schaefer 2010, *cf.* Pendleton 1986).

Archaic Period (6,000 B.C. to A.D. 500)

For the project area specifically, the Archaic Period is contemporaneous with the Middle Holocene to Early Late Holocene Period, as referenced by Laylander and Schaefer (2010). As summarized in the

Draft Chuckwalla Valley PTNCL report, this period is typified as one of “unspecialized hunting-gathering adaptations” where hunter-gathering populations during this period were forced, due to inhospitable climatological conditions, to “concentrate around a limited number of favored locations or emigrate to more habitable regions” (Laylander and Schaefer 2010; *cf.* Crabtree 1981; Schaefer 1994c; M. Weide 1976). Cultural patterns commonly associated with this period include the Pinto, Amargosa, Deadman Lake, and Gypsum.

Of particular relevance for the present project area, “[s]ites dating to this period have been identified more frequently in the Great Basin, Mojave Desert, and Sonoran Desert east of the Colorado River than in the Colorado Desert” (Laylander and Schaefer 2010). However, sites associated with this period have been found in the region that marks the boundary between the Colorado Desert and the Peninsular Ranges, as well as at various locations near springs and tanks (ex. Corn Springs and Mule Tank Petroglyph sites). The “Indian Hill Rockshelter” site, located in the Anza-Borrego Desert, is the most notable site dating to this period in the Colorado Desert (Laylander and Schaefer 2010). Other sites have more recently been identified along the Lake Cahuilla shoreline, as well as a more substantial habitation site located near Desert Hot Springs. Laylander and Schaefer (2010) note that “[a]dditional early sites fairly certainly are still to be discovered, buried under alluvial fans and wash deposits, sand dunes, Lake Cahuilla sediments, or Colorado River valley alluvium.”

Late Prehistoric Period (A.D. 500 to Contact)

Late Period sites previously documented within the Colorado Desert include sites with multiple hearth features and scatters of fire affected rock, as well as lithic and ceramic scatters and concentrations; temporary encampments containing diagnostic Patayan I-III ceramics (RIV-1119, -1821, and -1822); cobble and pebble-based lithic scatters and quarry workshops associated with diagnostic pottery, such as Tizon Brown Ware, Parker Buff, Salton Buff, Lower Colorado Buff and Patayan I-III (RIV-1811, -1820) (Eckert et al 2005). This period correlates with the “late Holocene period” referred to by Laylander and Schaefer in their 2010 report titled *Draft Chuckwalla Valley Prehistoric Trail Network Cultural Landscape*. It is during this period that pottery manufacture, using the paddle-and-anvil technique, first appears, as does bow and arrow technology, along with “floodplain agriculture, and cremation” (Laylander and Schaefer 2010, *cf.* Rogers 1945, Schaefer and Laylander 2007).

Among the cultural patterns associated within this period are the Saratoga Spring, Rose Spring, Yuman, Patayan, Hakataya, and Shoshonean, each with their own unique characteristics and assemblages. Most of these patterns are the result of interpreted technological changes and potential “ethnic affiliations” (Laylander and Schaefer 2010). The 2010 Chuckwalla Valley PTNCL report likewise concludes that the plethora of pictographs, petroglyphs, and milling features scattered throughout the Colorado Desert were created during this period, though, as a caveat, it is noted that dating such features is difficult, as is the determination of cultural affiliation. A major geophysical entity during this period was the ancient Lake Cahuilla, which provided a rich source of fish and other resources and hence played a significant role in the development of adaptive strategies by late prehistoric populations that occupied the Colorado Desert. Of particular importance to the present project area, Laylander and Schaefer have concluded that:

“Between A.D. 1000 and 1700, desert peoples focused on the lower Colorado River valley appear to have extended their focus beyond the Colorado River floodplain,

adopting a more mobile, diversified resource procurement pattern, with increased travel between the river and Lake Cahuilla to the west (Pendleton 1986). Long-range travel to special resource collecting zones and ceremonial locales, trading expeditions, and possibly warfare are reflected by the numerous trail systems seen throughout the Colorado Desert. Pot drops, trailside shrines, and other evidence of transitory activities are often associated with these trails (McCarthy 1982, 1993).”

Ethnographic Context

When contact first occurred between native peoples of the region and European and American outsiders, several distinct cultural groups occupied the region, which is now included within the bounds of Riverside County. Specific to the area in the vicinity of the Project, two cultural groups were dominant: the Halchidhoma and the Quechan (Schaefer et al. 2007:256; LSA, 2000). Other potentially influential aboriginal populations in the immediate environs included the Chemehuevi, Cahuilla, and potentially the Mojave, as well as other groups to the west along the Pacific coast. LSA and Associates, Inc. (2000) and Bean and Toenjes (in press) provides an in depth discussions of all native populations that appear to have been active in the region that is now within Riverside County.

For the purpose of analysis, a summary of ethnographic groups which may possibly have been active in the near the project area and in this general vicinity of the Colorado River, based on the available published literature, is included below and is organized by subsection. Each subsection describes how each discrete ethnographic group may have ordered and used the landscape in their respective territory to promote social cohesion. Each subsection also attempts to summarize what ethnographic information is available to help reconstruct the ethnogeography of the group’s territory by discussing what the boundary of each territory was, what information is available about the landforms that each group may have imbued with particular significance, and what information is available on primary routes of travel for each group based on information from peer-reviewed literature, as well as from early Native American consultation for the Project.

Quechan

The territory of the Quechan encompassed both sides of the Colorado River and, according to Quechan oral tradition, extended along the Colorado River from Blythe in the north to Mexico in the south (Bean and Toenjes, in press). At the time of European contact in the seventeenth century, the Quechan people numbered in the thousands. The largest concentration of Quechan traditionally lived at the confluence of the Colorado and Gila rivers, although they were not reported in that area in 1540, when the Alarcon expedition reached the confluence (Bean and Toenjes, in press, Forbes 1965, Forde 1931).

The Quechan lived in a series of temporary settlements that the Spanish called *Rancherías*, which were scattered along the Colorado River. Their settlements were moved seasonally, as the Colorado River would typically flood during the spring and then recede during the winter. For example, numerous named albeit seasonal villages were located along the terraces above the lower Colorado River flood zone. The village known as *Avi Kwotapai* was located on the west side of the Colorado River south of Blythe in the Palo Verde Valley, and *Xenu mala vax* was on the east side of the river near present-day Ehrenberg (Bean and Toenjes, in press, Bee 1983). Quechan and other Yuman-speaking groups report the identification of

well-traveled trails that extend along the Colorado River, as well as trail networks between peaks and other significant landscape features (Bean and Toenjes, in press, see discussions in Altschul and Ezzo 1994, Cleland and Apple 2003).

The Quechan people were primarily agrarian, growing crops of maize, squash, and beans. After European contact, they also grew a variety of melons, wheat, and black-eyed peas. They supplemented their diet by gathering wild plants such as mesquite and screw bean pods. Fish from both the Colorado and Gila rivers was a staple protein of the Quechan diet. Hunting was relatively unsuccessful due to the harsh desert climate (Bee 1983:10). The Quechan used a variety of nets and fish traps, along with cactus spine hooks and the bow and arrow, to fish during the spring and fall months when the fish were most plentiful (McGuire 1982).

The lower Colorado River tribes were organized militarily and warfare played a significant role in Quechan life. The Cocopah and the Maricopa were enemies of the Quechan. The Quechan would join their Mohave neighbors to the north and strike out against their collective enemies (Bee 1983:93). The Quechan most likely acted as “middlemen” who extracted a portion of trade goods in exchange for safe passage through pre-contact trade routes at the Colorado River Crossing. After European contact, this role may have increased conflict with the Spanish and other tribes, as trade with the Spanish became an economic factor.

The Quechan created pottery using the paddle-and-anvil technique and “had a long pottery tradition inherited from the Patayan (Moratto 1984). They made large storage vessels capable of floating food and goods across the Colorado River” (Hayes and Bloom 2006:138). Other types of ceramics made by the Quechan included bowls, parchers, cooking pots, small figurines, and a “rare floating bowl” that was used by women to hold perishables and infants which could be pushed ahead as they swam through the river (Campbell 1999).

Halchidhoma

A map by Spier indicates the Halchidhoma were occupying lands below the confluence of the Gila and Colorado rivers in 1605, and later (1700 to 1828) along the Colorado River in the vicinity of Blythe, California (Bean and Toenjes, in press; Spier 1933:5). Francisco Garcés, who encountered the Halchidhoma along the “lower Colorado River in 1776, estimated that approximately 2,500 people constituted the entire group. The Halchidhoma’s seasonal settlement patterns reflected a changing floodplain environment and consisted of camps located on the river terraces during the winter and spring, and dispersed extended family camps located on the river floodplain near their horticultural plots during the summer and fall (Bean and Toenjes, in press; Cleland and Apple 2003). In drought years such as 1749, the Xalchedon (Halchidhoma) crossed the intervening desert to the east from the Palo Verde Valley to gather mesquite seed-pods and palo verde seed-pods near the key settlement at Aapap Oidak (Bean and Toenjes, in press; Dunne 1955:56), which was the predecessor of modern Gila Bend.

The Halchidhoma were organized in a series of bands, clustered together and led by a headman who doubled as war chief (Forbes 1965). Their settlements consisted of round earth-covered houses (Barker and Wildesen 1975). Like all the Yuman groups of the Colorado River, the Halchidhoma traded with groups on the coast. These trips usually took four days and used a trail system that is often still visible (Cowan and Wallof 1977, Forbes 1965).

The Halchidhoma had a mixed economy that combined flood agriculture (the principal crops being corn, tepary beans and a type of squash/pumpkin) with hunting, fishing and gathering of honey mesquite and screwbean among other resources. They farmed using wooden hoes and digging sticks (Castetter and Bell 1951), and processed their foods with slab metates, manos, wooden mortars and stone pestles (Forbes 1965). They usually stored their foods in well-made ceramic vessels, usually of Lower Colorado Buff ware.

In the early 1820s, the Halchidhoma tribe was defeated by the Yumas to the south and the Mohaves to the north, driving them from the Colorado River down into Mexico. Later, in the mid-1830s, they came back into the United States and merged with the Maricopa of the Gila River, assimilating the culture and becoming thoroughly “Maricopian” in the process (Castetter and Bell 1951, Forbes 1965). As a result, there is little reliable modern ethnographic information on the Native inhabitants of the Blythe area (Cowan and Wallof 1977).

Chemehuevi

The Chemehuevi band of the Southern Paiute possibly entered the eastern Mojave Desert area from the north sometime in the seventeenth century (Yohe II and Sutton 1991). The Chemehuevi, also called the Pah-Utes, were closely related to the Southern Paiute in Death Valley and the southern Nevada region. At the time of European contact, the Chemehuevi claimed a large portion of the eastern and central Mojave Desert, perhaps as far west as Afton Canyon on the Mojave River (Kelly and Fowler 1986:368) and they inhabited the Providence Mountains. In 1776, Father Garcés observed a group of Chemehuevis located near the Whipple Mountains at a spot no more than 30 km west of the Colorado River. It has been generally assumed in the literature that the Chemehuevis were not on the Colorado River itself at this time, but were utilizing the territory west of the river. It was not until after the Halchidhoma left the valley in 1827 that the Chemehuevis settled on the Colorado River (Bean and Toenjes, in press; Kroeber 1925:593-595). Roth (Bean and Toenjes, in press; Roth 1976:81) presents evidence, however, of the existence of a mixed Halchidhoma-Chemehuevi village located in the Palo Verde Valley sometime between 1776, when Garcés recorded their presence near the Whipple Mountains and the 1827 abandonment by the Halchidhoma. Powell and Ingalls noted that 300 Chemehuevi lived in Chemehuevi Valley on the Colorado River, south of the Mohave. Kroeber in 1907 discussed the various applications of the terms "Paiute" and "Chemehuevi," citing Garcés, Powell, and others, and stated that Powell restricted the name "Chemehuevi" to the people in Chemehuevi Valley (Bean and Toenjes, in press; Kroeber 1907:107).

Kroeber (Bean and Toenjes, in press; Kroeber 1925:594) has quoted Mohaves as saying that they were the ones who brought the Chemehuevis to Chemehuevi Valley and Cottonwood Island, now covered by Lake Mohave, where they apparently lived side by side. Both of these areas are on the Colorado River within traditional Mohave territory as defined by Kroeber. Chemehuevi Valley was occupied by the Chemehuevi sometime after 1830, and Cottonwood Island, located even further to the north, was occupied in the 1850s. Laird (1976:123), writing from a Chemehuevi point of view, states that both of these spots were traditionally Chemehuevi. If these areas were formerly under the control of the Mohaves, it is not clear why the Mohaves did not keep the Chemehuevi out. It apparently was not until after 1859, when the Mohaves had the defensive support of the U.S. Army, that any attempts to drive the

Chemehuevi away from these areas were made (Bean and Toenjes, in press; Roth 1976:109). These attempts were largely unsuccessful.

To the west, the Chemehuevi were expanding into Serrano territory by the time of early Euro-American encroachment. Euler (Bean and Toenjes, in press; Euler 1966:39) believes that the Chemehuevi began to displace the Serranos west of Soda Lake by 1850. An earlier work by Van Valkenburg (Bean and Toenjes, in press; Van Valkenburg 1934:2) places them further west, on the Mojave River near Barstow, at about the same time. Laird (Bean and Toenjes, in press; Laird 1976:7) states that the territory from the Colorado River to the San Bernardino Mountains was also traditionally Chemehuevi.

In the late 1860s, hostilities broke out between the Mohave and Chemehuevi. Several years of fighting resulted in the western migration of a portion of the Chemehuevi population to Cahuilla villages in Banning and Cabezon and to a Serrano village in the Twentynine Palms area (Bean and Toenjes, in press; Bean and Vane 1978a:5-20; Kroeber 1925:594). Many of those displaced at that time did not return, but chose to stay among their new allies and kinsmen. In 1874, the Office of Indian Affairs set aside a portion of the Mohave-occupied Colorado River Reservation (now known as the Colorado River Indian Tribes Reservation) for the Chemehuevi. Understandably, most Chemehuevi “preferred to remain in their historical locations near Blythe, Needles, Beaver Lake, and Chemehuevi Valley” rather than live so close to their estranged friends, the Mohave (Kelly and Fowler 1986:388). Ultimately, in 1907, a separate reservation was established along the Colorado River north of Parker for the Chemehuevi living in Chemehuevi Valley (Bean and Toenjes, in press; Kelly and Fowler 1986:388).

The Chemehuevi were strongly influenced by the Mohave. Many Chemehuevi words are related to Mohave vocabulary, along with agricultural practices, house construction, warfare, and other cultural elements, such as religious practices. Like the Mohave, the Chemehuevi used square metates, paddle and anvil pottery techniques and hair dye (Kelly and Fowler 1986:369). In addition to their close association with the Mohave, the Chemehuevi traded widely with the Shoshone, Kawaiisu, Serrano, Vanyume, Cahuilla, and Diegueno (Kelly and Fowler 1986:369).

Influence from the Pueblo area to the east is seen in the form of agricultural practices of many of the Southern Paiute groups. The Chemehuevi, in more well watered areas and flood plains, grew yellow maize, gourds, beans, and winter wheat, combining Mohave and Pueblo practices (Kelly and Fowler 1986:371). Kroeber reported that the Chemehuevi occasionally farmed small areas of corn, beans, melon, pumpkins and wheat. In more arid areas, the Chemehuevi were hunter-gatherers. They hunted large game, such as deer and mountain sheep, along with rabbits, rodents, lizards and other small game (Kroeber 1925:597). Plant foods were of great importance and included a variety of grass seeds, pinyon, and mesal (yucca).

The Chemehuevi had a large range associated with seasonal food practices and traveled through most of the Mojave Desert as far as the Tehachapi area and the San Bernardino Mountains. Occasionally, they traveled to the Pacific coast to collect haliotis shells (Kelly and Fowler 1986:377). It was also reported that they would travel as far east as the Hopi’s territory, about a two-month round trip (Kelly and Fowler 1986:377).

Little is known about the Chemehuevi material culture. However, in historic times, they used basketry, primarily willow, to a great extent both for storage and for carrying possessions (Kroeber 1925:97). They also made basketry hats. The Chemehuevi used some pottery but relied more on basketry.

Spanish colonization had little effect on the Chemehuevi until the early 1800s. Although other Southern Paiute groups were acculturated earlier by the Spanish, the Chemehuevi's isolated territory protected them from being assimilated into the mission system. With the opening of the Old Spanish Trail, the Chemehuevi became more affected by the Spanish, and were brought to the missions to work (Kelly and Fowler 1986:386).

Cahuilla

According to archaeologists, the Cahuilla first traveled from the north to their current location about 2,000-3,000 years ago (Bean and Bourgeault 1989). As inhabitants of a topographically complex 2,400-square-mile area in south-central California, bisected by a major trade route (the Cocopa-Maricopa Trail), the Cahuilla were able to exploit and inhabit a variety of ecotones, including mountains, canyons, valleys, and deserts (Bean 1978). Portions of the Cahuilla territory include elevations of 11,000 ft (3352.8 m) in the San Bernardino Mountains to 273 ft (83.21 m) below sea level in the vicinity of the Salton Sea (Bean 1978). Today, three main divisions of Cahuilla are recognized by researchers: Desert Cahuilla, Mountain Cahuilla, and Western (or Pass) Cahuilla (James 1960). Their life ways adapted to a variety of environmental zones, which contributed to the formation of a complex cultural diversity.

According to Bean et al. (1991), the Cahuilla developed a sophisticated taxonomic system for geographical features, which included specific and generalized place names. The Cahuilla tended to name every spring, conspicuous rock, major outcrop of rock, canyon, grove or other geographic manifestation in their area. Place names often translated into terms describing the environment and many of the geographic features were explained in Cahuilla myths and legends. The general Cahuilla view of the world holds that humans, plants, animals and all other natural elements were merged into one single consistent and interdependent whole that are often reservoirs of residual "power" or symbolic representations of personages of the Cahuilla creation time that could still affect the daily lives of people (Bean 1976, Bean et al 1991).

Traditionally, the Cahuilla gathered, hunted, and gardened (Lawton and Bean 1968) and were organized socially and politically around a hierarchical structure. Cahuilla clans contributed to a larger integrative system which connected many politically autonomous segments into a wider religious, economic, and political network of cooperative groups (Bean 1972). The Cahuilla are members of the Shoshonean language group. They are organized along lines of patrilineal descent and are exogamous, being members of either the wildcat or coyote moieties. An office of lineage leader (net) is inherited through the father's line and is responsible for tribal schedules and events necessary to maintain cultural, social, political, and economic balance. Additionally, the lineage leader functions with the support of the paxa, a hawaynik or ceremonial song leader, and the shaman, who form an elite association (Bean 1978).

First contact with the Spanish came in 1774 during the Juan Bautista de Anza expedition (Bean 1978). After near eradication through the ensuing years, people of the remaining Cahuilla tribelets were confined to reservations in 1877, now known as the Morongo, Agua Caliente, Augustine, Cabazon, Los Coyotes, Santa Rosa, Cahuilla, Ramona, Mission Creek, and the Torres-Martinez Reservations (Bean et al. 1991).

Mohave (Tiira'ayatawi)

Also important in the history of the project region were the Desert Mohaves, who were also called Land Mohaves or Like-Mohaves (Kroeber 1959:294–298, 304–307). These peoples were called the Tiira'ayatawi by the Chemehuevi, who claimed that they had fought the Desert Mohaves in relatively recent times and extirpated them from a large territory extending westward from the New York and Providence mountains to the Mojave River (Earle 1996, 2005:6–7, 2009:26–35; Lerch n.d.). The Desert Mohaves were described to various ethnographers by Chemehuevi sources as a group which was of Mohave cultural affiliation, but dressed like the Chemehuevi, had bows like them, and hunted like them. They were said to have spoken Mohave and cremated their dead. Chemehuevi accounts described in some detail a war of extermination between the Desert Mohave and the Chemehuevi (Kelly 1953:17-24–27; Van Valkenburgh 1976:5–7). This war was recalled as having occurred circa five generations before that of the elderly native consultants.

According to Sherer, who participated in a study of the Mohave Clan, their traditional lands stretched along the Colorado River from the site of Hoover Dam southward to below Parker Dam (Bean and Toenjes, in press; Sherer 1965:5). The Mohave were centered in the Mohave Valley, and had some claim as far south as the Palo Verde Valley after the Halchidhoma were driven out, but did not much use the Palo Verde Valley (Bean and Toenjes, in press; Kroeber 1925:727). Desert Mohave apparently lived in the Mojave Desert as far west as Soda Lake at some period before the arrival of the Spaniards. Their occupation of the Providence Mountain/Old Woman Mountains/Soda Lake area and their replacement by the Chemehuevi are documented in ethnographic accounts collected by Harrington (n.d.), Kelly (n.d.), Eisen (1898), and others. These accounts are summarized by King and Casebier (1976). There is a Chemehuevi account, however, not documented in any Mohave accounts, that the Chemehuevi came from the north and fought a long war for this desert area, killing most of the desert Mohave. Those that survived this war fled to join the river Mohave.

At the time of the outbreak of the Chemehuevi – Desert Mohave war, sometime between A.D. 1500 and 1700 (Bean and Toenjes, in press; King and Casebier 1976:17-18), the latter were said by several Chemehuevi sources to have lived in the region of the Providence and Granite mountains and as far west as the Sinks of the Mojave River and the Soda Mountains. It was mentioned by one of Isabel Kelly's Chemehuevi sources that the Desert Mohave might have occupied the Mojave River as far to the west as Daggett, and one of Van Valkenburgh's consultants put them as far west as Barstow (Kelly 1953:17–11, 24–27). J. P. Harrington also recorded considerable information about the Desert Mohaves from the Mohave, who placed them in the vicinity of Newberry Springs, near Barstow. It was noted that this group had last been seen at 'Avi-kwaθ'utufa, what the Mohaves called the promontory at the northeast end of the Newberry Mountains next to Newberry Springs. They were said to have been headed directly north, and were never seen again (Harrington 1986:III:167: 363). The various Chemehuevi and Mohave accounts also suggest that the Desert Mohave population in question had close ties with the Mohaves of the Needles region.

Chemehuevi and Mohave accounts of the expulsion of the so-called Desert Mohaves create the impression that this event was relatively recent in the framework of regional tribal histories (Earle 2005:6–7, 2009:34–35). Native individuals interviewed in the early twentieth century provided information on the number of ancestral generations removed, from which the time of the event could be

placed. The accounts suggest a date of perhaps the mid- or late-eighteenth century. At the same time, Garcés' journey of exploration through the region in 1776 clearly seems to post-date the expulsion of the Mojaves, if the native accounts of Desert Mohave territorial occupation and of their removal are at all trustworthy. However, Garcés reported Mohave guides conducted Garcés across the Mojave Desert along a well-established trail. The party on its way west met several groups of Mohaves coming eastward. They also reported meeting with Mohave traders in the Santa Clara Valley in Ventura County and at a Rancheria in what is now Kern County. On his return trip across the Mojave Desert, he again met Mohave traders (Bean and Toenjes, in press; Kroeber 1953:4).

Garcés found the Halchidhoma living in the Parker-Blythe valley and the Chemehuevi inland, west of the Whipple Mountains and west of Chemehuevi Valley. It is known that the Mohaves of the Colorado River carried out raids across the Mojave Desert toward the Spanish coastal settlements in 1810 and 1819, but it is hard to see these raids transformed into the story of widespread desert occupation by a foraging-based Desert Mohave population (Earle 2005:19–23). In 1827, the Mohave drove out the Halchidhoma. After occupying the conquered area for about a year, the Mohave returned to Mohave Valley. The Chemehuevi then moved into the vacated area, although Mohave and Yuma families continued to make some use of the area. This was apparently a part of a general movement of the Chemehuevi southward (Bean and Toenjes, in press; Kroeber 1953:9-10). The Chemehuevi and the Mohave were jointly occupying Cottonwood Island at this time (Bean and Toenjes, in press; Kroeber 1953:10-14).

During much of the year, the Mohave lived in villages on terraces above the Colorado River, only moving down onto the floodplain in the early summer to plant crops after the seasonal floods. Settlements were typically small and dwellings were scattered. Known named Mohave rancherias included Passion, San Pedro, and Santa Isabel. Among the Mohave, individuals and families owned specific parcels of farmland, as well as individual mesquite trees. One of the methods used to indicate ownership was to hang arrowweeds in a tree, which meant that its yield had already been claimed (Bean and Toenjes, in press; Kroeber 1925:737). Disputes over privately owned resources were usually settled through physical contests "calculated to prevent fatalities" and avoid violent reprisals (Bean and Toenjes, in press; Kroeber 1925:744). Fish were a very important food resource for the Mohave, and are reported to have been "...taken with seines or driven up shallow sloughs into scoops" (Bean and Toenjes, in press; Kroeber 1925:737). The fish were broiled on charcoal or put in a stew.

5.3.3.4 Regional Historic Context

The following sections describe the historical context of the area in which the project site is located.

Spanish and Mexican Periods (1540-1848)

The first European presence in the Colorado River region occurred in 1540 when Hernando de Alcaron sailed up the Colorado River and stopped near present-day Yuma. That same year, Melchior Diaz marched from Sonora, Mexico to the confluence of the Colorado and Gila Rivers. In 1605, Juan de Onate traveled overland from New Mexico to the Colorado River (KEA 2000). However, none of these visits to the Colorado River resulted in extensive exploration of the interior Colorado Desert region. The first recorded exploration of the interior Colorado Desert region did not occur until 1702 when Father Eusebio Francisco Kino, a Jesuit missionary, cartographer, and explorer, began establishing a string of missions in

northern Mexico and southern Arizona. In 1771, Father Francisco Garces followed Kino's route, crossing the Colorado River and traveling west through the desert, before returning to Sonora (AECOM 2009).

Unlike the coastal areas and foothills of southern California, ranchos and large-scale land grants were not established in the Colorado Desert region (Eckhardt and Wilson 2009). Two settlements with attached missions were established around 1799, but were subsequently destroyed during an uprising in 1801 due to conflicts with the Native Americans (Schaefer 2003). In general, the region was rarely traversed until after Mexico achieved its independence in 1821 (Eckhardt and Wilson 2009). During the early 1800s, some prospectors traveled through the region in search of mines but there were no permanent Spanish or Mexican settlements in the area (Alford 1987).

On May 13, 1846, the United States declared war on Mexico and invaded Mexico from the east. The United States' invasion was successful and the Mexican period ended in 1848. Through the Treaty of Guadalupe Hidalgo, the United States acquired all Mexican territory west of the Rio Grande and north of the Gila River, which included California.

American Period (1848-Present)

In 1850, two years after California became a United States territory, California was admitted as the 31st state. The discovery of gold in northern California in 1848 by American James Marshall, the passage of the Homestead Act in 1862 granting 160-acre parcels of public domain to individual settlers, and the conclusion of the Civil War in 1865 resulted in a massive influx of settlers to California in the years immediately following the Mexican-American War. Mining and agriculture were the major impetuses for permanent settlement in the Colorado River region in the vicinity of the Palo Verde Mesa during the late nineteenth to early twentieth century.

Early Mining and Transportation Routes (1862-early 1870s)

After the gold sources in the Sierra Nevada Mountains diminished in the early 1860s, the Colorado River region experienced settlement and population growth as prospectors migrated to the area searching for fresh mineral deposits (McDonald and Schaefer 1998). According to the BLM publication *Desert Fever*, the Mule Mountains became the site of the first gold discovery in the desert portion of Riverside County in 1861 (Hartill 1980:24). That year, a prospector named Paulino Weaver reported locating gold "on the west side of the [Colorado] river, twenty miles southward from this place [La Paz, AZ], and in a range of mountains a little below the road coming in" (Hartill 1980:24). By the following year, researcher Russell Hartill notes that a company was preparing to extract the mineral deposit. Nevertheless, it was Weaver's discovery of gold at La Paz, Arizona that same year that prompted a gold rush in the region (Alford 1987). The news of the La Paz find spread quickly, and there was a rush of miners to the area soon after. The largest mining settlements in the region grew up around La Paz and nearby Castle Dome, which were both on the Arizona side of the river opposite present-day Blythe (McDonald and Schaefer 1998).

Miners who traveled to La Paz immediately after the 1862 find had three challenging routes to choose from in order to reach the mines. The first route commenced in San Francisco, where prospectors departed by boat to travel around the tip of Baja California and up to the mouth of Colorado River where they then traveled by boat an additional 300 miles up the river to present-day Needles and then by land

south to La Paz. The second route was the Butterfield Stage line that commenced in Los Angeles, continuing to Warner's Hot Springs in San Diego County, and then on to Yuma, Arizona, where miners could then catch a steamer for the 60 miles up the Colorado River to La Paz. The third route was along the Mormon Trail from San Bernardino over the Cajon Pass to Fort Mojave/Needles area, then south to La Paz (Harris n.d.). The Colorado River portions of these routes were established as a result of the U.S. Army's need to deliver supplies, equipment, and soldiers into the isolated inland areas of the West as settlers began to move into the new American west appropriated after the Mexican-American War. Overland transport was often time-consuming and perilous, so the Army had identified the Colorado River in the 1850s as a better route for moving goods and soldiers from the West Coast ports into the inland. During the 1850s, the Army began to ship goods from Baja California through the gulf to Port Isabel at the mouth of the Colorado where it was transferred to barges up to Fort Yuma. Once at Fort Yuma, the Army contracted with riverboat operators to transport materials and soldiers further north. George A. Johnson, who had been operating a ferry across the Colorado at Fort Yuma, became one of the most successful operators. His Colorado Steamship Navigation Company delivered goods (both military and civilian) and passengers up the river as far as the Virgin River confluence, and retained a monopoly on Colorado River shipping until the river was dammed after the turn of the twentieth century (Alford 1987).

Soon after gold was discovered at La Paz on the east side of the Colorado River north of Blythe, William David Bradshaw, a former soldier based in Los Angeles, established a new route to the La Paz mines. The route became known as Bradshaw Trail. It was the first road across Riverside County in 1862 to serve as an overland stage route. It was primarily used between 1862 and 1877 to haul miners and other passengers to the gold fields. Regular stage coach service on Bradshaw Trail began in 1862 and continued until the end of 1879 (Schaefer 2003). The trail was often travelled by stage coaches, U.S. Post Office, and groups with herds of sheep, horses, and cattle. Prior to 1862, the route was primarily used by the Cahuilla Indians and the Maricopa Indians (called Maricopa-Cahuilla and/or Copamaricopa Trail). The Halchidhoma Indians were known to occupy the area around the trail at its inception with the Colorado River. However, the general route was likely used by a variety of native peoples for many centuries before Bradshaw discovered it. Bradshaw was told of this Colorado Desert trail by Cabezon, of the Desert Cahuillas, and his Maricopa friend. The trail ultimately provided a quicker route to the gold fields of La Paz (now Ehrenberg) strategically guided along multiple watering holes. The trail extended along the south side of the Orocopia and Chuckwalla Mountains to Lone Palm Oasis or Soda Spring, then to Dos Palms, followed by Tabaseca Tank, Chuckwalla Well, and Mule Spring near the Mule Mountains, to Willow Spring in Palo Verde Valley, before reaching the river where there was a crossing to Arizona, at a place he called Providence Point and where Bradshaw established a ferry service to Olivia, which was on the Arizona side. Stages completed the trip at a stage station that was called the Adobe Station (on the western edge of Palo Verde Mesa (present-day junction of 18th Ave. and Stephenson Boulevard; approximately 6 miles northeast from the project site) (Hoyt 1952, Ross 1992, Alford 1987, Johnston 1976).

The exact location of the route once it crossed through the Mule Mountains to meet the Colorado River is not known for certain. According to Delmer G. Ross (1992) "no one seems to know the exact routes drivers of stagecoaches and freight wagons used to reach Adobe Station." However, Ross has identified at least two directions the trail took across the Palo Verde Mesa once it crossed through the Mule Mountains Mesa Cutoff and the Valley Route. Ross argues that the Mesa Cutoff route may have been in

use prior to the Valley Route “because the Palo Verde Valley was originally very densely wooded and was broken by numerous sloughs and lagoons, it seems likely that the Mesa Cutoff was the earlier of the two general routes.” No physical evidence of the Mesa Route has been identified. The Valley Route continues along the present-day Bradshaw Trail to the Palo Verde Valley, “where, as in the case of the Mesa Cutoff, the exact routing to Adobe Station has been lost over the years.” Ross further suggests, that “because of the difficulty of traversing the Palo Verde Valley for any distance in the early days before agricultural development resulted in clearing away the thick river-bottom brush and filling in the many bayous and small lakes, it seems reasonable to assume that the Valley Route came into use sometime later, probably only after some basic road grading had been accomplished.” Both routes appear to be shown on a 1907 map (Palo Verde Land Ownership Map 1907). Once the trail reached Palo Verde Valley, its route from Palo Verde Mesa through Palo Verde Valley to the Colorado River regularly shifted based on the location of the Colorado River and major flooding events (Ross 1992, Hoyt 1952, Alford 1987, Johnston 1976). In the early 1900s, the trail through the valley was described as nearly two feet deep, which was caused by the erosion of wheels, hooves, wind, and rain (Dekens 1962:7).

The trail had an active life of only about 15 years before the railroad was laid in 1877 from San Bernardino to Indio, Mecca, and Pilot Knob, and the placer mines at La Paz were mostly exhausted (Harris N.d.). The trail remained open after the railroad came but it was not used as heavily (Dekens 1962:42). With the exception of the Mesa Route that has not been located in the Mesa and the route through the Palo Verde Valley east of the Mesa, present-day Bradshaw Trail appears to follow its historic route as described in the archival record, though it is regularly graded and the portion east of the Mesa has been paved (Hoyt 1952; Ross 1992; Palo Verde Valley Land Ownership 1907).

Due to La Paz being situated along the river where steamboats made regular stops, its use as ferry stop, and the fact that it was a primary water source for mines further from the river, La Paz became the center of the gold mining district in the early 1860s. It was a small town that contained a few stores, bars, a bull ring, a newspaper, and a church. Most buildings were of adobe and brush construction. At its peak, the population of La Paz was about 1,400. In 1864, the town was temporarily occupied by the Union’s 4th California Infantry Companies F and G (Camp La Paz) to secure it from Confederates (Alford 1987). The importance of La Paz to the mining district began to decline once Confederate sympathizers seceded from the La Paz Mining District, using Olivia and Mineral City (now Midland) as their base. After Mineral City became a steamboat landing, it was favored over La Paz. The placers gave out by the late 1860s, and once the Colorado River cut a new channel in 1870, La Paz was stranded more than a mile from the river and the settlement disappeared. For a short period, another nearby settlement, Ehrenberg (across the river from present-day Blythe) became the most prominent settlement in the area with a ferry crossing for the Bradshaw stages, but this town also declined once the railroad was completed over the river at Fort Yuma to the south. The railroad bridge blocked large steamers from passing to river ports further north. The railroad also became a much more efficient manner in which to send goods from Fort Yuma to inland Arizona than the river route (Alford 1987). The Laguna Dam north of Yuma was constructed in 1909, effectively blocking all river traffic between Yuma and the northern ports on the river (Palo Verde Historical Museum and Society 2005:13).

Meanwhile, the California side of the river in the region remained mostly undeveloped. The alluvial soil held only minimal interest to miners (Dekens 1962:7). The earliest known building on the California side of the river was the Adobe Station, a Bradshaw Stage station located approximately one mile west of

present-day Neighbors, and approximately 5 miles north of the current routing of Bradshaw Trail's eastern reach (Dekens 1962:7; Harris n.d.).

The desert during the 1860s and early 1870s was primarily used for mining on the Arizona side of the river. Due to the remoteness and limited accessibility of resources, permanent settlements were few and far between. Despite this, the ever prominent search for mineral wealth potentially hidden in the remote areas of Arizona and California brought individuals, as well as more organized mining ventures, to the Colorado Desert. Cultural resources commonly associated with this period are diverse and could include mining-related structures, structural debris, roads quarry pits, and/or mining structures that are frequently demarcated by simple structures and/or land/mining claims (e.g., rock cairns, posts). No known buildings or structures, such as the Adobe Station or the ferry infrastructure, appear to be extant.

Initial Agricultural Development and Water Appropriation (1874-1899)

In 1874, San Diego engineer Oliver P. Calloway embarked on a trip up the Colorado River and, while at a stop in Ehrenberg, Arizona, he noticed the Palo Verde Valley across the river in California. He concluded that the valley's geographic slope from north to south and to the west would make it an ideal location for gravity-flow irrigated farmland. Under contract to the U.S. Surveyor General, he surveyed the Palo Verde Valley to map township, range and section lines along the Colorado River (Alford 1987:36). According to one account, "The surveyors cut the number of the township and section on each corner stake. As these may be destroyed, if one or more trees are growing nearby, they blaze the trees, two of them if possible, and cut the numbers on them." The blazed trees were known as "witness trees" (Norton 1994:55). Calloway's maps were approved by the Surveyor General's office in December 1874 (Alford 1987:36).

Surveying complete, Calloway traveled to San Francisco to search for an investor who could be persuaded to finance the development of a farming empire in the Palo Verde Valley. He chose land in the valley because of the convenience of Bradshaw Trail that led through the land. In addition, the Colorado Steamship Navigation Company's steamers landed regularly in the vicinity which meant that equipment and supplies could be transported to the location rather easily. Calloway had also concluded that the topography of the valley would be ideal for a gravity-flow system because water could be directed from the Colorado River to the south on land that sloped gently to the south, making pumping generally unnecessary. Since Calloway had identified the chosen property as swamplands, they were eligible under the Swamp and Overflow Act adopted by California in 1868 for claiming by anyone willing to put them to use (Alford 1987:36-37).

Calloway partnered with San Francisco real estate tycoon Thomas Blythe, who began acquiring the valley land in 160-acre parcels by convincing associates to claim parcels through the California Swamp and Overflow Act and subsequently transferring ownership to him. By September 1874, Blythe had acquired 39,196 acres. In 1877, Blythe obtained an additional 36,000 acres under the Desert Land Act, bringing his total holdings in the Palo Verde Valley to about 75,000 acres (the Desert Land Act allowed individuals to assume ownership of desert lands if they could provide irrigation and thereby transform it into farmland) (Lech 2004).

In 1875, Blythe selected a parcel for a new town he named "Blythe City," though there was little development over the next two and half years. Calloway and Blythe planned to build a canal that would bring water from the Colorado River to the valley. They chose an intake on the Colorado River near La

Paz, approximately six miles north of Blythe from which to divert some of the river's flow. Calloway surveyed and constructed a canal from the intake to Olive Lake, where a smaller canal was built that led to a portion of Section 18, Township 6 South, Range 23 East of the Blythe NE 7.5-minute quadrangle that had been set aside for an experimental farm (Lech 2004). The experimental farm was a success once irrigated with the new system, yielding sugar cane, cotton, corn, wheat, barley, potatoes, and other vegetables (Alford 1987:42).

In 1897, Blythe hired George Irish, a young San Francisco banker to prepare a report regarding how the valley could be developed, and plans were made to construct a new and larger canal from the intake to Olive Lake that could serve the entire area. Irish was appointed general manager of the project, which included oversight of land sales, leaving Calloway free to develop the irrigation system (Alford 1987:42). When Calloway was killed in an altercation with canal laborers, however, Irish hired Captain Christopher Columbus Miller in 1880 to finish construction of the canal. By 1882, Miller had constructed a larger canal parallel to the original canal between the intake and Olive Lake and plans were in place for a full-scale development of the valley (Lech 2004).

The unexpected death of Blythe in 1883 brought development of the valley to a dramatic halt for the next two decades. His estate was in dispute, which tied up key funds that were to have been used for development. Irish and Miller suspended work and returned everything to Blythe's estate. The estate was not settled until nearly 20 years later. In the meantime, the canals, headworks, and experimental farm silted over. The estate eventually was granted to Blythe's daughter, Florence Blythe, who, in 1899, leased the land to a Mr. Benton for cattle grazing until 1904. The Blythe estate was then sold to the Palo Verde Land and Water Company, a group of investors mostly from Ventura County (Lech 2004, Alford 1987:45). The remainder of the land that Blythe had obtained through the Swamp and Overflow Act was taken back by the government and made available for regular homesteading (Dekens 1962:24)

Beginning in the 1870s, the development of Palo Verde Valley for agricultural uses spurred settlement in the area. Cultural resources commonly associated with this period of agricultural development and early water appropriation were diverse and could have included agricultural buildings and structures, buildings (commercial and residential), the Blythe townsite, experimental farms, earthen off-road roadways, and irrigation canals and ancillary features (e.g., drains, agricultural fields, barns); however, these types of resources would be expected to be found to the far north of the project, near present-day Blythe. Also, once the ownership of the Blythe estate came into dispute (1883-1899), all development in the area was halted and construction was abandoned. No known buildings or structures from this period appear to be extant.

Renewed Agricultural, Irrigation System, and Energy Development (1900-Present)

Farming, irrigation, and energy development within the region have all been intimately intertwined, and contributed significantly to the permanent settlement of the area at the beginning of the twentieth century. The Palo Verde Land and Water Company, which had purchased the Blythe estate, subdivided some of the land in 1907, establishing the townsite of present-day Blythe (approximately 13 miles northeast of the project area) in 1908, with the intention of rehabilitating the irrigation system built by Calloway and Miller, and offering the land for sale for farming (Lech 2004; Alford 1987: 51).

To promote the use of the area for agriculture, the Palo Verde Mutual Water Co. was formed in 1908 (Setzler 1967:98). The intake created by Calloway was made four feet deeper and a new headgate was constructed in the 1870s to replace the rotted redwood headgates (Dekens 1962:20-21). Once improved, the water flowed along the 1870s canal for three miles, then into Olive Lake, formerly a slough that had been dammed, which, when filled, was three-quarters of a mile wide and a mile and a half long. From there, the water was released into the old irrigation ditches and new headgates were constructed to run the water into the several hundred acres of land originally irrigated during the initial development of Blythe. After a few years, however, Olive Lake filled with silt, so the water was sent to Hog Slough, but that slough also filled with silt. In the end, the area was returned to farm land and the canals were kept open by dredging (Dekens 1962:21). An early account of the canal construction describes the manner in which the ditches were constructed: “To make ditches a crew used a homemade plow left behind by the Blythe Company. It was a big shallow Vee with a wood framework and a leading edge of metal. With a team of about 20 bulls hitched, it could make a ditch in one pass, cutting under the arrowweeds and turning the silt up to make a ditch bank” (Dekens 1962:22).

In addition to Blythe, numerous small settlements were established in the first two decades of the twentieth century on the California side of the river in the valley, including Palo Verde, Rannells, Ripley, Neighbors, and Mesaville. Only Ripley and Neighbors still exist. Palo Verde, the earliest settlement in the southern valley, was established at the turn of the twentieth century and is about 2 miles east of the southeast corner of the project area (Alford 1987). The first school was established in 1902 (Palo Verde Historical Museum and Society 2005:11).

Rannells, located 15 miles southwest of Blythe at the crossing of present-day 30th Avenue (Bradshaw Trail) and State Route 78 within the boundaries of the Project, was established by J.W. Rannells of Los Angeles, a real estate investor, in 1911. In 1902, he, a Mr. Le Mont, and a Mr. Frank Geddes had settled on the property in preparation for establishing a townsite. In 1909, the settlement contained a brick yard, the Palo Verde Brick Mfg. Co., two brick stores, a school, hotel, and post office. Reportedly, some of Blythe’s oldest buildings were constructed of brick from the Verde Brick Mfg. Co. The town had disappeared by the early 1930s and no trace of Rannells exists today. Reportedly, the last of its buildings were absorbed by a nearby ranch and the businesses moved to Blythe (Setzler 1967:41-42, Alford 1987:58).

The townsite of Ripley, located approximately 10 miles south of Blythe at the intersection of State Route 78 and Broadway, approximately 5.5 miles northeast of the project area, was established in the early 1900s by A.E. Warmington, J. M. Neeland, and other officers and owners of the California Southern Railroad operating under the name of Blythe Construction Co. The townsite was named after the president of the Santa Fe Railroad, E. P. Ripley from Chicago, who visited the valley in 1917. The investors planned to promote Ripley as the trading center for the valley, with plans to route a main east-west highway through the town and a new ferry across the Colorado River at Ripley. In anticipation of growth and the town becoming a main stopover for travelers, the 2-story, 36-room Ripley Hotel was constructed between 1920 and 1922. J. M. Neeland also began work on a new Ripley power plant and established a power company. By 1922, Ripley had a lumber yard, a boarding house, two cotton gins, the large hotel, a public school, a railroad station, agent, and garages. However, in 1922, a devastating flood caused extensive damage to the southern part of the valley, covering approximately 35,000 acres of farmland (Setzler 1967:85-86, Palo Verde Historical Museum and Society 2005:48-49).

The town of Neighbors, located 6 miles southwest of Blythe and about 8.5 miles northeast of the project area at the intersection of State Route 78 and 18th Avenue, was started by J.E. Neighbors, who established a store and post office on his homestead several years before the townsite of Blythe was even laid out (Dekens 1962:31). Dekens describes Neighbors as a charismatic character that “talked and acted big, dashed about in a Stutz Bearcat and drank too much. One day he wrecked the Stutz and killed himself” (Dekens 1962:31). A school and a Methodist Episcopal Church were organized at the settlement (Alford 1987:55). The town of Neighbors no longer exists.

Mesaville, which was located approximately 6 miles north of the Palo Verde Valley and more than 20 miles north of the Project, was established in 1909. Approximately 100 homesteaders established the town and planned to grow citrus. They excavated a deep well for water, but the well was inadequate and, after a hard freeze in 1912 killed all the citrus trees, the settlement was abandoned. The post office closed in 1916 (Palo Verde Historical Museum and Society 2005:37).

There were many enterprising families that settled in the valley during the first busy decades. One Mexican family in particular, the Hodges, was influential in the settlement of the area. Four brothers, Albert, Frank, Bill, and Ed Hodges, were the children of an Irish father and a Mexican mother. Two of the children were Tom and Frank (or Frankie) Hodges. The Hodges settled on the south side of the Palo Verde Lagoon. Ellen Norton, the first school teacher in Palo Verde, in 1902, described her impression and knowledge of the family: “They are Catholics. The men speak good English but the women prefer their own Spanish language. They are all pleasant people to meet and very polite. The Hodges brothers are the owners of nearly all the hundreds of head of cattle that range through the valley” (Norton 1994:49, 64). Ed Hodges was the first to establish a regular weekly trip from Palo Verde to the railroad in Glamis. He carried freight, passengers, and mail leaving Palo Verde on Monday and returning on Wednesday night, making the full distance in a day and changing horses at Milipitas (Norton 1994:50-51). His light-weight combination freight and passenger rig was pulled by four horses (Norton 1994:75). Camiel Dekens, an early settler in the area, writes: “In Palo Verde the biggest men in the early days were the Hodges brothers, who owned a store and grubstaked miners and took up mining properties in their own names. They also dabbled in cattle. Their sister Mary owned some swampy land south of Palo Verde. It was known then as Mary’s Bottom and is still called that today although the land has been drained and cleared” (Dekens 1962:30). The Hodges left the area sometime during the early 1900s (Dekens 1962:30).

Some of the first tasks homesteaders completed once they had basic shelter were leveling the land and building ditches for irrigation, especially those in the southern part of the valley near Palo Verde to which the main irrigation system had not yet been extended. The first decade of the twentieth century, many farmers operated on little more than a subsistence level (Rumage 1956: 74). After attempts to raise cattle and sheep for sale failed, due to the distance of the settlements from the coast, the primary crop became cotton (Dekens 1962:58, Palo Verde Irrigation District c. 1930). Many early settlers excavated wells for drinking water though the water was highly alkaline (Alford 1987:62). Well depths ranged greatly from 100 to 300 feet deep (Dekens 1962:33).

Through the 1910s, although the irrigation system was rapidly expanded, settlers suffered major setbacks from devastating floods that regularly occurred when the unchecked Colorado River jumped its banks into the valley and carved new routes. It was decided that levees should be constructed to control the river’s flow and to avoid the devastating losses that the farmers were experiencing. The Palo Verde Joint Levee

District was formed in 1918. By 1920, the levee and irrigation canal system had been completed to south of Ripley (Norton 1994:92). A third water agency, the Palo Verde Drainage District, was formed in 1921. In 1923, a special act was approved in the California legislature to create the Palo Verde Irrigation District (Irrigation District), which immediately assumed the functions and obligations of the Palo Verde Joint Levee District and Palo Verde Drainage District. Two years later, in December 1925, the stockholders of the Palo Verde Mutual Water Co. sold the company to the Irrigation District (Setzler 1967:97). Thus, by the end of 1925, the Irrigation District became the sole agency in the valley for river control, drainage, and irrigation (Setzler 1967:98). The levee system was only partially successful. In 1926, about 22,260 acres out of a total of 36,135 acres in cultivation in Palo Verde Valley and Mesa were planted in cotton (Alford 1987:104).

The large-scale water conveyance system in the Colorado Desert region was expanded significantly in the 1920s and 1930s. In 1922, California reached an agreement with other states in the Colorado River watershed basin to construct the Colorado River Aqueduct (Eckhardt and Wilson 2009), which extends from Lake Havasu, Arizona (just north of the northern most extension of Palo Verde Valley) to Riverside, California. The Metropolitan Water District of Southern California (MWD) was created in the 1930s to construct the aqueduct, which would allow water to be transported from the Colorado River to the Los Angeles Basin (AECOM 2009). This was a massive undertaking and required the MWD to employ up to 10,500 people at any given time, with a total employment of 35,648 over an eight-year period (Eckhardt and Wilson 2009). It was the largest construction project in the world at the time, and it provided much needed jobs during the Great Depression (AECOM 2009). In the process, the MWD also established better infrastructure in the desert with the grading of new roads, and installation of a water supply system, power lines, and telephone lines, which led to the establishment of new towns near pumping stations and the growth of existing towns (Eckhardt and Wilson 2009).

Meanwhile, the settlements in the Palo Verde Valley and Mesa were in dire economic straits between 1926 and 1935 due to partial crop failures, flood damages, and shortages in irrigation water (Alford 1987:100). The Irrigation District defaulted on its bonds. Leaders in the valley worked hard for the Boulder Canyon Project and were influential in bringing about the construction of Boulder Dam (later designated as Hoover Dam) on the Colorado River, approximately 255 miles north of Palo Verde. Hoover Dam effectively regulated the flow of the river and virtually eliminated the occurrence of floods in the valley (Palo Verde Irrigation District n.d.).

The construction of the Parker and Davis Dams and the development of associated hydroelectric facilities also set the stage for the installation of the first of many transmission lines across the Colorado Desert region (Eckhardt and Wilson 2009). Authorization of the Parker and Davis Dams occurred on August 30, 1935 and April 26, 1941, respectively. Parker Dam was dedicated on November 19, 1938 and the Parker Dam Power Project, which included the construction of the power plant, substation, and transmission lines, was completed in 1952. Dedication of the Davis Dam and power plant occurred on December 10, 1952.

On May 28, 1954, the Parker Dam Power Project and the Davis Dam Project were consolidated into the Parker-Davis Project. Together, the Parker-Davis Project contained within its transmission system 31 substations and 51 transmission lines (Linenberger 1997). The Blythe Station was completed as part of the Parker Dam Power Project and was released for operation on April 6, 1951. The Knob Substation, also part

of the Parker Dam Power Project, was completed on February 9, 1951 and placed into commercial service on February 10, 1952 (Linenberger 1997).

The Parker-Davis Project advanced the general settlement of central and southern Arizona, southern Nevada, and southern California. Specifically, construction of Parker Dam has aided in the growth and development of remote places such as Blythe, California and Yuma, Arizona. The Parker-Davis Project also facilitated the development of metropolitan Los Angeles by providing power as well as water from the Colorado River. Furthermore, the construction of Parker and Davis Dams, as well as other dams along the Colorado River, has tamed and significantly changed the face of the Colorado River (Linenberger 1997). The Western Area Power Administration (WAPA)-owned Pilot Knob–Blythe 161 kV Transmission Line and the Imperial Irrigation District (IID)-owned Niland to Blythe 161 kV Transmission Line, both of which cross the Project, are part of a larger network of transmission lines built between the 1940s and 1950s to bring hydroelectric power from Parker and Davis Dams on the Colorado River to central and southern Arizona, southern Nevada, and southern California.

By the 1930s, agricultural cultivation had been diversified to include production of alfalfa and grain for livestock feed (Palo Verde Irrigation District c. 1930). Alfalfa became the principal crop by 1940 (Alford 1987:107). By the late 1980s, agricultural crops cultivated in the Valley included alfalfa (hay, pasture, seed), sudan (pasture and hay seed), bermuda (pasture and grass seed), wheat and barley, corn, oats, cotton, citrus, lettuce, and melons (Palo Verde Irrigation District 1989). At present, broccoli is also a large crop (Palo Verde Irrigation District n.d.).

Today, the Colorado River is the boundary between Arizona and California, and also forms the eastern and southern boundaries of the Irrigation District. The Irrigation District occupies about 189 square miles of territory in Riverside and Imperial Counties in California. The District contains approximately 131,298 acres, 26,798 acres of which are on the Palo Verde Mesa. Colorado River water, supplied through Irrigation District canals, is lifted onto the Mesa by private pumps to irrigate a portion of the acreage in the Irrigation District. The remaining mesa irrigated acreage is irrigated from deep wells developed by the landowners. The Irrigation District canal system consists of approximately 244.23 miles of main and lateral canals. While the Irrigation District has 56.0 miles of lined canals, the installation of concrete-lined farm ditches has increased greatly during recent years. The Irrigation District estimates that about 315 miles of concrete-lined farm ditches are present in the valley, about 72 percent of all private ditches. The Irrigation District drainage system is composed of approximately 141.4 miles of open drainage channels carrying groundwater drainage and canal operational spill water away from farmland and back to the river. This system of drains includes over 250 siphons, or submerged culverts (Palo Verde Irrigation District n.d.). The first several decades of the twentieth century witnessed the permanent development of the valley for agriculture. Cultural resources commonly associated with this period are diverse and could include agricultural buildings and structures; buildings (commercial and residential); irrigation canals and drains and related features such as canal headings, checks, siphons, deliveries, bridges, flumes, pump plants, moss racks and miscellaneous structures; ancillary features (e.g., agricultural fields); and wooden pole transmission lines. Early homesteaders constructed temporary shelters out of tents, arrowweed, and poles (Palo Verde Historical Museum and Society 2005:38). Many buildings were “stick-in-the mud”-style, which is described in a 1902 account of a home of a Mexican family in the valley as “made by planting poles in the ground and nailing or tying with thongs smaller poles, like laths, on each side of the upright poles. The poles in this one were tied with cow hide. Mud is

poured between the double lattice work and tamped down. Other poles are laid across the top and are covered with arrowweed or tules, thus making the roof which is then covered with dirt” (Norton 1994:23).

Other buildings were basic wood frame with canvas, such as the Pfof’s residence in the valley, which was described in 1902 as “A large room with a board floor...[that] had sides made of wire screen to keep out mosquitos and flies. The screen was covered with canvas that could be raised to let in the air in hot weather or fastened down to keep out the cold. The roof was thatched with tules, with dirt piled on top as further protection from the heat of the sun. There was a real door at the entrance.” As time passed, these primitive buildings were replaced by wood-frame homes, and commercial buildings were constructed of wood frame, brick, and reinforced concrete. In the early 1900s, men in the valley would assemble a team to capture the wild horses on the Palo Verde Mesa by creating a brush fence with wings extending like a large V, with the opening a half-mile wide or more across, that gradually narrowed into a corral (Norton 1994:85). Several canals and drains are illustrated on current topographic maps in the vicinity of the project, including the “C” Canal, the Hodges, Palo Verde, and Estes Drains, and numerous unnamed canals and Colorado River levees. The WAPA-owned Pilot Knob–Blythe 161 kV Transmission Line and the IID-owned Niland-Blythe 161 kV Transmission Line cross through the project.

Transportation (1872-1964)

The construction of the railroad through the area in the late-nineteenth century and early-twentieth century and the completion of roads, highways, and airfields in the early- to mid-twentieth century aided development in the region. Nevertheless, at the turn of the twentieth century, Palo Verde Valley and Mesa were conspicuously isolated from any major transportation network (Rumage 1956:66).

In 1872, the Southern Pacific Railroad began constructing a railroad line from the ocean to the eastern edge of California. The line reached Yuma on September 30, 1877 and regular service to Yuma began on October 11, 1877 (AECOM 2009, KEA 2000). Even so, the closest rail station to Palo Verde Valley was the Southern Pacific Railroad station at Glamis, 40 miles to the south. Travelers were then required to complete the journey by stage on the Glamis Road to Palo Verde, which was the end of line (Alford 1987). The stages stopped at Halfway Well, later known as Midway Well, to change horses (Dekens 1962:20). The road itself was a relatively unimproved desert trail though it served as the main transportation route for settlers and freight in the first decade of the 1900s (Rumage 1956:68). At Palo Verde, residents would sometimes hire out their rigs to transport travelers further north to Blythe (Dekens 1962:20). The independent railroad, the California Southern, was completed in 1916, and connected Blythe Junction (now Rice) to Blythe. A spur line to Ripley was completed soon after (Setzler 1967:81; Rumage 1956:72; Alford 1987).

Roads in the region at the turn of the twentieth century were unpaved and irregular. Early settler Camiel Deken wrote that roads “didn’t follow section lines or make square corners, but took off through the bush toward the exit roads.” Depending on the time of the year and the state of the river, residents used different routes to travel throughout the area. For instance, Deken continues “We had an inside or slough route to Palo Verde for winter time when the river was low and a road along the edge of the mesa for summer when the water was high and the sloughs were full” (Dekens 1962: 36). Another account states: “Roads fanned out in every direction because making one’s own path from one place to another was a frequent practice” (Alford 1987:62). Bradshaw Trail, described by Deken as the “old stage road” was still

open in the early 1900s though less commonly used than the Glamis Road. He describes that people sometimes incorrectly called Bradshaw Trail the Butterfield Stage Road, though that road ran further south. Dekens reported that the old stage route was still open around 1920 when he took an automobile trip along the route (Dekens 1962:42). Roads over the mesa, according to Dekens, “were a few wagon trails here and there. Except for the occasional washes, it was easy enough without any actual road” (Dekens 1962:52). A 1907 Palo Verde Valley land ownership map illustrates numerous meandering trails that extend north-south through the Valley and several roads that peter off into the mesa, including the two main Bradshaw Trail routes across the mesa, one which met with 22nd Avenue and the other 30th Avenue (Palo Verde Valley Land Ownership Map 1907).

In 1909, Frank Murphy decided to open a new east-west wagon long-distance road that would be shorter than the Bradshaw Trail route. Along with Dekens, Murphy assembled a team of four mules, a wagon, a slip scraper, a plow and, some picks and shovels, and spent 12 days clearing a path through the brush and scraping runways in and out of washes for the road from Blythe to Mecca that would later become U.S. Highway 60/70, and subsequently Interstate 10 (I-10) (Dekens 1962:27-29). The Riverside County Highway Commission recognized the route from Mecca to Blythe in 1914 (Alford 1987:113). In the 1920s, the route opened by Murphy and Dekens was named the Sunkist Trail by E.R. Fairbanks, who operated a local garage in Blythe. By that time, the trail extended from Los Angeles, California to Las Cruces, New Mexico. The title was used for at least another 15 years (Palo Verde Historical Society 2005:62). The U.S. Highway System was established in 1926 and the road was renamed U.S. 60. The road served as a key distribution route for goods throughout the southern portion of the United States.

The U.S. Bureau of Air Commerce (BAC) established a system of emergency landing fields across the United States in the early 1930s, which included the construction of an unpaved north-south airstrip three miles south of Blythe on Lovekin Boulevard. However, when the BAC’s successor, the Civil Aeronautics Administration (CAA), was charged by President Franklin Roosevelt with improving the cross-country airstrips in 1940, the CAA chose to ignore the 1930s airfield south of Blythe and constructed a new airfield, named Intermediate Flying Field Site 21, on the mesa seven miles west of Blythe. The airstrip was unpaved, with a weather station and a beacon. In February 1941, the War Department identified Site 21 as a potential site for the Army Air Forces which were doubling in size in preparation for war. In January 1942, work began at the airfield. The improvement of the airport was completed by the Works Progress Administration as part of the National Defense Program. The improvements included two paved runways, one more than 7,000 feet long, and the other one-mile long. The paving was thick enough to support the largest bombers of the time (Wilson 2008:3-11).

With the establishment of the Intermediate Flying Field Site 21, portions of U.S. 60/70 were realigned. The route had originally proceeded west through Blythe on Hobsonway, north on Main Street, and then west on Chanslorway, which changed to Riverside Drive, up to the mesa, and then down the alignment of the proposed east-west runway. The route was realigned to run directly west of Blythe along the southern edge of the airport. Reportedly, there are traces of the original U.S. 60/70 asphalt alignment immediately west of the airport (Wilson 2008:4). In 1964, U.S. 60/70 was decommissioned as part of the simplification of the highway numbering system. I-10 was completed in the Blythe area by 1965 (Palo Verde Historical Museum and Society 2005:102). Generally, the westbound lanes of the I-10 are atop the original U.S. Highway 60/70 (Wilson 2008:103).

The main north-south highway in the area, State Route 78, was designated by the State of California as a highway in 1934; however, at that time, the eastern terminus of State Route 78 was located in Imperial County, near the community of Kane Spring and the western terminus was located in the city of Escondido in San Diego County (California Highways n.d.). In the early 1960s, civic-minded Californians and local politicians began advocating extending State Route 78 east from Brawley through the town of Glamis and north through Palo Verde Valley to the city of Blythe in Riverside County (Native Sons of the Golden West De Anza Parlor 1964). They envisioned that the extension of State Route 78 would foster the economic and material growth of the Imperial and Palo Verde Valleys, enable more efficient communication, travel, and trade between Imperial and Riverside Counties, and also bolster local agriculture.

The extension of State Route 78 was laid out on already existing roads, specifically 32nd Avenue, Rannells Boulevard, 28th Avenue, and Neighbors Boulevard, which were classified as light-duty unpaved roads on an historical 1947 topographic map (*Resolution Relative to the Ben Hulse Highway* 1964; USGS 1947). According to a historic dedication plaque erected in the community of Imperial Gables in Imperial County, the course of State Route 78 parallels an “old Indian trail” which connected the Imperial and Palo Verde Valleys in the prehistoric/pre-Columbian/pre-contact era and was still visible in 1964 when the plaque was erected. However, no evidence of this prehistoric trail or historic route is on file with the Easter Information Center (EIC) or South Coastal Information Center (SCIC) for Riverside and Imperial Counties. On March 21, 1964, the California Legislature dedicated this stretch of State Route 78 for public use, designated it the “Ben Hulse Highway” in honor of State Senator Ben Hulse, who, according to the State resolution, “saw the manifold advantages of having such a highway linking the two counties, [and] became the motivating force behind its development” (*Resolution Relative to the Ben Hulse Highway* 1964). It is likely that the new portion of State Route 78 was paved at this time. Based on a review of historic maps and aerial imagery, there have been no known alignment, title, or numerical changes to State Route 78 since 1964. Today, State Route 78 is an asphalt-paved, two-lane highway that stretches from Oceanside in San Diego County east through Imperial County, then on a north/south routing through agricultural lands on Section boundaries in Riverside County from Palo Verde to I-10 just outside of Blythe also in Riverside County. The route is known as State Route 95 north of I-10.

Cultural resources commonly associated with this period are diverse and could include railroad-related structures, buildings (commercial roadside architecture), built-up asphalt and earthen off-road roadways, and air strips, flight-related structures, and historical debris associated with travel, construction and maintenance (ex. work camps). Nearby State Route 60/70, State Route 78, I-10, and State Route 95 are key twentieth century transportation routes within the area and region. With the exception of State Route 78 and the southern alternative routing of Bradshaw Trail, no buildings or structures from this period are known to be extant in the project vicinity.

Mining (1908-Present)

Mining in the Mule Mountain Range immediately west of Blythe and the project area has been a practiced trade since Weaver’s discovery of gold in 1862 (City of Blythe n.d., Hartill 1980:24). Despite this early discovery and prospecting, large-scale mining in the Mule Mountains remained unrecorded until 1908, when the American Flag Mine began operating. In addition to the American Flag Mine, the Stanfield Gold Mining Company began operating several mines in the area circa 1914. In the early 1910s, part-

owner L.A. Stanfield placed the Senate Mine into operation (Hartill 1980:25). The Senate Mine, a supposed component of the larger Carnation group of mines, was situated near the northwest corner of the Mule Mountain Range. This mine was eventually renamed the Roosevelt Mine. Along with the Rainbow group of mines, the Roosevelt Mine was described in a 1970 bulletin issued by the California Division of Mines and Geology as the most productive in the Mule Mountains Mining District, also referred to as the Hodges Mountain District, perhaps after the Hodges family who were influential in the settlement of the Palo Verde Valley in the early 1900s (Clark 1970: 214).

Mining in the Mule Mountains did not consist exclusively of mining for gold. Many mines included facilities for extracting a variety of other minerals, including copper. The Hodges Mine, also known as the Jet Black Mine, produced over 5,000 tons of manganese ore during World War I and World War II (Hartill 1980:17). Many of these operations incorporated shaft mining along with open-pit mining (USGS 1983).

Several of the more productive gold and copper operations, such as the Roosevelt, Rainbow and American Flag Mines, were still in use in varying capacities until the mid-1940s; however, by the mid-1950s, uranium had become the focus of mining in the Mule Mountains following the development of atomic energy technologies. A number of companies had discovered deposits of uranium in the 1950s and, by 1955, the Mule Mountain Mineral Company, Inc. had been formed to mine this radioactive element (Hartill 1980:26-27). While no further records of the mining of uranium in the Mule Mountains were found, according to a recent article released by American Energy Fields, Inc. (AEFI), thousands of tons of uranium ore were extracted from mines in the region between 1963 and 1964 (AEFI 2010). These included the Safranek, McCoy Wash and Little Ore Hill mines (AEFI 2010). After decades of dormancy, the uranium mines noted above are again of interest to those seeking to extract uranium. AEFI is currently investigating the feasibility of mining uranium ore at sites located near Blythe (AEFI 2010). Although the uranium operations took place outside of the Mule Mountains, it marked a change in mining patterns in the region. The Opal Hill Mine, located along the southern ridge of the Mule Mountains, also illustrates a shift in mining in the area. For the past several decades, the private owners of this open-pit mine have allowed tourists to prospect for their own fire agate and experience mining first hand (Pelphrey 1993).

Cultural resources commonly associated with this period could include mining-related structures, structural debris, access roads, borrow pits, mine shafts, open pit mines, and historic period artifacts associated with workers and/or on-site mining residents. No known mines are located in the project area; however, the Hodge Mine and two open-pit mines are located just north of Bradshaw Trail on the eastern edge of the Mule Mountains. Access roads to these mines branch off from Bradshaw Trail and cut northwest across the mesa within the project area.

20th Century Military Training

An erroneous listing on several post-1902 topographic maps is a site labeled “Fort Gass,” which is incorrectly believed to have been a military installation or a civilian trading post during the nineteenth century. The post was supposedly located at Palo Verde Peak in Imperial County, on the south end of the Palo Verde Mountains and approximately four miles southwest of Palo Verde. However, research conducted by R. Newton of the Fort Gaston Historical Society revealed that the post did not ever actually exist (California State Military Museum n.d.).

Desert Training Center (1942-1944)

During World War II, war efforts were being challenged in different theaters across the world, including not only Japan and Europe but also the desolate and barren areas of North Africa in Libya. Lieutenant General Lesley J. McNair and Major General George S. Patton Jr. recognized the need to train troops for desert warfare before sending them to Libya. In February 1942, the Army's General Headquarters formed an armored combat team, known as the I Armored Corps, as the force for a new facility to be known as the Desert Training Center (DTC). In Patton's first staff meeting with members of the I Armored Corps he stated "we cannot train troops to fight in the desert of North Africa by training in the swamps of [Fort Benning] Georgia...we will lose a lot of men from heat, but the training will save hundreds of lives when we get into combat" (Bischoff 2010: 23). The Riverside County area pleased Patton because it not only had mountains and vegetation but was desolate and remote for the large training exercises he envisioned.

The DTC spanned over 150 million acres in a tri-state area that included eastern Riverside County, Arizona's Yuma in the south, and Nevada's Searchlight in the north. Land owned by other Federal agencies was transferred to the War Department to allow the creation of the DTC, the purpose of which was not only to train troops but to develop tactics for desert war and test new equipment. From the start, Patton saw challenges in his first field operations, working in an environment unfamiliar to the Army. In a 1942 paper written by Patton entitled, "Notes on Tactics and Technique of Desert Warfare," he stated that the DTC's mission was "to determine the technique of living and moving in the desert and the tactics of desert fighting, particularly when opposed by armored formations, and in the face of inevitable air attack" (Bischoff 2010: 24).

Using the African Theater as the stage, the DTC employed new military tactics that included mechanizing the cavalry and using new types of methods in the motorized divisions, such as parachute troops, mountain troops, and anti-tank and anti-aircraft units, which provided more flexibility for combat. In addition, the Army acknowledged that the individual soldier was an important entity in the war effort, and, therefore, the Army provided tough and realistic training that would give soldiers self-confidence. The Armored Forces training manual read "every opportunity during training will be utilized to create enthusiasm and interest, to stimulate alertness, pride of personal appearance, sense of responsibility, and to develop initiative and esprit de corps" (Bischoff 2010: 27). Even General McNair reflected on the results and noticed the "irrepressible cheerfulness, keen intelligence, and physical stamina of the American soldier" (Bischoff 2010).

General Patton established several temporary camps in the DTC. The first camp was known as Camp Young after Gen. Samuel B.M. Young. Camp Young, a 28-acre parcel, was set up according to Gen. Patton's demands, and was located near Joseph Chiriaco's store and restaurant, known as Shaver's Summit. Pyramidal canvas tents and temporary wood structures constituted the bulk of the built environment. Water was obtained from the MWD Aqueduct and electricity was obtained from Parker Dam. The troops were transported along railroad spur lines.

At Camp Young, Patton and his officers lived among the troops and all were subjected to only the basic necessities, which included sheetless beds, musette bags, and footlockers. The 773 Tank Destroyer Battalion whose members constructed the camp described the camp as "eighteen square miles of nothing, in a desert designed for Hell" (Bischoff: 2010, 28). Patton, his officers, and the troops were all subjected to the same conditions as the Europeans in North Africa. "B"- and "C"- rations were prepared by soldiers,

and every man was limited to one canteen of water per day. It was thought that the human body could accommodate little water and “toughen” up; however, limiting water caused many health problems and even death. Patton stayed true to the belief, commenting, “one gallon per man has so far been more than adequate, even when we have operated for three days in succession at temperatures reaching 130 degrees in the sun” (Bischoff 2010: 35). Training in the harsh desert climate did lead to improvements on equipment, such as combat boots, cross-country tires, and vehicular cooling systems. In addition to Camp Young, two other divisional camps later would be set up, Camp Iron Mountain and a second camp near the town of Needles (Bischoff 2010).

The DTC officially opened on April 30, 1942, with 20 officers of the I Armored Corps, and, by May 30th, more than 4,800 enlisted men were stationed at Camp Young. On their first desert march, Patton required all his soldiers and officers to run one mile in 10 minutes with full packs and rifles. Patton emphasized a 6-week program. Larger operations that included 10,000 men, covering 300 miles in a 7-day event were employed by the summer. By the fall of that year, more than seven target ranges, two moving target ranges, two mechanized-combat ranges, and an infantry combat range were constructed for cross-country attacks and aerial bombardment training. The armored units learned how to rapidly deploy for combat using a bivouac approach (Bischoff 2010: 31). The rough terrain took a toll on the military’s vehicles, which were undersupplied and driven beyond capabilities. The Bazooka was first used at the DTC as a secret, anti-tank weapon (Bischoff 2010).

Between late summer and the fall of 1942, the operation of the DTC changed as Patton and his I Armored Corps departed to North Africa. Major General Alvan Gillem took command of the DTC, adding five more armored corps to the DTC. Gillem was replaced by Major General Walton Walker who said, “It is our job to rehearse for war...that will be demanded of them by actual warfare, the perfection necessary to win battles” (Bischoff 2010). By January 1943, the DTC was ordered to operate for the first time in U.S. military history as a “Theater of Operations,” which separated the divisions into two zones, Communications and Combat. The Combat Zone was the facility core for the divisional camps, maneuvers, and live-fire exercise for real battle, whereas the Communications Zone consisted of service units, such as post offices, maintenance shops, and bakeries. The Theater of Operations was well organized into 13-week training events, with officers required to lead a patrol over unknown terrain at night. The exercises lasted longer than 24 hours and the men were subject to no sleep, few rations, and limited water; officers unable to succeed were removed. The boundaries of the DTC were revised under General Walker’s command, which resulted in 19,000 square miles being divided into three Areas (A, B, C). These areas included the communities of Phoenix, Arizona and Boulder City, Nevada (Bischoff 2010).

Meanwhile, in North Africa, the Germans had been driven out of Libya by mid-1943; however, the DTC continued their desert war tactics emphasizing less combat and more large-scale training and maneuvering. General McNair traveled to Tunisia in April 1943, and was convinced that “only battle could truly produce battle-wise divisions” (Bischoff 2010: 41). On October 18, 1943, the DTC evolved into the “California-Arizona Maneuver Area” (C-AMA). The 1943 mission literally strengthened troops by developing tactics, techniques, and training for desert warfare, shocking the soldiers mentally for battle, firing under realistic battle conditions, and testing and developing equipment. The DTC/C-AMA had air power that included several airfields in California, Arizona, and Nevada, training 100,000 troops on air-ground cooperation in the over two years that the DTC/C-AMA was active. Overall, a total of

1,326,577 officers and enlisted men were trained at the DTC, and their training had a direct impact on the war efforts (Bischoff 2010). The DTC was closed on April 30, 1944 (Wilson 2008:50).

Maps of the DTC maneuver area, which illustrate maneuver area boundaries, off-limits boundaries, improved roads, desert roads and trails, airway boundaries, unlimited firing area boundaries, railroad crossings, landing strips, air fields, air base, water supply, and aqueduct crossings, do not show any DTC-related features within the Palo Verde Mesa except Bradshaw Trail, which is listed as a desert road and trail (Bischoff 2010:Figure 3; Maneuver Sketch Desert Training Center 1942).

Blythe Army Air Base (1942-1946)

The Blythe airport was situated near the geographic center of the DTC and, because it had been identified as early as 1940 for military use, its improvements were far ahead of DTC air fields that were still in the planning stages for the area. The airport location was chosen by Patton to serve as part of the DTC until the planned airfields were complete. The Army Air Forces (AAF) was based there and consisted of “one squadron of combat aviation, one medium-observation squadron, and an air ambulance to be associated with and under the control of the Desert Force Commander...” (Wilson 2008:11).

The construction of the Blythe Army Air Base at the Blythe Airport was approved on April 7, 1942. The first AAF organization to be deployed was the 46th Bombardment Group, arriving in May 1942. When they arrived, the airport had no living quarters, no water, no waste disposal system, no electricity, no paved roads, and no military supply system. Over the next few months, the base was constructed on a dispersed basis of 6,000 acres to protect against enemy attack. Northeast-southwest and northwest-southeast runways, a perimeter road, and numerous support buildings and roads were completed. Initially, the AAF groups deployed to Blythe Army Air Base embarked solely on missions to support the DTC ground forces (Wilson 2008:18). The pilots operated observation aircraft and simulated low-altitude attacks, high-altitude bombing attacks, and strafing runs.

By November 1942, the DTC airfields were operational elsewhere and the Blythe Army Air Base was transitioned from a base that supported DTC activities to a heavy bomber training base under the Second Air Force (Wilson 2008:20). On May 15, 1944, it was downgraded to Blythe Army Air Field. On October 19, 1945, the Blythe Army Air Field was permanently closed. It was declared surplus in July 1946, though it was used by the Air Force for a short period in 1946. On September 10, 1948, the federal government officially transferred ownership of the airport to the County of Riverside. Most of the buildings were sold and removed. Some were demolished and the wood salvaged (Wilson 2008:53-56).

Desert Strike (1964)

In 1964, the U.S. Army reused the old World War II site of the DTC/C-AMA for a large-scale training of troops in a single event called Desert Strike that occurred from May 17 to May 30, 1964. Thirteen million acres of the total 35 million acres of the DTC/C-AMA lands were utilized for this training event. Prior to that time, the land had not been utilized since the 1940s. It was reported that during the time that the old DTC airfields were not being used for military purposes, drug smugglers were using the airfields to traffic marijuana and cocaine into the country, and the land also was being used as a toxic waste disposal area (LVRJ 24 March 1985:4A).

During Desert Strike, joint training efforts were used by the U.S. Army and the U.S. Air Force, during which tactical nuclear weapons were employed alongside conventional weapons. Use of electronic counter measures, intelligence operations, and air traffic control were exercises that both task forces had employed during the Cold War period in U.S. history. The military exercises involved two corps and four divisions in a scenario of two fictional world powers—Calonia on the west and Nezona on the east, which were separated by the Colorado River. The conflict between Calonia and Nezona involved a water dispute, which eventually caused a pretend war. A neutral task force was set up between the two for administration and logistics in supporting the exercise (Bischoff 2010).

In this make-believe war, the Army troops were to use “armor thrusts, defensive operations along natural barriers; counterattacks with airborne assaults; and the situated employment of nuclear weapons” (Bischoff 2010: 165). The 2nd Armored Division consisted of approximately 10,600 troops that were part of four mechanized infantries and four armor battalions. Over 200 M48A1 tanks were used by the division. The 2nd Armored Division contained five armored and four mechanized infantry battalions as part of the exercise, using a total of 9,824 men. Over 200 tanks, 381 armored personnel carriers, 32 105-mm Howitzers, 7 155-mm Howitzers, and 3 8-inch Howitzers were used by the 2nd Armored Division. The 5th Mechanized Infantry Division consisted of two mechanized infantry battalions, four infantry battalions, and one armored battalion totaling 10,200 troops. This division used 122 armored personnel carriers, 54 tanks, 63 5-ton cargo trucks, and 441 2 ½-ton cargo trucks during the exercise. The 101st Airborne Division also participated in the event.

In addition to ground efforts, Air Force defenses were utilized in both divisions. The Air Force utilized 10,405 soldiers, including nine infantry divisions, two artillery units, and one signal battalion. During the event, a total of 89,788 personnel, including headquarters staff, were used as a neutral force between the two Joint Task Forces (Bischoff 2010).

The first action performed as part of Desert Strike consisted of a massive invasion of Task Force Phoenix into Calonia, beginning with the crossing of the Colorado River in several locations into Nezona. Troops were not allowed to use existing roads, and tanks went overland with many of the advances taking place in the area north of Blythe to Searchlight, Nevada (Bischoff 2010).

Cultural resources commonly associated with this period of military training could include air facilities and crash sites; bivouacs, campsites, and divisional camps; hospitals and medical centers; maneuver areas; railroad sidings and depots; ranges; and small-unit training areas.

5.3.3.5 Summary of the Ethnology, Prehistory, and History of the Region

Prior to the arrival of Europeans in California, several distinct cultural groups occupied a region of the Colorado Desert which is now within Riverside County. In the vicinity of the project area, two cultural groups were dominant: the Halchidhoma and the Quechan (Schaefer et al. 2007:256; LSA 2000). Other potentially influential aboriginal populations in the immediate environs included the Chemehuevi, Cahuilla, and potentially the Mohave, as well as other groups to the west along the Pacific coast.

The prehistoric cultural context for the immediate environs of the project area indicates that the earliest substantiated human presence in the Colorado Desert occurred during the Paleoindian Period (10,000 to 6,000 B.C.; Rondeau et al. 2007, Laylander and Schaeffer 2010). This group was referred to as the San

Dieguito, with occurrences reported in the Pinto Basin, at Ocotillo Wells, and in the Yuha Desert. In the project area, the Archaic Period is contemporaneous with the Middle Holocene to Early Late Holocene Period (6,000 B.C. to A.D. 500) and is characterized by “unspecialized hunting-gathering adaptations” due to the inhospitable climatological conditions (Laylander and Schaeffer 2010).

By the Late Prehistoric Period (A.D. 500 to Contact) the paddle-and-anvil pottery manufacturing technique had appeared, with the presence of encampments containing both diagnostic pottery, such as Tizon Brown Ware, Parker Buff, Slaton Buff, Lower Colorado Buff and Patayan I-III, and cobble- and pebble-based lithic scatters and quarry workshops (Eckert et al. 2005).

The project area is located in a region within the Colorado Desert in which few archaeological investigations were conducted until 1980s. As archaeological excavations were completed over a more extensive portion of the desert, a clearer picture of the culture history of the Colorado Desert began to emerge. As Schaefer and Laylander pointed out in a recent review of the prehistory of the Colorado Desert, the archaeology here is “embedded in a larger cultural context that includes the Mojave” and Sonoran Deserts, but with its own distinct archaeological manifestations (2007:247). The cultural attributes that unify human behavior in these three deserts include adaptation to similar environments with comparable climate, topography, flora and fauna; a shared language phylum (Aztec-Tanoan); and genetic relatedness due to regular interaction through intermarriage, trade, ritual and war (Jorgensen 1980).

During the Spanish Period, the Colorado Desert region was relatively isolated and was rarely traversed until the Mexican Period, which began when Mexico achieved its independence in 1821 (Eckhardt and Wilson 2009). During the American Period, which commenced after the Mexican-American War, mining and agriculture were the major impetuses for permanent settlement in the Colorado River region, and specifically in the vicinity of the Palo Verde Mesa during the late nineteenth and early twentieth century. The utilization of the desert during the 1860s and early 1870s was primarily associated with mining on the Arizona side of the river. Due to the remoteness and limited accessibility of resources, permanent settlements were few and far between. Despite this, the ever-prominent search for mineral wealth potentially hidden in the remote areas of Arizona and California brought individuals, as well as more organized mining ventures, to the Colorado Desert. Main routes through the area included the Glamis Road and Bradshaw Trail.

Beginning in the 1870s, the development of Palo Verde Valley for agriculture use spurred settlement in the area. However, the first settlement was abandoned by 1883 and was not reoccupied until the turn of the twentieth century, when farming, irrigation, and energy development all contributed significantly to the permanent settlement of the area. The construction of the railroad through the area in the late nineteenth century and early twentieth century and the completion of roads, highways (State Route 78 and I-10), and airfields in the early- to mid-twentieth century also aided development in the region. During this period, the city of Blythe was considered the main commercial center in the area.

During World War II, the region was used as part of the DTC and in 1964 was part of the large-scale Desert Strike training effort, which resulted in an influx of people and resources to the area. Mining in the Mule Mountain Range, which has included the extraction of gold, copper, and manganese ore, continues through the present, though it is no longer as much of a major economic driver as it was at the beginning of the twentieth century. Presently, agriculture is the main economic activity, and development in the area remains sparse.

5.3.3.6 Cultural Resources Inventory

A 100-percent cultural resources survey (BLM Class III field survey) of the all portions of the Project where right-of-entry (ROE) had been authorized (approximately 8,908 acres) was conducted. The cultural resources assessment included archival research, a pedestrian archaeological survey, and an architectural survey. During the survey, ground visibility throughout the project area was excellent, averaging 90-100 percent (Figures 5.3-2 and 5.3-3).

With the exception of 313 acres of the corridor that had been surveyed within the last five years, the cultural resources pedestrian survey included a 1,300-foot-wide gen-tie line corridor. Sites that previously had been surveyed were revisited during the recent survey to assess locational accuracy and to update the survey results, when needed. For those previously recorded sites along the gen-tie line that were verified as locationally accurate, data pertaining to those sites is included in this section and in the technical report. The California Department of Parks and Recreation (DPR) continuation forms were filled out for all sites that were not relocated during the pedestrian survey. The DPR forms are presented in the Confidential Appendices of the *Cultural Resources Technical Report*¹.

Archival Research

On December 22, 2010, prior to initiation of the field investigations, URS requested a records search from the EIC of the California Historical Resources Information System (CHRIS) located in the Department of Anthropology at the University of California, Riverside, in Riverside, California. Locations for the proposed SCE CRS expansion area, and the alternative substation had not yet been defined at the time of this initial record search. Therefore, on February 22, 2011, URS submitted a supplemental record search request to the EIC for additional acreage to cover the above-mentioned areas and facilities. Also in February, URS submitted a separate record search request to the SCIC to include portions of the record search radius that are within Imperial County; specifically, CEC regulatory buffers (200-foot buffer for archaeology and one-half-mile buffer for architectural history). In April 2011, a third supplemental record search request for the proposed access routes was submitted to the EIC.

Each record search request submitted called for a review of the CHRIS cultural resources database and other available sources for all previously recorded cultural resources and previous investigations completed within the project area, as well as within the defined search radii. The established search radii consisted of a one-mile radius from the boundary of the project site, and a one-quarter-mile radius from the centerline of the proposed gen-tie line.

Results received from both the EIC and the SCIC contained specific information regarding all previously recorded prehistoric and historic sites and isolates with trinomial or primary numbers; site record forms and updates for all cultural resources previously identified; and previous investigation boundaries and National Archaeological Database citations for associated reports, historic maps, and historic addresses. Also reviewed were the properties listed on the California Points of Historical Interest (CPHI), California Historical Landmarks (CHL), California Historical Resources Inventory, local registries of historic properties, CRHR, and NRHP. Details of the record search results are included in the Confidential

¹ Note: The Cultural Resources Technical Report, is being submitted under a confidential filing and is not for public disclosure. As such, this report does not appear in this AFC.

Appendices of the *Cultural Resources Technical Report*. The locations of archaeological sites are considered confidential and dissemination of those data is restricted under California Government Code 625.

Previously Conducted Cultural Resources Investigations

Results from the original and supplemental record searches at the EIC revealed that 32 cultural surveys had been previously conducted within the portion of project area that is in Riverside County, including the project site and associated one-mile search radius, and the gen-tie line and the associated one-quarter-mile search radius. Of these, 20 previous investigations appear to have been conducted within the boundaries of the project area (project site or the gen-tie line corridor). The EIC also included with their record search results three reports that provide an overview of the region but do not fall within the project area or one-mile search radius. The SCIC record search identified a total of eight previously conducted cultural investigations, four of which appear to cross the southern boundary of, and hence into, the project area.

In addition, three investigations were found to have been previously conducted within the project area that are not yet available at the Information Centers. These three investigations were conducted by Applied Earthworks, AECOM and ASM Affiliates, Inc., respectively. Cumulatively, including the results of all record searches, 46 investigations were previously conducted within the project area and the associated one-mile search radius, and the gen-tie line and the associated one-quarter-mile radius. Of the 46 investigations, 27 were conducted within the project area, four were conducted within one-quarter mile of the project area, and three were conducted within one-mile of the project area. An additional three reports do not fall within the project area, and the remaining nine investigations did not have locational data available. Table 5.3-3 provides a list of all previous cultural resources investigations.

**Table 5.3-3
Previous Cultural Resources Investigations within the Project Area
(Project Site and Gen-tie Line)**

Survey Report Number	Report Title	Date	Author	Within Project Area	Within ¼-mile Radius	Within 1-mile Radius
RI-00002	Miscellaneous Field Notes - Riverside County, San Diego Museum of Man	1953	San Diego Museum of Man	Overview of the Region Only		
RI-00160	Archaeological Resources Survey - West Coast - Mid-Continent Pipeline Project, Long Beach to Colorado River	1977	Greenwood and Associates			X
RI-00161	Paleontological, Archaeological, Historical, and Cultural Resources, West Coast-Midwest Pipeline Project, Long Beach to Colorado River	1975	Greenwood and Associates	Overview of the Region Only		

**Table 5.3-3
Previous Cultural Resources Investigations within the Project Area
(Project Site and Gen-tie Line)**

Survey Report Number	Report Title	Date	Author	Within Project Area	Within ¼-mile Radius	Within 1-mile Radius
RI-00220	Interim Report Field Work and Data Analysis: Cultural Resources Survey of the Proposed Southern California Edison Palo Verde-Devers 500kV Transmission Line	1977	Archaeological Research Unit, UC Riverside	X		
RI-00221	Cultural Resource Inventory and National Register Assessment of the Southern California Edison Palo Verde to Devers Transmission Line Corridor (California Portion)	1982	WESTEC Service, Inc.	X		
RI-00222	Final Report: Cultural Resource Survey of the Proposed Southern California Edison Palo Verde -Devers 500 kV Power Transmission Line	1977	Archaeological Research Unit, UC Riverside	X		
RI-00243	Archaeological Examinations of Mesa Drive into Sundesert Site, an Addendum Report	1977	Imperial Valley College Museum	X		
RI-00284	Cultural Resource Identification - Sundesert Nuclear Project	1977	Archaeological Research Unit, UC Riverside	X		
RI-00991	Persistence and Power: A Study of Native American Peoples in the Sonoran Desert and the Devers-Palo Verde High Voltage Transmission Line	1978	Cultural Systems Research, Inc.	Locational Data was not Available from the Eastern Information Center (EIC)		
RI-01020	Archaeological Examinations of West and North Perimeters of Sundesert Site and Requisition for Determination of Eligibility for the National Register Sun Desert Site	1978	Imperial Valley College Museum	X		
RI-01021	Archaeological Examinations of the South Section 21: Sundesert, An Addendum Report	1978	Imperial Valley College Museum	X		

**Table 5.3-3
Previous Cultural Resources Investigations within the Project Area
(Project Site and Gen-tie Line)**

Survey Report Number	Report Title	Date	Author	Within Project Area	Within ¼-mile Radius	Within 1-mile Radius
RI-01022	Archaeological Examination of the Sundesert Nuclear Plant Site, Final Report	1975	Imperial Valley College Museum	Locational Data was not Available from EIC		
RI-01023	Archaeological Examinations of Certain Geologic Drill Test Holes and Backhoe Trenches at Sundesert	1977	Imperial Valley College Museum	X		
RI-01038	An Aboriginal Trail Complex in the Big Maria, McCoy and Mule Mountains of the Central Colorado Desert	1977	William D. Alderson	Locational data was not Available from EIC		
RI-01211	A Cultural Resources Overview of the Colorado Desert Planning Units	1980	Institute for American Research	Overview of the Region Only		
RI-01249	California Desert Program: Archaeological Sample Unit Records for the Big Maria Planning Unit	1978	Bureau of Land Management (BLM)	X		
RI-01300	Mule Mountains - Area of Critical Environmental Concern - Management Plan	1981	BLM, California Desert District			X
RI-01305	Archaeological Examinations of the Proposed Railroad Line from Ripley to Sundesert	1977	Imperial Valley College Museum	X		
RI-01664	Cultural Resource Inventory of Seisdata Services Chuckwalla Geophysical Test Corridor, Riverside County, California	1982	WESTEC Service, Inc.	X		
RI-02481	An Archaeological Inventory and Evaluation of the Pebble Terraces in Riverside County, California	1989	BLM, Palm Springs-South Coast Field Office, North Palm Springs, CA	Locational data was not Available from EIC		
RI-04061	Cultural Resources Inventory of 1,542 acres of Palo Verde Mesa and Palo Verde Valley Catellus/BLM Land Exchange Area	1998	ASM Affiliates, Inc.	X		

**Table 5.3-3
Previous Cultural Resources Investigations within the Project Area
(Project Site and Gen-tie Line)**

Survey Report Number	Report Title	Date	Author	Within Project Area	Within ¼-mile Radius	Within 1-mile Radius
RI-04768	Cultural Resource Survey Report for the Blythe Water Project, Riverside and Imperial Counties, California	2001	Tierra Environmental Services		X	
RI-05520	Draft Southern California Gas Company Natural Gas Transmission Line 6902 Project, Riverside and Imperial Counties, CA, The Bradshaw Trail: Recommendation for National Register Eligibility	1993	LSA Associates, Inc.	Locational data was not Available from EIC		
RI-06186	Cultural Resources Overview and Survey for the Proposed Alignment of the North Baja Gas Pipeline	2000	KEA Environmental, Inc.	X		
RI-06187	Cultural Resources Evaluation for the North Baja Gas Pipeline	2001	EDAW, Inc.	X		
RI-06707	Cultural Resources Surveys of Alternative Routes within California for the proposed Devers-Palo Verde 2 Transmission Project	2008	ICF Jones & Stokes	X		
RI-06999	A Class III Cultural Resource Inventory, and Evaluation for the Coachella Canal, Lining Project: Prehistoric and Historic, Sites Along the Northeastern Shore of, Ancient Lake Cahuilla, Imperial and Riverside Counties, California	2003	ASM Affiliates, Inc.	Locational data was not Available from EIC		
RI-07204	Overview and Cultural Resources Survey for the De Anza Natural Gas Pipeline	2000	KEA Environmental, Inc.	Locational data was not Available from EIC		
RI-07348	Overview and Cultural Survey for the De Anza Natural Gas Pipeline	2000	KEA Environmental, Inc.	Locational data was not Available from EIC		
RI-07349	Chocolate Mountain Aerial Gunnery Range: Cultural	2005	EDAW, Inc.	Locational data was not Available from EIC		

**Table 5.3-3
Previous Cultural Resources Investigations within the Project Area
(Project Site and Gen-tie Line)**

Survey Report Number	Report Title	Date	Author	Within Project Area	Within ¼-mile Radius	Within 1-mile Radius
	Resources Survey of 12 Targets and Monitoring of 14 Archaeological Sites					
RI-07790	A Class II Cultural Resources Assessment for the Desert-Southwest Transmission Line, Colorado Desert, Riverside and Imperial Counties, California	2003	ASM Affiliates, Inc.	X		
RI-07967	A Class III Cultural Resources Survey for the Proposed Mesa Ranch Water Pipeline Right-of-Way Project, Palo Verde Mesa, Eastern Riverside County, California	2009	BLM, Palm Springs-South Coast Field Office, North Palm Springs, CA	X		
RI-08373	Final Cultural Resources Inventory of the Proposed DPV2 Colorado River Switchyard Project, Riverside County California	2009	ICF Jones & Stokes	X		
RI-08410	Draft Cultural Resources Inventory of the Proposed Devers to Palo Verde II 500 kV Transmission Line, Riverside County, California	2004	Mooney/Hayes Associates, LLC	X		
RI-08411	Final Amendment to Cultural Resources Inventory of the Proposed Blythe Energy Project Transmission Line, Riverside County, California	2009	Tetra Tech EC, Inc.	X		
(Not Yet Assigned)	Cultural Resources Class III Survey Draft Report for the Proposed Blythe Solar Power Project	2010	AECOM	X		
(Not Yet Assigned)	Class III Cultural Resources Survey Draft for the Colorado River	2011	Applied Earthworks	X		

**Table 5.3-3
Previous Cultural Resources Investigations within the Project Area
(Project Site and Gen-tie Line)**

Survey Report Number	Report Title	Date	Author	Within Project Area	Within ¼-mile Radius	Within 1-mile Radius
(Not Yet Assigned)	Cultural Resources Inventory of the Proposed Colorado River Substation Expansion Project, Riverside, California	2010	ASM Affiliates, Inc.	X		
NADB 1100139	Archaeological Examinations Of A Utility Site In Palo Verde Valley	1978	Von Werlhof, Sherilee			X
NADB 1100695	Intensive Cultural Resource Inventory for the Western Area Power Administration Blythe-Knob 161 kV Transmission Line, Riverside and Imperial Counties, California for U.S. Department of Energy Western Area Power Administration	1995	Moreno, Jerry L et al.	X		
NADB 1100854	Cultural Resources Overview and Survey for the Proposed Alignment of the North Baja Gas Pipeline. KEA Environmental, Inc.	2000	Kirkish, Alex, Rebecca Apple, Jackson Underwood, and James Cleland		X	
NADB 1100862	Cultural Resources Evaluation for the North Baja Gas Pipeline	2001	EDAW, Inc.		X	
NADB 1100864	Addendum 11 to Cultural Resources Overview and Survey for the North Baja Gas Pipeline Project - Archaeological Survey of Twenty-Four Extra Temporary Work Spaces	2002	Underwood, Jackson		X	
NADB 1101191	Draft Northern & Eastern Colorado [sic] Desert Coordinated Management Plan and Environmental Impact Statement - An Amendment to the California Desert Conservation Area Plan 1980 and Sikes Act Plan with the California Department of Fish and Game	2001	BLM and California Department of Fish and Game (CDFG)	X		

**Table 5.3-3
Previous Cultural Resources Investigations within the Project Area
(Project Site and Gen-tie Line)**

Survey Report Number	Report Title	Date	Author	Within Project Area	Within ¼-mile Radius	Within 1-mile Radius
NADB 1101242	Final Environmental Impact Statement/ Environmental Impact Report and Proposed Land Use Plan Amendment - Volume I and II - North Baja Pipeline Expansion Project	2007	BLM and CDFG	X		
NADB 1101243	Draft Environmental Impact Statement/ Environmental Impact Report and Draft Land Use Plan Amendment - Volumes I and II - North Baja Pipeline Expansion Project	2006	BLM	X		

BLM = United States Bureau of Land Management kV = kilovolt
 CDFG = California Department of Fish and Game UC = University of California
 EIC = Eastern Information Center

Previously Recorded Cultural Resources

The results received from EIC for the three records search requests identified 148 previously recorded cultural resources within an area encompassing the Project footprint, transmission line, a one-mile radius from the boundary of the Project footprint and a one-quarter-mile radius from the transmission centerline. Of the 148 previously recorded cultural resources, 89 cultural resources occur within the project area (project site and transmission line corridor). Of the 89 cultural resources in the project area, the search found that six were previously determined, through the Section 106 process, as eligible for listing on the National Register (five lithic scatter sites and the Historic Bradshaw Trail); 12 have been previously determined, also through the Section 106 process, as ineligible for listing on the National Register (ten lithic scatter sites, one prehistoric trail and one historic road). The CRHR or NRHP eligibility status for the remaining resources identified within the project area has not been evaluated.

Results received from the SCIC in response to the URS record search request identified a total of 20 previously recorded cultural resources within portions of the project area and record search radius that enter Imperial County. Of this total, one resource occurs within the project area and the remaining 19 are within the defined record search radius; the CRHR or NRHP eligibility status for the single resource located within the project area has not been evaluated.

In addition, it was determined that 113 cultural resources identified by Applied Earthworks, Inc. in its Class III Survey for the Colorado River Project (Applied Earthworks, 2011) are located within both the

project area and one-mile search radius (35 in the project area and 78 in the one-mile search radius). The eligibility status for the 35 cultural resources identified within the project area has not been evaluated.

Cumulatively, there are 279 identified cultural resources within the project area and respective record search radii as a result of all record search requests. This value includes resources within Riverside and Imperial County. Of this total, 123 are within the project area (project site and/or transmission line corridor) and 156 occur within the record search radius. Table 5.3-4 provides a list of all previously recorded cultural resources identified as within the project area and record search radii.

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-343; P33-000343	East-west trending trail segment that stretches for approximately 1,000 m. A cluster of hole-in-cap metal cans were located near the middle of the western segment of the trail.	Determined as ineligible for listing on NRHP, Status Code 6Y2 (2009)	2008 ICF Jones & Stokes; 2004 Mooney & Associates; 1980 University of California Riverside Anthropology Department; 1978 UC Riverside Anthropology Department; 1964 Johnston, et al.	X	
CA-RIV-650; P33-000650	North-south trail segment that intersects with a temporary campsite (CA-RIV-1821). The trail was originally recorded as measuring 2,066 m in length but was not relocated in 2004.	Not evaluated	2008 ICF Jones & Stokes; 2005 ICF Jones & Stokes; 2004 Mooney & Associates; 1980 UC Riverside Anthropology Department	X	
CA-RIV-664; P33-000664	60 m x 60 m temporary campsite located on desert pavement. Artifacts at the site include choppers, scrapers, and hammerstones.	Not evaluated	1974 Imperial Valley College Museum		X
CA-RIV-665; P33-000665	50 m x 50 m lithic scatter site containing Malpais tools including two scrapers.	Not evaluated	1974 Imperial Valley College Museum		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-666; P33-000666	50 m x 50 m lithic scatter including Malpais blades, scrapers, round cobbles and secondary quartzite flaked scrapers.	Not evaluated	1974 Imperial Valley College Museum		X
CA-RIV-668; P33-000668	Site consists of continuous lithic scatter that vary from very sparse to heavy concentrations, two aboriginal trail segments, cleared circles, San Dieguito I-III lithic work assemblages of flakes, cores, and cobbles.	Not evaluated	1984 Mooney-Lettieri & Associates, Inc.; 1978 Imperial Valley College Museum		X
CA-RIV-672; P33-000672	Extensive lithic shop with heavy concentration of tools and random scatter of tools on gravel terrace. Site includes trail and cairn.	Not evaluated	1978 Imperial Valley College Museum	X	
CA-RIV-673; P33-000673	Two trails are identified, 1 of Native American origin and the other historic in nature, having been associated with General Patton's Desert Training Facility.	Not evaluated	1974 Imperial Valley College Museum; 1977 University of California; 1980 UC Riverside Anthropology Department; 2004 Mooney and Associates; 2005 Mooney/Jones & Stokes; 2008 ICF Jones & Stokes	X	
CA-RIV-772; P33-000772	The resource is an east-west trending segment of an aboriginal trail that is included as an element of the Coco-Maricopa trail system.	Not Evaluated	1980 UC Riverside Anthropology Department; 2004 Mooney and Associates; 2004/2005 Mooney/Jones & Stokes; 2008 ICF Jones & Stokes	X	
CA-RIV-775; P33-000775	The resource consists of a trail segment trending northeast-southwest.	Not Evaluated	1980 UC Riverside Anthropology Department; 2004 Mooney and Associates; 2005 Mooney/Jones & Stokes; 2008 ICF Jones & Stokes	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-1095; P33-001095	Site consists of small lithic assemblage of broken cobbles, flakes, and tools.	Not Evaluated	1974 Imperial Valley College Museum; 1976 San Bernardino County Museum	X	
CA-RIV-1120; P33-001120	Site consists of a flake and core scatter with ten chert flakes, one core, and two quartzite hammerstones.	Not Evaluated	1976 Cowan		X
CA-RIV-1481; P33-001481	Site consists of six sand tempered, red, buff, grey exterior ceramic pottery sherds.	Not Evaluated	1978 E. Levy		X
CA-RIV-1488; P33-001488	Site consists of possible sleeping circles with slight mound around the edges, a house ring, a trail jutting southeast into wash, and a single sherd of sand-tempered plain buffware from the side of a large vessel.	Not Evaluated	1978 Imperial Valley College Museum	X	
CA-RIV-1489; P33-001489	Chipping circle consisting of 8 pieces of material in a 0.5-m x 0.5-m area.	Not Evaluated	Unknown		X
CA-RIV-1490; P33-001490	The site consists of a trail about 3 miles in length with one lithic detritus (red jasper) alongside the trail within a 50-m x 50-m transect.	Not Evaluated	Unknown	X	
CA-RIV-1745; P33-001745	Possible quartzite hammerstone in drain, between 2 granite pebble terraces, pottery scatter of pot shards, core, chopper, and sherds.	Not Evaluated	1978 Imperial Valley College Museum	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-1746; P33-001746	Possible Intaglio, lithic assemblages and 5 cleared areas, trail running 500 northeast for 200 feet, random small flaking stations, and San Dieguito I-III lithic workshop.	Not Evaluated	1978 Imperial Valley College Museum	X	
CA-RIV-1747; P33-001747	Site contains a trail running northeast-southwest 400 with San Dieguito II-III lithic work along the trail.	Not Evaluated	1978 Imperial Valley College Museum	X	
CA-RIV-1748; P33-001748	The site contains lithic scatters that vary from very sparse to heavy concentrations; 1 aboriginal trail segment was found in the area as well.	Not Evaluated	1978 Imperial Valley College Museum; 1984 Mooney-Lettieri and Associates	X	
CA-RIV-1749; P33-001749	Yuman I-III lithic shop, with some San Dieguito and Amargosan material.	Not Evaluated	1978 Imperial Valley College Museum	X	
CA-RIV-1750; P33-001750	Yuman I-III pass campsites consisting of some lithic ceramic materials, granitic hammerstone, and Yuman tools.	Not Evaluated	1978 Imperial Valley College Museum	X	
CA-RIV-1751; P33-001751	Low density lithic scatter with 5 flaking stations and 1 hearth feature.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1978 Imperial Valley College Museum; 1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-1752; P33-001752	San Dieguito I-III lithic shops, with some Yuman material.	Not Evaluated	1978 Imperial Valley College Museum	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-1819; P33-001819	A cobble quarry containing small cores, flakes, and tools primarily comprised of jasper, chalcedony, chert, and felsite with a small concentration of ceramics covering an area of 150 x 250 meters.	Determined as ineligible for listing on NRHP, Status Code 6Y2 (2009)	1980 BLM; 2004 Mooney & Associates; 2005 Mooney/Jones & Stokes; 2008 ICF Jones & Stokes; 2011 Applied Earthworks	X	
CA-RIV-1820; P33-001820	A dispersed lithic scatter containing debitage, reduction detritus, and cores and hammerstone of quartzite and Cryptocrystalline Silicate covering an area 25 m x 25 m.	Not Evaluated	1980 BLM; 2004 Mooney & Associates; 2005 Mooney/Jones & Stokes; 2008 ICF Jones & Stokes	X	
CA-RIV-1821; P33-001821	This site is comprised of a dispersed lithic scatter with flakes, debitage, cores, ceramic scatter and hearth feature. Evidence of trail segments was also present. Calcined bone was noted within several of the fire affected rock/hearth features.	Not Evaluated	1980 BLM; 2004 Mooney & Associates; 2005 Mooney/Jones & Stokes; 2008 ICF Jones & Stokes	X	
CA-RIV-1822; P33-001822	A complex lithic scatter with concentrations of ceramics and several hearth features near several trails.	Not Evaluated	1980 BLM; 2004 Mooney & Associates; 2005 Mooney/Jones & Stokes; 2008 ICF Jones & Stokes	X	
CA-RIV-5191; P33-005191	Bradshaw Trail: Major link between coastal CA and gold mines of La Paz, AZ. A gas pipeline bisects the road and an associated meter station is situated south of the road.	Determined as eligible for listing on NRHP, Status Code 2S2 (1997)	1993 LSA Associates; 1994 Western Cultural Resource Management; 2000 KEA Environmental, Inc., 2004 EDAW, Inc.	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-5531/H; P33-005801	Resource is a lithic scatter with 16 flaking stations and a modern refuse deposit with historic refuse intermixed with modern refuse.	Determined as eligible for listing on NRHP, Status Code 2S2 (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5532; P33-005802	Low-density lithic scatter with one flaking station.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5533; P33-005803	A light to moderate lithic scatter and a sparse tin scatter were identified on the site.	Determined as eligible for listing on NRHP, Status Code 2S2 (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5534; P33-005804	The site consists of 22 flaking stations within an overall moderate lithic scatter and a low-density historic debris scatter.	Determined as eligible for listing on NRHP, Status Code 2S2 (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5535; P33-005805	A sparse lithic scatter with areas of dense concentrations of lithic artifacts including 14 flaking stations.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5537; P33-005808	Very small lithic scatter consisting of 1 quartzite cobble core and 2 associated quartzite flakes.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1994 Western Cultural Resource Management; 2000 KEA Environmental, Inc.	X	
CA-RIV-5538; P33-005809	Low-density lithic scatter with two flaking stations in a circular 10-m-diameter area. Flakes, shatters, cobbles, and cores were identified.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-5539; P33-005810	This site is a sparse lithic scatter with one flaking station of flakes, shatters, fragments, cobbles, and cores.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5540; P33-005811	A dense concentration of reduced cobbles and debitage. Over 2,000 lithics, mainly unifacially reduced cobble cores, were found. Flaking stations, ceramics, and trail segments were recorded.	Determined as eligible for listing on NRHP, Status Code 2S2 (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5541; P33-005812	A large, moderate-density lithic scatter with 2 flaking stations. Unifacial cobble cores, split pebbles, and sparse flakes.	Determined as eligible for listing on NRHP, Status Code 2S2 (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5542; P33-005813	The site consists of a sparse lithic scatter with 1 chert multiracial cobble core, 1 quartzite unifacial cobble core, and 2 unifacial pebble cores.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5543; P33-005814	The site consists of 8 flaking stations, a rock feature, and a single piece of pottery within a low-density lithic scatter.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.	X	
CA-RIV-5545H; P33-005816	A road trending northeast-southwest with a transmission line access through the road trending northwest-southeast.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1994 Western Cultural Resource Management; 2000/2001 KEA Environmental, Inc./EDAW, Inc.; 2005 Mooney, Jones & Stokes; 2008 ICF Jones & Stokes	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-5551; P33-005824	The site consists of 1 chert multiracial pebble core, 1 brown siltstone split cobble, 1 chert multiracial cobble core, 1 chert unifacial cobble core, and 1 chert split pebble.	Determined as ineligible for listing on NRHP, Status Code 6Y (1997)	1994 Western Cultural Resource Management	X	
P33-005963	Isolate located along the existing Southern California Edison (SCE) Devers-Palo Verde transmission line access through-road. It consists of one primary quartzite and one secondary quartzite flake.	Not evaluated	2008 ICF Jones & Stokes		X
P33-005964	Isolate located along the Western Area Power Administration (WAPA) 161 kV transmission line between the Blythe and Pilot Knob substation. It consists of two pieces of one brown ware rim sherd.	Not Evaluated	1994 Western Cultural Resource Management		X
P33-005969	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substations. It consists of 1 chert cobble core and 1 quartzite cobble core.	Not Evaluated	1994 Western Cultural Resource Management	X	
P33-005970	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substation. It consists of 1 quartzite primary flake.	Not Evaluated	1994 Western Cultural Resource Management	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-005971	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substations. It consists of 1 quartzite unifacial cobble core with 2 flakes removed from ends.	Not Evaluated	1994 Western Cultural Resource Management	X	
P33-005972	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substations. It consists of 1 quartzite unifacial cobble core with 3 flakes removed from one end and 1 tested quartzite cobble with a single flake removed.	Not Evaluated	1994 Western Cultural Resource Management	X	
P33-005974	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substations. It consists of 1 quartzite tested cobble with 1 flake removed and 1 quartzite cobble core fragment.	Not Evaluated	1994 Western Cultural Resource Management		X
P33-005975	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substations. It consists of 1 reduced quartzite cobble.	Not Evaluated	1994 Western Cultural Resource Management	X	
P33-005976	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substations. It consists of 1 brown quartzite secondary flake.	Not Evaluated	1994 Western Cultural Resource Management	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-005977	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substations. It consists of 1 red quartzite unifacial cobble core.	Not Evaluated	1994 Western Cultural Resource Management	X	
P33-005978	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substations. It consists of 1 brown chert secondary flake with a patinated ventral surface and 1 brown secondary quartzite flake.	Not Evaluated	1994 Western Cultural Resource Management	X	
P33-005979	Isolate located along the WAPA 161 kV transmission line between the Blythe and Pilot Knob substations. It consists of one split black chert pebble core.	Not Evaluated	1994 Western Cultural Resource Management	X	
CA-RIV-6533; P33-010820	This site is a 30-m x 25-m lithic procurement area including a flaking station and several tested cobbles. Two flakes were discovered 40 meters away from the main scatter.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6534; P33-010821	A small lithic scatter consisting 3 quartzite tested cobbles and 10 total flakes (2 quartzite and eight yellow and white chert).	Not Evaluated	2000 Tierra Environmental Services		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-6535; P33-010822	The site is a pair of moderately well-defined prehistoric trail segments worn into the desert pavement. Both trails are east-west and separated by a distance of 50 m. The northern trail is 80 m long and the southern trail is 40 m long.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6536; P33-010823	A small lithic scatter consisting of one quartzite cobble hammer, core fragment and six total flakes (three quartzite, and three white chert).	Not Evaluated	2000 Tierra Environmental Services		X
CA-RIV-6538; P33-010825	The site consists of a single cleared circle, roughly 3 m in diameter. The feature has a well patinated, slight berm around the perimeter with an interior comprised of non-patinated small gravel and sands.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6539; P33-010826	The site consists of a small lithic concentration, composed of a unifacial cobble test core, a primary flake and a secondary flake clustered in a roughly 3-m area.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6594; P33-010881	This site consists of one flaking station containing 7+ brown opaque chert flakes.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6596; P33-010882	This flaking station consists of 1 test cobble, 1 primary flake and 1 angular waste of brown quartzite.	Not Evaluated	2000 Tierra Environmental Services	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-6612; P33-010898	This site is a temporary camp site consisting of 3 rock rings.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6613; P33-010899	This site consists of a pot drop of unidentified buffware and includes 100+ body sherds and 6 rim sherds. Reconstruction of this vessel seems possible.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6614; P33-010900	Site consists of 5 brown ware sherds.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6615; P33-010901	Site consists of 7 battered quartzite cobbles and hammerstone.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6616; P33-010903	Lithic scatter that includes at least 6 primary flakes of brown quartzite and 1 split white quartzite cobble.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6617; P33-010904	The scatter consists of 3 sherds made of an unidentified type of buff ware.	Not Evaluated	2000 Tierra Environmental Services	X	
P33-010906	The isolate consists of 2 milky quartz pieces of debitage.	Not Evaluated	2000 Tierra Environmental Services	X	
P33-010908	The isolate consists of 1 quartzite tested cobble.	Not Evaluated	2000 Tierra Environmental Services	X	
P33-010909	The isolate consists of 1 quartzite tested cobble and 1 quartzite flake.	Not Evaluated	2000 Tierra Environmental Services	X	
P33-010910	The isolate consists of 2 quartz tested cobbles.	Not Evaluated	2000 Tierra Environmental Services	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-010911	The isolate consists of a single uniface brown quartzite cobble chopper and a brown chert secondary flake 4 m away.	Not Evaluated	2000 Tierra Environmental Services	X	
P33-010912	The isolate consists of a single patinated brown chert, multidirectional core. The core is half-embedded in the desert pavement.	Not Evaluated	2000 Tierra Environmental Services		X
P33-010913	The isolate consists of a single brown jasper cobble fragment, with partial flake removals.	Not Evaluated	2000 Tierra Environmental Services	X	
P33-010923	The isolate consists of 1 quartzite oblong hammer / chopper.	Not Evaluated	2000 Tierra Environmental Services	X	
P33-010931	The isolate consists of a well-rounded patinated secondary chert cobble flake with cortex. The flake is 2.5 cm x 2.5 cm located on desert pavement with creosote bush.	Not Evaluated	2000 Tierra Environmental Services	X	
CA-RIV-6675; P33-011092	A low-density lithic scatter situated on a gravel terrace. Site contains 2 cores, 3 flakes, and 1 fragment of shatter in a 53-m x 23-m area.	Not Evaluated	2000 KEA Environmental, Inc.	X	
CA-RIV-6676; P33-011093	Site consists of at least 6 hole-in-top cans and 10 modern cans. Erosion has scattered cans over a 67-m x 22-m area.	Not Evaluated	2000 KEA Environmental, Inc.	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-6677; P33-011094	Well localized refuse scatter containing historic and modern refuse in a 12-m x 8-m area. There are at least 50 hole-in-top cans, glass and ceramic fragments, auto parts, wires, and about 100 modern cans.	Not Evaluated	2000 KEA Environmental, Inc.	X	
CA-RIV-6678; P33-011095	Site is a ceramic scatter of at least 12 sherds tentatively identified as Salton Brown. The site measures 6-m x 6-m.	Not Evaluated	2000 KEA Environmental, Inc.	X	
P33-011110	Resource is a section of the Blythe to Knob wooden pole, H-frame 161 kV transmission line built in 1951.	Not Evaluated	2008 ICF Jones & Stokes; 2000 Tierra Environmental Services; 2000/2001 KEA Environmental, Inc./EDAW, Inc.; 2000 KEA Environmental, Inc.	X	
P33-011111	This isolate consists of a chert core with several flake scars. The core is a quarter section of a cobble and is brownish in color measuring 4 cm x 4 cm.	Not Evaluated	2000 KEA Environmental, Inc.	X	
CA-RIV-7127/H; P33-012532	The transmission structure (built in 1940s or '50s) consists of wooden, H-frame poles and transmission wires. The portion of the line in the surveyed area is 7 miles of the Niland-Blythe 161 kV transmission line corridor. Various refuse like conductors, wires, and can scatter were found as well.	Not Evaluated	2000 KEA Environmental, Inc.; 2005 Mooney, Jones & Stokes; 2008 ICF Jones & Stokes	X	
P33-013584	Isolate consists of one brown chert flake.	Not Evaluated	1980 J. Thesken		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-013585	Isolate consists of three lithics: one core and two flakes.	Not Evaluated	1980 Bureau of Land Management		X
P33-013611	Isolate consists of two lithics: one chert and one quartzite flake.	Not Evaluated	1980 S. Carrico; 2008 ICF Jones & Stokes		X
P33-013612	Isolate consists of one Salton buffware ceramic sherd.	Not Evaluated	1980 S. Carrico		X
P33-013613	Isolate consists of one chert core.	Not Evaluated	1980 S. Carrico		X
P33-013614	Site consists of 5 lithics located near a possible Palen-Ford Dry Lake spillway to the Colorado River. Scatter is composed of quartzite flakes, a large flake scraper of chert, and a domed scraper of chert.	Not Evaluated	1980 BLM	X	
P33-013615	Isolate consists of four cobble tools and one flake located in an active eolian sand area.	Not Evaluated	1980 Bureau of Land Management		X
P33-013616	An isolated projectile point fragment made of banded basalt found along the SCE access road.	Not Evaluated	1980 BLM; 2008 ICF Jones & Stokes	X	
P33-013617	Site consists of four Parker Buffware ceramic pottery sherds.	Not Evaluated	1990 LSA Associates, Inc.		X
P33-013633	Isolate consists of one red and gold chert flake.	Not Evaluated	1989 LSA Associates, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-013659	Site consists of a light density lithic scatter.	Not Evaluated	2004 Mooney and Associates; 2005 Mooney, Jones & Stokes		X
P33-013660	This resource consists of four hearth features composed of quartzite and rhyolite cobbles and a large, light-density lithic scatter. The ceramic scatter, 5 m x 2 m, consists of six sherds of red plain ware. The hearth features cover an area of 75 m x 75 m, to 125 m x 80 m.	Not Evaluated	2004 Mooney and Associates; 2005 Mooney, Jones & Stokes		X
P33-013672	Resource consists of a variable-density lithic scatter measuring 20 m x 20 m. The principle matter is black and brown siliceous petrified wood with numerous core and hammerstone fragments.	Not Evaluated	2004 Mooney and Associates; 2005 Mooney, Jones & Stokes	X	
P33-014147	Resource consists of a communication wire trending north-south for over 435 feet. The wire is associated with the U.S. Army and is corroded with missing sheathing.	Not Evaluated	2005 Mooney, Jones & Stokes; 2008 ICF Jones & Stokes	X	
P33-014148	Resource is a historic trash scatter measuring 30 feet x 60 feet. Consists of sanitary cans, a ration can, a glass jar, four beer cans, and a general concentric meat tin.	Not Evaluated	2005 Mooney, Jones & Stokes	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-014149	Site is a WW II-era military hardware scatter associated with Desert Training Center (DTC)/California-Arizona Maneuver Area (C-AMA) and includes a small concentration of metal grommets, buckles, and fasteners in a 3-foot x 3-foot area.	Not Evaluated	2005 Mooney, Jones & Stokes	X	
CA-RIV-9100; P33-014150	The resource consists of a northwest-southeast-trending two-track road approximately 5 to 6 feet wide and running intermittently for about 2 miles. Some soda bottles and ration cans are found alongside.	Not significant	2005 Mooney, Jones & Stokes; 2008 ICF Jones & Stokes; 2009 Tetra Tech EC	X	
P33-014151	Resource is a ceramic scatter consisting of approximately 10 buffware sherds covering an area of 4 m x 8 m. Two rim sherds were observed. All were located in a large flood plain.	Not Evaluated	2005 Mooney, Jones & Stokes	X	
P33-014196	Resource is an isolate flake measuring 3 x 5 x 2 cms. The material is a dark gray Cryptocrystalline Silicate chert with 20percent cortex present.	Not Evaluated	2005 Mooney, Jones & Stokes		X
P33-014197	A pottery scatter consisting of 6 buffware sherds in an area 1 m x 2 m. The size of the sherds range from 3 to 8 cms and all appear to be composed of a fine temper.	Not Evaluated	2005 Mooney, Jones & Stokes		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-014198	Site consists of a widely dispersed historic trash scatter containing cans, wire, meat tins and glass.	Not Evaluated	2005 Mooney, Jones & Stokes		X
P33-014200	Isolate consists of one red jasper flake.	Not Evaluated	2005 Mooney, Jones & Stokes		X
P33-014206	Dense concentration of ceramic scatter covering a 10-m-diameter area consisting of approximately 30 sherds of dull, brick red plain ware.	Not Evaluated	2005 Mooney, Jones & Stokes	X	
P33-014208	Light-density lithic scatter consisting of flakes, debitage, several cobbles, hammerstone, and core. The entire site covers a 5-m x 5-m area.	Not Evaluated	2005 Mooney, Jones & Stokes		X
P33-014385	Resource consists of four 0.50-caliber machine gun shell casings stamped with "43/TW," manufactured by Twin Cities Ordnance Plant, Minneapolis, Minnesota. The casings are associated with the DTC/C-AMA.	Not Evaluated	2005 Mooney, Jones & Stokes; 2008 ICF Jones & Stokes	X	
P33-014386	Lithic scatter consisting of a dark violet quartzite cobble core and flake, 1 granitic hammerstone, and an assayed quartzite cobble.	Not Evaluated	2005 Mooney, Jones & Stokes; 2008 ICF Jones & Stokes	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-9005; P33-017312	This resource consists of four loci dispersed historic trash scatter across an approximately 450-foot by 350-foot area. The resources possibly represent a World War II (DTC/C-AMA) campsite or training bivouac.	Not Evaluated	2008 ICF Jones & Stokes		X
P33-017315	Small historic trash scatter measuring 3 feet x 5 feet containing 2 key-wind cans, 1 jam can all associated with military field rations of the mid-20th century.	Not Evaluated	2008 ICF Jones & Stokes		X
CA-RIV-9009; P33-017319	Historic trash scatter measuring approximately 10 feet x 13 feet and containing cans and a glass jar. The cans are mainly solder-dot, sanitary cans and key-wind cans.	Not Evaluated	2008 ICF Jones & Stokes	X	
CA-RIV-9010; P33-017320	Site consists of a lithic scatter containing two loci of petrified wood flakes and cores	Not Evaluated	2008 ICF Jones & Stokes		X
CA-RIV-9011; P33-017323	Site consists of a historic trash scatter with two concentrations containing sanitary and evaporated milk cans and one glass food jar.	Not Evaluated	2008 ICF Jones & Stokes		X
CA-RIV-9012; P33-017324	Two possible hearth features or aggregated rock scatters. The hearth features are made up of reddish quartzite cobbles. Prehistoric trails exist in the surrounding area.	Not Evaluated	2008 ICF Jones & Stokes	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-017325	Isolate containing three cans, two sanitary cans and one church key open can.	Not Evaluated	2008 ICF Jones & Stokes		X
P33-017328	A section of a historic trail running north-south and approximately 540 feet long and 1.4 feet wide. Previously recorded trail segments within 0.5 mile include CA-RIV-650T, CA-RIV-772T, and CA-RIV-775T.	Not Evaluated	2008 ICF Jones & Stokes	X	
P33-017952	Isolate containing one chert core, 8 cm x 5 cm x 4 cm, 50 percent cortex, with 5 scars, found in Aeolian deposits within a Creosote Bush desert environment.	Not Evaluated	2009 Tetra Tech EC, Inc.	X	
CA-RIV-9276; P33-018052	Site consists of a historic can scatter, consisting of 35 cans.	Not Evaluated	2010 ASM Affiliates, Inc.		X
CA-RIV-9277; P33-018053	Site consists of a historic trash scatter, consisting of two glass bottles and one can dating to 1942-1943.	Not Evaluated	2010 ASM Affiliates, Inc.		X
CA-RIV-9278; P33-018054	Site consists of a historic trash scatter, consisting of cans and glass bottles, with evidence of tank tracks.	Not Evaluated	2010 ASM Affiliates, Inc.		X
CA-RIV-9279; P33-018055	Site consists of a historic trash scatter, consisting of three glass bottles and one can, associated with the WWII military training at DTC/C-AMA.	Not Evaluated	2010 ASM Affiliates, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-9280; P33-018056	Site consists of the structural ruins and trash scatter of a historic bivouac probably related to WWII military training at DTC/C-AMA. The site contains two loci.	Not Evaluated	2010 ASM Affiliates, Inc.		X
CA-RIV-9281; P33-018057	Site consists of a historic trash scatter, consisting of widely dispersed cans and milled lumber, associated with the WWII military training at DTC/C-AMA.	Not Evaluated	2010 ASM Affiliates, Inc.		X
CA-RIV-9282; P33-018058	Site consists of a small historic trash scatter, consisting of a can and bottle dump in two discrete concentrations, associated with the WWII military training at DTC/C-AMA.	Not Evaluated	2010 ASM Affiliates, Inc.		X
CA-RIV-9283; P33-018059	Site consists of a compact prehistoric ceramic scatter and a single flake within a low density scatter of historic cans and bottles at the base of a small terrace.	Not Evaluated	2010 ASM Affiliates, Inc.		X
CA-RIV-9284; P33-018060	Site consists of four distinct historic refuse concentration and a dense prehistoric ceramic pot drop.	Not Evaluated	2010 ASM Affiliates, Inc.		X
CA-RIV-9285; P33-018061	Site consists of a historic refuse scatter with three loci, containing metal fragments, cans, bottles, household goods, 100+ porcelain fragments, barbed wire, glass tableware, wire nails and a jasper projectile point.	Not Evaluated	2010 ASM Affiliates, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-018062	Isolate consists of 16 aqua bottle fragments from a single bottle. Markings on the bottle indicate it to be a Puritas water bottle manufactured by W.J. Latchford Glass Company of Los Angeles, CA from 1925-1938.	Not Evaluated	2010 ASM Affiliates, Inc.		X
P33-018063	Isolate consists of two double-edged razor blades and a can fragment.	Not Evaluated	2010 ASM Affiliates, Inc.		X
P33-018064	Isolate consists of a single prehistoric ceramic Brown ware sherd.	Not Evaluated	2010 ASM Affiliates, Inc.		X
P33-018065	Isolate consists of a single historic metal can.	Not Evaluated	2010 ASM Affiliates, Inc.		X
P33-018066	Isolate consists of a single historic army-type pocket knife, with brass body and wooden handle.	Not Evaluated	2010 ASM Affiliates, Inc.		X
P33-018067	Isolate consists of three historic brown beer bottles, dating to 1942.	Not Evaluated	2010 ASM Affiliates, Inc.		X
P33-018068	Isolate consists of a single colorless glass beverage bottle, manufactured by Vidriera Monterrey in Monterrey, Mexico.	Not Evaluated	2010 ASM Affiliates, Inc.		X
P33-018069	Isolate consists of a U.S. General Land Office Survey quarter-section marker dated 1917. Marking Sections 5 and 6.	Not Evaluated	2010 ASM Affiliates, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-018070	Isolate consists of a single historic brown beer bottle. Manufactured by Owen-Illinois Glass Co. at the Charleston, WV, plant in 1943.	Not Evaluated	2010 ASM Affiliates, Inc.		X
P33-018071	United States Government Land Office (USGLO) Survey section marker dated 1917. It marks the Public Land Survey System division between Section 31 and 32 of Township 6 South, Range 21 East on the north and Township 7 South on the south.	Not Evaluated	2010 ASM Affiliates, Inc.		X
P33-018916	Site consists of a historical refuse scatter containing five key-wind military ration cans, two other cans and one friction-lid coffee can.	Not evaluated	2010 AECOM		X
P33-018917	Site consists of a historical refuse scatter containing four key-wind military ration cans, one knife-cut can, several can fragments, and a cluster of 16 amber beer bottles.	Not evaluated	2010 AECOM		X
P33-019325	Isolate consists of a single glass bottle.	Not evaluated	2009 EDAW/AECOM		X
P33-019326	Isolate consists of a single glass bottle.	Not evaluated	2009 EDAW/AECOM		X
P33-019390	Isolate consists of a single Colorado Buff Ware ceramic sherd.	Not evaluated	2010 AECOM		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P33-019612	Isolate consists of a variety of isolated tin cans over a large area. Artifacts consist of three multiple serving sanitary food cans; one sanitary can; three C-ration cans; and three sanitary cans.	Not evaluated	2010 AECOM	X	
P33-018675	A historical refuse scatter 53 m x 6 m consisting of three key-wind military ration cans and one bottle.	Not Evaluated	2009 AECOM		X
CA-IMP-00872	Indian trail course north and south.	Not Evaluated	1855 USGLO Survey Notes by R.C. Matthewson		X
CA-IMP-00873	Indian trail course north and south.	Not Evaluated	1856 USGLO Survey Notes by R.C. Matthewson		X
CA-IMP-01434	Core-detritus in wash.	Not Evaluated	1976 Mcl		X
CA-IMP-02455	House ring, San Dieguito II or San Dieguito III.	Not Evaluated	1978 Imperial Valley College Museum		X
CA-IMP-02456	Two hammerstones and a scraper on a narrow terrace between two drains, approximately 9.1 m x 15.2 m.	Not Evaluated	1978 Imperial Valley College Museum		X
CA-IMP-02457	Trail with 3 lithic sites, approximately 8 m x 8 m: grinding slab, teshoa scraper, chopper.	Not Evaluated	1978 Imperial Valley College Museum		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-IMP-02458	Trail bisects a small lithic site of chalcedony scrapers, cores, debitage and 1 quartzite core; San Dieguito III badly disturbed ring.	Not Evaluated	1978 Imperial Valley College Museum		X
CA-IMP-02459	Trail with hammerstone and chalcedony flakes located alongside, area about 3 m x 3 m.	Not Evaluated	1978 Imperial Valley College Museum		X
CA-IMP-02462	Site consists of a hammerstone and a core, San Dieguito III, area about 1 m x1 m.	Not Evaluated	1978 Bill Nolta		X
CA-IMP-02463	Site consists of hammerstone, cores, and lithic work debitage (San Dieguito).	Not Evaluated	1978 Bill Nolta		X
CA-IMP-02464	Site consists of a hammerstone and two cores, San Dieguito I or II; area of 1 m x 1 m.	Not Evaluated	1978 Bill Nolta		X
CA-IMP-02465	San Dieguito I or II unifacial jasper chopper.	Not Evaluated	1978 Bill Nolta		X
CA-IMP-02466	San Dieguito I or II lithic station with hammerstone, biface chopper and debitage.	Not Evaluated	1978 Bill Nolta		X
CA-IMP-02467	San Dieguito II biface chopper.	Not Evaluated	1978 Bill Nolta		X
CA-IMP-02468	San Dieguito III lithic station, honey quartz.	Not Evaluated	1978 Bill Nolta		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-IMP-02469	San Dieguito III site is a jasper core and flake.	Not Evaluated	1978 Bill Nolta		X
CA-IMP-07170	Isolate consists of 1 brown chert cobble core with several flakes removed and 1 tested gray chert cobble.	Not Evaluated	1994 Western Cultural Resource Management		X
CA-IMP-07237	Lithic site consists of cobble cores, tested cobble, primary/secondary/ tertiary flakes, and shatter; area is 75 m x 45 m.	Not Evaluated	1994 Western Cultural Resource Management		X
CA-IMP-07238	Two concentrations and three flaking stations.	Not Evaluated	1994 Western Cultural Resource Management		X
CA-RIV-7307/CA-IMP-7307	Site consists of a chert pebble core, chert cobble cores, siltstone split cobble, and a chert split pebble.	Not Evaluated	1994 Western Cultural Resource Management	X	
CA-RIV-9989H (AE-DEV-1H)	Low-density, historic WWII can scatter consisting of 10 cans and can fragments.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-9990H (AE-DEV-2H)	Multi-component site consisting of one utilized core fragment, a chert secondary flake, eight cans and one spent brass shell.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-9991 (AE-DEV-3)	Ceramic scatter consisting of 15 Lower Colorado Buffware body sherds, likely the result of a single pot drop.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-9992H (AE-DEV-4H)	WWII can refuse scatter consisting of 5 cans.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-9993 (AE-DEV-5)	Ceramic scatter consisting of 15 Lower Colorado Buffware sherds, likely the result of a single pot drop.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-9994 (AE-DEV-6)	Ceramic scatter consisting of seven Lower Colorado Buffware body sherds, likely the result of a single pot drop.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-9995 (AE-DEV-7)	Low-density lithic scatter consisting of debitage, cores, tested cobbles, and tools spread across two loci.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-9996H (AE-DEV-8H)	Low-density historic WWII can refuse scatter consisting of three cans.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-9997H (AE-DEV-9H)	Historic WWII refuse scatter consisting of two concentrations of cans, one containing 24 cans and 100+ can fragments and other containing five cans and several can fragments.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-9998H (AE-DEV-10H)	Small historic WWII refuse scatter consisting of three opened C-ration cans.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-9999H (AE-DEV-11H)	Multicomponent site that consists of a lithic scatter and a historic WWII refuse scatter.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10000H (AE-DEV-12H)	Multicomponent site that consists of a low-density prehistoric lithic scatter and a historic refuse scatter.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10001 (AE-DEV-13)	Low-density prehistoric lithic scatter consisting of a variety of lithic debitage, cores, tested cobbles, and a core tool.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10002 (AE-DEV-14)	Low-density prehistoric lithic scatter consisting of chert, jasper, quartz, and chalcedony debitage.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10003 (AE-DEV-15)	Ceramic scatter that consists of two pot drops, one is a scatter of 81 Parker Buffware sherds and the other is a scatter of six Salton Brown sherds.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10004H (AE-DEV-16H)	Site is a small (106 feet x 94 feet [E-W x N-S]) low-density historic refuse scatter consisting of three pieces of milled lumber, three metal strap jar closures, four evaporated milk cans, and one large sanitary can.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10005H (AE-DEV-17H)	Site is a small (164 feet x 56 feet [NW-SE x NE-SW]) low-density historic can scatter consisting of one oval sardine can with cut-out lid, two sanitary can fragments, and three evaporated milk cans.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10006H (AE-DEV-18H)	Low-density scatter consisting of a historic can with a lid, a chert primary flake, and a chert biface tool fragment.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10007H (AE-DEV-19H)	1917 USGLO survey monument consisting of a stamped brass cap on a 1-inch-diameter steel pipe.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10008H (AE-DEV-20H)	Historic refuse scatter consisting of six pieces of highly weathered milled lumber, one wire nail, one 0.50-caliber belt clip, and one evaporated milk can.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10009H (AE-DEV-21H)	Multicomponent site consisting of a ceramic scatter, a historic wood-frame structure, a historic refuse scatter, a window glass scatter and a low-density artifact scatter.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10010H (AE-DEV-22H)	Low-density multicomponent site consisting of a prehistoric ceramic scatter, two lithics and two historic cans.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10011 (AE-DEV-23)	Prehistoric ceramic scatter/pot drop consisting of 34 sherds of Lower Colorado Buffware.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10012H (AE-DEV-24H)	Historic site consisting of WWII C-ration cans. The site is likely the remains of a temporary/single-use camp area associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10013H (AE-DEV-25H)	Scatter consists of 1 No. 10 sanitary can (rotary opened), 1 can friction lid with soldered handle, and the fragmented remains of 1 evaporated milk can (48 feet x 30 feet (N-S x E-W), early 20th-century).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10014H (AE-DEV-26H)	Large historic refuse scatter consisting of glass, cans, ceramics and milled lumber. In addition, there is a quartz cobble concentration that is likely associated with gold mining/prospecting activities in the area.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10015 (AE-DEV-27)	Small ceramic scatter consisting of three prehistoric ceramic body sherds (Lower Colorado Buffware).	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10016H (AE-DEV-28H)	Site is a small (11 feet x 1 foot) historic WWII-era refuse scatter consisting of three C-ration strips (one with key).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10017H (AE-DEV-29H)	Site is a small (38 feet x 44 feet [N-S x E-W]) low-density historic WWII-era refuse scatter consisting of C-ration cans (3 lids, 1 base, 1 key strip) and one 1942 mercury head dime.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10018H (AE-DEV-30H)	Site is a small (36 feet x 27 feet [N-S x E-W]) historic WWII-era temporary/single-use camp area consisting of a 12-foot x 12-foot foxhole (Feature 1) and a low-density refuse scatter.	Not Evaluated	2011 Applied Earthworks, Inc.	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10019H (AE-DEV-31H)	Site is a small (36-foot x 10-foot [N-S x E-W]) historic refuse scatter consisting of heavy gauge (0.185-inch-diameter) wire, tapered rectangular meat tin (base and lid), and a single cut metal disk (1 3/36 inch diameter).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10020H (AE-DEV-32H)	Site is a low-density WWII-era refuse scatter consisting of 20 cans/can fragments scattered across a 134-foot x 39-foot (N-S x E-W) area.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10021H (AE-DEV-33H)	Low-density historic refuse scatter, likely the remains of a temporary/single use camp by a small group of individuals. The site consists of a small concentration of cans, and a larger scatter of historic refuse including cans, bottles, glass, and a United States Army mess kit spoon.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10022 (AE-DEV-34)	Low-density prehistoric lithic scatter consisting of one chert primary flake, two split chert cobbles, and one chalcedony core fragment.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10023 (AE-DEV-35)	Small prehistoric lithic scatter consisting of three cores, one un-patterned flake tool, and a variety of flakes, angular shatter, and tested cobbles. In addition, the site consists of a deflated hearth consisting of 100+ small cobbles to pebbles.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10024 (AE-DEV-36)	Small low-density prehistoric artifact scatter consisting of a lithic scatter and a small pot drop.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10025H (AE-DEV-37H)	This multicomponent site consists of a prehistoric lithic scatter, a historic refuse scatter, a concrete mounted marker with a fallen marker pole, and a partially filled foxhole that is likely associated with the DTC/C-AMA (1942–1944).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10026H (AE-DEV-38)	Site is small (18 m x 3.5 m) with low-density scatter consisting of a one chert core, two primary flakes, and one secondary flake.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10027H (AE-DEV-40H)	This multicomponent site consists of a prehistoric deflated hearth and lithic scatter, plus three solder-seam can fragments. The hearth is 54 cm x 40 cm (E-W x N-S) and composed of 23 large pebbles to small cobbles (2–7 cm) of petrified wood.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10028H (AE-DEV-41H)	This multicomponent site consists of an early 20th-century temporary/single use campsite associated with military maneuvers of DTC/C-AMA and two widely separated prehistoric lithic artifacts.	Not Evaluated	2011 Applied Earthworks, Inc.	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10029H (AE-DEV-42H)	Historic WWII refuse scatter consisting of a scatter of C-ration cans likely associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10030H (AE-DEV-43H)	Site is a large (325 feet x 275 feet [E-W x N-S]) low-density, WWII-era refuse scatter consisting of 39 artifacts (cans, batteries, milled lumber, etc.), likely associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10031H (AE-DEV-44H)	WWII temporary campsite with two foxholes, two C-ration can lids, and a boot sole likely associated with military activities at the DTC/C-AMA. The site also contains a single prehistoric unpatterned chalcedony flake tool.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10032H (AE-DEV-45H)	Historic WWII refuse scatter consisting of 12 cans and one glass bottle that is likely the remains of a temporary camp associated with military activities at DTC/C-AMA. The site also contains a single piece of chert angular shatter.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10033H (AE-DEV-46)	Site is a large (175 m x 123 m [N-S x E-W]) prehistoric mid-stage lithic resources reduction area consisting of 644 artifacts. More than 50percent of the total assemblage is composed of secondary flakes. Material used at the site is primarily chert (71 percent) and quartzite (26percent) with a variety of other minor materials in use (3percent). The site also contains a deflated hearth.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10034H (AE-DEV-47H)	Site is a small (25 feet x 11 feet [E-W x N-S]) low-density, WWII-era refuse scatter consisting of five cans, likely associated with activities at the DTC/CA-AZ (1942-44).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10035H (AE-DEV-48H)	Multicomponent site consisting of both a prehistoric component and historic WWII component. The prehistoric artifact scatter consists of one piece of chert angular shatter and 14 Lower Colorado Buffware sherds. The historic materials on site consist of refuse from a single-use campsite associated with military maneuvers at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10036 (AE-DEV-49)	Prehistoric ceramic scatter consisting of two small concentrations of Lower Colorado Buffware.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10037 (AE-DEV-50H)	Multicomponent site consisting of a historic refuse scatter (cans, glass and milled lumber) and a prehistoric scatter (seven ceramic body sherds).	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10038 (AE-DEV-51)	Site is a small, 33 m x 12 m (N-S x E-W), prehistoric artifact scatter consisting of four ceramic concentrations with a total of 50 sherds, and a scatter of lithic debitage and one milky quartz biface. The ceramic sherds appear to be the remains of a single globular jar tentatively identified as Lower Colorado Buff, a Patayan I (A.D. 700–1050) type.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10039 (AE-DEV-52)	Site is a small, 17 m x 3.6 m (E-W x N-S), prehistoric lithic scatter consisting of a concentration of chert and quartzite debitage (preponderance of secondary flakes) and one quartzite core (3.3 m x 3.0 m [N-S x E-W]), and a single outlying quartzite secondary flake.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10040H (AE-DEV-53)	Site is a small, 3 m x 2 m (N-S x E-W), deflated prehistoric hearth consisting of 144+ pebbles to small cobbles (5–12 cm) of metavolcanic, quartz, quartzite, and limestone materials.	Not Evaluated	2011 Applied Earthworks, Inc.	X	

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10041 (AE-DEV-54)	Site is a small, 25 m x 20 m (N-S x E-W), lithic resource processing area consisting of two hearths, a low-density lithic scatter that includes two chert primary flakes and two chert angular shatter, along with a single prehistoric ceramic sherd. Isolate is a single WWII-era C-ration can with lid.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10042H (AE-DEV-55H)	Multicomponent site consisting of a prehistoric lithic scatter (chert primary flake and a chert un-patterned flake tool) and a historic 1900-1950s refuse scatter and rectangular pit feature.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10043H (AE-DEV-56H)	Historic refuse scatter consisting of three vent-hole evaporated milk cans dating to 1935-1945. The date range suggests an associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10044H (AE-DEV-57H)	Historic refuse scatter consisting of nine artifacts. The artifacts are small ferrous metal cap covers likely associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10045H (AE-DEV-58H)	Historic refuse scatter representing the remains of a temporary/single-use camp area and consisting of 10 sanitary cans and can fragments and a long section of well drill casing.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10046 (AE-DEV-59)	Prehistoric artifact scatter consisting of lithics and Colorado Buffware ceramic body sherds.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10047 (AE-DEV-60)	Sparse prehistoric lithic scatter containing 39 prehistoric artifacts including primary flakes, secondary flakes, three tertiary flakes, one shatter, four assayed cobbles, one core, one modified flake and one biface.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10048H (AE-DEV-61H)	Site consists of eight prehistoric lithic artifacts and a sparse scatter of historic artifacts (three can bodies, one can lid), likely associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10049 (AE-DEV-62)	Sparse prehistoric scatter consisting of 18 lithic artifacts including primary flakes, secondary flakes, tested cobbles and one edge-modified flake.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10050H (AE-DEV-63H)	Scatter of 50 boards of milled lumber in two sizes -3.5 inches x 1.2 inches and 6.5 inches x 0.5 inches. The age of the site is undetermined, although the degree of weathering indicates approximately 40-70 years.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10051 (AE-DEV-64)	Sparse prehistoric scatter consisting of 27 lithic artifacts including primary flakes, secondary flakes, one core, and one piece of shatter.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10052 (AE-DEV-65)	Sparse prehistoric scatter consisting of 19 lithic artifacts including primary flakes, secondary flakes, one tertiary flake, two tested cobbles, one core, and one battered cobble. A single C-ration can was also observed on site.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10053 (AE-DEV-66)	Sparse scatter consisting of 16 prehistoric artifacts including primary flakes, secondary flakes, and three cores.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10054H (AE-DEV-67H)	Scatter of nine cans including three sardine cans, five sanitary-seam food cans, and one can with a metal screw-top lid. The cans are likely associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10055H (AE-DEV-68H)	Scatter of five cans including two bases and three lids from key-strip opened C-ration cans. The cans are likely associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10056H (AE-DEV-70H)	Scatter of 10 cans and can lids including one C-ration can base and four C-ration can lids. The cans are likely associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10057H (AE-DEV-71H)	Scatter of 12 cans and can lids including key-strip opened C-ration cans, four rectangular meat tins, two sanitary-seam food cans, and one P38-opened can lid. These items are likely associated with military activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10058H(AE-DEV-72H)	Scatter covers 66 feet x 33 feet (NW-SE x NE-SW) consisting of four cans, a wire spool, one C-ration can base and three milk cans dating to 1917–1929.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10059H(AE-DEV-73H)	Scatter covers 203 feet x 68 feet (NE-SW x NW-SE) consisting of eight cans, four milk cans, two C-ration can bases, and two C-ration can lids.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10060 (AE-DEV-77)	Low-density scatter containing 31 prehistoric lithic artifacts and seven ceramic sherds. The lithic artifacts include debitage items and three tools. In addition, a single WWII coffee tin was found on site.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10061H (AE-DEV-78H)	Isolated foxhole or fighting position related to military exercises associated with the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10062 (AE-DEV-80)	Sparse lithic scatter containing 15 lithic debitage artifacts and one chert biface.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10063 (AE-DEV-81)	Sparse lithic scatter containing six lithic debitage artifacts including two primary flakes, three secondary flakes, and one tertiary flake.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10064 (AE-DEV-83)	Concentration of 30 Tumco Buff pottery sherds.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10065H (AE-DEV-85H)	Historic site consisting of one crushed 1-gallon sanitary food can, one medium sanitary food can, one clear glass bottle, and one steel cap.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10066H (AE-DEV-86H)	Scatter of 32 cans and can fragments within a 15-foot diameter area.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10067H (AE-DEV-87H)	WWII-era refuse scatter consisting of 13 cans and an opening key. The site is likely associated with military maneuvers at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10068 (AE-DEV-88)	Site is a small, 24 m x 5.5 m (NW-SE x NE-SW), prehistoric ceramic scatter consisting of a centralized pot drop with 15 body sherds and an additional four sherds scattered outside the concentration.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10069H (AE-DEV-89H)	Historic can scatter consisting of three cans	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
CA-RIV-10070 (AE-DEV-90)	Site consists of one core and three pieces of lithic debitage (one secondary flake and one angular shatter).	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10071H (AE-DEV-91H)	Five excavation features and seven areas of excavation disturbance in a line that roughly parallels an abandoned east-west two-track road. It is likely that these are fighting positions created during training activities at the DTC/C-AMA.	Not Evaluated	2011 Applied Earthworks, Inc.		X
CA-RIV-10072H(AE-DEV-92)	Site is an 89 m x 28 m (E-W x N-S), prehistoric lithic scatter consisting of chert and quartzite debitage, tested cobbles, and cores.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
CA-RIV-10073 (AE-DEV-93)	Site is a small, 57 m x 7 m (NW-SE x NE-SW), low-density, prehistoric lithic scatter consisting of five pieces of lithic debitage (chert flakes and angular shatter).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019712 (AE-DEV-39H)	This 1917 USGLO survey monument is marking the quarter section boundary between Sections 7 and 8 of Township 7 South, Range 21 E. The brass cap marker is 2.5 in. diameter and mounted on a 12-inch tall x 1 1/8-inch outside diameter steel pipe.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019746 (AE-DEV-76H)	1917 USGLO quarter section monument with modern steel and wood posts.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P-33-019761 (AE-DEV-ISO-1H)	Pair of historic brown glass ABM bottles. Bottle 1 has an "Owens Illinois Glass Company" mark indicating production in 1943. Bottle 2 has an L-M symbol indicating producing at the Latchford Marble Glass Co., Los Angeles, CA (1939-1957).	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019762 (AE-DEV-ISO-2)	Quartzite tested cobble with two adjacent flake scars on one surface.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019763 (AE-DEV-ISO-3)	Two isolated prehistoric lithic artifacts; one quartzite pebble tool and one quartzite tested cobble.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019764 (AE-DEV-ISO-4)	Isolate is a single wind-blown chalcedony tertiary flake (40.32 x 24.29 x 9.9 mm [L x W x Th]).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019765 (AE-DEV-ISO-5)	Isolated prehistoric un-patterned flake tool fashioned from a chert primary flake.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019766 (AE-DEV-ISO-6)	Isolate is a pair of lithic artifacts: 1 chalcedony exhausted core and 1 chert bipolar secondary flake.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019767 (AE-DEV-ISO-7)	Isolated prehistoric chert biface fragment. The artifact appears to be a projectile point with a missing distal end.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019768 (AE-DEV-ISO-8)	Portable prehistoric milling slab measuring 26.2 x 23.5 x 9 cm [L x W x Th].	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P-33-019769 (AE-DEV-ISO-9)	Isolate is a single prehistoric quartzite primary flake (6.4 x 3.4 x 3.1 cm [L x W x Th]).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019770 (AE-DEV-ISO-10H)	Site contains of one prehistoric lithic artifact, a chert primary flake, and one historic artifact, a vent-hole evaporated milk, with "PUNCH HERE" 1935–1950s (Kimball 2005).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019771 (AE-DEV-ISO-11)	Isolated prehistoric chert core.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019772 (AE-DEV-ISO-12)	Isolated prehistoric quartzite cobble core.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019773 (AE-DEV-ISO-13)	Isolate consists of two prehistoric flakes. Artifact 1 is a quartzite primary flake and Artifact 2 is a chert tertiary flake fragment.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019774 (AE-DEV-ISO-14H)	Isolate consists of a pair of unrelated artifacts; one single prehistoric ceramic body sherd (un-typed Lower Colorado Buffware) and one base of a WWII-era C-ration can (1942–1944).	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019775 (AE-DEV-ISO-15)	Isolate is a single piece of highly weathered chert angular shatter.	Not Evaluated	2011 Applied Earthworks, Inc.	X	
P-33-019776 (AE-DEV-ISO-16)	Isolated prehistoric tested cobble with two flakes removed.	Not Evaluated	2011 Applied Earthworks, Inc.		X

**Table 5.3-4
Previously Recorded Cultural Resources within the Project Area
(Project Site and Transmission Line)**

Resource Identifier	Description	Federal/State Eligibility Status	Date/Author	Within Project Area	Within 1-Mile Radius
P-33-019777 (AE-DEV-ISO-17)	Two prehistoric groundstone artifacts; one is a milling slab and the other is a quartzite unifacial handstone.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019778 (AE-DEV-ISO-18)	Two prehistoric ceramic body sherds of un-typed Lower Colorado buffware.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019779 (AE-DEV-ISO-19)	Isolated prehistoric groundstone fragment.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019780 (AE-DEV-ISO-20)	Isolated tertiary flake of brown chert.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019781 (AE-DEV-ISO-21H)	Isolated clear glass mason jar with maker's mark "CROWN PRODUCTS CORP./2/3698/SF & LA" embossed on the base.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019782 (AE-DEV-ISO-22)	Isolated prehistoric ceramic sherd of Topock Buff.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019783 (AE-DEV-ISO-23)	Isolated tested cobble and one C-ration can base.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019784 (AE-DEV-ISO-24)	Isolated piece of mottled brown and black chert angular shatter.	Not Evaluated	2011 Applied Earthworks, Inc.		X
P-33-019785 (AE-DEV-ISO-25)	Isolated brown chert core tertiary flake.	Not Evaluated	2011 Applied Earthworks, Inc.		X

C-AMA = California-Arizona Maneuver Area
 DTC = Desert Training Center
 KV = kilovolt

SCE = Southern California Edison
 USGLO = United States Government Land Office
 WAPA = Western Area Power Administration

5.3.3.7 Archaeological Survey

The Project consists of two cultural resources survey types: archaeological areas and areas of historic architecture. The archaeological survey area includes the project site, laydown area, gen-tie and access routes, plus an additional 200 feet around the project site and laydown area, a 650-foot buffer on either side of the gen-tie line, and a 50-foot buffer on either side of the access routes. The archaeological survey consisted of an intensive field survey that covered the entire project area where ROE had been granted by the landowners. The principal survey method consisted of a systematic walk-over in parallel transect intervals no greater than 15 meters.

URS archaeologists conducted an intensive archaeological survey (Class III) of approximately 8,908 acres. The survey was conducted by teams of three to five qualified staff. Each team had a team leader who worked directly with the field director and PI throughout the field survey and site recordation activities. Each survey crew was guided by a sub-meter Global Positioning System (GPS) unit which contained previously uploaded records search shapefiles and project-specific boundary data. Garmin GPS units were also carried as backup devices. All teams were equipped with a digital camera. Each crew was assigned portions of the U.S. Geological Survey (USGS) map sections for survey.

As previously noted, the principal survey method consisted of a systematic walk-over in parallel transect intervals no greater than 15 meters across the entire horizontal extent of the portion of the project area that had the potential for direct disturbance. Areas of steep terrain (greater than a 30- to 45-degree slope) where access was not feasible due to unsafe or unstable surfaces were not surveyed. Areas situated within or atop steep terrain with the potential for cultural resources were investigated (e.g., caves, ridge tops). Per the CEC's "Rules of Practice and Procedure and Power Plant Site Regulations Revisions" (CEC 2007b), the portions of the project area that have been surveyed in the last five years were not resurveyed for this report, which BLM and CEC staff found acceptable (George Kline (BLM-Palm Springs Office) and Sarah Allred (CEC), personal communication 2011). As a result, of the 9,184 acres within the entire project area, 8,595 acres were subject to a pedestrian survey.

Overall surface visibility was good to excellent across the project area. Visibility ranged from 80-90 percent of the ground surface. Survey areas were thoroughly inspected for cultural materials to ensure adequate coverage for resource identification.

Evidence of disturbances within and surrounding the project area included numerous small mammal burrows, extensive rock collector prospecting, mining activities, off-highway vehicles (OHV) and other recreational use, utilities (transmission lines and underground gas lines), historic-period military activity, and the creation and maintenance of unpaved access roads.

Survey and Recordation Methods

The following sections discuss the survey and recordation methods that were used during the archaeological survey.

Archaeological Sites and Isolates

Upon discovery or relocation of an archaeological resource, survey teams delineated the site boundary and recorded the resource on the appropriate DPR 523 Series forms. Form information was collected using a combination of staff observations and data recording devices including sub-meter GPS and digital cameras. Each isolated find and site was given a designation that included the project acronym, initials of the team leader and a sequential number (e.g., RMS-RN-001), with isolated finds including the designator “ISO” (e.g., RMS-RN-ISO-002). Site boundaries were delineated by team members transecting the area of the find, with transects spaced no greater than three meters apart. Individual artifacts, and artifact concentrations or loci were flagged, quantified by type and material, mapped, described, and photographed. Digital photographs were taken of unique or temporally diagnostic artifacts, and representative samples of artifacts within loci were taken. All photographs were recorded onto the team’s log with relevant data including temporary site/isolated designation, date, direction, recorder, and subject.

Artifacts were classified according to definitions in field manuals provided by the BLM/CEC for this Project. Based on these field manuals, archaeological sites were defined as four or more historic or prehistoric period (non-refitting) artifacts within 30 meters of each other. Groups of three or fewer prehistoric or historic (non-refitting) artifacts not within 30 meters of each other were recorded as isolated finds.

Archaeological Linear Features

Trail segments were mapped with the sub-meter GPS by following the trail until it terminated or was no longer feasible to follow (or entered areas for which access was not authorized). Trails were measured, described in notes, and photographed. Artifacts or other features (e.g., rock cairns, trail shrines, cleared circles) observed within or adjacent the trail were noted and recorded separately. Tank tracks and other historic period linear resources (i.e., two-track roads) were recorded (George Kline, Matt Bischoff, and Sarah Allred, personal communication, 2010) under a single site number, but individually given features numbers and mapped accordingly. Tank tracks and other historic period linear resources were identified on aerial photos and traced to their full extent per agency guidance (George Kline, personal communication, 2010).

Field Data Post-Processing

Data collected in the field were transferred to, and consolidated with, electronic data files maintained at the field office on a daily basis. Data quality was checked to ensure conformance with the scope of work, agency satisfaction, and regulatory compliance. GPS data were downloaded using ArcPad 9.2 software and transmitted to Geographic Information Systems (GIS) staff for post-processing. Initial plots of data from each survey team were compiled and reviewed to determine the validity of resource boundaries with regard to established methods. Where appropriate, resource areas were combined into larger units based on the distance between artifacts and/or concentrations (i.e., if the distance between artifacts/concentrations was less than 30 meters). GIS data were organized appropriately for submission to BLM.

Site mapping methods included assigning an individual locus number to areas within sites that contain higher concentrations of artifacts. Those loci that appear to represent a single episode of lithic reduction

(i.e., same material) were interpreted as a single reduction episode, while other concentrations that appeared to represent multiple activities were interpreted according to the cultural constituents present (e.g., multiple single-reduction loci, lithic scatter concentrations). In the case of multi-component sites, historic and prehistoric components were also assigned an individual locus when possible. Fieldwork did not include artifact collection, subsurface site explorations, or artifact analysis.

Archaeological Research and Survey Results

Intensive pedestrian surveys were performed within the archaeological survey area between March 9 and May 31, 2011 under the direct supervision of individuals who meet the Secretary of Interior Standards for Archaeology (Prehistoric and Historic). In addition to basic topographic and feature data, field maps included the survey area, known access routes, and previously recorded cultural resources. Survey staff identified, recorded, and provided evaluation recommendations for archaeological resources older than 45 years (pre-1966). The identified sites were photographed with a digital camera, mapped with sub-meter GPS units, and recorded on the appropriate DPR 523 series forms. The forms were used to document the resources and their major elements, level of alteration, registry eligibility recommendations, and integrity. Additionally, URS field survey and reporting procedures used field manuals and context documents provided by the BLM and CEC to cultural resources identified within the project area. Tables 5.3-8 and 5.3-9 provide a list of all newly recorded and updated archaeological resources within the project area.

The URS team identified a total of 2,237 cultural resources within the project area (refer to Figures 5-1 through 5-3 in the Technical Report - Under Confidential Filing); 526 archaeological sites [266 prehistoric, 207 historic, and 53 multi-component (include both prehistoric and historic elements)], and 1,698 archaeological isolated finds.

Of the 526 archaeological sites within the project area, 222 are recommended as being eligible for the NRHP (Refer to Table 5-1 and 5-2 in section 5 of the Technical Report - Under Confidential Filing) because these sites have the potential under criterion (d) of the NRHP to have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4). Also applicable is the CRHR in that these sites may have yielded or are likely to yield information important to prehistory or history (Section 15064.5). The remaining 304 archaeological sites (Table 5-1 and Figure 5-1 and 5-2) and 1,698 isolates within the project area are recommended not eligible under NRHP and CRHR criteria, and the data potential is considered exhausted through the level of documentation provided in this report.

Of the 2,237 cultural resources 122 represent previously recorded resources within the project area. During the survey these previously recorded sites were updated or confirmed, except for nine, which could not be relocated. These sites include CA-RIV-650T, -772, -775, -5532, -5535, -5537, -10003, P-33-14147, and P-33-17952. The sites that could not be located appear to have been plotted incorrectly at the initial time or recordation, or to no longer exist due to disturbances and mitigation work conducted as a result of the construction of the existing pipeline and transmission lines. Section 2 of the technical report (Under Confidential Filing) provides further discussion of the record search results.

The summary archaeological site descriptions, evaluations, and tables are provided in the Cultural Resources Technical Report (Section 5 - Under Confidential Filing). The tables and summary site

descriptions are extremely large (approximately 1,500 pages) and therefore have not been duplicated here for this reason.

5.3.3.8 Architectural Research and Reconnaissance Results

On March 9, May 3-5, and May 18, 2011, historic architectural resource surveys were conducted within the project area by individuals who meet the Secretary of Interior Standards for History and Architectural History. The historic architecture survey area included the project site, laydown area, gen-tie line, access routes, plus an additional one-half mile around the project site and transmission line corridors, and an additional 50 feet on either side of access roads. Of note, for areas outside of the project site, the historic architecture survey occurred from public vantage points, since site access and ROE were not available at the time of the survey for the privately-owned properties. In areas where views of the property were obstructed (e.g., tree overgrowth, private roads), investigators utilized available information to study the property. For the most part, the survey did not consider properties set back from the edge or boundary of the parcel, and large rural properties were not identified beyond the area reasonably subject to effect by the project. Field maps used for this effort contained information regarding basic topographic and feature data, the historic period architectural survey area, known access routes, and previously recorded cultural resources. The architectural history survey involved identifying, recording, and evaluating historic-period properties built at least 45 years ago (pre-1966) within the architectural history study area. The identified properties were photographed with a digital camera and recorded on the appropriate DPR 523 series forms. The forms document the architectural history resources within the architectural history study area and the major elements, level of alteration, registry eligibility, and integrity of the resources. Table provides a list of all newly recorded and updated historic architecture resources within the project area.

**Table 5.3-5
Newly Recorded and Updated Historic Architecture Resources**

Newly Recorded/Updated Resource Name	Resource Description	Construction Date
RMS-ML-001, P-33-011110	Portion of Western Area Power Administration (WAPA)-owned Pilot Knob to Blythe 161 kilovolt (kV) Transmission Line	1951
RMS-ML-002, CA-RIV-7127/H, P33-012532	Portion of Imperial Irrigation District (IID)-owned Niland to Blythe 161 kV Transmission Line	1955
RMS-ML-003, CA-RIV-5191/, P33-5119	Portion of Bradshaw Trail	1862
RMS-ML-004	Open Pit Mines No.1 and No.2 and Access Road	Between 1959-1976
RMS-ML-005	Portion of Hodges Mine Access Road	Pre-1952
RMS-ML-006	Portion of Opal Hill Mine Access Road	Pre-1953
RMS-ML-007	Portion of State Route 78	1964
RMS-ML-008	Bradshaw Trail Borrow Pit	Between 1953-1959

**Table 5.3-5
Newly Recorded and Updated Historic Architecture Resources**

Newly Recorded/Updated Resource Name	Resource Description	Construction Date
RMS-ML-009	Portion of Hodges Drain	Between 1952-1965
RMS-ML-010	Portions of C-03 Canal	Pre-1923
RMS-ML-011	Portion of Palo Verde Drain	Pre-1949
RMS-ML-012	Portion of Estes Drain	Between 1949-1965
RMS-ML-013	Portion of Private Drain No.1	Circa 1920s

IID = Imperial Irrigation District
 KV = kilovolt
 WAPA = Western Area Power Administration

5.3.3.9 Native American Contacts and Coordination

The NAHC was contacted on February 22, 2011 to request a search of the Native American Sacred Lands File (SLF) to aid in determining the presence of Native American sacred sites within the project area. A list of Native American contacts that may have knowledge of known cultural resources or sacred sites within the project area was also requested. The NAHC initially responded on March 4, 2011, indicating their records search of the SLF identified the presence of Native American cultural resources in the project area. A revised response that provided additional information was received from the NAHC on March 15, 2011. The results of the NAHC SLF search indicated that Native American Sacred Lands were present within five map sections, two of which are within the project area and the other three are adjacent. In addition to the response letter, the NAHC also provided a Native American contact list. Each contact on the list was sent a notification of the proposed Project by mail on April 11, 2011, with a request that they respond with information regarding any known cultural resources or sacred sites within the project area. Follow-up phone calls were made and documented on April 21 and 26, and July 19, 2011.

As of July 2011, URS had received seven responses. Of those, three were written responses, and four were telephone responses. The written responses and a summary of the telephone responses are contained in Appendix 5.3A

5.3.3.10 Supplementary Record Searches and Historic Research

Research consisting of reviewing the CPHI, CHL, CRHR, and the NRHP databases was conducted to supplement the EIC and SCIC record search results. In addition, local registers, such as the County of Riverside listing, were reviewed. No resources listed in these databases are situated within the Project or a one-mile radius.

The California Department of Transportation publication titled *Statewide Bridge Inventory of Local Agency and State Agency Bridges for Riverside and Imperial County* was reviewed. None of the bridges

listed in this document that are located within a one-mile radius of the Project have been assigned a NRHP status designation indicating it is listed on the NRHP (status designation 1), eligible for NRHP listing (status designation 2), may be eligible for NRHP listing (status designation 3), or unevaluated (status designation 4).

Site-specific and general primary and secondary research was conducted at/with the Palo Verde Historical Museum, Palo Verde Public Library, Black History Museum, Fort Gaston Historical Society, Irrigation District, Imperial Irrigation District, General Patton Memorial Museum, Palm Springs Air Museum, Palm Springs Historical Society, Quartzite Museum, Pioneer Museum, BLM, University of California Riverside, University of California San Diego, University of San Diego, San Diego Public Library History Room, and numerous online resources (e.g., *Calisphere – A World of Digital Resources*, *Online Archive of California*, *California Historic Topographic Map Collection*). In addition, URS obtained historic-period aerial photographs of the project area from Environmental Data Resources, Inc. for select years between 1948 and 1975. The research provided insight into the historic contexts and themes of the area and specific information concerning the properties within the project area (e.g., date of construction, architect/builder, historic landownership). As part of this research, URS reviewed historic maps (e.g., USGS maps) and photographs, newspaper articles, general histories, journal articles, master theses, and other relevant data. Copies of historic maps and aerial images are included as part of the Confidential Appendices to the *Cultural Resource Technical Report*.

Historical Societies, Museums, and Local Agencies

As part of the research to determine the presence of cultural resources, URS contacted local historical societies, museums, and local agencies to request information regarding any cultural resources listed as being located within a one-mile radius of the proposed project site and linear facilities pursuant to any City or County ordinance recognized by any local historical or archaeological society or museum. Specifically, the following contacts were made:

- Barbara Burrow, City of Blythe, Planning Department
- Palo Verde Historical Museum and Society
- Quartzite Historical Society and Museum
- Minnie Washington, Black History Museum and Multi-Cultural Museum of Blythe
- General Patton Memorial Museum
- Historic Resources Management Programs, University of California, Riverside
- Dick Clark, Palm Springs Air Museum
- Greg Hough, Palm Springs Historical Society
- Riverside County Historical Commission
- Pioneers Museum and Cultural Center
- Leslie J. Mouriquand, Riverside County Transportation & Land Management Agency (TLMA)
- June Hamilton, Fort Gaston Historical Society

On March 10, 2011, Rebecca Chavez, Riverside County Historical Commission, responded that she would forward the request to Keith Herron, Historic Preservation Officer. No further response has been received.

On March 15, 2011, Jeri Vogelsang, Palm Springs Historical Society, responded that the society does not have material in their archive concerning the area in question, as they collect and store only that which originated in Palm Springs. Therefore, they could not say whether there are any cultural resources in the area.

On March 15, 2011, Leslie Mouriquand, Riverside County TLMA, responded that she did not have a database to consult and did not know if there were any cultural resources within the study area. She recommended that a study be completed to identify the presence of cultural resources.

On March 29, 2011, a representative of the Black History Museum called to request clarity about the type of information requested. She stated that the museum would follow-up with the members and respond if necessary. No further response has been received.

To date, no additional responses have been received. Copies of correspondence with the local historical societies, museums, and local agencies are included as part of the Confidential Appendices to the *Cultural Resource Technical Report*.

5.3.4 Environmental Analysis

This section addresses the potential impacts of the Rio Mesa SEGF on cultural resources during both construction and operation of the Project. The environmental impacts are assessed for cultural resources that have been determined by the lead (federal and state) agency as eligible under applicable laws. As discussed above in Section 5.3.2, cultural resources are evaluated for eligibility status using criteria established by both federal and state mandates. For a cultural resource to be considered eligible, it must meet one or more of these criteria of the NRHP, CRHR, or satisfy uniqueness under CEQA. If a cultural site qualifies for inclusion to the NRHP it typically also qualifies for inclusion to the CRHR.

The cultural resource investigations and reports for this Project were conducted in accordance with CEQA, and pertinent sections of the PRC and CCR, as noted in Section 5.3.2. Additionally, cultural resources investigations were conducted in compliance with “Instructions to the California Energy Commission (CEC) Staff for the Review of and Information Requirements for an Application for Certification” (CEC 1992), “Regulations Pertaining to the Rules of Practice and Procedure and Power Plant Site Certification” (CEC 2007a), “Rules of Practice and Procedure and Power Plant Site Regulations Revisions” (CEC 2007b), and the Warren-Alquist State Energy Resources Conservation and Development Act, PRC Section 25000 et seq. Furthermore, because this Project involves lands managed by BLM, compliance with Section 106 of NHPA and NEPA was required, with specific guidelines for cultural resources provided in the BLM *8100 Manual* and through consultation with the BLM Palm Springs Field Office Archaeologist (George Kline). The intensive field survey was carried out under URS’ statewide permit CA-06-11 and Fieldwork Authorization 66.66 11-12 issued in March 2011 (effective through March 2012).

In summary, the URS team identified a total of 2,237 cultural resources within the project; 526 archaeological sites [266 prehistoric, 207 historic, 53 multi-component (including both prehistoric and historic elements), and 13 historic-period architectural resources]; and 1,698 archaeological isolated finds (refer to Section 5 of the Technical Report - Under Confidential Filing).

URS archaeologists recommend 222 archaeological sites eligible for listing in the NRHP and CRHR. The remaining 2,002 archaeological resources (304 sites, and 1,698 isolates) are recommended not eligible under any criteria of the NRHP or CRHR.

Of the 2,237 cultural resources 122 represent previously recorded resources within the project area. During the survey these previously recorded sites were updated or confirmed, except for nine, which could not be relocated. The sites that could not be located appear to no longer exist, either due to disturbances or mitigation work conducted as a result of the construction of the existing pipeline or transmission line in the project area. Section 5 of the Technical Report (Under Confidential Filing) provides further discussion the inventory results.

The historic period architectural survey identified 13 historic-period built environment properties present in the project area. Three of the 13 properties had previously been recorded and evaluated as part of previous cultural resource investigations. These properties include the WAPA-owned Pilot Knob to Blythe 161 kV Transmission Line, the IID-owned Niland to Blythe 161 kV Transmission Line, and Bradshaw Trail. The WAPA-owned Pilot Knob to Blythe 161 kV Transmission Line was previously recorded by Christy Dolan of KEA Environmental, Inc. in 2000 and updated by both Andrew Pigniolo of Tierra Environmental Services in 2000 and William T. Eckhardt of ICF Jones & Stokes in 2008. The original site record by Dolan stated that the WAPA-owned Pilot Knob to Blythe 161 kV Transmission Line was eligible for listing on the NRHP. However, the 2000 update by Pigniolo found that the portion of the WAPA-owned Pilot Knob to Blythe 161 kV Transmission Line that had been evaluated was ineligible for NRHP listing. The 2008 update by Eckhardt did not contain an eligibility determination. However, in 2009, the *Cultural Resources Report* for SCE's Devers-Palo Verde No. 2 Project (SCE 2009) stated that the WAPA-owned Pilot Knob to Blythe 161 kV Transmission Line was not eligible for listing on the NRHP. A detailed significance evaluation was not available as part of that report.

The IID-owned Niland to Blythe 161 kV Transmission Line was recorded by Christy Dolan of KEA Environmental, Inc. in 2000 and was updated by Stacy Wilson, Heather Kwiatkowski, and William Eckhardt of Mooney, Jones & Stokes in 2005 and by William T. Eckhardt of ICF Jones & Stokes in 2008. Although the resource was recorded, a significance evaluation was not included. In 2009, the *Cultural Resources Report* for SCE's Devers-Palo Verde No. 2 Project (SCE 2009) stated that the IID-owned Niland to Blythe 161 kV Transmission Line was not eligible for listing on the NRHP. However, a detailed significance evaluation was not available. For both of the previously-recorded transmission lines, it was determined that the segments of either property present in the project area are not eligible for listing in the NRHP, CRHR or for consideration as historical resources for purposes of CEQA. An update form was drafted for both properties to reflect this evaluation.

Our determination is that the segment of Bradshaw Trail present in the project area does not appear eligible for listing in the NRHP, CRHR, or for consideration as a historical resource for the purposes of CEQA. An updated form for Bradshaw Trail was drafted to reflect this evaluation. Although the portion of the historic-period trail present in the project area has never been previously recorded, a segment west

of the project area was recorded in 1993 by Brad Strum of LSA Associates, Inc. The evaluation conducted by Strum did not provide a detailed significance evaluation, but Strum stated that he believed the feeling and association for the trail was retained. The following year, an Archeological Site Record was drafted as part of the Western Area Power Administration Blythe-Knob 161 kV Transmission Line project (WCRM Report No. 94AZ004). The brief record stated that “Bradshaw Trail may represent a significant archeological site given its relationship to early transportation; however, the portion of the site within the project area does not contribute to the qualities that make the site eligible for NRHP status.” Additional updates for Bradshaw Trail were drafted in 2001 by Apple and Cleland and in 2004 by Apple and Shaver. Neither of these forms included an evaluation of the property. The remaining ten historic-period properties have not been previously evaluated or recorded.

5.3.4.1 Assessment of Effects

Based on information received to date, avoidance of impacts to some cultural resources recommended as eligible for NRHP and CRHR appears to be feasible. Such impacts could be avoided during the final design phases of the Project, largely because certain topography has been identified as being unsuitable for construction of the Project and, therefore, the sites will be avoided and will not be subject to direct effects. Although determinations of eligibility have yet to be made, it is anticipated that an agreement document along with treatment plans will be prepared and will resolve adverse effects to NRHP eligible resources. In addition, mitigation measures for significant resources under CEQA are provided that will reduce impacts to less-than-significant levels. Refer to the Cultural Resource Technical report, Section 5 for the summary of cultural resources recommended eligible for CRHR and NRHP within the project area. With approved mitigation measures impacts to cultural resources will be mitigated to less than significant levels.

5.3.5 Cumulative Effects

The cumulative analysis for impacts to cultural resources was performed for a local and regional geographic area. At the local level, the geographic area considered for cumulative impacts on cultural resources is generally defined as the area on either side of I-10 between Desert Center and Blythe in eastern Riverside County, hereinafter referred to as the I-10 corridor. The regional geographic area considered for cumulative impacts is the Southern California Desert Region, which includes the 25 million-acre California Desert Conservation Area (CDCA). Past activities involving ground disturbance and potential impacts to cultural resources include development of the I-10 corridor, the Devers-Palo Verde Transmission Line, and Kaiser Eagle Mountain Mine. Reasonably foreseeable projects include the Genesis Solar Energy Project (GSEP), the Palen Solar Power Project (PSPP), the Blythe Solar Power Project (BSPP), the Rice Solar Energy Project (RSEP), and the Desert Sunlight Solar Farm (DSSF).

A cumulative impact to cultural resources refers to a proposed project’s incremental effects in combination with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project to cultural resources listed or eligible for inclusion in the NRHP and the CRHR. Cumulative impacts may result in a substantial adverse change in the significance of a resource, potentially jeopardizing its eligibility for listing on the NRHP and CRHR.

According to the Final EIS and CDCA Plan Amendment for DSSF, past construction of projects with large-scale ground disturbance within the I-10 Corridor, including Chuckwalla Valley and Ironwood State Prisons, I-10, the Devers-Palo Verde Transmission Line, the Blythe-Eagle Mountain Transmission Line and a natural gas line (both of which are parallel to I-10), and Kaiser Eagle Mountain Mine have disturbed at least 7,898 acres and likely destroyed an estimated 2,081 cultural resources. Cultural resources in the Southern California Desert Region have primarily been affected by construction of large-scale military installations and military training operations, although substantial adverse changes to NRHP-eligible resources have been avoided.

According to cultural resources surveys for DSSF, GSEP, PSPP, and BSPP summarized in the Final EIS and CDCA Plan Amendment for DSSF, the I-10 Corridor has an average site density of 0.017 cultural resources per acre. The CEC Decision prepared for BSPP identified potentially adverse effects to 800 sites within the I-10 corridor and approximately 17,000 sites within the Southern California Desert Region as a result of past activities and reasonably foreseeable projects including BSPP, GSEP, and PSPP. DSSF is anticipated to result in significant, unmitigable impacts to 58 archaeological sites. According to the Final EIS for DSSF, cultural resources surveys covering approximately 20 percent of Riverside and San Bernardino counties have identified and documented more than 20,000 cultural resources. The Devers-Palo Verde No. 2 transmission line including the new CRS, also has the potential to adversely affect cultural resources.

The Project will avoid impacts to some cultural resources recommended eligible for NRHP and CRHR and it is anticipated that an agreement document along with treatment plans will be prepared and will resolve adverse effects to NRHP eligible resources. In addition, mitigation measures for significant resources under CEQA are provided that will reduce impacts to less-than-significant levels. With approved mitigation measures, Project impacts to cultural resources will be mitigated to less than significant levels. Therefore, the incremental effects of the Rio Mesa SEGF to cultural resources, when considered together with the effects of past, present, and reasonably foreseeable future projects, will not contribute to cumulatively significant impacts. Avoidance of some resources recommended eligible for the NRHP and CRHR, preparation of an agreement document along with treatment plans, and mitigation measures under CEQA will ensure that the Project does not contribute to substantial adverse impacts to cultural resources in the I-10 Corridor and Southern California Desert Region. Project cultural resources impacts are considered less than cumulatively considerable.

5.3.6 Mitigation Measures

Through implementation of the Conditions proposed below, all applicable LORS relating to cultural resources will be met. These measures include standard Conditions which include; (1) designation of a cultural resources specialist (CRS), cultural resources monitor (CRM), and cultural resources technical specialists (project prehistoric archaeologist [PPA] and project historic archaeologist [PHA]); (2) project documents provided to CRS, CRM, PPA, and PHA; (3) cultural resources monitoring and mitigation plan; (4) worker environmental awareness and training program; (5) procedures for halting construction in the event that there is an inadvertent archaeological discovery and treatment measures; and (6) adherence to a BLM programmatic agreement if one is deemed necessary. It is anticipated that additional mitigation measures may be required once the CEC and BLM have made NRHP and CRHR eligibility

determinations for cultural resources identified within the project area and which are subject to direct effect.

5.3.6.1 Cul-1 - 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 CRS, one or more alternate CRSs, if alternates are needed, and the two 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. The CRS shall have a primarily administrative and coordination role for the Project. The Project owner shall ensure that the CRS implements the cultural resources conditions, provides for data recovery of known historical resources, and shall ensure that the CRS makes recommendations regarding the eligibility for CRHR listing 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 CRMs, if needed, to assist in mitigation, monitoring, and curation activities. No ground disturbance shall occur prior to Cultural Project Manager (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, noncompliance on this or other CEC 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 CFR Part 61. In addition, the CRS shall have the qualifications listed below.

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.
3. At least three years of experience in a decision-making capacity on cultural resources projects, with at least one of those years in California, and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

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 by the CEC and BLM for mitigation measures of cultural resources determined to be NRHP and CRHR eligible. The PPA’s training and background must meet the U.S. Secretary of the Interior’s Professional Qualifications Standards for prehistoric archaeology, as published in Title 36 CFR Part 61, and the resume of the PPA must demonstrate familiarity with similar artifacts and environmental modifications (deliberate and incidental) to those associated with the prehistoric and

protohistoric use of the Palo Verde Mesa. The PPA must meet OSHA standards as a “Competent Person” in trench safety.

The Project owner shall ensure that the CRS obtains the services of a qualified historical archaeologist to conduct the necessary research specified by the CEC and BLM for mitigation measures of cultural resources determined to be NRHP and CRHR eligible. 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 CFR Part 61.

The resumes of the CRS, alternate CRS, PPA, and PHA 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. The Project owner may name and hire the CRS, alternate CRS, PPA, and PHA prior to certification.

5.3.6.2 Cul-2 - Project Documents For Cultural Resources Personnel

Prior to the start of ground disturbance, the Project owner shall provide the CRS, the PPA, and the PHA with copies of the AFC, data responses (if applicable), confidential cultural resources documents, the Staff Assessment (SA), and any other relevant supplemental filings for the Project. The Project owner shall also provide the CRS, the PPA, the PHA, and the CPM with maps and drawings showing the footprints of the power plants, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and shall be at an appropriate scale (i.e., 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. Release of cultural resources information will be pending BLM approval.

If construction of the Project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS, the PPA, the PHA, and the 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 the CPM of any changes to the scheduling of the construction phases.

5.3.6.3 Cul-3 - 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 contributions of the PPA, and the PHA. 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 PPA, and the PHA, 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.

5.3.6.4 Cul-4 - Worker Environmental Awareness Program

Prior to, and for the duration of the ground disturbance activities, 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, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training can 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. A display of 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. 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.
6. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and contact their supervisor and the CRS or CRM, and that redirection of work will be determined by the construction supervisor and the CRS.
7. Presentation of an informational brochure that identifies reporting procedures in the event of a discovery.
8. Provision of an acknowledgement form, signed by each worker indicating that they have received the training.
9. Provision of a sticker that shall be placed on hard hats indicating that environmental training has been completed.
10. Instruction that no ground disturbance activities shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

5.3.6.5 Cul-5 - Authority To Halt Construction; Treatment of Discoveries

The Project owner shall grant authority to halt ground disturbance to the CRS, alternate CRS, PPA, PHA, and the CRMs in the event of a discovery subject to the terms of this section. 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 in a manner sufficient to ensure that the resource is protected from further impacts.

Monitoring and daily reporting, as provided in other Conditions, shall continue elsewhere during the ground-disturbing activities. The halting or redirection of ground disturbance shall remain in effect until the CRS has observed the discovery, and the conditions outlined below have occurred.

1. The CRS will notify the Project owner, 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. The notification will include a description of the discovery (or changes in character or attributes), the action taken (e.g., work stoppage, redirection), a recommendation of NRHP and 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 will notify all Native American groups that expressed a desire to be notified in the event of such a discovery.
3. The CRS will complete 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 will confer, and the CPM will concur regarding the recommended eligibility of the discovery, and will approve the CRS' proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation will be completed.

5.3.6.6 Cul-6 - Compliance with BLM Programmatic Agreement or Memorandum of Agreement

If BLM prepares a Programmatic Agreement or Memorandum of Agreement for the Project, with associated implementation and monitoring programs, and the programs are found to conflict with or duplicate the Conditions, the BLM provisions shall take precedence.

5.3.7 Involved Agencies and Agency Contacts

Table 5.3-6 lists the agencies involved in cultural resources management for the Project and a contact person at each agency.

**Table 5.3-6
Agency Contacts**

Agency	Contact	Permit/Issue
Bureau of Land Management Palm Springs Field Office	George Kline BLM Palm Springs-Field Office 1201 Bird Center Drive Palm Springs, California 92262 (760) 833-7105 email: gkline@blm.gov	<ul style="list-style-type: none"> • Federal agency NHPA Section 106 compliance • BLM fieldwork authorization • Coordination of archaeological work on behalf of the BLM • Government-to-government Native American consultation
Bureau of Land Management Moreno Valley Field Office	Tiffany Thomas, Rolla Queen BLM California Desert District Office 22835 Calle San Juan De Los Lagos Moreno Valley, CA 92553 (951) 697-5200 email: tathomas@blm.gov, rqueen@blm.gov	
California Energy Commission	Sarah M. Allred 1516 Ninth Street Sacramento, CA 95814 (916)654-3936 email: SAllred@energy.state.ca.us	State agency, CEQA and Warren-Alquist Act 1974 (as amended) compliance
California Historical Resources Information System, Eastern Information Center	University of California Riverside Riverside, CA 92521-0418 (951) 827-7369 email: matthew.hall@ucr.edu	Cultural resources data repository for Riverside County
California Historical Resources Information System, South Coastal Information Center Matthew C. Hall, Coordinator California Historic Resources Information System, Eastern Information Center c/o Department of Anthropology	David M. Caterino, Coordinator California Historic Resources Information System South Coastal Information Center San Diego State University 4283 El Cajon Blvd., Suite 250 San Diego, CA 92105 (619) 594-5682 email: scis@mail.sdsu.edu	Cultural resources data repository for Imperial County
Riverside County Archaeologist and Cultural Liaison County of Riverside Planning Department (TMLA)	Leslie Mouriquand 38686 El Cerrito Road Palm Desert, CA 92211 (760)393-3411 email: LMOURIQU@rctlma.org	Compliance with County of Riverside Cultural Resource requirements, CEQA compliance
Riverside County Sheriff's Department Coroner Sergeant/ Archaeologist/ Anthropologist	Deborah Gray 47-225 Oasis Street Indio, CA 92201 (760) 863-8311 email: DWGray@riversidesherriff.org	Identification of human remains. Coordinates with NAHC regarding prehistoric Native American human remains.

**Table 5.3-6
Agency Contacts**

Agency	Contact	Permit/Issue
Native American Heritage Commission	Dave Singleton, Associate Governmental Program Analyst 951 Capitol Mall, Room 364 Sacramento, CA 95814 (916) 653-6251 email:ds_nahc@pacbell.net	Native American traditional cultural properties, sacred land files repository, general coordination point of contact regarding Native American cultural issues.
Office of Historic Preservation	Milford Wayne Donaldson, State Historic Preservation Officer 1725 23rd Street, Suite 100 Sacramento, CA 95816 (916) 653-6624 email:mwdonaldson@parks.ca.gov	Federal agency for National Historic Preservation Act Section 106 compliance

5.3.8 Permits Required and Permit Schedule

Prior to initiation of fieldwork at the Project, performed as part of this cultural resources assessment, the Project’s Cultural Resources Principal Investigator, Rachael Nixon, filed a Fieldwork Authorization Request under state-wide BLM Cultural Use Permit CA-09-18. The request identified the areas that would be surveyed, supervisory personnel, and survey dates. A fieldwork authorization was obtained on March 29, 2011. As shown in Table 5.3-7, all cultural resources work was conducted under the BLM permits listed below. URS’ fieldwork authorization permit is in effect until March 2012.

**Table 5.3-7
Applicable Permits**

Responsible Agency	Permit/Approval	Schedule
Bureau of Land Management	State-wide Permit CA-09-18 issued to URS Corporation	April 15, 2009
Bureau of Land Management	Field Authorization to Conduct Specific Cultural Resources Work FA-66.66 11-12	March 1, 2011 to March 1, 2012

5.3.8.1 Key Personnel Qualifications

All cultural resources fieldwork performed for this analysis was carried out under the direct supervision of archaeologists who meet the Secretary of Interior's *Standards and Guidelines for Archaeology and Historic Preservation*, and was consistent with the procedures for compliance with NEPA, Section 106 of the NHPA, and CEQA §15064.5.

The following key cultural resources personnel conducted and/or supervised the field survey activities; trained field staff to ensure accuracy and quality of data collection; managed post accuracy and quality of post data during post processing; and supported the preparation of the technical report completed as part of this AFC.

- Rachael Nixon, MA, RPA (URS Principal Investigator)
- Arleen Garcia-Herbst, PhD, RPA (URS Prehistoric/Historical Archaeologist)
- Jay Rehor, MA, RPA (URS Geoarchaeologist)
- Jeremy Hollins, MA (URS Architectural Historian)
- Mark Neal, MA, RPA (URS Prehistoric/Historical Archaeologist)
- Kimberly Maeyama, PhD (URS Prehistoric Archaeologist)
- Sarah Mattiussi, BA (URS Prehistoric Archaeologist)
- Dustin Kay, BA (URS Prehistoric/Historical Archaeologist)

5.3.9 References

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Adequacy Issue: Adequate _____ Inadequate _____
 Technical Area: **Cultural Resources**
 Project Manager: _____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date _____
 Technical Staff: _____
 Technical Senior: _____

Project: _____
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SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	5.3.3 Affected Environment, pp. 5.3-13 to 5.3-105; 5.3.4 Environmental Analysis, pp. 5.3-105 to 5.3-107; 5.3.4.1 Assessment of Effects, p. 107; 5.3.5 Cumulative Effects, pp. 5.3-107 to 108; 5.3.6 Mitigation Measures, pp. 5.3-108 to 5.3-112.		
Appendix B (g) (2) (A)	A summary of the ethnology, prehistory, and history of the region with emphasis on the area within no more than a 5-mile radius of the project location.	5.3.3.5 Summary of the Ethnology, Prehistory, and History of the Region, pp. 5.3-45 to 5.3-46.		

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Appendix B (g) (2) (B)	<p>The results of a literature search to identify cultural resources within an area not less than a 1-mile radius around the project site and not less than one-quarter (0.25) mile on each side of the linear facilities. Identify any cultural resources listed pursuant to ordinance by a city or county, or recognized by any local historical or archaeological society or museum. Literature searches to identify the above cultural resources must be completed by, or under the direction of, individuals who meet the Secretary of the Interior's Professional Standards for the technical area addressed.</p> <p>Copies of California Department of Parks and Recreation (DPR) 523 forms (Title 14 CCR §4853) shall be provided for all cultural resources (ethnographic, architectural, historical, and archaeological) identified in the literature search as being 45 years or older or of exceptional importance as defined in the National Register Bulletin Guidelines, (36CFR60.4(g)). A copy of the USGS 7.5' quadrangle map of the literature search area delineating the areas of all past surveys and noting the California Historical Resources Information System (CHRIS) identifying number shall be provided. Copies also shall be provided of all technical reports whose survey coverage is wholly or partly within .25 mile of the area surveyed for the project under Section (g)(2)(C), or which report on any archaeological excavations or architectural surveys within the literature search area.</p>	<p>5.3.3.6 Cultural Resources Inventory (Archival Research, pp. 5.3-47 to 5.3-98);</p> <p>5.3.3.10 Supplementary Record Searches and Historic Research, pp. 5.3-103 to 5.3-105;</p> <p>5.3.8.1 Key Personnel Qualifications, pp. 5-.3-114 to 115; resumes are provided in Appendix A of the Cultural Resources Technical Report (Under Confidential Filing).</p> <p>Cultural Resources Technical Report (Under Confidential Filing) refer to Appendix D, Historic Correspondence; Appendix E, Confidential Figures; Appendix F, Record Search Results.</p>		

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<p>Appendix B (g) (2) (C)</p>	<p>The results of new surveys or surveys less than 5 years old shall be provided if survey records of the area potentially affected by the project are more than five (5) years old. Surveys to identify new cultural resources must be completed by (or under the direction of) individuals who meet the Secretary of the Interior’s Professional Standards for the technical area addressed.</p> <p>New pedestrian archaeological surveys shall be conducted inclusive of the project site and project linear facility routes, extending to no less than 200’ around the project site, substations and staging areas, and to no less than 50’ to either side of the right-of-way of project linear facility routes. New historic architecture field surveys in rural areas shall be conducted inclusive of the project site and the project linear facility routes, extending no less than .5 mile out from the proposed plant site and from the routes of all above-ground linear facilities. New historic architecture field surveys in urban and suburban areas shall be conducted inclusive of the project site, extending no less than one parcel’s distance from all proposed plant site boundaries. New historic architecture field reconnaissance (“windshield survey”) in urban and suburban areas shall be conducted along the routes of all linear facilities to identify, inventory, and characterize structures and districts that appear to be older than 45 years or that are exceptionally significant, whatever their age.</p> <p>A technical report of the results of the new surveys, conforming to the Archaeological Resource Management Report format (CA Office of Historic Preservation Feb 1990), which is incorporated by reference, shall be separately provided and submitted (under confidential cover if archaeological site locations are included).</p>	<p>5.3.3.6 Cultural Resources Inventory (Archival Research, pp. 5.3-47 to 5.3-98);</p> <p>5.3.3.7 Archaeological Survey, pp. 5.3-99 to 5.3-102; Cultural Resources Technical Report (Under Confidential Filing);</p> <p>5.3.3.8 Architectural Research and Reconnaissance Results, pp. 5.3-102 to 5.3-103; Cultural Resources Technical Report (Under Confidential Filing);</p> <p>5.3.8.1 Key Personnel Qualifications, pp. 5-.3-114 to 115; resumes are provided in Appendix A of the Cultural Resources Technical Report (Under Confidential Filing);</p> <p>Cultural Resources Technical Report for the Rio Mesa Electric Generating Facility, Riverside County, California (Under Confidential Filing).</p>		

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Appendix B (g) (2) (C) cont.	Information included in the technical report shall also be provided in the Application for Certification, except that confidential information (archaeological sites or areas of religious significance) shall be submitted under a request for confidentiality pursuant to Title 20, California Code of Regulations, § 2501 et seq. At a minimum, the technical report shall include the following:	See following sections.		
Appendix B (g) (2) (C) (i)	The summary from Appendix B (g)(2)(A) and the literature search results from Appendix B (g)(2)(B);	5.3.3.5 Summary of the Ethnology, Prehistory, and History of the Region, pp. 5.3-45 to 5.3-46; 5.3.3.6 Cultural Resources Inventory (Archival Research, pp. 5.3-47 to 5.3-98); 5.3.3.10 Supplementary Record Searches and Historic Research, pp. 5.3-103 to 5.3-105; Cultural Resources Technical Report (Under Confidential Filing) refer to Appendix D, Historic Correspondence; Appendix E, Confidential Figures; Appendix F, Record Search Results.		

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SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (2) (C) (ii)	The survey procedures and methodology used to identify cultural resources and a discussion of the cultural resources identified by the survey;	5.3.3.7 Archaeological Survey, pp. 5.3-99 to 5.3-102; Cultural Resources Technical Report (Under Confidential Filing); 5.3.3.8 Architectural Research and Reconnaissance Results, pp. 5.3-102 to 5.3-103; Cultural Resources Technical Report (Under Confidential Filing);		
Appendix B (g) (2) (C) (iii)	Copies of all new and updated DPR 523(A) forms. If a cultural resource may be impacted by the project, also include the appropriate DPR 523 detail form for each such resource;	Cultural Resources Technical Report (Under Confidential Filing) refer to Appendix G, Newly Recorded and Updated Cultural Resources.		
Appendix B (g) (2) (C) (iv)	A map at a scale of 1:24,000 U.S. Geological Survey quadrangle depicting the locations of all previously known and newly identified cultural resources compiled through the research required by Appendix B (g)(2)(B) and Appendix B (g)(2)(C) (ii); and	Cultural Resources Technical Report (Under Confidential Filing) refer to refer to Appendix E, Confidential Figures.		
Appendix B (g) (2) (C) (v)	The names and qualifications of the cultural resources specialists who contributed to and were responsible for literature searches, surveys, and preparation of the technical report.	5.3.8.1 Key Personnel Qualifications, pp. 5.3-114 to 115; resumes are provided in Appendix A of the Cultural Resources Technical Report (Under Confidential Filing).		

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Appendix B (g) (2) (D)	Provide a copy of your request to the Native American Heritage Commission (NAHC) for information on Native American sacred sites and lists of Native Americans interested in the project vicinity, and copies of any correspondence received from the NAHC. Notify the Native Americans on the NAHC list about the project, including a project description and map. Provide a copy of all correspondence sent to Native American individuals and groups listed by the NAHC and copies of all responses. Provide a written summary of any oral responses.	Cultural Resources Technical Report (Under Confidential Filing); refer to Appendix B, Native American Correspondence); 5.3.3.9 Native American Contacts and Coordination pp. 5.3-103 and Appendix 5.A of the AFC.		
Appendix B (g) (2) (E)	Include in the discussion of proposed mitigation measures required by subdivision (g)(1):	See following sections.		
Appendix B (g) (2) (E) (i)	A discussion of measures proposed to mitigate project impacts to known cultural resources;	5.3.6 Mitigation Measures, 5.3.6.1 Cul-1 – Cultural Resources Personnel, pp. 5.3-109 to 5.3-110; 5.3.6.2 Cul-2 – Project Documents for Cultural Resources Personnel, p. 5.3-110; 5.3.6.3 Cul-3 through Cu- 5 – Cultural Resources Monitoring and Mitigation, pp. 5.3-110 to 5.3-111; 5.3.6.6 Cul-6 Compliance with BLM PA or MOU (if BLM creates) pp. 5.3-112.		

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SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (2) (E) (ii)	A set of contingency measures proposed to mitigate potential impacts to previously unknown cultural resources and any unanticipated impacts to known cultural resources; and	5.3.6 Mitigation Measures, 5.3.6.1 Cul-1 – Cultural Resources Personnel, pp. 5.3-109 to 5.3-110; 5.3.6.4 Cul-4 – Worker Environmental Awareness Program, p. 5.3-111; 5.3.6.5 Cul-5 – Authority to Halt Construction; Treatment of Discoveries, p. 5.3-112. Cultural Resources Technical Report – Section 7 (Under Confidential Filing).		
Appendix B (g) (2) (E) (iii)	Educational programs to enhance employee awareness during construction and operation to protect cultural resources.	5.3.6 Mitigation Measures, 5.3.6.4 Cul-4 – Worker Environmental Awareness Program, p. 5.3-111. Cultural Resources Technical Report – Section 7 (Under Confidential Filing).		
Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	Table 5.3-1 Laws, Ordinances, Regulations and Standards (LORS), pp. 5.3-3 to 5.3-5. Cultural Resources Technical Report – Section 7 (Under Confidential Filing).		

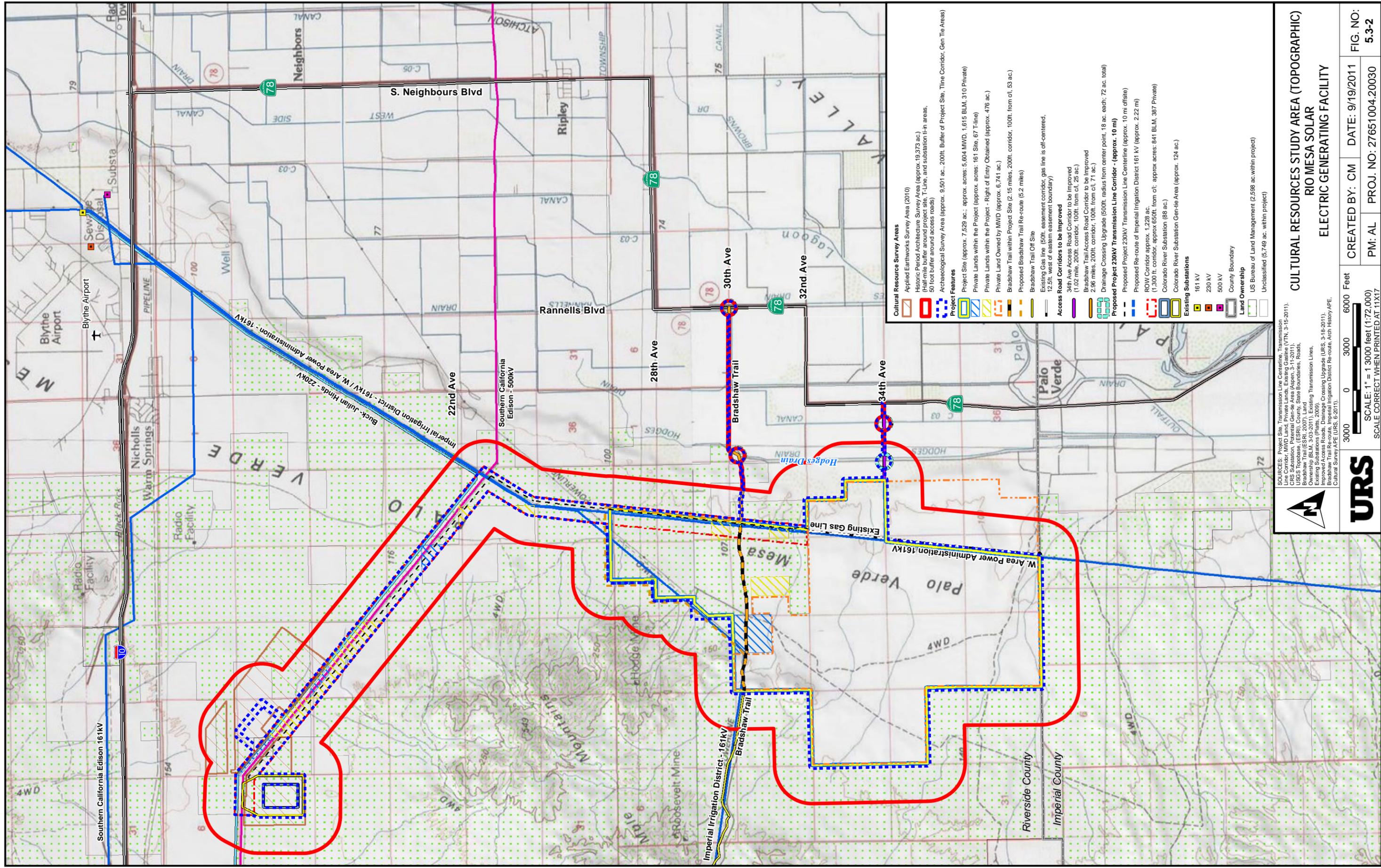
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SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	Table 5.3-7 Applicable Permits, p. 5.3-114.		
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	Table 5.3-6 Agency Contacts/Issues, pp. 5.3-113 to 5.3-114.		
Appendix B (i) (3)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	5.3.8 Permits Required and Permit Schedule, pp. 5.3-114.		



Cultural Resource Survey Areas

- Applied Earthworks Survey Area (2010)
- Historic Period Architecture Survey Area (approx. 19,373 ac.) (Half-mile buffer around project site, T-Line, and substation (i-n areas, 50 foot buffer around access roads))
- Archaeological Survey Area (approx. 9,501 ac., 200ft. Buffer of Project Site, Time Corridor, Gen Tie Areas)

Project Features

- Project Site (approx. 7,529 ac., approx. acres: 5,604 MWD, 1,615 BLM, 310 Private)
- Private Lands within the Project (approx. acres: 161 Site, 67 T-line)
- Private Lands within the Project - Right of Entry Obtained (approx. 476 ac.)
- Private Land Owned by MWD (approx. 6,741 ac.)
- Bradshaw Trail within Project Site (2.15 miles, 200ft. corridor, 100ft. from c/l, 53 ac.)
- Proposed Bradshaw Trail Re-route (5.2 miles)
- Bradshaw Trail Off Site
- Existing Gas line (50ft. easement corridor, gas line is off-centered, 12.5ft. west of eastern easement boundary)

Access Road Corridors to be Improved

- 34th Ave Access Road Corridor to be Improved (1.02 mile, 200ft. corridor, 100ft. from c/l, 25 ac.)
- Bradshaw Trail Access Road Corridor to be Improved (2.96 miles, 200ft. corridor, 100ft. from c/l, 71 ac.)
- Drainage Crossing Upgrade (500ft. radius from center point, 18 ac. each; 72 ac. total)

Proposed Project 230kV Transmission Line Corridor - (approx. 10 mi)

- Proposed Project 230kV Transmission Line Centerline (approx. 10 mi offsite)
- Proposed Re-route of Imperial Irrigation District 161 kV (approx. 2.22 mi)
- ROW Corridor approx. 1,228 ac.
- (1,300 ft. corridor, approx 650ft. from c/l; approx acres: 841 BLM, 387 Private)
- Colorado River Substation (88 ac.)
- Colorado River Substation Gen-Tie Area (approx. 124 ac.)

Existing Substations

- 161 kV
- 230 kV
- 500 kV

Land Ownership

- County Boundary
- US Bureau of Land Management (2,598 ac. within project)
- Unclassified (6,749 ac. within project)

SOURCES: Project Site, Transmission Line Centerline, Transmission Line Corridor, MWD Land, Private Lands, Existing Gasline (VTN, 3-16-2011), CRS Substation, Potential Gen-Tie Area (Aspen, 3-11-2011), USGS Topobase (ESRI), County, State Boundaries, Roads, Ownership (BLM, 3-09-2011), Existing Transmission Lines, Existing Substations (Platts, 2009), Improved Access Roads, Drainage Crossing Upgrade (URS, 3-18-2011), Bradshaw Trail Re-route, Imperial Irrigation District Re-route, Arch History APE, Cultural Survey APE (URS, 6-2011).

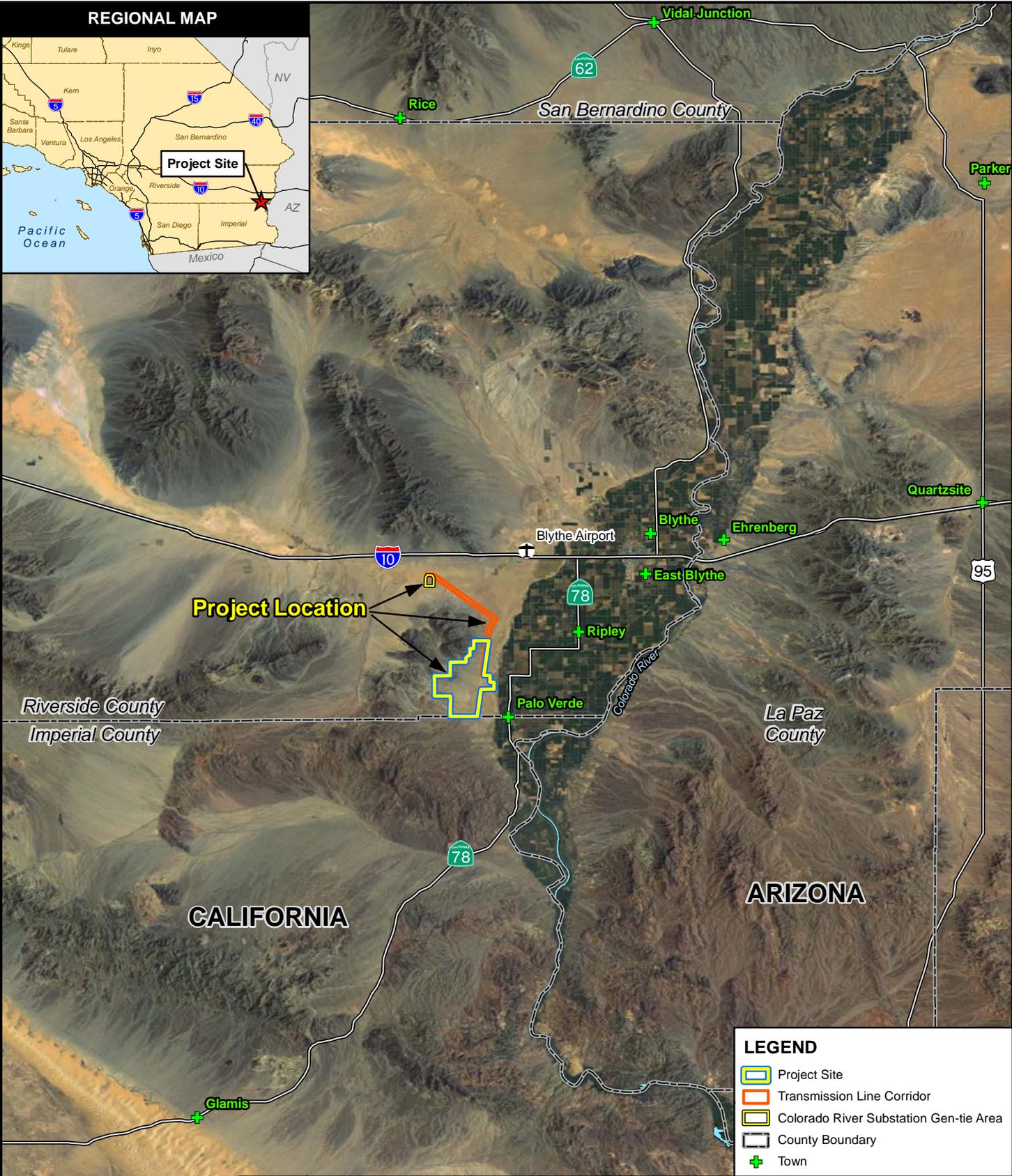


URS

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 SCALE: 1" = 1 3000 feet (1:72,000)
 SCALE CORRECT WHEN PRINTED AT 11X17

CULTURAL RESOURCES STUDY AREA (TOPOGRAPHIC)
RIO MESA SOLAR
ELECTRIC GENERATING FACILITY

CREATED BY: CM DATE: 9/19/2011 FIG. NO:
 PM: AL PROJ. NO: 27651004.20030 5.3-2



REGIONAL MAP



LEGEND

- Project Site
- Transmission Line Corridor
- Colorado River Substation Gen-tie Area
- County Boundary
- Town



SOURCES: Project Site, Transmission line Corridor (VTN, 3-15-2011), Gen-tie Area, (Aspen, 3-11-2011) Boundaries, Cities, Rivers, (ESRI, 2010) Imagery (NAIP, 2009).

**REGIONAL AND VICINITY MAP
RIO MESA SOLAR ELECTRIC GENERATING FACILITY
RIVERSIDE COUNTY, CALIFORNIA**



5 0 5 10 Miles
SCALE: 1" = 10 miles (1:633,360)
SCALE CORRECT WHEN PRINTED AT 8.5X11

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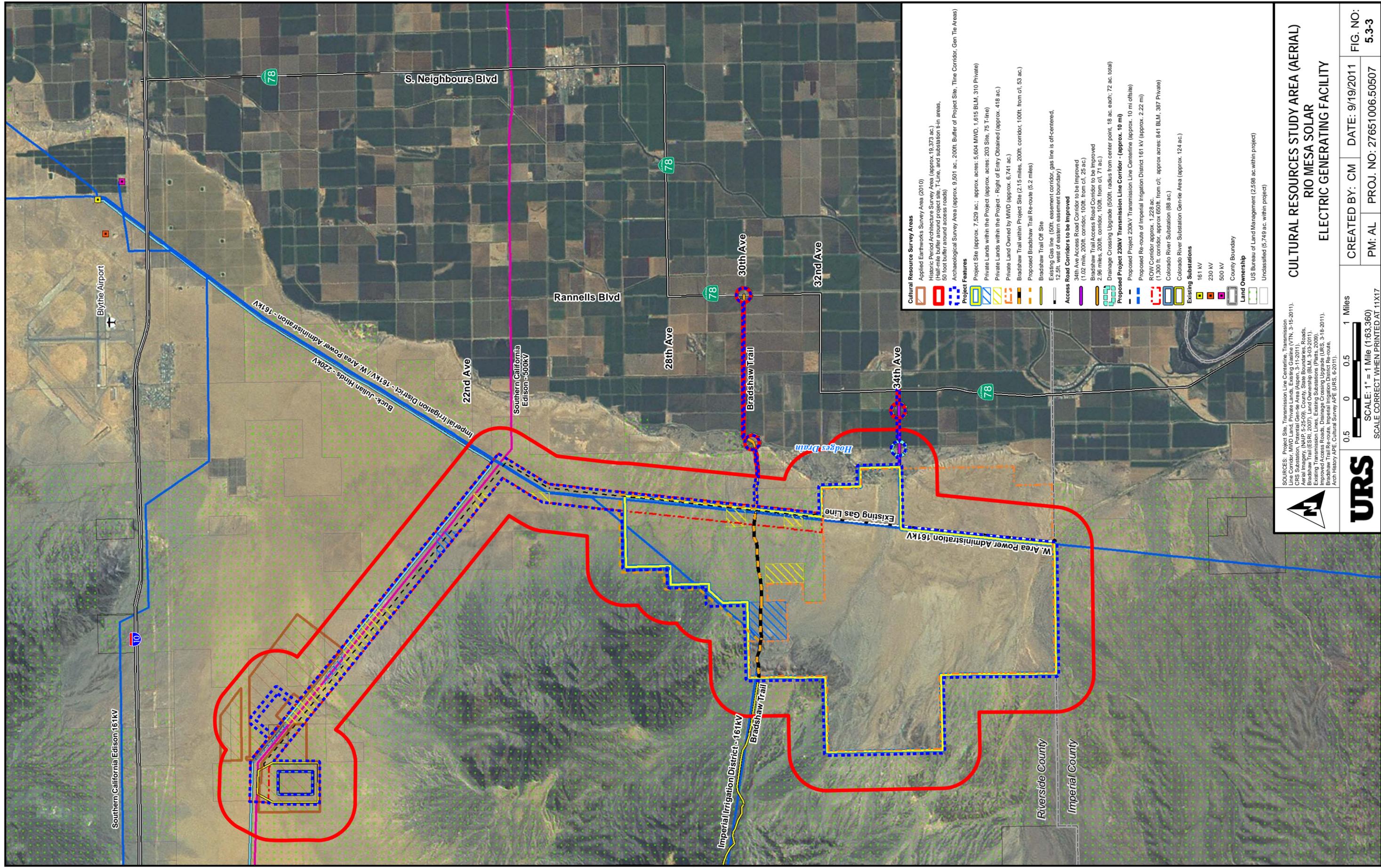
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5.3-1



Cultural Resource Survey Areas

- Applied Earthworks Survey Area (2010)
- Historic Period Architecture Survey Area (approx. 19,373 ac.) (Half-mile buffer around project site, T-Line, and substation in-in areas, 50 foot buffer around access roads)
- Archaeological Survey Area (approx. 9,501 ac., 200ft. Buffer of Project Site, T-Line Corridor, Gen Tie Areas)

Project Features

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Drainage Crossing Upgrade (500ft. radius from center point, 18 ac. each; 72 ac. total)

- Proposed Project 230KV Transmission Line Centerline (approx. 10 mi offset)
- Proposed Re-route of Imperial Irrigation District 161 kV (approx. 2.22 mi)
- ROW Corridor, approx. 1,228 ac.
- 1,300 ft. corridor, approx 650ft. from c/l, approx acres: 841 BLM, 387 Private)
- Colorado River Substation (88 ac.)
- Colorado River Substation Gen-Tie Area (approx. 124 ac.)

Existing Substations

- 161 kV
- 230 kV
- 500 kV

Land Ownership

- County Boundary
- US Bureau of Land Management (2,598 ac. within project)
- Unclassified (5,749 ac. within project)

SOURCES: Project Site, Transmission Line Centerline, Transmission Line Corridor, MWD Land, Private Lands, Existing Gasline (VTN, 3-15-2011), Aerial Imagery, (NAP, 5-25-09), County, State Boundaries, Roads, Bradshaw Trail (ESRI, 2007), Land Ownership (BLM, 3-03-2011), Existing Transmission Lines, Existing Substations (Platts, 2009), Improved Access Roads, Drainage Crossing Upgrade (URS, 3-18-2011), Bradshaw Trail re-route, regional irrigation district, Brad Re-route, Arch History A/E, Cultural Survey A/E (URS, 9-2011).



0.5 0 0.5 1 Miles
 SCALE: 1" = 1 Mile (1:63,360)
 SCALE CORRECT WHEN PRINTED AT 11X17

CULTURAL RESOURCES STUDY AREA (AERIAL)
RIO MESA SOLAR
ELECTRIC GENERATING FACILITY

CREATED BY: CM DATE: 9/19/2011 FIG. NO:
 PM: AL PROJ. NO: 27651006.50507 5.3-3