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## DOCKET

**09-AFC-6**

DATE JAN 08 2010

RECD. JAN 08 2010

January 8, 2010

California Energy Commission  
Docket Unit  
1516 Ninth Street  
Sacramento, CA 95814-5512

Subject: **CULTURAL RESOURCES CLASS III SURVEY DRAFT REPORT  
FOR THE PROPOSED BLYTHE SOLAR POWER PROJECT  
DOCKET NO. (09-AFC-6)**

Enclosed for filing with the California Energy Commission is the original copy of the **CULTURAL RESOURCES CLASS III SURVEY DRAFT REPORT FOR THE PROPOSED BLYTHE SOLAR POWER PROJECT**, for the Blythe Solar Power Project (09-AFC-6).

Sincerely,

A handwritten signature in cursive script that reads "Ashley Y. Garner".

Ashley Y. Garner

**CULTURAL RESOURCES CLASS III SURVEY DRAFT REPORT FOR THE  
PROPOSED BLYTHE SOLAR POWER PROJECT  
RIVERSIDE COUNTY, CALIFORNIA  
CALIFORNIA**

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September 2009

USGS Quadrangles: McCoy Peak, McCoy Wash, Roosevelt Mine 7.5"

Keywords: Archaeological Survey, Blythe, Palo Verde Mesa, Palo Verde Valley, Desert Training Center/California-Arizona Maneuvers Area, Riverside County, Bureau of Land Management, California Energy Commission



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*(Confidential attachments bound separately)*

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## EXECUTIVE SUMMARY

Solar Millennium, LLC and Chevron Energy Solutions (Applicants) propose to construct a solar thermal energy generating facility called the Blythe Solar Power Project (BSPP or Project), west of the town of Blythe, in eastern Riverside County. As currently planned, the Project will be a concentrated electrical generating facility composed of four solar parabolic-trough generating stations with a combined electrical output of approximately 1,000 megawatts (MW) nominal power. The proposed Project will be built primarily on public lands managed by the Bureau of Land Management (BLM), and is undergoing joint review by the BLM and the California Energy Commission (CEC) in association with the Applicants' submission of an Application for Certification (AFC).

As specified in the Memorandum of Understanding (MOU) between the BLM and CEC concerning solar thermal power plants (BLM 2007), the two agencies are conducting a joint review of the Project satisfying the requirements of both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). To meet applicable regulatory requirements, ED&A/AECOM (AECOM) completed a Class III cultural resources survey and a historic architectural resources survey of the entire Project as originally proposed with appropriate buffers as required by the CEC. The cultural resources survey was conducted under BLM Cultural Use Permit CA-06-20, and a BLM Fieldwork Authorization dated February 6, 2009.

This report presents the inventory and assessment of the cultural resources identified at the BSPP, along with the results of all attendant research and contact programs. The results of the historic architectural resources survey and reconnaissance are presented separately in Attachment 6. Additionally, to meet CEC siting requirements, local historical societies, the Native American Heritage Commission, and local Native American tribal representatives were contacted for input. A summary of the results of the ongoing contact programs are presented in Chapter 3, and a detailed contact communication log and copies of correspondence are provided in Attachment 2.

Prior to field investigations, on February 11, 2009, a comprehensive records search for the Project was performed by the staff of the California Historical Resources Information System Eastern Information Center (EIC), housed at the University of California, Riverside. The records and literature search indicated that 26 previous investigations had been conducted within the Project Records Search Area which encompassed the Project right-of-way, as originally requested from the BLM, and a one-mile radius around the boundaries of the right-of-way. These previous investigations consist of 23 survey-level investigations, one heritage resources program, one monitoring report, and one regional overview. Of these, nine were conducted within portions of the Project as originally proposed (BLM 1989; Cowan and Wallof 1977; King et al. 1973; McDonald and Schaefer 1998; McDougall et al. 2006; Mitchell 1989; Padon et al. 1990; Underwood et al. 1986; Wilson 1984).

The records search also indicated that 71 cultural resources had been recorded previously within the Project Records Search Area. Of these, four are located, at least in part, within the Project. These include a lithic scatter, a trail segment, and two large lithic quarries. Sixty-seven cultural

resources are located outside of the Project but within the Project Record Search Area. These include an intaglio, rock features, multi-component sites, trail segments, rock alignments, cleared areas, lithic scatters and quarries, lithic and ceramic scatters, ceramic scatters, temporary camps, historical debris scatters, historical tent platforms, can scatters, a historical road bed, and various isolated artifacts.

To meet state and federal requirements, Project cultural resources specialists conducted a new Class III cultural resources survey of the BSPP. As defined in Section 8110 of the *BLM Manual*, a Class III survey is a “professionally conducted, thorough pedestrian survey of an entire target area” intended to “provide managers and cultural resource specialists with a complete record of cultural properties locatable from surface and exposed profile indications” (BLM 2004:19). Beginning on March 30, 2009 and concluding on June 26, 2009, a Class III cultural resources survey was undertaken for the Project. The Project Cultural Resources Survey Area (CRSA) was approximately 7,850 acres, and included the Project plant site disturbance area with a 200-foot buffer on all sides, and two linear features with 50-foot buffers on each side of the proposed alignments, per CEC requirements. The linear features surveyed as part of this investigation have since been abandoned due to changes in the location of a planned electrical substation. The cultural resources found along those lines are presented here, although they are not included in the AFC section submitted to the CEC, as they are no longer part of the proposed BSPP. When the transmission route is finalized, additional studies will be performed and the information provided to involved agencies and other stakeholders.

The pedestrian survey of the CRSA inventoried a total of 228 archaeological sites of which 194 are historic, 31 are prehistoric, and 3 contain both historical and prehistoric materials. Four of the prehistoric sites had been recorded previously. The survey also identified 1,214 new isolated finds. Due to Project design changes subsequent to the cultural resources survey, 29 of the archaeological sites and 65 of the isolates are no longer within the Project disturbance area. Ten additional sites are located within the 200-foot buffer around the current Project disturbance area.

Sites and isolated finds consist of prehistoric and historical artifacts and features. Most of the sites and isolates are historical in age, and consist predominantly of metal cans, with smaller quantities of glass bottles and jars, milled lumber, broken ceramics, and sundry metal items. Historical features include survey markers, rock features, prospecting pits, stone and wooden structures, as well as cleared areas, fortified positions, can and trash scatters, aircraft parts, smoke land mines, and tank tracks associated with the use of the Project vicinity during World War II as part of the Desert Training Center/California-Arizona Maneuvers Area. Prehistoric cultural materials include flaked stone tools and debitage, groundstone items, tested cobbles, ceramic sherds, cairns, and thermal features.

Assessments of the archaeological sites based on surface materials and conditions indicate that 47 of the sites located within the current Project disturbance area, are possibly significant and eligible for inclusion on the CRHR under either Criteria 1 or 4 and are unevaluated for the NRHP. Only those sites and isolates within the Project plant site disturbance area, as currently planned, are evaluated. Table ES-1 summarizes the identified archaeological resources and their status.

**Table ES-1. Summary of Archaeological Resources Potentially Affected by the BSPP**

	<b>Total</b>	<b>Possibly Eligible for CRHR Unevaluated for NRHP</b>	<b>Not Eligible</b>	<b>Not Evaluated</b>
<b>Prehistoric Sites</b>	31	23	1	7
<b>Historic Sites</b>	194	22	141	31
<b>Multi-component Sites</b>	3	2	0	1
<b>Isolated Finds</b>	1,214	0	1,149	65

Avoidance of archaeological sites is always the preferred treatment option. If possibly significant and eligible sites cannot be avoided through project redesign, further investigations would be required to determine the significance of the identified resources under Section 106 of the National Historic Preservation Act (NHPA). Any destructive subsurface testing should commence only after the completion of the consultation and certification processes, and attendant Project design changes, in order to avoid unnecessary impacts to archaeological resources.





# CHAPTER 1

## INTRODUCTION

### PROJECT DESCRIPTION

Solar Millennium LLC and Chevron Energy Solutions (Applicants) are proposing to develop the Blythe Solar Power Project (BSPP or Project), a large solar thermal power generating facility west of the town of Blythe, in eastern Riverside County, California (Figure 1 and Plate 1). The BSPP will use a parabolic-trough solar thermal technology to concentrate the sun's energy on linear receivers located at the center point of each of four parabolic solar subarrays. The heat collected in the subarrays will be channeled to create steam which, in turn, will drive a turbine that generates electricity.

The BSPP will be built primarily on public lands managed by the Bureau of Land Management (BLM), and will produce more than 50 megawatts (MW) upon completion – an estimated 1,000 MW nominal in total. As such, the Project is required to undergo review by both the BLM and the California Energy Commission (CEC). The two agencies have agreed to conduct combined reviews of large solar thermal power projects, as stipulated in a Memorandum of Agreement (MOA) executed in 2007. AECOM has been retained to conduct cultural resources studies, including archaeological and architectural surveys, for the Project to satisfy state and federal regulations. This report is intended to support compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) as part of the joint review process.

Prior to field investigations, a records search was undertaken at the California Historical Resources Information System Eastern Information Center (EIC), housed at the University of California, Riverside. The Project Records Search Area included the Project right-of-way originally requested from the BLM, and a one-mile buffer around that right-of-way. Within the Project Records Search Area, the EIC staff identified 71 previously recorded sites and 26 previous investigations. Of those, four sites and nine previous studies fall within a portion of the Project as originally proposed.

From March 30 to June 26, 2009, AECOM cultural resources specialists conducted a Class III archaeological survey for the Project. As defined in Section 8110 of the *BLM Manual*, a Class III survey is a “professionally conducted, thorough pedestrian survey of an entire target area” intended to “provide managers and cultural resource specialists with a complete record of cultural properties locatable from surface and exposed profile indications” (BLM 2004:19). For the Project, the “target area” was defined as the approximately 7,850-acre Project Cultural Resources Survey Area (CRSA), which included the roughly 7,030-acre Project plant site disturbance area with a 200-foot buffer on all sides, and linear features with 50-foot buffers to each side of the proposed alignments, as mandated by the CEC (Figure 2). The CRSA includes portions of the McCoy Peak, McCoy Wash, and Roosevelt Mine 7.5” USGS quadrangles. Specifically, the CRSA is located in all or part of Township 6S and Range 21E, Sections 1, 2, 3,

4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 23, 24, 26, and 35; and Township 6S and Range 22E, Sections 6, 7, and 18; and Township 7S and Range 21E, Sections 3 and 4.

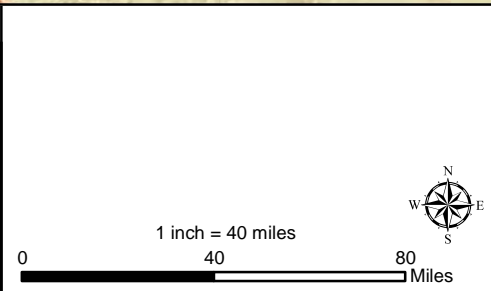
After the completion of the cultural resources survey, the preliminary transmission line route provided by the Applicants was abandoned. The cultural resources found along the abandoned alignment are included in this report, although they are not part of the AFC filing with the CEC as they are no longer part of the proposed Project. At present, the route of the transmission line is under discussion. When a new route is chosen for the transmission line, the needed cultural resources investigation will be conducted and the results provided to the regulatory agencies and other stakeholders.

The intensive Class III pedestrian survey of the CRSA inventoried a total of 228 archaeological sites of which 194 are historic, 31 are prehistoric, and 3 contain both historical and prehistoric materials. Four of the prehistoric sites had been recorded previously. The survey also identified 1,214 new isolated finds. Due to Project design changes subsequent to the cultural resources survey, 29 of the archaeological sites and 65 of the isolates are no longer within the Project disturbance area. Ten additional sites are located within the 200-foot buffer around the current Project disturbance area.



**Plate 1. Overview photograph of the BSPP with the Maria Mountains in the background.**





**Class III Cultural Resources  
Report for the  
Blythe Solar Power Project**

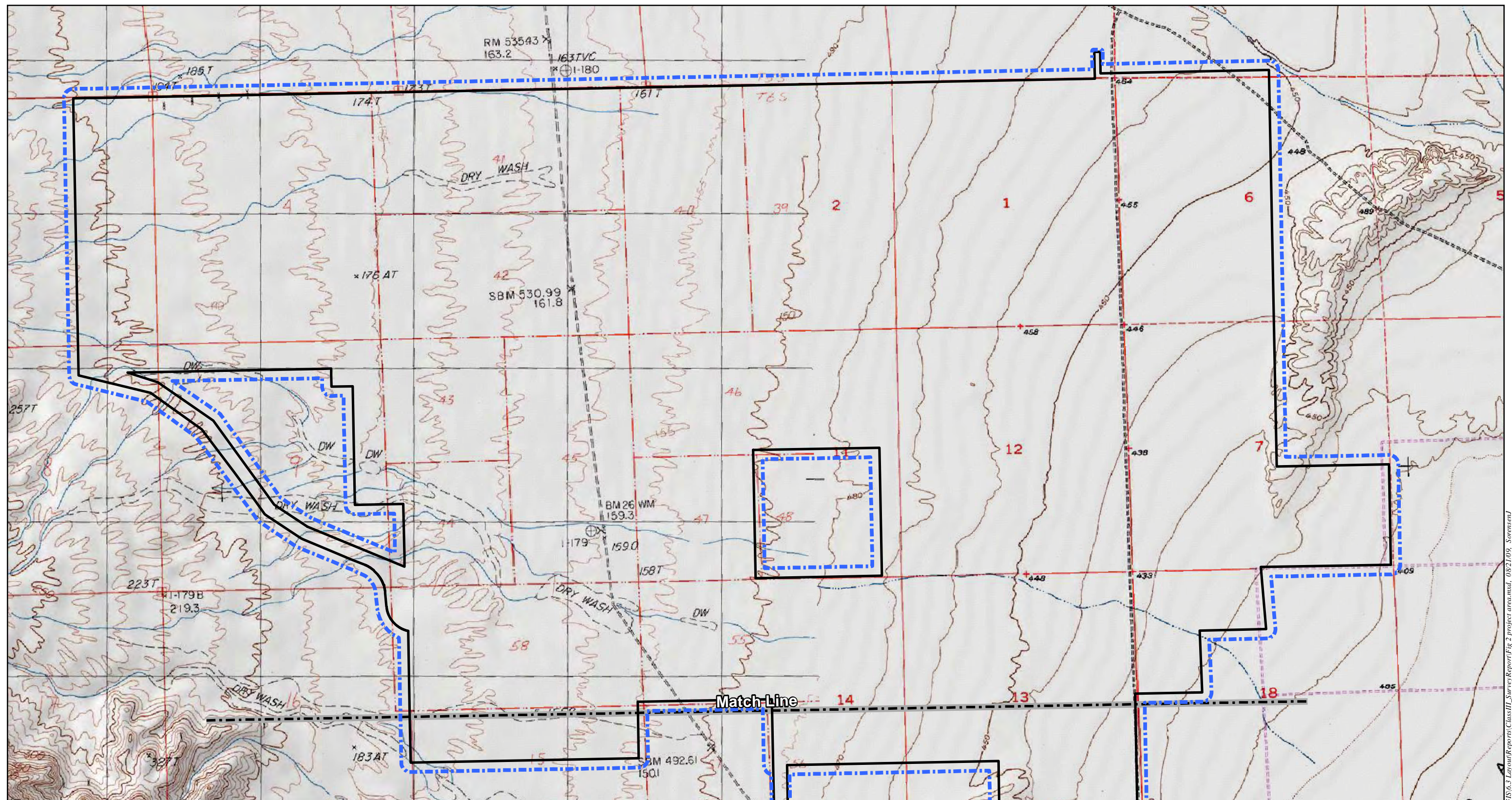
**Figure 1  
Regional Setting  
of the Project Area**

Source: ESRI; AECOM 2009;

 <b>Solar Millennium</b>
 <b>AECOM</b>
Date: August 2009

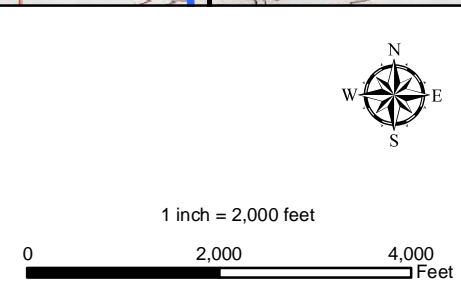






- Legend**
- Archaeological Survey Area
  - Facility Footprint

Source: NAIP, 2005; USGS; AECOM 2009



**Class III Cultural Resources  
Report for the  
Blythe Solar Power Project**

**Figure 2a  
Project Area**

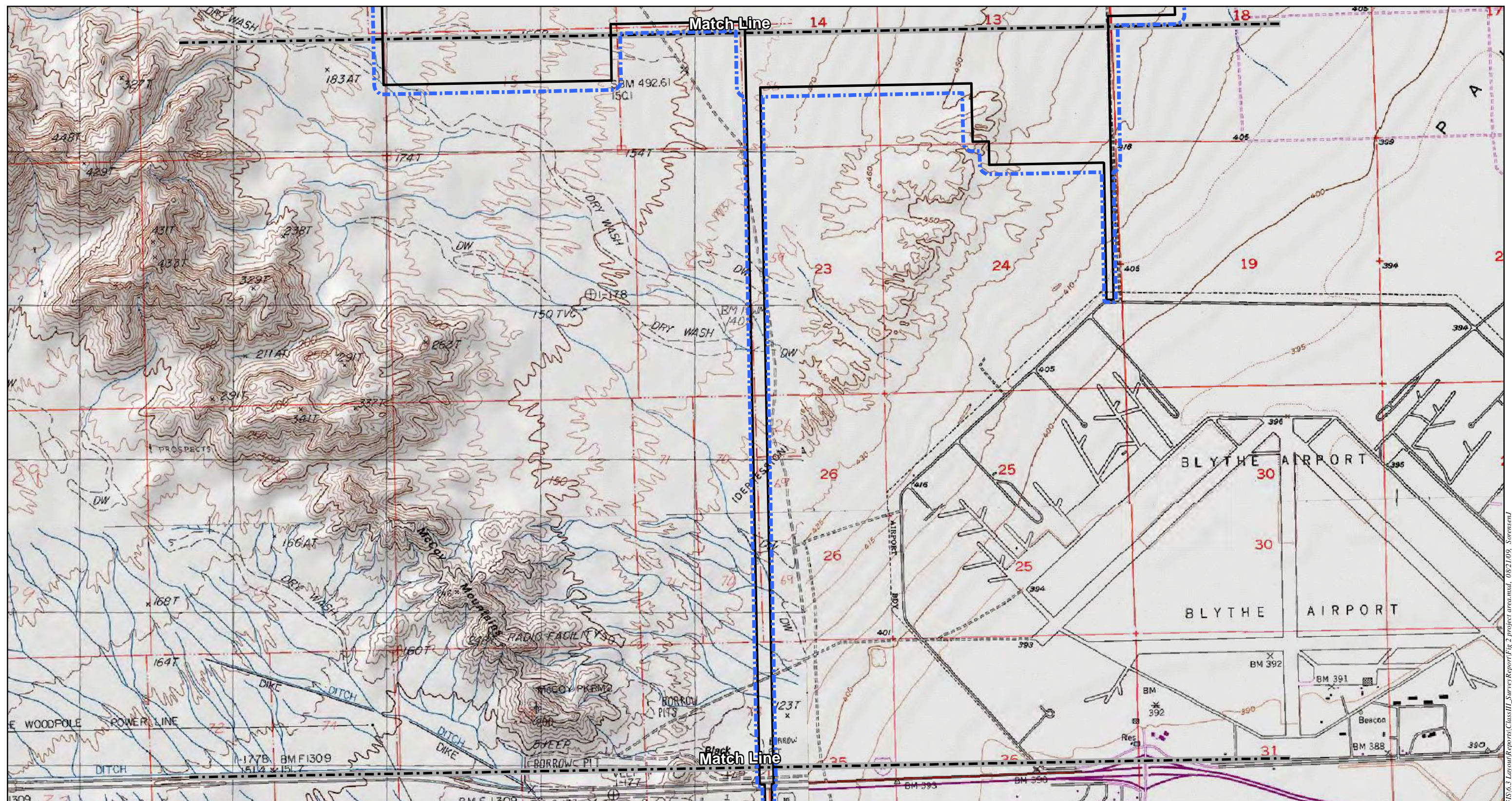


Date: August 2009



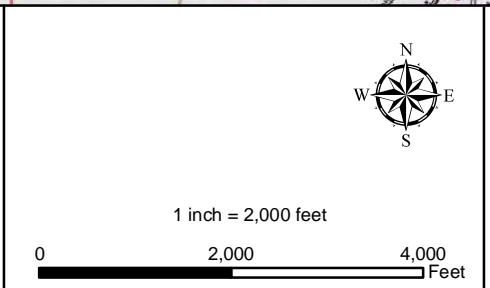






- Legend**
- Archaeological Survey Area
  - Facility Footprint

Source: NAIP, 2005; USGS; AECOM 2009



**Class III Cultural Resources  
Report for the  
Blythe Solar Power Project**

**Figure 2b  
Project Area**



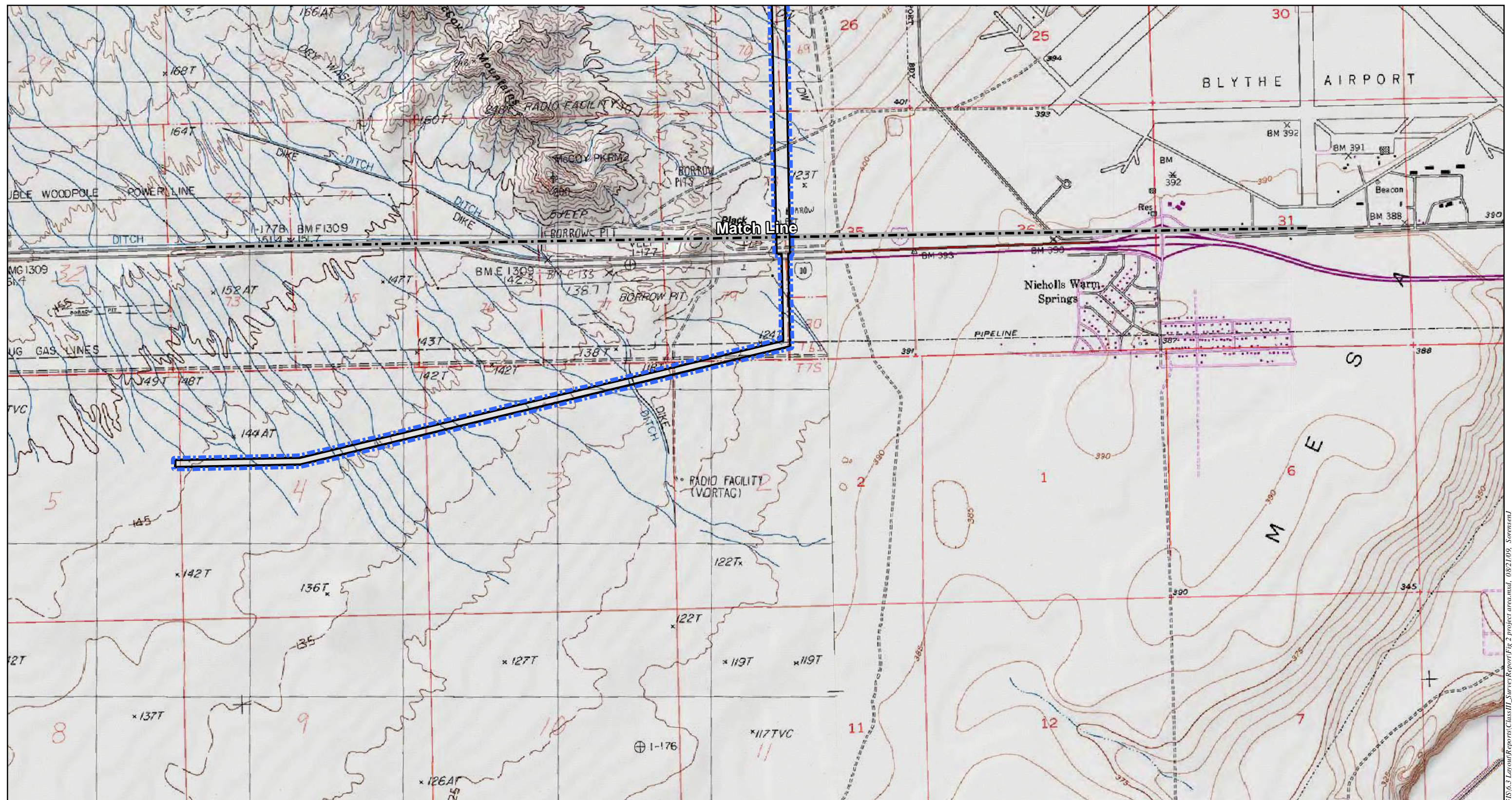
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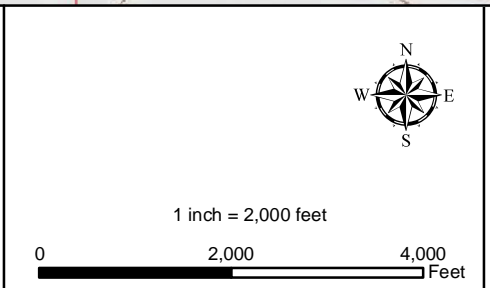






- Legend**
- Archaeological Survey Area
  - Facility Footprint

Source: NAIP, 2005; USGS; AECOM 2009



**Class III Cultural Resources  
Report for the  
Blythe Solar Power Project**

**Figure 2c  
Project Area**

**Solar  
Millennium**

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**AECOM**

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Date: August 2009

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## REGULATORY SETTING

Cultural resources are assessed for eligibility for inclusion in the California Register of Historical Resources (CRHR) and recommendations are provided to the BLM regarding eligibility for inclusion on the National Register of Historical Places (NRHP). Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. State and federal laws use different terms for cultural resources. California state law discusses cultural resources as “historical resources,” whereas Federal law uses the terms “historic properties” or “historic resources.” In all instances where the terms “resource” or “resources” are used, they are intended to convey the sense of both state and federal law.

For listing in the CRHR a historical resource must be significant at the local, state or national level under one or more of the following four numbered criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. It is associated with the lives of persons important to local, California or national history;
3. It embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of a master or possesses high artistic values;
4. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California or the nation.

For listing in the NRHP, a historic property must be significant at the local, state or national level under one or more of the following four lettered criteria:

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

All resources or properties nominated for listing in either the CRHR or NRHP must retain integrity, which is the authenticity of a historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as

historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling and association. It must also be judged with reference to the particular criteria under which a resource is proposed for nomination.

Assessments of Project impacts are based on the level of direct and indirect physical changes to a significant resource. A significant impact would occur if the Project:

- alters a resource or its setting in a manner that affects the qualities that make it significant. Direct impacts to archaeological resources include grading, and for built resources include removal of key elements (e.g., roof), or demolition;
- indirectly alters the setting, access to, or other elements of the resource in a manner that negatively affects the significance of the resource. Examples of indirect impacts include increased erosion at archaeological sites or visual intrusion of buildings that are left vacant; or
- disturbs any human remains, including those located outside of formal cemeteries.

## LORS

Numerous laws, ordinances, regulations, and standards (LORS), on federal, state, and local levels, seek to protect and govern the management of cultural resources. The BSPP will comply with applicable LORS throughout planning, construction, and operation. Applicable LORS are summarized in Table 1, and briefly discussed below.

**Table 1. LORS Applicable to Cultural Resources**

Laws	Applicability
<b>Federal</b>	
Antiquities Act of 1906, Title 16 United States Code, Sections 431-433	Federal legislation for protection of cultural resources on federal land
National Historic Preservation Act (NHPA), Title 16 United States Code Section 470 et seq.	Establishes national policy of historic preservation; requires that Federal agencies consider significant cultural resources prior to undertakings.
Archaeological Resources Protection Act of 1979, Title 16 United States Code Sections 470aa-470mm	Provides protection for archaeological resources on public lands and Indian lands
Executive Order 11593 of May 13, 1971, 36 Federal Register (FR) 8921	Provides for protection and enhancement of the cultural environment
Secretary of Interior's Standards for Archaeology and Historic Preservation 48 FR 44716-42	Establishes guidelines for technical reports and standards for evaluation for State Historic Preservation Office

<b>Laws</b>	<b>Applicability</b>
Federal Land Policy Management Act of 1976 Sections 1710 (a)(8) and 1740	Establishes that public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ...and archeological values.
Native American Graves Protection and Repatriation Act, Title 25, United States Code Sections 3001-3013	This law provides for ownership of Native American graves and grave goods on federal lands..
American Indian Religious Freedom Act, Title 42 United States Code Section 1996	Provides protection of Native American religious practices
<b>State</b>	
California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2	Requires public agencies to evaluate impacts to cultural resources; provides guidance for evaluating and mitigating impacts.
CEQA Guidelines, California Code of Regulations Title 14 Sections 15064.5, 10564.7, 105126.4(b), Appendix G Section V	Addresses reburial options for Native American remains and provides for treatment of archaeological discoveries. Encourages agencies to develop thresholds of significance to determine the significance of environmental effects Outlines mitigation measures related to impacts on historical resources. Environmental checklist for identifying potential disturbances to cultural resources
Public Resources Code Sections 5024.1, 5097.98, 5097.99, 5097.991, and 21084.1	Establishes the California Register of Historical Resources Discusses the procedures that need to be followed upon the discovery of Native American human remains. 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 Provides a definition of historical resources, and states that projects that cause a substantial adverse change in the significance of an historical resource are projects that may have a significant effect on the environment
Assembly Bill 2641	Modifies the process that private land owners follow after discovering Native American human remains (set forth in California Public Resources Code 5097.98).
Health and Safety Code Sections 7050.5, and 8010-8011	Establishes procedures for notification in the event of the discovery of human remains. Requires construction to be halted and the County Coroner to be contacted if human remains are encountered. Makes it a misdemeanor to disturb or remove human remains found outside a cemetery.
<b>Local</b>	
Riverside County General Plan, Chapter 5 (Multipurpose Open Space [OS] Element), Policies OS 19.2-19.4	Provides that the County will promote the preservation of cultural resources and promote Native American consultation

<b>Laws</b>	<b>Applicability</b>
Riverside County General Plan, Chapter 5 (Multipurpose Open Space [OS] Element), Policies OS 19.5-19.7	Provides historic structure evaluation and enforcement of the Historic Building Code during development projects
Riverside County General Plan, Exhibit A, CEQA Findings of Fact and Statement of Overriding Considerations, Section 4.7, Mitigation Monitoring Program, Measures 4.7.1A, 4.7.1B, and 4.7.1C	Outlines mitigation measures for cultural resources monitoring programs

### ***Federal LORS***

Antiquities Act of 1906, Title 16 United States Code Sections 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.

National Historic Preservation Act, Title 16 United States Code Section 470 et seq. The National Historic Preservation Act (NHPA) sets in place a program for the preservation of historic properties. 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 NRHP). It also gives the Advisory Council on Historic Preservation and State Historic Preservation Offices (SHPO) an opportunity to consult. Federal agencies issuing permits for the BSPP, including the BLM, would be required to comply with NHPA requirements.

Archaeological Resources Protection Act of 1979, Title 16 United States Code Section 470aa-470mm. This Act provides protection of archaeological resources from vandalism and unauthorized collecting on federal land.

Executive Order 11593 of May 13, 1971, 36 Federal Register (FR) 8921. This Executive Order focuses on the protection and enhancement of the cultural environment. It outlines responsibilities of the federal agencies and Secretary of the Interior with regard to cultural resources.

Archeology and Historic Preservation: Secretary of Interior’s Standards and Guidelines 48 FR 44716-42. This document establishes standards and guidelines regarding professional qualification requirements for archaeological and historic preservation professionals, technical report format and content, and standards for resource evaluation required by the State Historic Preservation Officer.

Federal Land Policy Management Act of 1976 43 United States Code Section 1701 et seq. The Federal Land Policy Management Act (FLPMA) declares that it is the policy of the United States that public lands be managed so as to protect historical and archaeological resources, and that the Secretary of Interior shall establish rules and regulations regarding resource protection on public lands.

Native American Graves Protection and Repatriation Act, Title 25 United States Code Sections 3001-3013. Provides for the protection of Native American graves, funerary objects, and “objects of cultural patrimony” on federal land and establishes the procedures for determining ownership for Native American human remains, funerary objects, and other sacred objects under federal jurisdiction. For undertakings on public land managed by the BLM, adherence to NAGPRA and other applicable federal laws will be managed by BLM personnel after a coroner’s determination that recovered remains are Native American.

American Indian Religious Freedom Act, Title 42 United States Code Section 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 BSPP would be required to comply with this Act if Native Americans identified issues regarding their right to exercise traditional religious practices.

### ***State LORS***

California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2. Under CEQA, the lead agency is responsible for determining whether a project may have a significant effect on historical and archaeological resources. Section 21083.2 states that if the lead agency determines that the project may have a significant effect on “unique” archaeological resources, an environmental impact report shall 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 it meets one of the following criteria: (1) Contains information needed to answer important research questions and that there is a demonstrable public interest in that information; (2) Has a special and particular quality such as being the oldest or best example of its type; or (3) 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.

CEQA Guidelines, California Code of Regulations Title 14 Section 15064.5. State CEQA Guidelines define a “historical resource” to include:

- Resource(s) listed or eligible for listing on the California Register of Historical Resources (14 California Code of Regulations (CCR) Section 15064.5(a)(1); Resource(s) either listed in the National Register of Historic Places or in a “local register of historical resources” unless “the preponderance of evidence demonstrates that it is not historically or culturally significant.” (14 CCR Section 15064.5(a)(2)); Resources identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code (14 CCR Section 15065.5(a)(2)). Subdivision (g) provides that

[a] resource identified as significant in an historical survey may be listed in the CRHR if the survey meets all of the following criteria:



- 1) The survey has been or will be included in the State Historic Resources Inventory.
- 2) The survey and the survey documentation were prepared in accordance with...procedures and requirements [of the (California) Office of Historic Preservation].
- 3) The resource is evaluated and determined [by the 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].
- 4) If the survey is five years or more old at the time of its nomination for inclusion in the California Register of Historical Resources, the survey is updated to identify historic resources that have become eligible or ineligible due to changed circumstances or further documentation and those that have been demolished or altered in a manner that substantially diminished the significance of the resource.

Resources identified by such surveys are presumed to be historically or culturally significant unless the preponderance of evidence demonstrates otherwise.

- The final category of “historical resources” may be determined at the discretion of the lead agency:

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. (14 CCR Section 15064.5(a)(3))

When initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a 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 treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials in consultation with the lead agency and with the appropriate Native Americans as identified by the NAHC. (14 CCR Section 15064.5(d)).

#### CEQA Guidelines, California Code of Regulations Title 14, Section 15064.7.

This section encourages lead agencies to develop, publish, and implement thresholds of significance in order to standardize environmental assessments. Such thresholds must be adopted by ordinance, resolution, regulation or rule at the conclusion of a public review process.

CEQA Guidelines, California Code of Regulations Title 14, Section 15124(b).

This section states that where several measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. Formulation of mitigation measures should not be deferred until some future time. However, measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way. This section also 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 Appendix G Section V. This appendix is a checklist that identifies potential impacts to historical, cultural, or paleontological resources. The checklist includes four questions to determine if a potential project would:

- a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?
- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- d) Disturb any human remains, including those interred outside of formal cemeteries?

Questions on the checklist are assessed to determine if a project impacts would be potentially significant, less than significant with mitigation, less than significant, or have no impact. The final determination of project impacts is made by the lead agency on the project.

Public Resources Code Section 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: (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; (2) Is associated with the lives of persons important in our past; (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or (4) Has yielded, or may be likely to yield, information important in prehistory or history.

Public Resources Code Section 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 County 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. These procedures must be followed when remains are found on lands not managed by the federal government. For undertakings on

public land managed by the BLM, adherence to applicable federal laws will be managed by BLM personnel after a coroner's determination that recovered remains are Native American.

Public Resources Code Sections 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. They also mandate that it is the policy of the state to repatriate Native American remains and associated grave goods. For undertakings on public land managed by the BLM, adherence to applicable federal laws will be managed by BLM personnel.

Public Resources Code Section 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.

Assembly Bill (AB) 2641. This section provides procedures for private landowners to follow upon discovering Native American human remains. Landowners are encouraged to consider culturally appropriate measures if they discover Native American human remains as set forth in California Public Resources Code 5097.98. AB 2641 further clarifies how the landowner should protect the site both immediately after discovery and into the future. For undertakings on public land managed by the BLM, adherence to applicable federal laws will be managed by BLM personnel.

Health and Safety Code Section 7050.5. This code 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 and treatment of Native American remains. For undertakings on public land managed by the BLM, adherence to applicable federal laws will be managed by BLM personnel.

Health and Safety Code Sections 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. For undertakings on public land managed by the BLM, adherence to applicable federal laws will be managed by BLM personnel.

### ***Local LORS***

Riverside County General Plan, Chapter 5 (Multipurpose Open Space Element), Open Space Policies 19.2-19.4. This portion of the General Plan 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 area 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 General Plan outlines policies for the preservation of historic resources in the County of Riverside. Policies within this chapter identify the need for

review of proposals for large development projects by the History Division of the Riverside County Regional Park and Open-Space District for the purposes of evaluation in relation 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.

Riverside County General Plan, Exhibit A, CEQA Findings of Fact and Statement of Overriding Considerations, Section 4.7, Mitigation Monitoring Program, Measures 4.7.1A, 4.7.1B, and 4.7.1C. The Riverside Mitigation Monitoring Program addresses cultural resource protection. Mitigation measures include contacting the County Coroner in the event of the discovery of human remains and contacting the NAHC if the remains are determined to be prehistoric, promoting avoidance as the preferred mitigation measure, and five specific measures (4.7.1C a-e) to be implemented as part of data recovery for sites where impacts cannot be avoided.

## **AREA OF POTENTIAL EFFECTS (APE)**

As defined in the Advisory Council on Historic Preservation's regulation 36 CFR 800.16(d), the *Area of potential effects* (APE) is "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking." Typically, the APE for archaeological surveys is defined by the proposed project ground disturbance area(s). For historical surveys including existing standing structures, the APE is often defined more broadly to include areas of potential visual or auditory effects.

For the BSPP, the APE for archaeological survey is defined as the extent of the Project plant site disturbance area and any linear features. Due to Project redesigns, no linear features are presently proposed for the BSPP, although a transmission line will be added at a later date. Thus, at present, the Project APE is the 7,030-acre Project plant site disturbance area comprised of part or all of Township 6S and Range 21E, Sections 1, 2, 3, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 24; and Township 6S and Range 22E, Sections 6, 7, and 18. These sections are located in the McCoy Peak and the McCoy Wash 7.5" USGS topographic quadrangles.

The BLM and CEC also provide guidelines for the inventory and documentation of cultural resources within a proposed project area. According to CEC guidelines, an archaeological survey should be conducted within the APE and extend beyond the project disturbance boundaries at least 200 ft. For linear facilities, the alignment right-of-way, and at least 50 ft either side of the right-of-way, is to be surveyed. BLM guidelines require the identification and reporting of all cultural resources at least 50 years old through the use of a Class III intensive pedestrian survey. In the event that a project footprint changes and cultural resources identified during the Class III survey are removed from the revised Project boundary, those cultural resources must still be recorded and included in the survey report. However, impact and significance evaluations of sites located outside the Project APE are not required.

For the purposes of this Class III report, the Project Cultural Resources Survey Area (CRSA) is defined as the entire area surveyed by Project personnel including the Project plant site disturbance area, the originally proposed linear features, and CEC-mandated buffers, which total approximately 7,850 acres. The CRSA includes the 7,030-acre Project APE, as currently proposed. Only sites within the Project APE are evaluated for impact and significance (see Chapters 5 and 6).

## **PROJECT PERSONNEL**

Rebecca Apple M.A., Registered Professional Archaeologist (R.P.A.) served as the Project Manager, and provided senior review for the Project. Christopher Doolittle, M.A., R.P.A. and Angela H. Keller, Ph.D., R.P.A. were the co-Project Directors for the project. Mr. Doolittle directed the fieldwork and report preparation, and is a co-author of this report. Dr. Keller coordinated data analysis after the field survey, and is the primary author of this report. Collin Tuthill was the assistant field director and supervised GIS mapping and field data archiving after the completion of fieldwork. Linda Kry served as a field crew chief and subsequently created all DPR forms for the identified cultural resources. Archaeological field technicians Michael Buxton, TeeJay Casado, Ginger Cooley, Bruce Gothar, Michael Hares, Celeste LeSuer, Andrew Lown, Patrick Moloney, Lucas Piec, Ruth Rhoades, Julianne Toenjes, and Britt Wilson participated in the field survey.

M. K. Meiser, M.A., conducted the historic architectural research and survey, and co-authored portions of this report as well as the Historic Architectural Survey Report included with this document as Attachment 6. Stephen Weidlich contacted the NAHC and subsequently contacted Native American individuals and groups with traditional ties to the Project region. Mr. Weidlich provided a communication log and copies of correspondence for Attachment 3. Justin Sorensen, Brad Stein, and Charles Skaggs provided technical GIS support and created all project maps. Nora Castellanos assisted with technical editing and DPR form assembly. James Cleland, Ph.D., R.P.A. contributed significant information to the cultural setting section of this report. Resumes of key personnel are provided in Attachment 1.

## **REPORT ORGANIZATION**

Chapter 1 of this report provides a description of the proposed Project, including the regulatory setting of applicable LORS, and a definition of the Project APE. Chapter 2 is a discussion of the physical and cultural setting of the Project. The physical setting section includes a brief discussion of Project climate, hydrology, geology, flora and fauna. The cultural setting section includes a discussion of the prehistoric and historic contexts relevant to the immediate Project area and surrounding Colorado Desert.

Chapter 3 reviews the archival research and contact program initiated by Project cultural resources personnel. Archival research included a complete records search of the files held at the California Historical Resources Information System Eastern Information Center (EIC), at the

University of California, Riverside. In addition, searches of the specialized repositories at the NAHC, the BLM field office in Palm Springs, and various historical societies and museums were conducted. As requested by the CEC, Project cultural specialists also initiated a contact program with area Native American individuals and groups identified by the NAHC, and with local historical societies, as documented in Chapter 3 and Attachment 3.

Project methodology, including descriptions of field methods, reporting methods, defined site types, and research issues and themes are presented in Chapter 4. Chapter 5 provides the results of the field survey and background research program, including a synthetic discussion of Project archaeological sites and isolates by theme, context, and type. Summary tables present our significance recommendations and impact assessments for Project sites. Chapter 6 provides a summary and management recommendations for cultural resources within the BSPP.

Attachment 1 includes resumes of key personnel on the Project. Attachment 2 includes the results of the records search undertaken at the EIC. Attachment 3 presents the results of the Native American contact program, historical society contact program, and contacts with the BLM. Attachment 4 includes Project maps containing the specific locations of archaeological sites and isolated finds. Attachment 5 contains the California Department of Parks and Recreation (DPR) site forms for archaeological sites identified during the Class III survey. Attachment 6 is the Historic Architectural Resources Survey, authored by M. K. Meiser. Once this report has been finalized, a copy will be sent to the EIC as a permanent record. Note that Attachments 2, 4, and 5 are confidential attachments that are bound separately due to the sensitive site location information contained therein. Attachment 6 has also been bound separately.



## **CHAPTER 2**

### **PROJECT SETTING**

#### **NATURAL CONTEXT**

##### **Physiography and Geology**

The Project is located on the Palo Verde Mesa, a series of ancient raised river terraces associated with the Pleistocene course of the lower Colorado River (Plate 2). The relatively flat topography of the mesa slopes gently down from the northwest to the southeast, and is bounded by the McCoy Mountains to the west, and the Little and Big Maria Mountains to the north and east. To the south, the Palo Verde Mesa grades into an east-west trending valley pass through which modern Interstate 10 was built adjacent to the Coco-Maricopa Trail (CA-RIV-53T), an important prehistoric transportation corridor from the Colorado River to the Pacific Coast.

The Palo Verde Mesa is part of the northern extent of the Colorado Desert, a subdivision of the greater Sonoran Desert. Encircling the northern Gulf of California, the Colorado Desert spans portions of northwest Mexico, southwest Arizona, and southeast California (Schaefer 1994b). It is a subtropical desert that is periodically influenced by tropical weather conditions, including massive seasonal rain storms known locally as monsoons. In general, the Colorado Desert differs from the Mojave Desert to the north by being lower, flatter, and warmer both in summer and winter (Hickman 1993). Within the Palen, Mule, McCoy, and Maria Mountains, the rocks and basin-and-range physiography of the Colorado Desert is similar to that of the Mojave Desert.

Sediments in the Project vicinity generally originate from quaternary riverine deposits from the Colorado River, and alluvial fan deposits from the mountains to the northwest. Much of the Project contains well-developed, heavily patinated desert pavements subject to deflation from frequent winds (Plate 3). Running northwest to southeast, several alluvial washes cut through stable desert pavement surfaces and transition to active ephemeral washes consisting of sandy silts combined with small cobbles and poorly sorted gravels.

Along the eastern edge of the Project, extensive, linear deposits of water-rounded cobbles sit atop remnant river terraces associated with the Pleistocene course of the Colorado River (Plate 4). These terrace-top cobble deposits, known as “pebble terraces” (Schaefer 1985), consist primarily of fist-sized water-rounded rocks representing a variety of stone materials collected from the length of the Colorado River. The pebble terraces were utilized by the prehistoric inhabitants of the region as a ready source of fine-grained stone for the production of flaked stone tools (Flenniken and Spencer 2001; Schaefer 1985). The most common toolstones present on the pebble terraces are quartzite, chert, and chalcedony. More recently, these pebble terraces have attracted the attention of rock collectors targeting the multicolored quartzite cobbles, called “sunburst pebbles,” used in landscaping, construction, and “the manufacture of terrazzo tiles” (Flenniken and Spencer 2001:2; Mitchell 1989; Reed 1984a, 1984b). Individual rock collectors have also mined the pebble terraces for large hexagonal quartz crystals and ferrous limonite





**Plate 2. The desert pavement in the BSPP.**



**Plate 3. View of the Project with the McCoy Mountains in the background.**



**Plate 4. The northern pebble terrace at the BSPP, facing north.**

cubes that occur in relative frequency on the terraces (Parker and Parker 2008). Two such pebble terraces exist along the eastern edge of the Project, and both were previously recorded as prehistoric archaeological sites (CA-RIV-2846 and CA-RIV-3419; see Chapter 3 below).

### **Climate and Hydrology**

The Colorado Desert is one of the hottest regions in all of the Americas. Average daily temperatures range from the low 40s in winter to 105 degrees Fahrenheit in summer, although summer temperatures can soar into the 120s. A high of 127 degrees Fahrenheit was recorded at the Gold Rock Ranch station, located approximately 15 miles northwest of Yuma. This region also experiences rapid heat loss at night, resulting in a wide daily temperature variance of approximately 30 degrees. Annual rainfall totals within the Colorado Desert are among the lowest in the greater Sonoran Desert, averaging less than 2 inches (5 cm) per year in the Salton Trough and between 2 to 4 inches (5-10 cm) along the Colorado River (Crosswhite and Crosswhite 1982).

Surface water within the region includes both seasonal and perennial sources. In the summer months, the area is occasionally hit by intense thunderstorms which can turn the normally dry washes that crosscut the Palo Verde Mesa into raging torrents. Perennial water is limited to McCoy Spring in the McCoy Mountains, roughly 9 miles northwest of the Project, and the



Colorado River, 13 miles east of the Project. The Colorado River is one of the major river systems of North America, with its headwaters high in the Colorado Rocky Mountains. The Colorado River travels 1,400 miles (2,253 km) to the Gulf of California, picking up vast quantities of sediment along the way. Prior to completion of a series of dams on the lower Colorado River, beginning with the Hoover Dam in 1935 (later renamed Boulder Dam), the river frequently changed its course and overflowed its banks. The Palo Verde Mesa terraces and associated linear cobble deposits are the result of the ancient meandering and periodic flooding of the Colorado River.

During the Pleistocene, the course of the Colorado River ran through the Project area, creating large remnant river terraces, as described above. Periodically, the Colorado River overflowed its banks and deposited significant quantities of well-rounded boulder- to pebble-sized rocks along its banks. With the movement of the Colorado River to the east, these terrace deposits were left behind in an increasingly arid landscape. Today, the remnant river terraces support well-developed desert pavements with dense concentrations of rounded Colorado River rocks, known as pebble terraces. These pebble terraces run from the northeast to the southwest, reflecting the Pleistocene course of the Colorado River. They are dense stable features, cut only by the larger drainages which generally flow from the northwest to the southeast (Plate 5). Along the back, northwestern side of the pebble terraces, low-velocity alluvial flows have deposited fine silts. These are some of the few areas of the Project with active deposition and, therefore, the potential for subsurface cultural materials is relatively high along the western edges of the pebble terraces. Throughout most of the remainder of the Project, subsurface materials are unlikely owing to aggrading and deflationary regimes.



**Plate 5. Dry seasonal wash in the BSPP.**

At the beginning of the Holocene, the Colorado River retreated to the east and began to cut deeply into the surrounding sediments. Periodically, though, the river dramatically flooded, changed course, and flowed into previously dry inland areas. After large flood episodes, water from the Colorado River was occasionally impounded and diverted into the Salton Trough, creating a vast inland freshwater lake, in the area of the historical Lake Cahuilla. Impounded waters from the Colorado River would continue to flow into the Salton Trough for years or even centuries until another major flood event sufficiently reworked the river delta at the Gulf of California to allow the river to resume its typical course. At these times, numerous, ethnically and linguistically distinct Native American groups converged on the newly formed lake. Some of the intermittent prehistoric use of the Palo Verde Mesa likely dates from these episodes of inland lake activity.

## **Flora and Fauna**

The Project's present biotic communities are comparable to those of the Mojave Desert to the north, but with more species diversity due to the Colorado Desert's bimodal pattern of rainfall. For the prehistoric inhabitants of the southern deserts, plant and animal resources would have been a significant factor in the use of the Palo Verde Mesa. Throughout most of prehistory, the Project area offered a relatively limited array of biotic resources, particularly in comparison to the nearby lower Colorado River region with its reliable year-round water. Nevertheless, the Palo Verde Mesa did offer a collection of useful resources for travelers between the larger village communities of the lower Colorado River to the east and the mountains and valleys to the west.

Within the Project, creosote scrub is the dominant vegetation community, with a greater variety of species occurring along the seasonal washes that crosscut the land from west to east (Plate 6). Vegetation is characteristically sparse, consisting primarily of creosote (*Larrea tridentata*), with smaller quantities of white bursage (*Ambrosia dumosa*), saltbushes (*Atriplex* spp.), and ocotillo (*Fouquieria splendens*). In some washes and along western faces of the Pleistocene pebble terraces, stands of mesquite (*Prosopis* spp.) and ironwood (*Olneya tesota*) bushes also grow. Nearer to the Colorado River, washes support the palo verdes (*Parkinsonia florida*) from which the mesa derives its name (Plate 7), as well as agaves (*Agave* spp.). Of these plants, the mesquites, agaves, and saltbushes were the most important food plants, and edible portions were typically roasted in stone-lined earthen ovens, or roasting pits (Lightfoot and Parrish 2009:347, 356). The remnants of some of these roasting pits may be preserved as piles of fire-affected cobbles identified as prehistoric sites adjacent to the natural pebble terraces at the eastern edge of the Project.

Beyond food plants, the desert also offered medicinal and utilitarian plants. Traditionally, creosote was an important medicinal plant, the leaves of which were brewed as a tea good for treating upset stomach and cough (Bean and Saubel 1972). Both saltbushes and varieties of mesquite were also used as traditional treatments for muscle pain and inflammations (Owen 1962:109). Mesquite and ironwood were prized for their branches which were used to construct houses, fashion weapons, and as quality firewood. Finally, in addition to its use as a foodstuff,





**Plate 6. Creosote scrub vegetation common to the BSPP.**



**Plate 7. Palo verde tree growing in a wash at the BSPP.**

agave was harvested for its long leaves which were stripped and processed into an extremely durable fiber used to make nets, bowstrings, sandals, and many other fiber goods (Lightfoot and Parrish 2009:356). This same agave fiber was the primary source of modern rope until the advent of synthetic fiber rope after WWII.

Despite its forbidding appearance, the Colorado Desert is also home to a variety of animal species, all adapted to extreme heat and aridity. Most of the animal species that inhabit the Colorado Desert are also found in the Mojave Desert to the north. Because of the high daytime temperatures, many desert animals have adapted by spending much of the day underground in cool burrows or aestivating (lying dormant to stay cool and preserve water and energy during extremely hot and dry periods). Small, burrowing rodents are particularly abundant in sandy desert sediments.

Animals commonly found in the Colorado Desert include blacktailed jackrabbit (*Lepus californicus*); desert cottontail (*Sylvilagus auduboni*); kit fox (*Vulpes macrotis*); and a variety of rodents such as round-tailed ground squirrel (*Spermophilus tereticaudus*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), desert and Merriam kangaroo rats (*Dipodomys merriami*), and desert pocket mouse (*Perognathus penicillatus*). Native Americans hunted several of these small mammals, particularly the desert cottontail, as food. Larger mammals are limited to desert bighorn sheep (*Ovis Canadensis nelsoni*), Sonoran pronghorn antelope (*Antilocapra americana sonorensis*), and coyote (*Canis latrans*), although all of these larger species are more common closer to the mountains and river where water is more abundant. A number of bat species live in the Colorado Desert, including the California leaf-nosed bat (*Macrotus californicus*).

Numerous species of reptiles also make their home in the Colorado Desert. Reptiles with specialized adaptations to sandy environments include fringe-toed lizards (*Uma inornata*, *U. notata*), flat-tailed horned lizard (*Phrynosoma m'calli*), banded sand snake (*Chilomeniscus cinctus*) and the poisonous sidewinder snake (*Crotalus cerastes*). Other desert reptiles include chuckwalla (*Sauromalus obesus*), desert iguana (*Dipsosaurus dorsalis*), rosy boa (*Lichanura trivirgata*), western diamondback (*Crotalus atrox*), and the protected desert tortoise (*Gopherus agassizi*) of which we found many carapace fragments within the Project (Schoenherr 1992; Turner and Brown 1994).

In the Colorado Desert, common avian species include horned lark (*Eremophila alpestris*), common raven (*Corvus corax*), mourning dove (*Zenaida macroura*), Costa's hummingbird (*Calypte costae*), black-throated sparrow (*Amphispiza bilineata*), verdin (*Auriparus flaviceps*), and greater roadrunner (*Geococcyx californianus*). Migratory birds found throughout the southern deserts include several swallow and warbler species of varying genera. Occasionally, smaller raptors such as the northern harrier (*Circus cyaneus*), Swainson's hawk (*Buteo swainsoni*), the western burrowing owl (*Athene cunicularia hypugaea*), and the loggerhead shrike (*Lanius ludovicianus*) are also found in the Colorado Desert. Raptors were of particular importance to local Native American groups, and their feathers were commonly used in ceremony.

## Geomorphology and Subsurface Deposits

In this section, we discuss the geomorphology of the Project vicinity to preliminarily assess the potential for subsurface archaeological materials not evident from the surface finds recorded during our survey. Although the BSPP is located in the Colorado Desert culture history region (Schaefer 1994b), it is part of the southern portion of the Mojave Desert geomorphic province. The northwest trending McCoy Mountains border the Project western edge, and the alluvial Palo Verde Valley provides its eastern boundary. The entire Project is contained within what is known as the Palo Verde Mesa, which is bounded to the north by the Big Maria Mountains and to the south by the Mule Mountains. Much of the Project sits atop a gently sloped bajada extending east from the base of the McCoy Mountains to a line of Pleistocene pebble terraces that form a steep escarpment descending toward the Colorado River. Along the base of the McCoy Mountains, the bajada is deeply cut in places, creating a broken terrain that was a focus of human activity during certain periods.

The Class III inventory of the project area identified thousands of archaeological resources on the surface ranging from prehistoric trail segments to 1960s-era Falstaff beer cans. The desert was a common ground shared for thousands of years. The predominant landform in the project area is desert pavement. This has been variously defined as a layer of coarse pebbles and gravel created through the removal of finer materials by wind and other processes (Stone 2006), and as a one pebble-thick concentration of gravel that mantles a stable surface (Waters 1992). While the term *desert pavement* seems to imply the improbability of subsurface archaeological materials, studies elsewhere in the Southwest suggest that some archaeological materials, particularly intrusive pit features excavated prehistorically, may be present *below* the desert pavement (Ahlstrom and Roberts 2001). This section briefly addresses the potential for subsurface archaeological material in the Blythe project area.

A recent USGS study of the Palo Verde Mesa characterized it as late Miocene to Holocene surficial deposits (Stone 2006). Much of the following discussion is derived from this study. The project area is composed of finer alluvium derived from the McCoy Mountains or sediments of varying size deposited by the Colorado River. The two large pebble terraces rising above the desert pavement along the east the Project are examples of deposits left by the Colorado River. The oldest surface deposits are locally derived, Miocene-age gravels. These are present in the deeply dissected slopes and ridges adjacent to the McCoy Mountain range. Pleistocene-age landforms include the smooth, varnished pavements and the pebble terraces. Holocene alluvium is present as rough surfaces between relict depositional bars and channels. With the exception of the pebble terraces, most of the middle Pleistocene to Holocene alluvial units are interpreted as the products of aggradation events that took place during interglacial climatic environments (Bull 1991).

In the Project vicinity, there are four basic geomorphic units:

1. Recent Holocene alluvium
2. Older Holocene alluvium

3. Pleistocene to Pliocene alluvium
4. Miocene alluvium

### ***Recent Holocene Alluvium***

Recent Holocene surfaces in the study area occur as alluvial deposits characterized by a lack of desert varnish. These consist of fine grain sand, pebbly sand, and sandy pebble-gravel along valley floors marginal to older, varnished alluvial-fan deposits. These surfaces are covered by sparse to moderately dense vegetation and commonly are transected by shallow channels of active sediment transport. Thin accumulations of eolian sand are present locally. Near the mountains some of these gravels form surfaces that may be inactive. These deposits are interpreted to range in age from 0 to 2 thousand years old.

Holocene deposits have the highest probability of containing buried archaeological materials. The active alluvial transport of sediments from the mountains toward the river can either cover in situ archaeological deposits or secondarily deposit these materials further downstream. The inactive surfaces toward the mountains suggest less volatility of sediment transport and thus less chance of buried archaeological material. The probability of subsurface archaeological materials in these deposits is the highest of all deposits in the project area.

In the Project, recent Holocene alluvium is relatively rare and largely concentrated to the north along the McCoy Wash and along the eastern flanks of the Pleistocene-era pebble terraces. These raised terraces consist of several-meters-deep beds of river rocks (Flenniken and Spencer 2001:figure 2), deposited by the Colorado River during the Pleistocene. The terraces run perpendicular to the general slope of the terrain and act as dikes, damming and diverting the natural flow of water. Washes that typically flow unrestricted from the northwest to the southeast are redirected and consolidated behind the pebble terraces, depositing sandy silty sediments of unknown depth. Within this setting and below the prehistorically used terraces, our survey identified a number of prehistoric thermal features buried in the sands. Some of these features were exposed in the sidewalls of washes. Others are manifest as rock concentrations on the surface. Without doubt, subsurface archaeological materials exist in these locations.

### ***Older Holocene Alluvium***

The older Holocene alluvial deposits of gravel and sand that form unvarnished to lightly varnished surfaces are manifest as bars and swales in the eastern two-thirds of the project area. These are thought to date between 2 and 8 thousands years ago. Vegetation can be moderately dense in swales but is sparse on bars. Stone (2006) characterizes these surfaces as depositionally inactive. In terms of buried archaeological material, these surfaces are older than most of the archaeology of the region. In general, the surface inventory should reflect the types and distribution of any material covered up by eolian or alluvial activity, but depths beyond a half meter are unlikely. The probability of buried archaeological material in these surfaces is moderate, and the probability of buried archaeological deposits without surface manifestations is relatively low.

### ***Pleistocene to Pliocene Alluvium***

The older alluvial-fan deposits characterized by smooth, varnished, dark brown to black desert pavement are mostly present in the western two-thirds of the project area. These pavements have



little surface relief and are composed of tightly to moderately packed, angular to subangular rock fragments with generally less than 30 percent interstitial sand. Shallow sandy channels dissect and drain the pavements. Vegetation is typically dense in these channels but is sparse to absent on the pavement surfaces. These surfaces are interpreted to be between 8 and 730 thousand years in age. The probability of buried archaeological material on these surfaces is low.

### ***Miocene Alluvium***

The last geomorphic unit is Miocene in age and is classified as a fine to coarse, poorly sorted gravel and sand that typically form high, deeply dissected, narrow ridges extending away from mountain fronts. Some ridges are relatively flat, narrow plateaus that preserve small tracts of smooth desert pavement, but most ridge crests are sharp to rounded and presumably have been eroded to a level below that of any preexisting alluvial surface. The probability of buried archaeological material on these surfaces is low.

### ***Project Geomorphology and the Potential for Buried Deposits***

In simple terms, most surfaces in the Project are old, rock bearing, and deflating. The “fragile patterns” exhibited in desert environments, first identified by Julian Hayden, is evident in the Project. Fragile patterns are “any archaeological area in which man’s material remains lie without depth upon an existing natural surface” (Hayden 1965:272). For the most part, archaeological studies in the region have borne this concept out (Byrd and Pallette 1998; Ezzo and Altschul 1993; Hunt 1960; McDonald, Flenniken, and McGarthy 1996; Rogers 1939; Stone 1991; Stone and Dobbins 1982). Except in those cases where prehistoric inhabitants actively created dug-out, subsurface features (e.g., pithouses, postholes, earth ovens), subsurface archaeological deposits are simply not found. Ahlstrom and Roberts (2001) argue that low-density, low-diversity artifact scatters associated with desert-pavement surfaces can simply be dismissed as surface manifestations with no potential for subsurface cultural remains. Only in the more active washes and the along upslope, western faces of the pebble terraces are depositional regimes and subsurface deposits likely in the Project.

### **Holocene Climate Change**

Climatic shifts over the course of the Holocene have resulted in a number of biotic and hydrologic changes that affected the distribution of resources important to human groups living in and utilizing the northern Colorado Desert (Table 2).

### ***Terminal Wisconsin to Middle Holocene***

Packrat middens from the Pichaco Peak locality suggest that in the Chocolate Mountains and Salton Trough regions, south and west of the Project, during the terminal Wisconsin summer temperatures were cooler than present, but winter temperatures were generally comparable. Rainfall was primarily confined to the winter, at levels around 50 percent greater than present. After about 10,000 years ago, temperatures increased overall but summer temperatures remained cooler than present. There is some evidence of an increase in precipitation at this time, possibly resulting from more frequent and intense El Niño patterns (Spaulding 1995). First proposed by Antevs (1948), the reconstruction of an arid middle Holocene period (ca. 7,000–4,000 years before present [B.P.]) is now supported by packrat midden, geomorphic, and pollen data (Byrne

et al. 1979; Hall 1985; Holliday 1989; Mehringer 1986; Spaulding 1991). Although the middle Holocene was clearly warmer and more arid than present, the various lines of evidence suggest that the period was one of high climatic variability rather than unremitting heat and drought (Grayson 1993).

**Table 2. Major Climatic Intervals**

<b>Climatic Interval</b>	<b>Years Before Present (B.P.)</b>	<b>Climate and Hydrology</b>
Early Holocene	10,000 - 7000	Cooler summer temperatures; upslope retreat of woodland species; precipitation greater than present
Middle Holocene	7000 - 4000	Warmer temperatures; arrival of modern Colorado Desert vegetation; precipitation generally lower than present
Neoglacial	4000 - 2000	Cooler temperatures; precipitation greater than present
Medieval Climatic Anomaly	1150 - 550	Warmer temperatures; two extreme droughts between 1060–850 B.P. and 740–600 B.P.
Little Ice Age	450 - 150	Cooler temperatures; precipitation greater than present

### ***Late Holocene***

Evidence from the late Holocene (after ca. 4000 B.P.) indicates at least three distinct climatic episodes that would have affected humans living in the desert. Studies of macrofossils from packrat middens and evidence for extended lacustral intervals in the Mojave Desert (Drover 1979; Enzel et al. 1992; Smith 1979; Wells et al. 1989), suggest that the period between ca. 4000–2000 B.P. was generally cooler and notably wetter than present. Known as the Neoglacial, this period in the Mojave Sink region was marked by extensive desert lakestands supported by the flooding of the Mojave River, likely resulting from increased precipitation in the Transverse Ranges.

The Medieval Climatic Anomaly, which extended from about 1,200 to 700 years ago, was marked by generally warm temperatures and punctuated by extreme, extended droughts from A.D. 890 to 1100, and from A.D. 1210 to 1350 (Stine 1994). In the Mojave Desert, packrat middens provide evidence of effectively drier conditions associated with increased temperatures. Presently, there are no published records of increased spring activity or desert lake high stands throughout the Mojave during this period (Jones et al. 1999). In the Colorado Desert, though, Waters (1983) reports evidence for high stands of Lake Cahuilla during much of this interval. The sustained high water in Lake Cahuilla may have mitigated the effects of the droughts on local populations, although the Palo Verde Mesa surely would have been very dry.

The generally arid conditions of the Medieval Climatic Anomaly reversed sharply about 600 years ago, marking the beginning of the Little Ice Age (Grove 1988). A variety of data from the Mojave Desert indicate both lower temperatures and increased winter precipitation during this period. Cooler temperatures are suggested by the expansion of cold-loving blackbrush scrub into lower elevations at this time. Evidence for extended lakestands in the Mojave Sink (Enzel et al.

1989, 1992) indicates enhanced precipitation in the Transverse Ranges. Essentially modern climatic conditions only became established in the region about 150 years ago.

## **CULTURAL CONTEXT**

### **Prehistoric Background**

Despite more than 80 years of archaeological investigation, our understanding of the prehistory of the Colorado Desert still relies heavily on comparisons with adjacent regions. In fact, the basic culture history of the region has not changed dramatically since pioneering archaeologist Malcolm Rogers (1939, 1945, 1966) published his initial impressions of the chronology and cultural development of the desert. This state of affairs is largely attributable to the dearth of stratified subsurface sites in the region, since many desert sites are entirely superficial. (Schaefer 1994a, 1994b). Additionally, the prehistoric use of the Colorado Desert was apparently episodic, with long periods of low-intensity use of the land during particularly arid times. Nevertheless, ongoing work continues to sharpen our comprehension of the region. Figure 3 presents several regional chronological schemes in a comparative tabular fashion. Our discussion largely follows Crabtree's (1981) chronological framework with further elaboration of cultural development from Schaefer (1994b) and others.

Climatic changes, characterized by temperature and moisture variations, significantly affected the distribution and subsistence practices of prehistoric populations in the Colorado Desert, as described for the Holocene in some detail above. During the late Pleistocene (25,000 to 10,000 years ago) temperatures in California were generally cool and moist, resulting in widespread montane glaciations and the creation of numerous pluvial lakes (Antevs, 1955; Grayson, 1993). Throughout much of the Pleistocene, the Colorado River ran some 10 to 15 miles east of its current course, adjacent to the Project. Over millennia, the powerful river carved a series of raised terraces along its western bank as it moved east, toward its present course. During that time, the Project area would have been subject to devastating and unpredictable flooding. Flooding which, depending on the velocity of the water flow, sometimes cut away the land and other times deposited quantities of silt, gravel, and rock. These varying aggrading and depositional actions of the Colorado River created the raised, stepped terraces and cobble deposits of the Palo Verde Mesa.

At the end of the Pleistocene, some 12 to 10 thousand years ago, the first recognizable human use of the Colorado Desert began. The earliest inhabitants of the region were highly mobile hunter-gatherers exploiting a variety of plants and animals. The settlement patterns of the Late Pleistocene and Early Holocene inhabitants suggest that they preferred to live along the shores of prehistoric lakes and on mesas near perennial washes (Schaefer and Laylander 2007).

<i>Date</i>	<b>Rogers (1966) “Central Aspect”</b>	<b>Warren (1984) Mojave Desert</b>	<b>Sutton (1996) Mojave Desert</b>	<b>Crabtree (1981) Colorado Desert</b>	<b>Schaefer (1994b) Colorado Desert</b>
<b>1850</b>	Paiute and Mojave	Shoshonean/ Protohistoric	Late Prehistoric	Late Prehistoric Yuman/Patayan	Late Prehistoric
<b>1500</b>	Prehistoric Yuman and Shoshonean Groups				
<b>1000</b>					
<b>500</b>	Basketmaker III and Pueblo II	Gypsum	Gypsum	Amargosa	Late Archaic
<b>AD</b>					
<b>0</b>					
<b>BC</b>					
<b>1000</b>					
<b>2000</b>	Amargosa	Pinto	Pinto	Pinto	Early Archaic
<b>3000</b>					
<b>4000</b>					
<b>5000</b>					
<b>6000</b>	?	Lake Mojave	Lake Mojave	San Dieguito	Paleoindian
<b>7000</b>					
<b>8000</b>	San Dieguito		Paleoindian		
<b>9000</b>					
<b>10000</b>	? (Early Man)				
<b>30000</b>					

**Figure 3. Comparative chart of regional chronological sequences**

Roughly 7,000 years ago, local pluvial lakes began to evaporate and settlement shifted to the Colorado River and to perennial springs in the mountains and valley floors (Pendleton 1984). Between the comparatively verdant river banks to the east and the spring-fed mountains to the west, the parched Palo Verde Mesa was not a particularly attractive spot for long-term habitation. The mesa was, as Jay von Werlhof (2004:v) has noted, “basically a through-way”: a well-traveled corridor from the river to the mountains, and from the southern low desert to the northern high desert. Nevertheless, the visually striking terraces of the Palo Verde Mesa were likely an important waypoint for travelers. The terraces provided a reliable source of fine-grained toolstone, as well as stands of edible mesquite and saltbush, which could be processed and roasted using local cobbles. Although the Project area shows no signs of long-term habitation, the mesa was clearly well known and repeatedly visited throughout prehistory.

### ***Paleoindian Period: San Dieguito (10,000–5,000 B.C.)***

Currently, most archaeologists identify the San Dieguito complex as the earliest use of the Colorado Desert during the Pleistocene–Holocene transition. Malcolm Rogers (1939) defined this cultural complex based on archaeological surveys of southern California coastal and desert regions conducted in the 1930s. San Dieguito materials are most common around now-dry inland lakes and on old desert terraces, but they have also been found at Ventana Cave in southern Arizona, and along the California coast, where they were first documented at the Harris Site (Rogers 1966; Warren 1966). Based on limited material evidence, Rogers inferred that San Dieguito subsistence was focused on highly ranked food resources, particularly large game, although small mammals were also taken. This hunting-focused subsistence strategy, in turn, was thought to have encouraged a pattern of relatively high residential mobility.

The material culture associated with the San Dieguito complex consists entirely of flaked stone tools such as choppers, scrapers, blades, projectile points, and distinctive crescent-shaped items interpreted as amulets (Rogers 1939, 1966; Warren 1966). The lack of millstone implements has long been viewed as evidence that San Dieguito peoples made little use of plant foods, particularly seed plants that require pounding and grinding. Lorann Pendleton (1984:68-74), though, observes that ethnographies of Colorado Desert peoples mention the use of wooden mortars and pestles for the processing of wild mesquite. If similar wooden milling implements were used by San Dieguito peoples, they have not survived in the archaeological record.

Beginning with Rogers, archaeologists have attempted to assign cultural materials to the San Dieguito complex based upon the extent of desert-varnish on rock artifacts, and the degree to which artifacts are embedded in the ancient desert pavements (e.g. Schaefer 1985). Based on these measures, various cleared circles, trails, and geoglyphs have traditionally been included within the San Dieguito complex. These assignments, however, are no longer secure, as both patination and embeddedness have been demonstrated to be unreliable for cross-dating purposes (McGuire and Schiffer 1982; see also Mitchell 1989). Further, in the case of trails, many were used over multiple generations, often by multiple cultural and linguistic groups. In fact, most of the major routes through southern California deserts and mountain passes used today by modern highways (e.g., Interstates 10 and 15) follow ethnohistorically documented Native American trails.

Despite decades of scholarly research, dating the San Dieguito complex continues to be problematic (Love and Dahdul 2002; Schaefer 1994b). Very little datable material is preserved at most San Dieguito sites, and sites in desert regions are often situated on deflated desert pavements where extremely old materials lie side-by-side with modern trash. The related Lake Mojave complex, found in the Mojave Desert to the north, is thought to date to between 12,000 and 7,000 years before present (B.P.) (Warren and Crabtree 1986). More recent work suggests a slightly earlier terminal date of around 8,000 B.P. for the Lake Mojave Complex (see Schroth 1994). If the Lake Mojave and San Dieguito complexes are contemporaneous, then this highly mobile, hunting-focused use of the land came to a close early in the Holocene as ancient pluvial lakes contracted and large mammals became scarce.

### ***Archaic Period: Pinto and Amargosa Complexes (5,000 B.C.–A.D. 500)***

The Archaic period in North American prehistory is characterized by the emergence of several distinctive regional adaptations to varying local conditions. In the western deserts, the Archaic spans the time from the end of cooler and wetter climatic conditions of the early Holocene, at around 5,000 B.C., to the introduction of pottery and bow-and-arrow technology, around A.D. 500 (Antevs 1955; Grayson 1993; Van Devender and Spaulding 1979). Regional populations were generally expanding, leading to a diversification and intensification of subsistence activities, and regional trade and interaction networks were established. Groundstone tools, largely absent in the Paleoindian period, became widespread during the Archaic.

In the southern California deserts, the best-known regional culture complexes of the Archaic period are the Gypsum, Pinto, Elko, and Amargosa, each defined by recognizably distinct projectile point types. Within the Colorado Desert, the early facet of the Archaic period (ca. 5,000–1,500 B.C.) is often subsumed under the Pinto complex (Crabtree 1981; Rogers 1939), although very virtually no open-air desert sites have components dated to this time. The later facet of the Archaic period (ca. 1,500 B.C.–A.D. 500), is associated with the Amargosa complex in the Colorado Desert, following Rogers' (1939, 1966) nomenclature. In contrast with the general pattern of population expansion during the Archaic period, there is a dearth of evidence of Archaic occupation in the Colorado Desert (Schaefer 1994b; Weide 1976). During the early Archaic, the Colorado Desert appears virtually abandoned on the basis of current data. This absence of Archaic occupation on the desert is a key regional research issue (Schaefer 1994b). Due to the dearth of securely dated Archaic sites in the Colorado Desert, developments within the Archaic must be inferred from the development trajectories of adjacent areas.

Although few open-air sites date to the Archaic, rockshelter deposits at Indian Hill Rockshelter, in Anza-Borrego Desert State Park (McDonald 1992; Wilke 1986), and at Tahquitz Canyon, near Palm Springs (Schaefer 1994b), contain late Archaic components below more recent materials. These shelter sites lie roughly 100 miles southwest and west of the Project, and contain distinctive dart-sized projectile points, groundstone implements, and rock-lined cache pits. At Indian Hill Rockshelter, McDonald (1992) also uncovered inhumations, one of which is radiocarbon dated to  $4,070 \pm 100$  years B.P. Unlike later lower Colorado River burials, these are not cremations. Several other inhumations associated with cairns may also date to the late Archaic (Schaefer 1994b:65). The materials at the rockshelter sites and others outside of the Colorado Desert suggest that the Archaic period inhabitants of southern California were “diversified hunters and gatherers” who focused increasingly on processing and storing seed and

nut foods, and who relied on “mobility” and social “flexibility of group size” to exploit the seasonally variable natural resources of their ranges (Schaefer 1994b:65).

On the Palo Verde Mesa, evidence for Archaic period use or occupation is slight, as area sites rarely contain diagnostic projectile points or other artifacts necessary to securely date them to the Archaic. In fact, most sites contain no finished flaked stone tools whatsoever (Flenniken and Spencer 2001; Mitchell 1989; Schaefer 1985, 1994b; 2003; Singer 1984). One small suggestion of an Archaic presence on the mesa, though, exists at site CA-RIV-7175, located along the eastern border of the Project. As part of a larger in-field analysis of lithic production in the McCoy Wash area (Flenniken and Spencer 2001:47-48), Jerry Reieux and his colleagues documented three bifaces described as “dart-point-size” bifacially worked blanks fashioned of heat-treated chalcedony. Although the bifaces are “blanks,” and therefore lack key diagnostic hafting and other attributes necessary to typologically define them, the “dart-point” size of the blanks is suggestive of an Archaic date. Dart-sized points are relatively rare in the subsequent Late Prehistoric after the introduction of bow-and-arrow technology and attendant reduction in the size of projectile points.

***Late Prehistoric/Protohistoric Period: Patayan Complex (A.D. 500–ca. A.D. 1850)***

The Patayan complex spans the Late Prehistoric and Protohistoric periods, and dates from approximately A.D. 500 until the American expansion into the area at the turn of the nineteenth century. The Protohistoric period encompasses a protracted 300-year period of sporadic European exploration and colonization that had little effect on aboriginal lifeways in the southern California deserts. There is a clear correspondence between the geographical distribution of archaeologically recognizable Patayan cultural materials and the historically documented territories of Yuman-speaking peoples: the Quechan, Mohave, Cocopah, Paipai, Yavapai, Havasupai, and others. Thus, the archaeological Patayan complex is often taken to be directly ancestral to the ethnographic Yuman cultures of the region. Nevertheless, Jerry Schaefer reminds us that non-Yuman groups, such as the Cahuilla and the Chemehuevi, were also active participants in this cultural complex: “the prehistoric Patayan world was multicultural and inter-cultural, representing many dynamic adaptive strategies and social systems but sharing common elements of technology, material culture, and ideology” (Schaefer 1994b:66).

The Patayan complex is characterized by marked changes in the artifact assemblage, economic system, and settlement patterns of the region. Perhaps the most recognizable change from an archaeological perspective was the introduction of paddle-and-anvil pottery, either from Mexico or from the ancestral pueblo groups of the U.S. Southwest (Rogers 1945; Schaefer 2003; Schroeder 1975, 1979). During this time, floodplain horticulture, featuring maize, beans, squash, and other crops, was similarly introduced from the south and east. Arable land along the lower Colorado River came under cultivation, as did the banks of the New and Alamo rivers in Imperial Valley. The Colorado Desert lay on the prehistoric frontier of the westward expansion of agriculturally based subsistence systems to the west.

Bow-and-arrow technology was also introduced at this time, possibly from desert hunter-gatherer groups moving in from the west and north. Smaller, arrow-sized projectile point types of the Cottonwood Triangular and Desert Side-notched series are common. The Cottonwood series

projectile points likely predate the Desert Side-notched types, and probably predate the introduction of pottery manufacture in the region. Concomitant with these dramatic subsistence and technology changes were several, apparently related, ceremonial and religious changes. During the Late period, burial practices shifted from inhumations to cremations and partial cremations. Artistic expression on rock (petroglyphs) and land (intaglios) flourishes at this time in association with expanding trade and trail networks, and increasingly elaborate kinship systems tying together extensive territories (McGuire and Schiffer 1982). Warfare likely also increased at this time, and was well documented in the Protohistoric and historical periods.

By all accounts, the vast majority of the archaeological materials in the Colorado Desert, and on the Palo Verde Mesa particularly, date to the Late Prehistoric and Protohistoric periods (e.g., Rogers 1945; Schaefer 1994b, 2003). Most sites in the area consist of ceramic sherds and a limited variety of stone tools and tool-making debris. Very few temporally diagnostic tools or projectile point types are recorded in the Project vicinity. In the present survey, no finished projectile points were identified, and small number of Tizon brownware and Colorado buffware sherds were recorded. A recent detailed study by Flenniken and Spencer (2001) suggests that most of the lithic reduction (stone-tool making) in the Project vicinity was directed at the production of relatively small, thin flakes suitable for the creation of arrow-sized projectile points, which only appear roughly 1,500 years ago in the region (see also Ludwig 2005). Additionally, most of the earth art and rock art sites, as well as many trails and ceremonial sites, likely date to this period (Altschul and Ezzo 1994; Schaefer 1994b). Many ceremonial features continued to be used after European contact, and even to the present day.

## **Ethnographic Background**

In contrast to the dark primordial world of most of the world's origin myths, the Chemehuevi speak of a time before time that knew no darkness. In the beginning, the Chemehuevi say, there was a world of "continuous daylight" in which the culture hero Coyote and his older brother Wolf lived and hunted. Then, Wolf was killed by "eastern enemies" who unwittingly released Wolf's powerful magic and threw the world into an endless night (Kelley and Fowler 1986:385). Finally, Coyote wished to mourn his brother and so he brought back the sun to burn his brother's things. Thus, a time of day and night began, and our world began with mourning (Kroeber 1925:598).

A number of ethnographically documented culture groups are associated with the Palo Verde Mesa through historical use and oral history. These include the Yuman-speaking Mohave, Halchidhoma, and Quechan, and Numic-speaking Chemehuevi along the lower Colorado River, and the Takic-speaking Cahuilla in the deserts and mountains west of the Project (Bean 1972; Bean and King 1974; Bean and Vane 1978; Fowler and Fowler 1971; Laird 1976; Rogers 1939, 1966; Schaefer 2003; Singer 1984). All of these groups were at home in the deserts, but lived primarily near reliable water sources including the Colorado River, inland lakes, and numerous springs.

The stretch of the Colorado River immediately adjacent to the Project was notably contentious, changing hands more than once in the Protohistoric period. Prior to 1700, the banks of Colorado River east of Blythe may have been occupied by the Maricopa (Kroeber 1925:800), although this



is far from certain. At some point, the Maricopa migrated east and the Halchidhoma settled the area. Almost immediately, the Halchidhoma found themselves under attack from the allied forces of the Mohave and Quechan. The traditional focus of Mohave population was to the north in the Mojave Desert, while Quechan peoples had their largest villages to the south between Yuma and the Gulf of California. Generations of near-constant warfare finally drove the Halchidhoma off the river and, ultimately, to their Maricopa allies on the Gila River in Arizona (Kroeber 1925:799).

After the Halchidhoma vacated the Parker and Blythe valleys between 1825 and 1830, the Mohave lived in the area for a year or so, but then returned north to the Mohave Valley. The Mohave then encouraged their traditional allies, the Chemehuevi, with whom they shared many ceremonial practices, to move into the former Halchidhoma territory along the river (Bean and Vane 1982:34). By the mid 1800s, Chemehuevi groups were living along the Colorado River east of Blythe, and experimenting with floodplain agriculture. All of these lower Colorado River groups had trading relationships with groups to the west, most notably the Cahuilla, who lived principally in the deserts and mountains around historical Lake Cahuilla. The Cahuilla likely traversed the Project visiting their river neighbors, and even today, some group members retain knowledge of the area and its traditional resources.

In the late 1860s, hostilities broke out again along the Colorado River, this time between long-time allies, the Mohave and Chemehuevi. Several years of infighting resulted in the western migration of a percentage of the Chemehuevi population to Cahuilla villages in Banning and Cabezon and to Serrano villages in the Twenty-nine Palms area (Kroeber 1925:594). Many of those displaced at this 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 (Kelley 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 (Kelley and Fowler 1986:388).

Throughout the Protohistoric and historical periods, the Palo Verde Mesa was part of a long-distance transportation corridor from the Colorado River to the Pacific Coast (Bean and Vane 1978, Davis 1961, King 1981, Sample 1950, Singer 1984). The west side of the Colorado River was also an important corridor for travel between southern and northern river groups, particularly the Quechan and Mohave. North-south running trails have been identified along the river as transportation routes, as well as ceremonial ways linking key mountains, springs, and other landscape features (Stone 1991; Woods 1986). These trails and landscape features are frequently associated with rock and earth art, as well as small rock piles known as cairns.

The Colorado Desert is remarkable for its many prehistoric sites associated with what might generally be termed ritual activities (Altschul and Ezzo 1994). In addition to the remains of Native American habitations and resource procurement locations, the region contains abundant earth figures (geoglyphs), rock art (petroglyphs), shrines, cairns, and a well-preserved trail

system along which these features tend to cluster (Altschul and Ezzo 1994; Cachora 1994; Johnson 1985; McGuire and Schiffer 1982; Pendleton et al. 1986; Pignuolo et al. 1997; Reed 1981; Rogers 1939; Schaefer 1994a, 1994b; von Werlhof 1987). Desolate stretches of desert pavement like that of the Project may seem uninhabited and insignificant, but as corridors of physical and spiritual travel, they remain important to modern-day Native American groups. As Quechan tribal member and archaeologist Lorey Cachora (2000:79) describes, key landscape features, such as mountains and springs, are connected by a web of power which cannot be broken without affecting “the entire cosmos.” Thus, “although peaks are most important, the valleys between the peaks, and the desert pavements, are also important in that they are pathways for the web that must run through them from one peak to others” (Cachora 2000:79; see also Laird 1976:38).

In the greater Project vicinity, archaeologists have identified segments of east-west trending trails that likely connected communities along the lower Colorado River with resources and communities in the mountains and interior valleys, as well as north-south running trails paralleling the river (Altschul and Ezzo 1994; Cleland and Apple 2003; Mitchell 1989; Stone 1991, Woods 1986). North-south running trails have also been associated with a specific mourning ritual, or *keruk*, following the path of the first mourning ritual that involved a pilgrimage between two powerful peaks: *Akikwalal* at Pilot Knob near Yuma, and *Avikwami* in the Newberry Mountains near Needles (Ezzo and Altschul 1993:7-46). To the east and west of the Project, archaeologists have also recorded significant rock art and intaglio sites along the Colorado River and in the McCoy Mountains (van Werlhof 2004). No prehistoric rock or earth art was identified during the present survey of the Project, although surveyors did record a 200-meter-long segment of a north-south running trail, which may have connected with a documented segment of the Coco-Maricopa Trail (CA-RIV-53T) at Black Rock (see discussion in Chapter 4). The following sections present brief historical discussions of the five Native American groups with the strongest historical relationship to the Project vicinity.

### ***Quechan***

According to Quechan oral tradition, their territorial range extended along the Colorado River from Blythe, in the north, to Mexico, in the south. At the time of sustained European contact in the 17th 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 strangely not reported in that area in 1540, when the Alacon and Diaz expeditions reached the confluence (Forbes 1965; Forde 1931). Nevertheless, in the following century large Quechan villages existed in the area.

The Quechan economy was based on a combination of horticulture, fishing, and gathering. During the winter and spring, Quechan groups lived in seasonal village settlements located on terraces above the river floodplain. After the spring floods receded, small family groups would disperse to their agricultural plots along the river to plant crops. After the harvest in the fall, the Quechan would gather again in the large villages on the terraces, where stored agricultural foods, fishing, and limited gathering allowed them to live together through the winter (Bee 1983; Forde 1931). In all times but high flood, fishing in the Colorado River provided an important source of protein.

Numerous named 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 between Blythe and the Palo Verde Valley, and *Xenu mala vax* was on the east side of the river near present-day Ehrenberg (Bee 1982). Quechan and other Yuman-speaking groups report well-traveled trails that extend along the Colorado River as well as trail networks between peaks and other significant landscape features (see discussions in Cleland and Apple 2003). Primary ethnographic sources for the Quechan include Bee (1983), Castetter and Bell (1951), and Forde (1931).

### ***Mohave***

The Mohave were one of the most respected and feared groups in California at the time of European contact. They were known equally for their military might, powerful shamans and religious ceremonies, and proclivity to long-distance travel. The Mohave are also notable for their understanding of themselves as a unified “nation” of people, known as the *Hamakhava*, rather than as a series of loosely related clans or villages (Kroeber 1925:727). The whole of the Mohave acted together in defending their territory and attacking their enemies. Visiting parties of Mohave also traveled far and wide, apparently largely out of curiosity and almost entirely without fear. Thus, the Mohave became spiritually and socially influential over a vast portion of the US Southwest and southern California. Even the notably insular Zuñi pueblo people “perform dances that they attribute to the Mohave” (Kroeber 1925:599).

In 1604, the Oñate Spanish expedition encountered the Mohave as far south as the present Colorado River Indian Tribes Reservation (Stewart 1969), although their largest settlements were known to be further north. Kroeber (1959) reported that the majority of the Mohave population lived along both sides of the lower Colorado River from south of Davis Dam to Topock. According to Stewart (1969), the Mohave also extended their territory south into the Chemehuevi and Colorado Valleys, and intermittently controlled areas as far south as Palo Verde (cf., Kroeber 1959). After the Halchidhoma vacated the Parker-Blythe Valley area between 1825 and 1830, the Mohave briefly settled there, but soon returned to their stronghold in the Mohave Valley (Bean and Vane 1982).

During much of the year, the Mohave lived in villages on terraces above the Colorado River, only moving down onto the floodplain in the spring to plant crops after the seasonal floods. Like most Colorado River peoples, the Mohave relied on floodplain horticulture, fishing, and gathering for subsistence. Planted crops included maize, black-eyed beans (cowpeas), squash, pumpkin, and several local grasses. Cultivated plants were supplemented by the collection of wild plant foods including honey mesquite (*Prosopis glandulosa*) and mesquite screwbean (*Prosopis pubescens*), which could be stored for long periods of time and were traditional staple foods. Although the pods of both plants could be eaten green, they were usually pounded into flour using long stone or wooded pestles. Additionally, screwbean pods were often processed in large pits dug into sandy soil where the pods were placed, covered with vegetation, and then periodically watered to leach out bitter compounds (Lightfoot and Parrish 2009:355).

The bulk of the traditional Mohave diet was vegetarian, but hunting and fishing were nonetheless important components of the seasonal subsistence cycle. Mohave hunters considered spring the

best time to hunt, when they could lie in wait next to springs where the young grass would attract deer. Rabbits and other small game were also targeted, although they were more often taken in traps, snares, and communal drives. When the high waters of the Colorado River receded in July and August, the Mohave turned to fishing and caught a variety of Colorado River fish species by driving them into shallow sloughs or trapping them in seines (Kroeber 1925:737; Stewart 1957).

The Mohave are well known for their long-distance travel. Like other Colorado River tribes, they participated in a trade network extending east to the Pueblos of Arizona and west to the Pacific coast. A number of important passes and routes of travel, including the well-known Mohave trail connecting the high deserts with the southern California coastal valleys, were developed or frequented by the Mohave. The endurance and speed of Mohave travelers was legendary at the time of European contact. According to one hyperbolic account, groups of Mohave men, running only at night, were said to be capable of traveling from the Colorado River to the Pacific coast in only three day's time, although the typical duration of such a trip was 15 to 16 days (McCawley 1996:112). During the Colonial era, the Spanish frequently encountered groups of traveling Mohave who continued the tradition of desert-coastal travel and trade throughout the Mission period, occasionally in conflict with the wishes of Spanish officials (Cook 1962:158-159).

The general Yuman belief in the importance of dreaming, and the fundamental interrelationship between the mundane and spiritual worlds, was particularly developed among the Mohave (Kroeber 1925:754). All people were capable of meaningful dreaming, and most individuals came to their chosen roles in life as a result of their dreams. In dreams, the Mohave travel in a mythical place and time when the world was first formed and the important places, such as mountains and springs, came into being. Dreams also inform public rituals, and the many complicated "song series" that singers perform from memory are said to be dreamed as much as learned. The songs of the Mohave are remarkably specific geographically, noting "the exact spot at which each character journeyed or slept or stood or looked about" (Kroeber 1925:755). Thus, Mohave songs seem to act as a means of storing and transferring important landscape knowledge: they are, among other things, a collection of meaningfully constituted mental maps of the Mohave territory and beyond. Many nearby groups, including the Chemehuevi, borrowed extensively from the Mohave song series repertoire.

The Mohave were unique among the lower Colorado River groups in that individuals and families owned specific parcels of farm land, as well as individual mesquite trees. Disputes over privately owned resources were usually settled through physical contests "calculated to prevent fatalities" and avoid violent reprisals (Kroeber 1925:744). Primary ethnographic sources for the Mohave include Castetter and Bell (1951) and Kroeber (1920, 1925). More recently, Kenneth Stewart (1983) has summarized the ethnographic literature regarding the Mohave for the Handbook of North American Indians series.

### ***Halchidhoma***

Although no longer located in the area, the Halchidhoma are a Yuman-speaking people who, until about 1825, lived along the Colorado River in the vicinity of Blythe and Needles. The Halchidhoma were known to travel and trade over great distances. The Coco-Maricopa Trail, leading west from a portage point across the Colorado River adjacent to the Palo Verde Valley, linked the Halchidhoma with the Pacific coast (Dobyns et al. 1963). Ceramic seriation and

radiocarbon dates from marine shell artifacts indicate that an extensive trade network between the Pacific coast and the lower Colorado River region was established by A.D. 900 (Sample 1950). The Halchidhoma also traded with the Hualapai of northern Arizona, and had close relations with the Maricopa.

By all accounts, the Halchidhoma were frequently in conflict with their Colorado River neighbors, the Quechan and Mohave (e.g., Kroeber 1925). During the decades, if not centuries, of hostility, the Halchidhoma established strong alliances with the Yuman-speaking Maricopa and Cocopa peoples who lived to the east, along the Gila River. Ultimately, the Halchidhoma went to live with and intermarried with their allies the Maricopa, and are therefore poorly documented in the ethnographic literature. Spier's (1933) ethnography of the Maricopa touches only briefly on the, by then historical, Halchidhoma. Other sources include Castetter and Bell (1951), Kroeber (1925), and a more recent summary article by Harwell and Kelly (1983).

### ***Chemehuevi***

The Chemehuevi are the southernmost group of 16 groups of the Southern Paiute peoples (Kelly and Fowler 1986), and the only non-Yuman speakers living along the lower Colorado River at the time of European contact. The traditional territory of the Chemehuevi was an extensive area southwest of Las Vegas, including portions of the eastern Mojave Desert of California. Describing the Chemehuevi territory, Alfred Kroeber observed that it was "the largest in California occupied by a people of uniform dialect," but also "easily one of the most worthless, and certainly among the two or three most thinly populated" (Kroeber 1925:595).

The Chemehuevi were traditional allies of the Mohave, and after the Halchidhoma were driven from the Colorado River area in the early 19th century, the Chemehuevi moved into the area vacated by the Halchidhoma. Like their allies the Mohave, the Chemehuevi traveled extensively through the deserts and as far west as the Pacific coast "just to look around," as well as to exchange goods and obtain marine shell ornaments and raw materials (Kelley and Fowler 1986:377). Periodically, small groups of Chemehuevi and Las Vegas Southern Paiute would travel together to the Hopi villages in Arizona, although those trips were described as purely social visits involving gift exchanges, not trading expeditions (Kelley and Fowler 1986:377).

When Europeans first reached the California desert, the Chemehuevi occupied the eastern half of the Mojave Desert from south of Death Valley to Riverside and Imperial counties. Traditional Chemehuevi subsistence was based on hunting and gathering, although the groups living along the lower Colorado River adopted floodplain horticulture similar to that practiced by the Mohave and Quechan (Kroeber 1925; Roth 1976). Nevertheless, the lower Colorado River Chemehuevi retained a greater reliance on hunting and gathering, particularly focused on small game and mesquite, than did their riverine neighbors. Primary ethnographic sources for the Chemehuevi include Laird (1976), Kelly and Fowler (1986), and Euler (1966), who wrote a comprehensive ethnohistory of the Southern Paiute.

### ***Desert Cahuilla***

The Desert Cahuilla traditionally occupied the Coachella Valley, west of the Project, near the modern towns of La Quinta and Indio. During the Late Prehistoric and Protohistoric periods, the

Cahuilla were in regular contact with groups along the lower Colorado River. The traditional route to the river crossed directly south of the Project along the course of the modern I-10 freeway. Along with other Takic speakers, the Cahuilla are believed to have migrated into southern California from the Great Basin. Scholars do not agree upon the timing or effect of the Takic migration, and it remains an important topic of ongoing research (e.g. see Golla 2007; Sutton 2009). Based on linguistic data and archaeological materials, researchers have suggested migration dates from 1500 B.P. to as early as 2500 B.P.

Cahuilla subsistence was an extensive hunting-and-gathering system tethered to permanent villages located near reliable water. Large Cahuilla villages were inhabited year-round. Seasonally, as different foods became available, small groups would move to temporary camps to collect localized plant resources and to hunt. Important game animals included rabbits, deer, and bighorn sheep. The Cahuilla primarily exploited desert plant resources such as agave, yucca, mesquite, various cacti, and grasses. In addition, large groups periodically traveled into the mountains to harvest acorns and pinyon nuts with their mountain allies. They would bring the harvests back to the permanent settlements where the nuts could be stored for many months.

There are a number of ethnographic sources for the Cahuilla (e.g., Barrows 1900; Kroeber 1908; Strong 1929). Since the 1970s, Lowell Bean (e.g., 1972, 1978) has interpreted and synthesized the varied ethnographic information about the Cahuilla, working closely with modern tribal members (Bean and Saubel 1972).

## **Historical Background**

European exploration of the Colorado Desert began in 16th century, but sustained Euro-American settlement of the region did not occur until the mid-19th century. This extended period of exploration without expansion creates a long Protohistoric period in the region, during which Europeans and local Native American groups knew of one another, but interacted very little. This time period is discussed above from the point of view of Native American history. Below, we describe the Euro-American expansion into the region and subsequent historical developments.

### ***European Exploration***

By 1539, the Spanish had begun to explore parts of what they named Alta California. Early explorers, such as Francisco de Ulloa (1539), Hernando de Alarcon (1540), and Francisco de Coronado (1540), led expeditions into the Gulf of California, reaching the mouth of the Colorado River and continuing up the river past the Gila confluence. However, little exploration of the interior deserts was undertaken until much later. Spanish exploration of the interior deserts for the next 200 years was intermittent as the region was considered desolate, remote, and filled with staunch indigenous adversaries such as the Mohave and Quechan.

The first recorded explorer of the interior Colorado Desert region was Father Eusebio Francisco Kino, a Jesuit missionary, cartographer, and explorer. Starting in 1691, Kino established a string of missions in northern Mexico and southern Arizona, finally reaching the Colorado River in 1702. Almost 70 years later, Father Francisco Garcés followed Kino's route, reaching the villages of the Quechan Indians at the junction of the Gila and Colorado rivers in 1771. Garcés's party crossed the Colorado River and traveled west through the desert until they could see the

San Jacinto Mountains in the distance, before returning to Sonora. Three years later, Father Garcés and a Spanish border captain named Juan Bautista de Anza attempted an overland route to Monterey. When they reached the Colorado River, Anza found the local Quechan to be surprisingly friendly. The Quechan assisted the Spanish in fording the river, locating wells and trails, and ultimately rescuing an exploring party lost in the desert. In the 1800s, most of the travel from Arizona to central California followed Anza's route.

### ***The American Expansion***

The first Americans to arrive in the Colorado Desert in any numbers were prospectors hunting for the next big gold strike. Regionally, mining and prospecting activity was most intense in the mountains and high deserts of the Mojave, but small-scale mining has been a consistent feature of the Colorado Desert from the 1800s to the present day. Generally speaking, mining productivity in the Colorado Desert was greatest between 1890 and 1910, with a brief resurgence during the Great Depression in the 1930s, when a hard-scrabble existence in the desert seemed preferable to unemployment in the cities (Rice et al. 1996; Morton 1977). In the immediate Project area, manganese and gypsum mining were particularly intense during the initial years of World War I and World War II, when other mining activities were reduced or curtailed entirely.

In the 1820s, limited placer mining began in the eastern Colorado Desert. In the early 1800s, prospectors were some of the only Euro-Americans traveling in the California deserts, and they frequently came into conflict with Native American groups. From the 1840s through the 1880s, the U.S. Cavalry established a series of camps and forts throughout the Arizona, Nevada, and California deserts to protect settlers and immigrants from the often hostile tribes whose territories they were invading. In 1848, the discovery of gold at Sutter's Mill brought a tremendous influx of American and European settlers to California. Between 1849 and 1860 an estimated 8,000 emigrants crossed the Colorado Desert on their way to California (Laflin 1998:10). In the 1850s, some would-be miners tried their luck in the eastern Colorado Desert, but found very little gold. Most miners simply passed through the desert on their way to the larger strikes to the west and north.

Sustained economic development in the Colorado Desert region only began in the 1870s, and came to fruition in the early part of the 20th century. Development was dependent largely on two things: transportation and water. The first of these came in 1872, with the construction of the Southern Pacific Railroad from the ocean to the eastern edge California. The Southern Pacific line began on the coast and reached Yuma on September 30, 1877. The railroad was the single most important boost to mining in the southeastern Colorado Desert, offering convenient transportation of heavy mining equipment, supplies, personnel, and, when the miners were lucky, bullion. By 1880, the Southern Pacific Railroad was providing access to gold and silver ore deposits in the Chocolate Mountains, Cargo Muchachos, and Palo Verde Mountains. Water remained a scarce resource in the desert, with most water for mining enterprises coming from highly localized sources such as springs, wells, and streams.

By the turn of the century, miners from all over the world and from all walks of life had migrated to California hoping for the next big strike. While the popular image of the prospector is an old white man with a dusty hat and a trusty burro, the reality was much more diverse. Many of the

earliest miners in California were Native American, Mexican, Spanish, and freed or escaped African American slaves. With the completion of most of the western rail lines in the 1860s and 1870s, numerous immigrant Chinese railroad workers also turned to mining. The Chinese joined a host of hopeful immigrants from Ireland, England (particularly Cornwall), Italy, Germany, France, Chile, Peru, Australia, Croatia, and even the Pacific Islands (Caltrans 2008:63). Although few in number, women also owned interests in mines and took part in prospecting. The mining towns of the 1850s were raucous and exotic places filled with people from across the globe in search of easy fortune. In the last decades of the 1880s, though, most of the easily mined placer deposits of gold were depleted and the “halcyon days of the gold rush were quickly coming to a close,” precipitating increased racial and ethnic tensions throughout the state (Caltrans 2008:44). In the Project vicinity, the most numerous ethnic groups were EuroAmericans, Native Americans, African Americans, and recent Mexican immigrants, some of whom were also seasonal workers in the agricultural fields around Blythe.

In the newly founded farming community of Blythe, local newspapers extolled the mineral riches of area mountains, which were reported to contain “nearly all important minerals” including gold, silver, copper, lead, limestone, and manganese (*Blythe Herald*, 15 January 1917; see also *Palo Verde Valley Weekly Review*, 9 November 1916). The glowing accounts of mineral riches in early Blythe newspapers were belied by accompanying humorous pieces about the “passing of the prospector,” and the advent of a new “mechanized” type of prospector who bid farewell to the burro in favor of “a real automobile” (*Palo Verde Valley Weekly Review*, 28 December 1916; *Blythe Herald*, 15 January 1917). By the early 1900s the glory days of mining were over, and in the Palo Verde Valley area mining remained a relatively small part of the economy, never becoming the economic boon that early town planners might have hoped.

Several modestly successful copper mines, such as the Crescent Mine and Smith-Hopkins Mine, were located in the northern McCoy Mountains, but the less-glamorous gypsum and manganese deposits became more important in the region. In the northern extent of the McCoy Mountains, several mines produced significant quantities of manganese, the ore being used to harden steel for armaments (Butler 1998:44; Shumway et al. 1980:44). During WWI, the Blackjack mine employed one to two dozen men at a time to extract 45-percent-pure manganese ore which was shipped east for use in armament factories. A brief mention of the mine in the *Blythe Herald* optimistically proclaimed the “outlook” at the Blackjack mine “unusually good” due to the inflated war-time price of manganese ore (*Blythe Herald*, 11 October 1917). With the end of the war in 1918, though, the price of manganese fell to prewar levels, and manganese mines lay largely dormant until the onset of WWII in the 1940s.

When the United States formally entered WWII, manganese mines in the McCoy Mountains became active once again. Of the dozen or so manganese mines “active in the vicinity of the McCoy Mountains north of Blythe” during WWII, the largest was the Arlington Mine along the northeastern flank of the McCoy range (Shumway et al. 1980:44). From 1942 to 1945, the Arlington Mine shipped roughly 8,500 tons of ore via the Santa Fe Railroad at the Inca (Cox) siding (Shumway et al. 1980:44; see also *Palo Verde Valley Times*, 19 November 1942, and 24 June 1943). In 1945, the government created new, more-stringent specifications for manganese ore that none of the McCoy deposits could meet, leading to a near total shutdown of the mines in a matter of months.



In addition to manganese, area gypsum deposits were also exploited during WWII. Gypsum is a primary ingredient in modern wall board, known commonly as drywall, and historically it was used as a component in various plasters and in fast-drying Portland cement. Several large gypsum deposits exist north of the Project. The most significant is located near the railway town of Midland, which developed to support the gypsum mines. During the height of WWII, the “need for quick construction of armed forces installations boosted the employment [at the Midland mines] to an all-time peak of over 400 men” (Shumway et al. 1980:49). After the war, though, the demand for gypsum was increasingly met by foreign mines, and in December 1966, the Midland Plant, then owned by US Gypsum, was closed (Shumway et al. 1980:50).

Within the Project, no mines or significant prospects exist. The many waves of mining activity in the region are identifiable in the Project as a scattering of abandoned prospecting pits, collections of food trash and other debris, and a handful of prospect claim markers in the form of wooden stakes, small stone cairns, and metal cans which may originally have contained claim papers. These are most common along the west side of the Project at the base of the McCoy Mountains, and in the many drainages that cut into the mountain range. Automobile parts, bits of screening and wire, and sundry tools are also common, reflecting the new, 20th-century prospector’s reliance on automobiles: “He now packs his chuck and blankets, and a barrel of water if he is wise, and goes forth in a real automobile,” often of an “ancient vintage” (*Blythe Herald*, 15 January 1917).

### ***Development of the Palo Verde Valley***

In southern California, agriculture became an economically important industry by the late 1850s, directly on the heels of the enormous growth in population produced by the Gold Rush. In the late 19th century, homesteading formed the foundation for California’s agricultural economy, after the passage of the Homestead Act in 1862 opened vast areas of public land to private citizens. The California Swamp and Overflow Act of 1874 and the Desert Land Act of 1877, also promoted the acquisition of open tracts of land, often by speculators. Much of this land was poorly suited to farming, but the verdant Palo Verde Valley of the lower Colorado River was a dramatic exception.

### ***The Founding of Blythe***

From 1855 to 1884, the U.S. General Land Office registered many new settlers in the Palo Verde Valley (Setzler 1998: iv). The first large-scale venture to develop land in the valley began in the 1870s, with the arrival of Thomas H. Blythe, “the father of the Palo Verde Valley.” Blythe was the visionary developer of the seasonally inundated lands on the west bank of the Colorado River, directly across from the established portage point at Ehrenberg, Arizona. Born Thomas Williams in England in 1822, Thomas changed his name after a series of business failures, and came to America for a new start in 1849. He eventually moved to San Francisco, in 1855, and gained some success in a wide range of ventures, including mining, promotion, and general investment. Although he never married, Blythe had one daughter named Florentine Blythe, also known as Flora and Florence, who was born in 1873 and raised without him in England.

In 1875, Blythe traveled with an engineer named William Calloway to the Ehrenberg, Arizona along the Colorado River. Calloway had previously been engaged in building many of the desert

roads of San Diego County, which at that time included most of current Riverside County. Calloway's knowledge of the land and engineering acumen impressed Blythe and encouraged him to consider investing in development along the Colorado River. Blythe and Calloway envisioned the development of the river-fed lands, and Blythe had a particular dream of constructing an elaborate hacienda in his newly developed riverside retreat (Setzler 1998:10). To realize his dream, Blythe hired Calloway as a project engineer, and George S. Irish as project manager. In 1876, Blythe was introduced to Mexican General Guillermo Andrade, a promoter of colonization of the Colorado River on behalf of the Mexican government. Andrade became a silent partner in Blythe's scheme for development. In the coming years, Blythe's venture to clear and develop 40,000 acres of land west of the Colorado River became an obsession for him, although he spent very little time there (Setzler 1998:10).

In 1875, the venture filed for 400,000 acres of Swamp Land District No. 310, as designated by the California Swamp and Overflow Act (Palo Verde 2005:7). By late 1875, Blythe named his fledgling town, "Blythe City, in compliment to myself" (Setzler 1998:10). Initially the town consisted of tent houses, a corral, and a general store. Thomas Blythe made the first filing in California for water rights in 1877 when he requested rights to Colorado River water for his venture (Setzler 1998:v). He was granted 190,000 miner's inches. Together, Calloway and Irish developed experimental ditch and canal irrigation systems, hiring local Native American laborers who had been farming the floodplains successfully for centuries. The major project of their irrigation system was the construction of a masonry headgate in the riverbank to control flow to the system (Palo Verde 2005:7). By 1878, a 40-acre experimental farm, known as the Colorado Company, was planted. In 1880, Calloway was killed in an altercation with two of the Native American workers, causing a delay in the completion of the main canal intake until he was replaced by C.C. Miller (Setzler 1998:11). Two years later, the canal was almost complete, and Blythe made his second and last visit to the site. Blythe was enthusiastic about the progress, but fatefully, he would never see the fruition of his \$82,000 investment. Only one year later, on April 4, 1883, Thomas Blythe died of a heart attack in San Francisco (Setzler 1998:11). After years of convoluted legal battles, Blythe's daughter Florence inherited the property in 1904.

Almost immediately, the Mutual Water Company, the precursor to the Palo Verde Irrigation District, was formed to purchase the land from Florence. Later in 1904, the land was transferred to the Mutual Water Company. During this time, pioneering settlers continued to pour into the valley, and the town of Blythe grew from a tent city to a proper town, finally incorporating in 1916 with 600 residents on 832 acres of land (Palo Verde 2005:7). The first residents were "desert characters, homesteaders, pioneer settlers who wanted land of their own, fugitives from the law and adventurers who met the accepted challenge to help tame the area, and make it civilized" (Setzler 1998: ii). Mining activities and then homesteading and experimental farming continued to attract new residents and commerce, via steamboat and railroad. Most of the early homes throughout the Palo Verde Valley were tent houses, although there were also a few adobe buildings in the region (Setzler 1998:1). Blythe and the Palo Verde Valley prospered in the 1910s, with high demands for crops related to wartime activities, most of all cotton. With a new cotton gin in 1911, and settlers clamoring for homestead lots, the town of Blythe experienced a small boom, peaking with high cotton production in 1919 and the end of WWI. Several civil projects were constructed during this period of prosperity, and set the foundation for the continuing growth of the city.

In transforming arid land into productive farming and grazing lands, water was the key. Long after the people of Blythe had incorporated and begun to farm the wildly productive Palo Verde Valley with Colorado River water, the Metropolitan Water District was created in the 1930s to transport water from the Colorado River to the Los Angeles basin. The Metropolitan Aqueduct was constructed from Parker Dam, north the Project, through the mountains east of Indio to Riverside and, finally, to Los Angeles. It was the largest construction project in the world at the time, and as it developed, the Metropolitan Aqueduct provided much-needed jobs during the Depression (Pittman 1995). The diversion of water to the Los Angeles basin, though, was of little import to the farming communities of Blythe and the greater Palo Verde Valley, as they retained their water rights originally granted to the quixotic town founder, Thomas Blythe.

### *Ranching*

On the Palo Verde Mesa in the vicinity of the Project, agriculture was never a significant pursuit due to the poor soils and lack of water. These impediments, though, did not stop a few enterprising souls from using the area as ranching land during the early 20th century. Although we do not have their names, we can tell some of their story from the material remains on the mesa. One possible ranch site documented during the current survey (site SMB-H-404) dates to the early 20th century and contains several standing structures, a water trough (with an etched date of “1936”), and other features. Other likely ranching sites and features are concentrated along the eastern edge of the Project, and in the McCoy Wash.

As part of an archaeological survey in the McCoy Wash, Albert Spencer, Jerry Reiou, and colleagues (Spencer et al. 2001) recorded several sites probably associated with limited livestock grazing just north of the current Project in the McCoy Wash. In several site record forms (e.g., those for sites CA-RIV-7174, CA-RIV-7179, and CA-RIV-7080, on file at the EIC), Spencer and colleagues describe riveted metal well heads, dilapidated wire and lumber enclosures, concrete foundations, and other features that they associate specifically with early 20th century sheep grazing. As evidence of such activity, they cite a Mr. Walter Scott and “oral histories” which describe the use of the McCoy Wash and vicinity for sheep grazing early in the 20th century. This accords well with both the recorded archaeological features, and historically documented floods of the McCoy Wash, which left the normally dry area verdant and grassy for a short while. One such large flood occurred in 1939, and much of the ranching-related debris in the CRSA may date to the short period of green after that and earlier floods (Palo Verde 2005:68).

### *Training for Foreign Wars*

Harsh, dry, and forbidding, the western deserts of California, Arizona, and Nevada have always been one of the most thinly populated regions in the United States. Prehistorically, the western deserts were home to a number of Native American groups, as discussed above, most of whom congregated along the rivers and other reliable water sources, leaving vast stretches of desert largely uninhabited. Today, populations are still concentrated along the rivers and around fresh springs and wells. In March 1942, when General George S. Patton, Jr. first visited the area, there were only a handful of small towns and a total human population in the low thousands, but he and the U.S. military command were delighted with this “desolate and remote” landscape (Meller 1946:3).

All of the qualities that make the western deserts inhospitable – the dry hot days and bitterly cold nights, the general lack of water, the poor sandy soils, the dunes and desert pavements broken only by craggy mountainous terrain – were the very qualities that made the deserts ideal for large-scale, realistic military training. In the western deserts, military commanders found a vast, unforgiving, and lightly populated landscape perfect not only for training troops in desert tactics, but also for mounting joint maneuvers on a previously inconceivable scale. Making the area even more inviting were the relatively good transportation systems of paved roads and rail lines that crossed the deserts and allowed for the movement of supplies, personnel, and armaments (Bischoff 2000; Henley 1989).

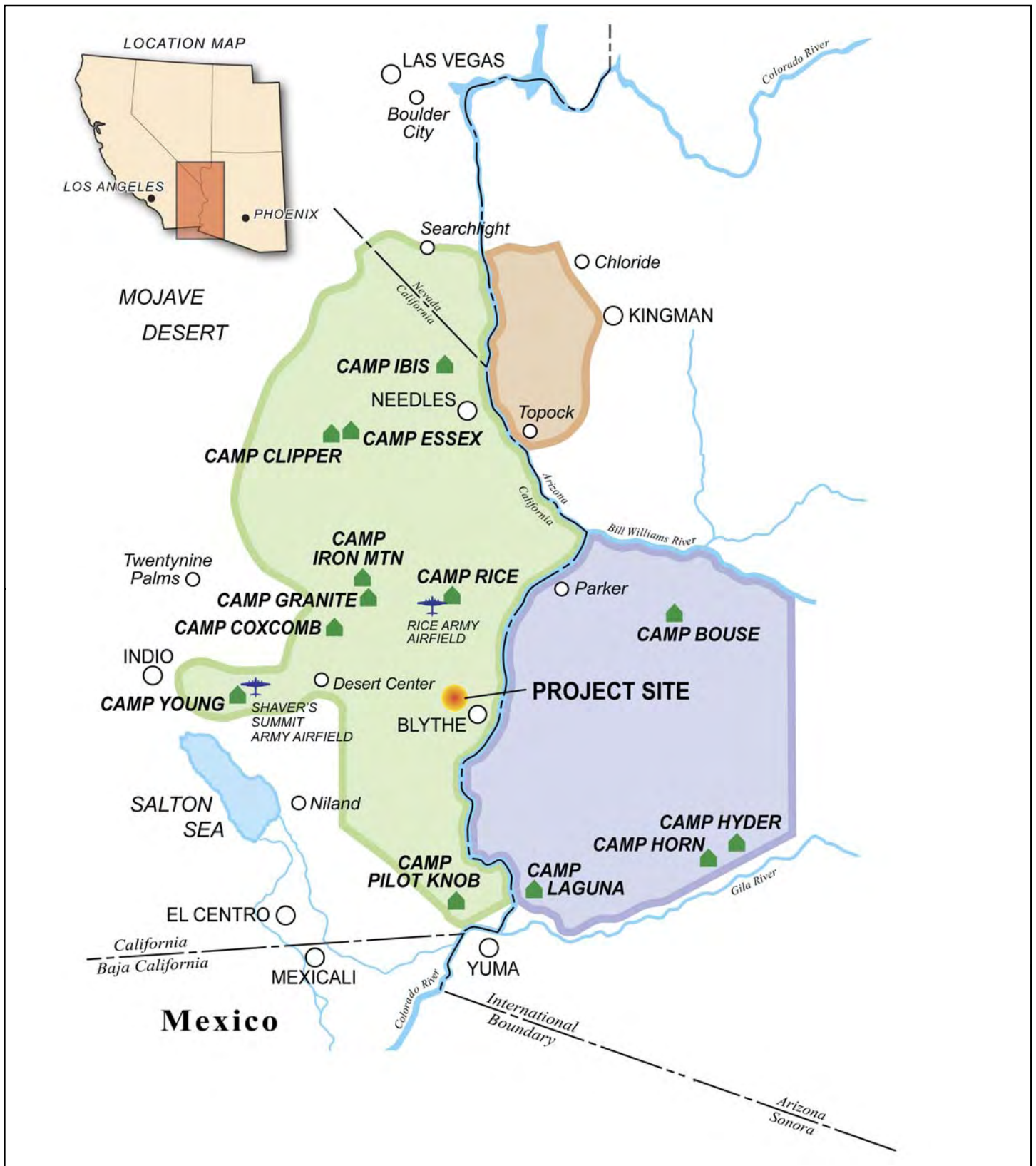
### *World War II: The Desert Training Center and California-Arizona Maneuvers Area*

Early in 1942, shortly after the bombing of Pearl Harbor and the U.S. entry into WWII, the Director of Army Ground Forces and Combat Training for the War Department, Lt. General Lesley J. McNair, ordered the creation of the Desert Training Center (DTC) in California, Arizona, and Nevada (Figure 4). The DTC was to be a training facility where U.S. troops could become acclimated to the rigors of desert fighting, and desert tactics could be tested before the inevitable confrontation with the Germans in North Africa. General McNair believed in greater “realism in training,” which he equated with “large maneuvers and live-fire exercises” of a kind rarely seen in U.S. military training up to that point (Gorman 1992:1). The DTC was, thus, also intended to function as an enormous mock theater of war in which his ideas about “realism in training” could be put into action.

One man who shared McNair’s abiding belief training realism was General George S. Patton, Jr., who had only recently been placed in command of the first tank unit in U.S. military history, the 1st Armored Corps. Early in his military career as a cavalry man, Patton had observed first-hand the importance of large, realistic training maneuvers. In 1916, as part of the punitive expedition against Pancho Villa, the cavalry amassed in the western deserts a “war strength regiment of infantry and some artillery . . . in the midst of an unrestricted maneuver and hundreds of square miles of varied terrain,” and the training benefits were, in Patton’s words, “almost UNIMAGINED” (Patton 1917, in Province 2002:19). Therefore, when General Patton was tasked with overseeing the creation of the DTC in the western deserts of California, Arizona, and Nevada, he was fully aware of the hardships and “unimagined” benefits of the deserts. Patton scouted the region by plane, jeep, and horseback beginning in March 1942. The area he eventually chose was well suited to military training because of several features, including the general lack of human habitation, the difficult and varied terrain, the established railroads and highways, the presence of several military installations throughout the region, and the fact that much of the land was owned by the U.S. government (Henley 1989:5-7).

#### — Desert Training Center

Patton established his base of operations near Shaver’s Summit (now Chiriaco Summit) at Camp Young. Troops began arriving at the DTC in April of 1942 and endured harsh physical training that included restricted water, physical endurance training, and lack of sleep. Life at the DTC was so difficult that the officers and enlisted men came to refer to the facility as “the place that God forgot” (Henley 1989:22-24). Patton commanded the DTC for only three months, and in



<p><b>Map Location</b></p>	<p><b>Legend</b></p> <ul style="list-style-type: none"> <li>DESSERT TRAINING CENTER</li> <li>AREA B ADDED IN 1943</li> <li>AREA C ADDED IN 1943</li> </ul> <p>0 30 60 Miles</p>	<p><b>Blythe Solar Power Project Cultural Resources Class III Survey Report</b></p> <p><b>Figure 4</b></p> <p><b>Map of the DTC/C-AMA with the location of the BSP indicated</b></p>	<p><b>Solar Millennium</b></p> <p><b>AECOM</b></p> <p>Date: September 2009</p>
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July 1942, he was placed in charge of the Allied invasion of North Africa, code named Operation Torch. When General Patton left the DTC, his units were replaced by 12,000 new troops, and he was replaced by Major General Alvan Gillem, Jr. All of the maneuvers in the Project vicinity were likely under the direction of Major General Gillem and his successors. Patton's exercises were largely confined to the desert reaches around Camp Young, many miles to the west. The first large-scale maneuvers reported in the local *Palo Verde Valley Times* newspaper began in August of 1942, under the direction of Major General Gillem, and eventually spilled onto the Palo Verde Mesa.

— California-Arizona Maneuvers Area

After the resounding success of the Allied troops in North Africa, the need for desert training evaporated, but the perceived benefits of the DTC as a vast theater of war ensured the center's survival. In 1943, after 19 months of operations and expansion, the DTC was home to almost 200,000 troops and had grown in size to an area larger than the whole of England. At its largest, the DTC/C-AMA encompassed some 18,000 square miles in California, Arizona, and Nevada. On October 20, 1943, the DTC was officially renamed the California-Arizona Maneuver Area (C-AMA), in recognition of the evolving purpose and scope of the facility (Meller 1946). The facility, though, continues to be better known as the Desert Training Center, and most researchers today acknowledge that fact by referring to the facility by the somewhat cumbersome name Desert Training Center/California-Arizona Maneuver Area, or DTC/C-AMA (Bischoff 2000). A contemporary account of the DTC/C-AMA, dated 19 November 1943 by Captain Herbert Chase, Public Relations Officer, describes the mission of the facility:

The mission of the California-Arizona Maneuver Area is to train, maintain, and supply troops realistically as in a Theatre of Operations. The training is designed to harden troops physically and to train soldiers mentally for the shock of battle. Much of the firing is conducted under realistic battle conditions. Other objectives are the development of tactics, techniques, and training methods suitable for desert warfare, and to test and develop equipment and supplies (as quoted in Baty and Maddox 2004:88).

In addition to the command center at Camp Young, the DTC/C-AMA eventually contained 12 divisional camps in California and Arizona, including the top-secret Camp Bouse where specially equipped tanks and their crew were readied for action against the Germans (Baty and Maddox 2004; see also Henley 1989:9). Of the California camps, Camps Iron Mountain, Exxex/Clipper, and the short-lived Camp Rice (35 miles north of the Project) were constructed in the spring of 1942. Shortly thereafter, Camps Coxcomb and Ibis were constructed in the summer of 1942 and the winter of 1942/1943, respectively (Bischoff 2000). Camp Pilot Knob, the furthest south camp located roughly 80 miles due south of the Project, was constructed in the spring of 1943. Camps Laguna, Horn, Hyder, and Bouse, in Arizona, were constructed after the Arizona land known as "Area B" was added to the DTC/C-AMA in the summer of 1943 (Bischoff 2000:23). These camps are the most visible remains of the enormous flurry of military activity in the DTC/C-AMA between 1942 and 1944, but they were not the true focus of that activity. As Matt Bischoff forcefully stated in his overview of the DTC/C-AMA:

[T]he purpose of the facility was to train soldiers. Troops did not come out to the desert to remain in their camps, and they spent much time in the field, training and

maneuvering. Maneuver areas and their related sites represent the real “work” of the Desert Training Center, where men were taught to fight and survive in desert combat (Bischoff 2000:103).

#### — Maneuvers

During the life of the DTC/C-AMA, there were six major maneuvers consisting of multiple divisions pitted against one another across enormous battle lines (Bischoff 2000:44). In the Project vicinity, evidence for maneuvers is well represented, creating a landscape of war comparable to any actual battlefield. As documented in local newspapers, the Palo Verde Mesa and the towns of Midland and Blythe were frequently embroiled in the “sham battles” of the DTC/C-AMA (e.g. *Palo Verde Valley Times*, 20 August, 3 September, 24 September, and 8 October 1942). In the late summer and fall of 1942, the town of Blythe became known as “Little Libya” sitting at the center of “the greatest desert maneuvers in the history of the American Army” (*Palo Verde Valley Times* 8 October 1942). These enormous maneuvers ran for several weeks or months, during which the men lived on the desert in makeshift bivouacs, and dined primarily on canned C- or K-rations opened with distinctive key-wind strips, P-38 can openers, or “bayonet” style. As the controlled “dispersal” of armored vehicles was critical to desert camouflage and defense, during the maneuvers troops traveled, slept, and ate with their vehicles, not in centralized facilities (Patton 1942, in Province 2002:37-38, 196). This method of dispersed bivouac, march, and battle formation, would be expected to result in an equally dispersed and scattered distribution of food, fuel, oil, and other trash, similar to that actually observed in the Project (see Chapter 5).

In one notable “sham battle,” the fighting overran the Palo Verde Mesa and “hundreds of tanks maneuvered on the north mesa” in the vicinity of the Project (*Palo Verde Valley Times*, 24 September 1942). In an exciting underdog victory, the Red army, “outnumbered two to one, fell back 70 miles toward the Palo Verde Valley [to the mesa], and successfully outpointed the numerically superior Blue army” (*Palo Verde Valley Times*, 24 September 1942). This battle was held between the communities of Vidal, Rice, and Blythe, in an area encompassing the Project. During the Red army’s strategic retreat, they took over the town of Blythe with tanks, “covering the main thoroughfares leading into town.” A few weeks later in early October 1942, the fighting again encroached upon the “outskirts of Blythe,” as foreign observers from more than a dozen allied countries – from Chile and Venezuela to China, South Africa, and Poland – came to see Major Gillem’s vast training maneuvers (*Palo Verde Valley Times*, 8 October 1942).

After the exercises of the summer of 1942, local papers do not mention large-scale battles in the area again. Through 1943, there are sporadic notices of soldiers getting lost on the desert, causing highway accidents, taking showers at the USO Club during maneuvers, or causing a stir in Blythe, which was frequently overrun by men on leave with nowhere else to go (*Palo Verde Valley Times*, 4 March, 18 March, 8 July, 29 July 1943). Troops from Camps Ibis and Rice are specifically mentioned. This lack of comment on major maneuvers in the vicinity of Blythe during 1943, after such vivid accounts in 1942, may simply reflect a growing sense of secrecy and control over media coverage of DTC/C-AMA affairs. Alternatively, though, the Palo Verde Mesa may not have hosted large-scale maneuvers again.

One tantalizing bit of evidence is a historical map titled, “California-Arizona Maneuver Area,” thus post dating the renaming of the facility in October 1943, which shows the Palo Verde Mesa north of the Blythe Army Air Base as an “Off Limits” area. In this map, on file at the George S. Patton Museum, the east-west access road between the WWII-era Arlington Mine and the Inca railroad siding, is also marked as off limits. After the 1943 change in mission from desert training to theater of war, apparently “many areas within the DTC/C-AMA area were designated ‘off limits’ to soldiers,” and the Mesa northwest of Blythe may have been one of them (Bischoff 2000:31). If so, then most of the materials present in the Project would date to the brief window between the departure of General Patton in the summer of 1942, and the re-alignment of the Desert Training Center as the California-Arizona Maneuvers Area in the fall of 1943.

#### — Blythe Army Air Base

To support the mission of the DTC/C-AMA, several desert airfields were commandeered and significantly improved by the Army between 1942 and 1944. One of these wartime training bases was the Blythe Army Air Base, which was originally constructed by the Civil Aeronautics Administration (CAA) in 1940 as the Intermediate Flying Field Site 21 (Wilson 2008:4). With the development of the DTC/C-AMA, the little airfield west of Blythe was identified as an excellent candidate for Army use, and it was officially taken over by the Army in April 1942, under the direction of General Henry H. Arnold, Commanding General of the Army Air Forces (Wilson 2008:12). One month later, the 46th Bombardment Group was deployed to the Blythe Army Air Base, and the men immediately went to work building base housing, bringing in utilities, and improving the airfield facilities.

By September 1942, the airfield was formally designated the Blythe Army Air Base, with paved runways suitable for military aircraft. In the spring of 1943, the airfield was further improved, and an “unusually large taxi strip, of a type heavy enough to accommodate the largest four-motored bombers,” was constructed (*Palo Verde Valley Times*, 4 June 1943; see also 13 May 1943). From the fall of 1942 to 1945, the Blythe Army Air Base supported numerous training exercises in the DTC/C-AMA, and became known for its excellent training of heavy bomber crews who went on to complete hundreds of successful bombing missions in Europe and the Pacific (Wilson 2008).

#### — Closing the DTC/C-AMA

Ultimately, the enormity of the DTC/C-AMA training exercises became too great to manage, as all available fighting troops were needed on the fronts in Europe and the Pacific. After training hundreds of thousands of enlisted men and officers, and aiding in the formulation of numerous tactical advances, the DTC/C-AMA was closed in April 1944. As a heavy-bombing training facility, the Blythe Army Air Base remained in operation for another year. At the end of 1945, though, after months of slow down-staffing and dismantling, the Blythe Army Air Base was decommissioned and returned to the people of Blythe as a community airport (*Palo Verde Valley Times*, 11 October 1945, 20 December 1945). During this time, the remaining Army staff, including a combat engineer battalion, helped the small town of Blythe to recover from the war by assisting in several beautification projects during their off weekends (*Palo Verde Valley Times*, 4 October 1945).

With the closing of the DTC/C-AMA and the Blythe Army Air Base, the Colorado Desert returned to its prewar population and activity levels. Civilian buildings and airports converted for military use during the war returned to civilian use. Surplus military barracks were recycled for a variety of uses throughout the local communities.

### *Before Vietnam: Joint Exercise Desert Strike*

In the spring of 1964, the enormous area that had been the DTC/C-AMA once again supported large-scale military training exercises employing both ground and air forces. From May 17th to 30th 1964, a joint Army–U.S. Air Force training exercise, known as Exercise Desert Strike, took over the Palo Verde Mesa and more than 12 million acres along the California-Arizona border. Amid the escalating nuclear arms race, the U.S. Strike Command elected to conduct the largest and most costly training exercise at the time, to “become familiar with the concepts and doctrines associated with large-scale employment of nuclear weapons” (U.S. Army, n.d.:312). Army and Air Force units were trained in passive and active tactics, concepts and procedures for joint operations, and the use of and defense against tactical nuclear weapons.

The exercise was a two-sided enactment, with fictitious world powers code named “Calonia” and “Nezona” sharing a common border at the Colorado River. The premise of the conflict between these two entities, each led by a Joint Task Force and two designated War Cabinets, was a dispute over water rights. Major tactical operations during the exercise included deep armor thrusts, defensive operations along natural barriers, counterattacks including airmobile and airborne assaults, and the simulated use of nuclear weapons. The Air Force provided fighter, air defense, interdiction, counter-air reconnaissance, and troop carrier operations in support of both joint task forces (U.S. Army, n.d.:316). In the first phase of Desert Strike, Nezona initiated mock battle with a full-scale invasion of Calonia. A new concept for military river crossings was put into operation during this invasion, accomplished with a combination of assault boats, amphibious armored personnel carriers, ferries, bridges, and fords at eight major sites across a 140-mile long stretch of the Colorado River. The practice of attack and counterattack continued into a second phase, in which simulated nuclear strikes and airborne assaults were traded between the forces.

To the troopers who participated in Desert Strike, the exercise was better known as “the long, hot walk” (Moore 2008). According to Major John Jinerson, who participated in Desert Strike as part of A Company, 459th Signal Battalion, the experience of these enormous maneuvers for individual soldiers and units was often a lot of waiting followed by brief moments of activity (John Jinerson, personal communication 2009). In the velvety dark desert nights, many men saw what they believe were UFO’s as they awaited orders. Stationed between Amboy and Cadiz, Jinerson’s company was testing two-way radios for use in Vietnam, and was not directly involved in most of the simulated live-fire exercises along the river. To relieve the heat and the boredom, many men brought in beer by the case. A particular favorite was Falstaff beer, because “it was cheap” (John Jinerson, personal communication 2009; see also Jinerson’s 2009 online video). Within the Project, surveyors found a number of aluminum-top pull-tab beer cans of the type that would have been available in 1964, including Falstaff beer cans (Plate 8).



**Plate 8. Members of A Company, 459th Signal Battalion enjoying a little down time during Exercise Desert Strike, May 1964 (courtesy of John Jinerson).**

Desert Strike “proved once again the lessons which had been learned in World War II when this same area had been part of the great California-Arizona Maneuver Area,” with one commander General Bastion praising the extensive Desert Maneuver Area as it “provided freedom of maneuver and reduced the dependence of units on existing road nets. The long distances involved, the possibility for uninhibited movement, and the lack of civilian population centers as an alternate supply source provided extremely fine tests in logistics, communications, and maintenance” (U.S. Army, n.d.:325).

The magnitude of the troop movements, and the required supplies and equipment, made Exercise Desert Strike the largest training operation in the United States since WWII (U.S. Army, n.d.:319). The total cost of Desert Strike was \$35,342,493, with the participation of 89,788 troops (U.S. Army, n.d.:323). The U.S. Continental Army Command initially critiqued the operation as being poorly planned due to equipment degradation in the difficult environment and a lack of value in troop training for the time and cost, although the value of more “realistic” engagements for all involved units was noted (U.S. Army, n.d.:321). After Desert Strike, large-scale training exercises were discontinued in the Desert Maneuver Area, and the country became completely engaged in the war in Vietnam.

### ***Recent Activity on the Palo Verde Mesa***

The most notable contemporary activity on the Palo Verde Mesa is the collection of surface rocks and minerals from the raised pebble terraces that run through the mesa. These terraces, formed by the Colorado River during the Pleistocene, were mined prehistorically for cobbles of dense, fine-grained stone suitable for the production of flaked stone tools (Flenniken and Spencer 2001; Schaefer 1985). In recent years, the pebble terraces have attracted individual rock hunters and large-scale commercial rock collectors. Beginning in the 1980s, significant numbers of rock collectors began frequenting the Palo Verde Mesa pebble terraces targeting the multicolored quartzite cobbles, called “sunburst pebbles,” used in landscaping, construction, and “the manufacture of terrazzo tiles” (Flenniken and Spencer 2001:2; Mitchell 1989; Reed 1984a, 1984b). Individual rock hunters also visit the pebble terraces to collect large hexagonal quartz crystals and ferrous limonite cubes, both of which might also have been specially collected by prehistoric visitors to the mesa (Parker and Parker 2008; Plates 9 and 10). In an online forum, Dr. Delmer G. Ross, a Professor of History at La Sierra University, has posted extremely detailed descriptions of the pebble terraces in the Project and the mineral specimens to be found there.



**Plate 9. Limonite cubes in the BSPP.**





**Plate 10. Hexagonal quartz crystal in the BSPP.**

In addition to rock collection, in the 1970s and 1980s, the Palo Verde Mesa was also the scene of a brief, and ultimately tragic, attempt at farming. Agriculture has historically been the most significant contributor to the Palo Verde Valley economy, but the poor, gravelly soils and lack of water of the mesa effectively discouraged any attempts at farming until 1977. That year, Mr. Max Eakins was granted permission to farm unused portions of the northern runways at Blythe Airport, formerly the Blythe Army Air Base. He used central-pivot irrigation systems which created huge crop-circle-like scars still evident on the surface, and from the air. With the application of regular water, Mr. Eakins brought in several alfalfa crops over seven years. In a truly bizarre turn of events, this lone agricultural enterprise on the Palo Verde Mesa ended abruptly on January 4, 1984 when Mr. Eakins and his wife Susan were shot and killed by two “local ne’er-do-wells” (Wilson 2008:91). After the capture of the murderers, the Eakins’ bodies were found buried along the western edge of the airfield. The apparent motive for the killings was theft – of the alfalfa crop.



## **CHAPTER 3**

### **ARCHIVAL RESEARCH AND CONTACT PROGRAM**

This chapter outlines the results of the records search and background research for the BSPP and vicinity. Archival research was conducted for the Project to identify previous surveys within or near the BSPP. Various sources were consulted, including historical maps and photographs on file with agencies and institutions that may have information pertinent to the Project. A contact program was initiated with individual Native American individuals and tribal groups to solicit their input on the Project. Historical societies located near the Project were also contacted to identify any additional information or concerns they may have relevant to the Project.

Archival research was conducted to encompass the areas required under Section 106 of NHPA, as well as CEC siting regulations. The archival research included a complete records search at the California Resources Information System, Eastern Information Center at the University of California, Riverside, conducted by their trained and qualified staff. All materials collected as part of the EIC records search area presented in confidential Attachment 2.

#### **RECORDS SEARCH**

Prior to field investigations, a records search was conducted by the staff of the EIC, on February 11, 2009. The Project Records Search Area encompassed the Project right-of-way as originally requested from the BLM, and a one-mile buffer around the right-of-way boundaries. The search included a review of archaeological, historical, and environmental literature as well as the archaeological site records and survey maps on file at the EIC. In addition to records housed at the EIC, cultural resources staff conducted a background literature review of the following resources:

- National Register of Historic Places, California Register of Historical Resources, as well as local listings
- BLM site files
- Historic GLO maps
- Documents on file with the General Patton Memorial Museum
- Documents on file with the Palo Verde Historical Museum and Society.

#### **Previous Investigations**

The records and literature search identified 26 previous investigations conducted within the Project Records Search Area. These consist of 23 survey-level investigations, one heritage resources program, one monitoring report, and one regional overview. Of these, two previous investigations were conducted within the Project plant site disturbance area (BLM 1978; Cowan and Wallof 1977), and another seven were conducted within portions of the originally proposed Project transmission line (King et al. 1973; McDonald and Schaefer 1998; McDougall et al. 2006; Mitchell 1989; Padon et al. 1990; Underwood et al. 1986; Wilson 1984). Although the

original transmission alignment has since been abandoned, any new alignment is likely to cross through most, if not all, of these same survey projects.

The reports by Jay von Werlhof (von Werlhof 1989, 2004; von Werlhof and von Werlhof 1974) and Jerry Schaefer (Schaefer 2003; McDonald and Schaefer 1998; Schaefer et al. 1998) notably contain detailed and informed discussions of the prehistoric and ethnographic use of the immediate project area, reflecting the authors' significant research experience in the region (see also Schaefer 1994b). Further, Schaefer's 2003 report contains an excellent synthesis of the history of archaeological research in Colorado Desert, which augments the exhaustive research history compiled two decades earlier by Robert Crabtree (von Till Warren et al. 1980; see original reports in Attachment 2).

In addition to the reports mentioned above, other investigations of particular importance to the assessment of archaeological materials in the BSPP include those by Mike Mitchell (1989), Judyth Reed (1984a, 1984b), and Ruth Wilson (1984), which address the prehistoric use of the Pleistocene pebble terraces along the eastern edge of the Project. Historical sites, particularly WWII-era sites associated with the use of the region for military training, are described in some detail by Schaefer et al. (1998). Also of significance, but apparently not on file at the EIC, is a report by Spencer et al. (2001) containing a cultural resources inventory for a proposed watershed project in the McCoy Wash. Included in the Spencer et al. (2001) document is Jeffrey Flenniken and Alan Spencer's (2001) extremely useful study of lithic debitage from the pebble terraces along the eastern edge of the Project. Table 3 lists all known previous investigations conducted within the Project Records Search Area.

**Table 3. Summary of Previous Surveys within Records Search Limits**

<b>EIC Report Number (RI-)</b>	<b>Year</b>	<b>Author</b>	<b>Title</b>
01249	1978	Bureau of Land Management (BLM)	<i>California Desert Program: Archaeological Sample Unit Records for the Big Maria Planning Unit.</i>
00220	1977	Cowan, Richard and Kurt Wallof	<i>Interim Report – Fieldwork and Data Analysis: Cultural Resources Survey of the Proposed Southern California Edison Palo Verde-Devers 500 kV Power Transmission Line.</i>
00982	1980	Crew, Harvey	<i>An Archaeological Survey of Geothermal Drilling Sites in Riverside County.</i>
04005	1996	Demcak, Carol	<i>Report of Archaeological Survey for L.A. Cellular Site #C601, Nicholls Warm Springs, Riverside County, California.</i>
00160	1977	Greenwood, Roberta	<i>Archaeological Resources Survey – West Coast –Mid- Continent Pipeline Project, Long Beach to the Colorado River, Addendum.</i>
00161	1978	Greenwood, Roberta	<i>Paleontological, Archaeological, Historical, and Cultural Resources – West Coast-Midwest Pipeline Project, Long Beach to Colorado River.</i>

<b>EIC Report Number (RI-)</b>	<b>Year</b>	<b>Author</b>	<b>Title</b>
00092	1973	King, Thomas, George Jefferson, and Michael Gardner	<i>Archeological and Paleontological Impact Evaluation: American Telephone and Telegraph Company's Oklahoma City/Los Angeles "A" Cable Route, Between the Colorado River and Corona, California.</i>
04061	1998	McDonald, Meg, and Jerry Schaefer	<i>Cultural Resources Inventory of 1,542 Acres of Palo Verde Mesa and Palo Verde Valley Catellus/Bureau of Land Management Exchange Area.</i>
06707	2006	McDougall, Dennis, Joan George, and Susan Goldberg	<i>Cultural Resources Surveys of Alternative Routes within California for the Proposed Devers-Palo Verde 2 Transmission Project.</i>
02481	1989	Mitchell, Mike	<i>An Archaeological Inventory and Evaluation of the Pebble Terraces in Riverside County, California.</i>
03029	1990	Padon, Beth, Scott Crownover, Jane Rosenthal, Rebecca Conard	<i>Cultural Resources Assessment Southern California Gas Company Proposed Line 5000, Riverside County, California.</i>
05714	2004	Raschkow, Wanda	<i>Heritage Resources Program-Project Review and Statistical Summary for Project McCoy Wash Flood Retention Dam-Access Road.</i>
01842	1984a	Reed, Judyth	<i>Archaeological Inventory CA-050-MP3-13.</i>
01814	1984b	Reed, Judyth	<i>Results of Inventory and National Register Assessment of Archaeological Materials on Seven Terraces in the Colorado Desert.</i>
00002	1953	Rogers, Malcolm	<i>Miscellaneous Field Notes – Riverside County, San Diego Museum of Man.</i>
07790	2003	Schaefer, Jerry	<i>A Class II Cultural Resources Assessment for the Desert- Southwest Transmission Line, Colorado Desert, Riverside and Imperial Counties, California.</i>
07753	1998	Schaefer, Jerry, Drew Pallette, and Jim Eighmey	<i>A Cultural Resources Inventory and Evaluation of the Parker-Blythe 161 kV Transmission Line No. 2 Riverside &amp; San Bernardino Counties, California.</i>
05564	2003	Schmidt, James	<i>Archaeological Monitoring Report, Southern California Edison Blythe-Eagle Mountain 161 kV Deteriorated Pole Replacement Project.</i>
05245	2005	Schmidt, James	<i>Negative Archaeological Survey Report: Southern California Edison Company: Blythe-Eagle Mountain 161 kV Deteriorated Pole Replacement Project.</i>
<i>not on file at the EIC</i>	2001	Spencer, Alan, Jerry Reioux, and Julia Grim	<i>A Cultural Resource Inventory of the Proposed McCoy Wash Watershed Project Near Blythe, Riverside County, California</i>
02210	1986	Underwood, Jackson, James Cleland, Clyde Woods, and Rebecca Apple	<i>Preliminary Cultural Resources Survey Report for the US Telecom Fiber Optic Cable Project, From San Timoteo Canyon to Socorro, Texas: The California Segment.</i>

<b>EIC Report Number (RI-)</b>	<b>Year</b>	<b>Author</b>	<b>Title</b>
01211	1980	von Till Warren Elizabeth, Robert Crabtree, Claude Warren, Martha Knack, and Richard McCarty	<i>A Cultural Resources Overview of the Colorado Desert Planning Units.</i>
03334 <sup>a</sup>	1989	von Werlhof, Jay	<i>Archaeological Investigations of the Soil Conservation Service, McCoy Wash Project Near Blythe, California.</i>
04784	2004	von Werlhof, Jay	<i>Archaeological Examinations of Mesa Verde Pipeline Improvement.</i>
01317	1974	von Werlhof, Jay, and Sherilee von Werlhof	<i>Archaeological Assessment of a Proposed Weigh Scale Station Along I-10, West of Blythe, California (P.M. 143.8/145/5).</i>
02078	1984	Wilson, Ruth	<i>Biological and Archaeological Survey of Two Proposed State Prison Sites, Blythe, California (Sec. 2 Cultural Resources – Archaeological Survey Only).</i>

*Note:* <sup>a</sup> The survey area for report RI-03334 is mislabeled as RI-01334 on the map provided by the EIC. RI-01334 is an archaeological assessment of a wastewater treatment plant site in the Coachella Valley prepared by James Swenson in 1981.

The records search also identified 71 previously recorded cultural resources within the Project Records Search Area. Of these, four are located within the Project, as currently defined. These are a lithic scatter (CA-RIV-7175), two large prehistoric lithic quarries (CA-RIV-2846 and CA-RIV-3419) on top of Pleistocene pebble terraces, and a linear feature identified as a prehistoric trail segment (CA-RIV-1464). The 67 cultural resources located outside of the Project, but within the Project Records Search Area, include an intaglio, rock features, trail segments, rock alignments, cleared areas, lithic scatters and quarries, lithic and ceramic scatters, temporary camps, historical debris scatters, historical tent platforms, can scatters, historical road beds, multi-component sites, and isolated artifacts. Table 4 presents all cultural resources identified by previous researchers within the Project Records Search Area.

## **OTHER ARCHIVAL RESEARCH**

Archival sources, including museum collections, agency archives, and historical maps, were consulted for the BSPP (Table 5). The results of archival research are discussed below.

### **Historic Maps**

Historic maps on file at California State University Chico and the University of Alabama were referenced online. In addition, historical maps from Malcolm Rogers on file at the Museum of Man in San Diego were also reviewed. No structures, other than the Blythe Army Air Base, are evident in the Project vicinity on any historical maps.



**Table 4. Summary of Previously Recorded Cultural Resources**

Primary Number (P-33-)	Permanent Trinomial (CA-RIV-)	Description	Date(s) Recorded	Within Project	Within one-mile Radius of Project
<i>Archaeological Sites</i>					
N/A	53T	Prehistoric trail segment	2007; 2004; 1991; 1989; 1987; 1980; 1979; 1955; 1954; 1953		X
661	661	Rock alignment	1991; 1978; 1974		X
662	662	Intaglio	1991; 1974		X
880	880	Cleared area; lithic scatter	1973		X
885	885	Cleared areas; lithic scatter; trail segment	1973		X
1135	1135	Lithic quarry	2000; 1997; 1976		X
1136	1136	Ceramic scatter	1976		X
1464	1464	Trail segment	1978	X	
1481	1481	Ceramic scatter	1978		X
2790	2790	Lithic scatter	1984		X
2791	2791	Lithic scatter	2005; 1984		X
2792	2792	Lithic scatter	1984		X
2793	2793	Lithic scatter	1984		X
2794	2794	Lithic scatter	1984		X
2795	2795	Lithic scatter	1984		X
2796	2796	Lithic scatter	1984		X
2844	2844	Lithic scatter	1984		X
2845	2845	Lithic scatter	1984		X
2846	2846	Lithic quarry	2003; 2000; 1988; 1984	X	
3417	3417	Lithic quarry	1989; 1988		X
3418	3418	Lithic quarry	2001; 2000; 1997; 1988		X
3419	3419	Lithic quarry	2008; 1988; 1984	X	
3671	3671	Lithic scatter	2000; 1989		X
3672	3672	Lithic quarry	2001; 1989		X
3673	3673	Trail segment with associated lithics	2000; 1989		X
N/A	3799	Temporary camp	1990; 1989		X
N/A	4568	Trail segment	1991		X
8032	5982H	Historic debris scatter	2000; 1997		X
8135	6045	Lithic scatter	1997		X
8136	6046	Lithic and ceramic scatter	1997		X
8138	6048	Lithic quarry and scatter	1997		X

Primary Number (P-33-)	Permanent Trinomial (CA-RIV-)	Description	Date(s) Recorded	Within Project	Within one-mile Radius of Project
9669	7174H	Historic tent platforms, can scatters, and animal enclosures	2000		X
9670		Historic can scatter; isolate – prehistoric biface	2000		X
9671	7175	Lithic scatter	2001	X	
9672	7176	Ceramic scatter	2000		X
9673	7177H	Historic can scatter	2000		X
9675	7179	Ceramic scatter; historical tent platforms	2000		X
9676	7180H	Historic foundations and debris scatter	2000		X
12912		Ceramic scatter	2000; 1990		X
13310		Fire-affected rock features	2001		X
13617		Ceramic scatter	1990		X
13672		Lithic scatter	2004		X
14150		Historic two-track road	2005		X
14175		Ceramic scatter	2005		X
17169	8934	Historic debris scatter	2008		X
17170	8935	Historic debris scatter	2008		X
17312	9005	Historic debris scatter	2008		X
17315		Historic debris scatter	2008		X
17317	9007	Lithic scatter	2008		X
17318	9008	Lithic scatter	2008		X
17319	9009	Historic debris scatter	2008		X
17320	9010	Lithic scatter	2008		X
17323	9011	Historic debris scatter	2008		X
<b><i>Isolates</i></b>					
12821	N/A	Isolate - biface	1986		X
12902	N/A	Isolate – historical shell casings	1990		X
12903	N/A	Isolate – historical glass bottle	1990		X
12904	N/A	Isolate – biface	2000		X
12905	N/A	Isolate – historical glass bottle	2000		X
12906	N/A	Isolate – two ceramic sherds	1990		X
12907	N/A	Isolate – test cobble	1990		X
12908	N/A	Isolate – historical shell casings	1990		X
12909	N/A	Isolate – tested cobble	1990		X

Primary Number (P-33-)	Permanent Trinomial (CA-RIV-)	Description	Date(s) Recorded	Within Project	Within one-mile Radius of Project
12910	N/A	Isolate – historical shell casings	1990		X
12911	N/A	Isolate – historical shell casings	1990		X
12913	N/A	Isolate - debitage	1990		X
12914	N/A	Isolate – three historical cans	2004; 1990		X
13611	N/A	Isolate – debitage	1980		X
13612	N/A	Isolate – ceramic sherd	1980		X
13613	N/A	Isolate - debitage	1980		X
13633	N/A	Isolate – debitage	1989		X
17325	N/A	Isolate – historical cans	2008		X

**Table 5. Historical Maps**

Map Name	Scale	Year
McCoy Peak	1:24,000	1975
McCoy Spring	1:62,500	1952, 1983
McCoy Wash	1:24,000	1983
Ripley	1:24,000	1975
Roosevelt Mine	1:24,000	1983

## Museums and Historical Societies

The General Patton Memorial Museum at Chiriaco Summit (formerly known as Shaver's Summit) near Desert Center was visited on April 30, 2009. The museum collections contain information about the DTC/C-AMA and military history related to the Project in the form of exhibits and interpretive narratives. The museum's reference library was unavailable for research; the museum did offer publications regarding the DTC for purchase.

The Palo Verde Historical Museum and Society in Blythe was visited on May 4–5, 2009. The reference library contained several vertical files pertaining to the history of the region, particularly focusing on the development of the Blythe community. Vertical files also contained unpublished memoirs, photographs, pamphlets, and newspaper clippings filed by themes, topics, places, important individuals, and eras. The society also had a comprehensive collection of relevant local periodicals, specifically the local newspaper, the *Palo Verde Valley Times*. The society's President of the Board of Directors, Sylvia Summers, provided assistance in the location of references and an expansive knowledge of regional history.

## **BLM Archives**

The BLM Field Office in Palm Springs was visited on May 4, 2009. BLM references include General Land Office (GLO) plat maps of the Project, desert land entries, and various survey reports. Christopher Dalu, BLM Staff Archaeologist, kindly provided several archived reports and supplemental site information from the BLM files.

## **CONTACT PROGRAM**

### **Native American Contact Program**

Native American tribes in the Colorado Desert maintain strong traditional ties to the land and to the cultural resources that have been left by their ancestors. The knowledge and beliefs of Native American groups are an important factor in the siting of any large project that may disturb traditional cultural resources or disrupt access to traditional resources and landscape features. In accordance with federal mandates, the BLM has initiated government-to-government consultation with Native Americans to address these issues.

The CEC, however, requires that the Applicants independently make reasonable efforts to identify Native American concerns for cultural resources and sites of traditional and religious significance within the Project. To satisfy this requirement, AECOM cultural resources staff contacted the Native American Heritage Commission (NAHC) on April 13, 2009 to request a list of local Native American groups who might have an interest in the Project, as well as a search of the NAHC's confidential Sacred Sites files for areas of concern in the vicinity of the Project. On April 20, 2009, David Singleton, Program Analyst for the NAHC, responded and indicated that no sacred sites or traditional cultural properties are known within a one-half-mile radius of the Project. He noted, however, that "numerous Native American cultural resources" exist in the Project vicinity. Additionally, Mr. Singleton provided a list of Native American contacts who may have an interest in the Project.

On May 1, 2009, Project cultural resources personnel mailed formal requests for input and information to the list of Native American individuals and groups provided by the NAHC. The initial contact letters included a brief description of the Project and its location, as well as a map indicating the original right-of-way obtained from the BLM for the BSPP. Copies of correspondence with the NAHC and with Native American groups and individuals are provided in Attachment 3. Follow up calls, faxes, and email messages to the identified Native Americans are ongoing. Table 6 summarizes the history of Native American contacts initiated by AECOM. A detailed communications log of the Native American Contact Program is provided in Attachment 3.

**Table 6. Summary of the Native American Contact Program**

<b>Contact, Title Affiliation</b>	<b>Initial Date of Contact</b>	<b>Response</b>
Joseph R. Benitez Chemehuevi	5/1/2009	6/14/2009 – Letter indicating that the Chemehuevi Band of Indians at Havasu Landing should be contacted.
Ann Brierty, Policy Cultural Resources San Manuel Band of Mission Indians	5/1/2009	None to date.
Bennae Calac, Tribal Council Member Pauma Valley Band of Luiseño Indians	5/1/2009	7/22/2009 – Telephone conversation indicating no comment on the BSPP; requested that other involved tribes be contacted.
Jeff Castillo, Tribal Business Development Fort Mojave Indian Tribe	7/23/2009	None to date. [Note: Faxed information forwarded to Mr. Castillo by Tribal secretary Terri Merdrano.]
Diana L. Chihuahua, Cultural Resource Coordinator Torres-Martinez Desert Cahuilla Indians	5/1/2009	7/27/2009 – Letter asking AECOM to contact the Cocopah Tribe. Also requested that (1) Native American monitors be involved in all cultural resources investigations and ground disturbing activities; (2) coroner and NAHC be contacted if human remains are encountered; (3) cultural resources documentation and reports be sent to the Tribe and made available to all interested tribes.
Michael Contreras, Cultural Heritage Program Manager Morongo Band of Mission Indians	5/1/2009	None to date.
Sherry Cordova, Chairperson Cocopah Indian Tribe	8/14/2009	None to date.
Mike Darryl, Chairperson Twenty-nine Palms Band of Mission Indians	5/1/2009	7/22/2009 – Matter referred to Anthony Madrigal, Environmental Department, for comment.
Esadora Evanston, Environmental Coordinator Fort Mojave Indian Tribe	5/1/2009	7/23/2009 – No comment at this time from the Environmental Department.
Gary Goforth, Tribal Administrator Fort Mojave Indian Tribe	5/1/2009	7/23/2009 – Gary Goforth no longer works for the FMIT.
Joseph Hamilton, Chairman Ramona Band of Cahuilla Mission Indians	5/1/2009	None to date.
Anthony Madrigal, Environmental Department Twenty-nine Palms Band of Mission Indians	7/22/2009	None to date.

<b>Contact, Title Affiliation</b>	<b>Initial Date of Contact</b>	<b>Response</b>
Jill McCormack, Cultural Resource Manager Cocopah Indian Tribe	8/14/2009	8/28/2009 – Letter requesting further information and discussion of the project..
Lisa Milward Torres-Martinez Desert Cahuilla Indians	7/24/2009	None to date.
Linda Otero, Director AhaMaKav Cultural Society, Fort Mojave Indian Tribe	5/1/2009	7/22/2009 – Checking records; will contact AECOM if there are concerns.
James Ramos, Chairperson San Manuel Band of Mission Indians	5/1/2009	None to date.
Michael Tsosie, Cultural Contact Colorado River Reservation	5/1/2009	None to date.
Patricia Tuck, THPO Agua Caliente Band of Cahuilla Indians	5/1/2009	7/23/2009 – Requested summary of archaeological report for comment.
Tim Williams, Chairperson Fort Mojave Indian Tribe	5/1/2009	7/23/2009 – Matter referred to Jeff Castillo, Tribal Business Development contact, for comment.
Charles Wood, Chairperson Chemehuevi Reservation	5/1/2009	None to date.

To date, three formal response letters, several verbal requests for information, and two verbal notices of no comment have been received. The letters are from Joseph R. Benitez, a Chemehuevi Tribe member, Diana Chihuahua, Cultural Resource Coordinator for the Torres-Martinez Desert Cahuilla Indians, and Jill McCormack, Cultural Resource Manager for the Cocopah Indian Tribe. In his response letter dated June 14, 2009, Mr. Benitez suggested that the Chemehuevi Band of Indians be contacted directly (Chairperson Charles Wood had previously been contacted). He also noted that the Chemehuevi and Halchidhoma used locations in the Project vicinity “as gathering places” for social functions and ceremonial activities. In a letter dated July 27, 2009, Ms. Chihuahua indicated that the Cocopah Tribe should be contacted for comment, and then outlined a series of recommendations pertaining to the conduct of any cultural resources investigations or ground disturbing activities at the Project site. She specifically requested that all cultural investigations and ground disturbance include a Native American monitor and a qualified archaeologist, and that both the coroner and NAHC be contacted if human remains are encountered. Further, she asked that all cultural resources documentation be made available to interested tribes. Representatives of the Cocopah Indian Tribe were contacted on August 14, 2009, following Ms. Chihuahua’s request. For the Cocopah Indian Tribe, Ms. McCormack responded in a letter dated August 28, 2009, and requested more information and further discussion of the project. Those discussions are ongoing.



Of the verbal communications, five were requests for more information or notifications that the matter had been passed to another contact person for further comment. Two verbal responses indicate no comment on the Project at this time. Bennae Calac, Tribal Council Member of the Pauma Valley Band of Luiseño Indians, conveyed that the tribe has no comment on the BSPP at this time, but he urged AECOM and the BLM to contact any other regional tribes that might be interested in the project. Esadora Evanston, Environmental Coordinator for the Fort Mojave Indian Tribe, responded that her department has no comment on the Project, but other agents of the tribe reserve the right to comment independently. Finally, Patricia Tuck, THPO for the Agua Caliente Band of Cahuilla Indians, has requested a summary report of the BSPP archaeological survey before commenting on the Project.

### **Historical Society Contact Program**

Local historical societies were contacted regarding the Project, as presented in Table 7. Letters were sent to various local historical societies, museums, and research institutions on June 1, 2009, requesting information or comment on any part of the Project and surrounding environs. Follow-up calls were made to each entity on July 17, 2009. To date, no responses have been received.

**Table 7. Historical Society Contact Program**

<b>Historical Society/Museum</b>	<b>Initial Date of Contact</b>	<b>Response</b>
General Patton Memorial Museum	6/1/2009	None to date.
Historic Resources Management Programs, University of California, Riverside	6/1/2009	None to date.
Palm Springs Air Museum	6/1/2009	None to date.
Palm Springs Historical Society	6/1/2009	None to date.
Palo Verde Historical Museum and Society	6/1/2009	None to date.
Riverside County Historical Commission	6/1/2009	None to date.

### **Agency Contacts**

Project cultural resources professionals contacted several governmental agencies as required by law and standard professional practice. Agencies with jurisdiction over aspects of the cultural resources assessment of the BSPP are listed in Table 8, along with contact information.

**Table 8. Agency Contacts for the BSPP**

<b>Agency &amp; Official Contact</b>	<b>Contact Information</b>	<b>Regulatory Purview</b>
<b>Native American Heritage Commission</b> David Singleton, Program Analyst	915 Capitol Mall, Room 364 Sacramento, CA 95814 (916) 653-6251 nahc@pacbell.net	Coordination of Native American cultural issues in California
<b>State Historic Preservation Office</b> Milford Wayne Donaldson, SHPO	1416 9th Street, Room 1442-7 Sacramento, CA 95814 (916) 653-6624 calshpo@parks.ca.gov mwdonaldson@parks.ca.gov	NHPA and CEQA compliance
<b>California Historical Resources Information System Eastern Information Office</b> Matthew C. Hall, Coordinator	Department of Anthropology University of California, Riverside Riverside, CA 92521 (951) 827-7369 matthew.hall@ucr.edu	Cultural resources and historical architectural resources data repository for Riverside County
<b>Bureau of Land Management Palm Springs-South Coast Field Office</b> Chris Dalu, Staff Archaeologist	1201 Bird Center Drive Palm Springs, CA 92262 (760) 833-7105 Christopher_Dalu@ca.blm.gov	BLM Fieldwork Authorization and coordination of fieldwork on behalf of the BLM; government-to-government Native American consultation
<b>California Energy Commission Siting, Transmission, and Environmental Protection Division</b> Michael McGuirt, Planner II (Archaeology)	1516 9th Street, MS 40 Sacramento, CA 95814 MMcGuirt@energy.state.ca.us (916) 654-4870	Certifying governmental agency for power-generating projects in California

## Required Permits

The BSPP plant site is located on public lands managed by the BLM. To conduct any archaeological field investigations on BLM land, qualified cultural resources personnel must file a Fieldwork Authorization Request with the BLM. Prior to fieldwork on the BSPP, Project cultural resources specialists filed a Fieldwork Authorization Request under BLM Cultural Use Permit CA-06-21. The request indicated areas to be surveyed, supervisory personnel, and survey dates. An approved Fieldwork Authorization was issued by the BLM on March 27, 2009.

Since the completion of the Class III survey, cultural resources monitoring has continued on the Project in association with geotechnical investigations and water-well testing. Ongoing cultural resources monitoring work on the Project is being conducted under BLM Cultural Use Permit CA-09-22 and a BLM Fieldwork Authorization dated August 5, 2009.

## CHAPTER 4 METHODOLOGY

### SURVEY METHODS

Between March 30 and June 26, 2009, Project archaeologists conducted a Class III survey of the approximately 7,850-acre CRSA, including all Project disturbance areas, linear features, and CEC-mandated buffers around the Project as originally proposed (see Chapter 1 for a discussion of the APE and changes to the Project since the completion of the survey). Following the guidelines in Section 8110 of the *BLM Manual*, the Class III survey was an intensive pedestrian survey designed to identify all cultural properties “locatable from surface and exposed profile indications” within the “target area” defined by the Project disturbance areas and CEC’s siting requirements (BLM 2004:19). The survey was conducted by qualified four- to eight-person survey teams, each led by a qualified crew chief (Plate 11). A maximum survey interval of 20 m was employed, although crew members frequently walked between transect lines to record isolated artifacts and sites. After the initial pedestrian survey phase, site-recording teams returned to the identified sites to record them in greater detail.



**Plate 11. Surveyors at the BSPP.**

When archaeological sites were encountered, the survey crew determined the location of the site using handheld global positioning system (GPS) units, and then flagged and mapped the location

for subsequent recording by the dedicated site-recording teams. All flagging was removed when the recording teams completed their work. For the Project, four or more artifacts were considered a site, and an arbitrary distance of 30 meters between artifacts and features was used to divide cultural material into individual sites. Site boundaries were drawn relatively tightly around the visible archaeological materials, particularly at historical refuse scatter sites where subsurface remains appeared highly unlikely.

Isolated single artifacts and collections of three or fewer artifacts that were separated from other cultural materials by more than 30 meters were recorded as isolated finds, or isolates. The location of each isolated find was recorded with a GPS unit and the artifacts were documented by the survey crews immediately. Where necessary, drawings and photographs were made of distinctive artifacts, maker's marks, and other culturally or chronologically sensitive indicators.

The survey crew also attempted to relocate previously reported site locations as documented at the EIC. To guide our field studies, Project staff members plotted previously recorded archaeological sites on Project base maps at a scale of 1 inch to 2,000 feet. Field crews also used 7.5-minute United States Geological Survey (USGS) topographic maps and large-scale aerial photographic maps. Previously recorded sites were only re-mapped or otherwise re-recorded if the existing records were deemed inaccurate due to a change in the site condition or configuration.

Site recording included intensive survey of the site area, along with photographic documentation (site overviews and detail shots including diagnostic artifacts), site sketch maps, artifact and feature descriptions, and descriptions of the environmental context. To better preserve the cultural resources, archaeological teams did not collect any artifacts or other materials during the survey. Artifacts were documented and identified in the field by experienced crew members. Archaeological survey in the BSPP commenced on March 30, 2009 and concluded on June 26, 2009.

## **Documentation**

Sites identified during the survey were documented in detail to allow for the completion of all appropriate DPR 523 forms. Minimally, these include primary forms (Form 523A) and location maps overlaid on a USGS topographic map (Form 523J). More complex resources potentially require an Archaeological Site Record (Form 523C), Linear Feature Form (Form 523E), and/or a Sketch Map (Form 523K). Sketch maps included a site datum, features, artifacts concentrations, and other cultural elements. Isolated finds were noted and their location mapped with a hand-held GPS. In addition to the information required for DPR site forms, detailed field notes were produced for each site. Field notes contained information about site impacts, geology, vegetation, and diagnostic information about cultural materials at each site.

All isolates identified in the Project were recorded on a primary form and USGS location map. Resource locations were determined using a hand-held GPS unit. Apparent clusters of artifacts were recorded as Concentrations. Elements of sites that could not be removed (i.e. hearths, mining claims, bedrock features) were recorded as Features. All completed DPR site forms will

be sent to the EIC for the assignment of Primary number designations in the state inventory system. DPR forms are currently being completed and will be provided when they are finished.

## **SITE TYPES**

The new Class III intensive pedestrian survey was designed to identify and evaluate Project archaeological sites to the extent possible on the basis of surface observations (BLM 2004). Before the commencement of fieldwork, senior Project archaeologists outlined the types of cultural resources that were likely to be encountered, and the relevance of such resources for the investigation of regional research issues. Sites types and research issues common to the Colorado Desert were compiled in the Class III Work Plan (Apple and Cleland 2009), in order to facilitate the consistent identification of Project sites during survey. These defined site types were revisited and expanded for this report in light of the materials encountered during the survey (Plate 12). Site types expected and encountered on the desert are listed below, followed by a discussion of the relevant research issues and themes within which they might be profitably addressed.



**Plate 12. Large historical period site at the BSPP.**

### **Prehistoric Site Types**

#### ***Habitation Sites***

Habitation sites are characterized by a wide variety of occupation debris and, occasionally, the remains of domestic architecture. These sites can contain living areas (see also rock rings and cleared circles, below), cooking hearths, subsistence remains (faunal bone and plant remains),

midden deposits, and artifact scatters. Within the habitation site type, a range of subtypes exist distinguished primarily by the intensity and longevity of the use of the site as a living space. Habitation sites can range from very large, permanent villages occupied year round by several families, to small, temporary camp sites occupied once for a matter of days or weeks. Nevertheless, even temporary habitation sites often contain discrete activity areas devoted to a variety of activities such as lithic reduction, milling, butchery, cooking, and other subsistence-related activities. Prehistoric habitation sites of any duration are unlikely on the Palo Verde Mesa, as there is no reliable water nearby.

### ***Quarries and Lithic Procurement Sites***

In North America, stone tools of various kinds were some of the most important implements of daily life. Flaked stone tools were used to cut, scrape, chop, carve, and take down game animals. Groundstone tools were largely milling implements used to grind plant foods, medicinal herbs, and minerals. The manufacture of these tools required specific types of stone distributed unevenly across the land. Deposits of high-quality toolstone were mined repeatedly over centuries and even millennia. While some quarries were claimed by particular ethnic or family groups, most were used by a variety of groups with overlapping ranges. Lithic raw material procurement sites can take the form of quarries where rock was dug and chiseled out of the ground, and free deposits of rock, typically transported and aggregated through water or glacial action.

In the Project, the long pebble terraces associated with the Pleistocene course of the Colorado River were frequented by prehistoric groups who used the river cobbles to create flaked stone tools of various types. Much of the initial work of removing the weathered outer cortex of the cobbles was completed where the cobbles were found on the pebble terraces. Thus, the pebble terraces contain clear evidence of their use for lithic raw material procurement and tool production.

Evidence of groundstone quarries and production sites has been found in the Palo Verde Hills (Apple et al. 2001), at Palo Verde Point (Johnson 2001), in the Picacho Basin (Pendleton et al. 1986), and along the Colorado and Gila Rivers (Ezzo and Altschul 1993; Schneider and Altschul 2000). Boma Johnson's (2001) work suggests that there are large quarries in the Palo Verde Point area that were utilized for the manufacture of mano, metate, and pestle blanks. At temporary campsites and larger habitation sites, mobile groups often cached groundstone tools for use upon their return to the same locales.

### ***Lithic Scatters and Flaking Stations***

This site type can range from single-use flaking stations to large scatters that contain numerous flaking episodes with a light background scatter of debitage. Discrete flaking stations, where a single episode of lithic reduction occurred, often include cores and debitage, but rarely finished tools or useable flakes. When tools are found in lithic scatters, they are usually broken blanks from early in the manufacturing process, or expedient tools. The debitage in lithic scatters may be the result of various core and biface reduction technologies.



Debitage size and character is often associated with the size of the parent material. A lithic study in the nearby McCoy Wash included a detailed in-field analysis of reduction techniques as reconstructed from the preserveddebitage and cores (Flenniken and Spencer 2001). The researchers concluded that four discrete reduction technologies were represented in the wash, all of them apparently contemporaneous and directly related to the size and shape of the source materials chosen for reduction (Flenniken and Spencer 2001:61). Although lithic scatters are generally interpreted by archaeologists as places where toolstone acquisition and tool manufacture occurred, Native American representatives have pointed out that certain ritual activities also result in the production of scatters of flaked stone materials (Altschul and Ezzo 1994; Cachora 1994).

### ***Trails***

Trails are generally tamped into stable surfaces, sometimes with larger gravel and pebbles pushed to the sides to form slight berms along the edges of the trail. In the desert, trails are typically found along the tops of ridge systems, as well as on stable alluvial fans, desert pavements, and in upland areas where they often disappear into a washes. Prehistoric trails can follow washes for considerable distances. Several trails have been documented along the lower Colorado River where they are often associated with petroglyphs, ground figures, and cairns (Altschul and Ezzo 1994; Cachora 1994; Johnson 1985; McGuire and Schiffer 1982; Pendleton et al. 1986; Pignuolo et al. 1997; Rogers 1939; Schaefer 1994a, 1994b; von Werlhof 1987).

### ***Ceramic Scatters and Pot Drops***

“Ceramic scatter” refers to a dispersed surface distribution of ceramics, typically from multiple vessels. A “pot drop” is traditionally defined as a small, distinct concentration of sherds from a single vessel. As early as the 1930s, Malcolm Rogers recognized that shrines along trails and other ceremonially significant sites in the Colorado Desert frequently contain concentrations of prehistoric ceramics.

### ***Cleared Circles***

Cleared circles, sometimes referred to as “sleeping circles,” are commonly found throughout the regional study area. These are cleared areas in the desert pavement that are roughly circular in outline. Following Malcolm Rogers’ (1966) initial work, archaeologists have interpreted larger cleared circles as sleeping or resting places, and identified smaller ones as vision quest or meditation circles (Davis 1980; Ezzo and Altschul 1993; Pignuolo et al. 1997; Rogers 1966; von Werlhof and von Werlhof 1977). Habitation debris is rarely found in direct association with cleared circles (Rogers 1966), and subsurface deposits at cleared circles in the Colorado Desert generally are very rare (Marmaduke and Dosh 1994; Pendleton et al. 1986; Schaefer 1986). Lorann Pendleton (1984) has suggested that some cleared circles lacking associated artifacts may be natural features created by wind action around creosote bushes.

### ***Rock Rings***

Prehistoric rock rings are commonly found throughout southeastern California, southwestern Arizona and Utah, southern Nevada, and the Pinacate region of Mexico. Rock rings are found as isolates or in clusters and are situated in areas of desert pavement or other stable surfaces. Rings larger than 1 m in diameter are generally regarded as habitation places, with the rocks possibly used to support the brush walls of temporary structures (Pignuolo et al. 1997; von Werlhof and

von Werlhof 1977). Smaller rock rings may have delineated hearths, or they might have had a ceremonial function (Cleland 2005; Pignuolo et al. 1997). Although generally circular in shape, some are more oval or rectangular in shape (Rogers 1966). Rock rings are typically composed of a single course of cobble- to boulder-sized rocks, although some contain two or more courses of stacked stone.

### ***Prehistoric Cairns***

Within the Colorado Desert, prehistoric cairns are typically situated on stable surfaces. The cairns, which may be partially collapsed, are composed of multiple courses of dry-stacked rocks ranging from pebbles to small boulders. Prehistoric cairns are frequently found associated with trails or other prehistoric features. Researchers have also documented a number of human inhumations associated with cairns, and dating largely to the Archaic period (McDonald 1992; Schaefer 1994b).

### ***Thermal Cobble Features***

Thermal cobble features interpreted as the remains of roasting pits are occasionally found away from domestic debris as isolates or in groups. Roasting pits sometimes occur in association with natural stands of specific food resources, such as agave, pinyon nuts, and saltbush seeds. These plant foods were often harvested, processed, and roasted before consumption or transport to established habitation sites (Lightfoot and Parrish 2009:347, 354). A roasting pit is a type of earth oven constructed by digging an oval to circular hole and lining it with vegetation or cobbles and small boulders. A fire may be built over the rocks to heat them before placing the plant food materials in the earth oven, or the foodstuffs may be placed directly on the cobbles and then covered with other materials (e.g., green plants, rocks, soil), before a fire is built over the entire feature.

Archaeologically, the remains of roasting pits are typically 1 m to 3 m in diameter, roughly circular concentrations of fist-sized cobbles, most showing evidence of thermal alteration. These may be the in situ remains of earth ovens, or they may be “clean out” concentrations of stones removed from an oven to access the roasted foods within. Several examples of this site type were identified along the pebble terraces that bound the eastern side of the Project. Similar features, identified as “agave baking pits” were excavated by Steven Shackley (1984) approximately 140 miles southwest of the Project in the In-ko-pah Gorge area.

### ***Petroglyphs***

Petroglyphs are formed by removing, by various means, the varnish or weathered surface from boulders or bedrock outcrops. Considered ceremonial in nature, petroglyphs in the Colorado Desert include anthropomorphic, zoomorphic, abstract, and geometric forms (Cleland and Apple 2003; Ezzo and Altshul 1993). Although single, isolated petroglyphs are occasionally found, petroglyphs usually occur clustered on rock faces forming panels, possibly with compositional significance.

### ***Ground Figures – Geoglyphs and Rock Alignments***

For the purposes of this study, two types of ground figures are recognized: geoglyphs and rock alignments. Both are considered to have ceremonial or ritual significance. Geoglyphs, sometimes

referred to as intaglios, are lines and figures created through various means on stable ground surfaces (Harner 1953; Johnson 1985; Rogers 1945). Geoglyphs may be formed through a deliberate subtractive process, or incidentally from repetitive motion upon the land.

In the Colorado Desert, geoglyphs are typically formed by removing the uppermost layer of desert pavement rocks and gravel, exposing the lighter-colored soil beneath. The removed gravel is often pushed to the edge of the exposed surfaces, forming a low gravel berm around the geoglyph figure. Depending on the construction method and the degree of erosion, these berms can range from well-defined to ill-defined or nonexistent (von Werlhof 1987). Geoglyphs may alternatively be tamped into the desert pavement rather than incised. For example, tamped rings are features in which the pavement surface is compressed but not actually removed, possibly as a result of the repetitive movements involved in ritual circle dances (Johnson 1985; Solari and Johnson 1982; von Werlhof 2004).

Ground figures can also be formed by an additive process wherein cobbles and/or small boulders are arranged on the ground surface in various shapes and alignments (Johnson 1985; von Werlhof 1987). For this Project, we refer to these additive ground features as “rock alignments.”

### ***Cremations and Human Remains***

All cultures maintain specific practices and profound beliefs concerning the treatment and disposition of the dead. For that reason, the disturbance of human remains is always a sensitive issue culturally, ethically, and legally. Traditionally, the Late Prehistoric and Protohistoric peoples of the Colorado River area practiced cremation, although other practices, including burial, are known archaeologically. In situ burials and cremations in the Colorado Desert are frequently associated with small collections of artifacts including ceramics, lithic artifacts, basketry, faunal and botanical materials, and shell ornaments and beads. Very often, cremations and burials were placed in depressions or holes specifically dug for the purpose of interring the dead. For that reason, burials and cremations may be minimally evident or completely imperceptible on the present-day ground surface.

While relatively rare, sites with cremations or burials have been recorded in the Colorado Desert. Burials and cremations are more common in and near habitation sites, and relatively uncommon in non-habitation, resource procurement areas like the Palo Verde Mesa. Nevertheless, special circumstances and special individuals, such as shamans or suspected witches, sometimes necessitated burial far from habitation and in unexpected locales. Human remains are subject to special protection under federal and state law. Within the Project, the disposition of any Native American human remains and associated funerary objects would be subject to state law as well as the requirements of NAGPRA.

### **Historic Site Types**

#### ***Transportation Routes***

Transportation routes consist of historical trails and roads. The condition of the roads may vary from faint two-tracks to graded or paved alignments, where the route not the road is significant. Several unimproved roads run through and adjacent to the Project, most associated with the initial survey of the land and the transport of goods and people to mining activities in the region.

Most of these roads were likely also used during the WWII-era military training activities of the DTC/C-AMA.

### ***Historic Camps***

Temporary historical camps are found throughout the Colorado Desert. These camps often include features such as campfire/hearths and debris scatters, as well as rectangular cleared areas, often called “tent pads,” that may have been cleared to create a more comfortable sleeping area for sleeping bags and tents. Specific types of temporary historical camps in the Project may include construction camps for linear facilities (railroads, transmission lines, water conveyance, etc.), mining camps, sheep-herding camps, and military camps and bivouacs.

### ***Residential Structures and Features***

Formal structures built of wood, stone, concrete, metal, and other materials are not common on the Palo Verde Mesa owing to the harsh environment which inhibited homesteading. In the Project vicinity, one collection of stone and concrete structures with attendant features and refuse scatters is known along a road following a GLO section line surveyed in 1917. Other types of historical structures and features include concrete foundations, structures and features built of milled lumber, and metal features, including well heads and pipelines.

### ***Historic Cairns***

Many of the rock piles within the Colorado Desert are associated with historical mining claims. These can vary in size and composition. Rarely, a can or other container in the cairn will contain information regarding the claim. In addition, some historical cairns in the BSPP may be related to the use of the area during WWII as part of the DTC/C-AMA, possibly as aerial markers for flight training or for the guidance of air support during simulated maneuvers.

### ***Refuse Scatters and Dumps***

This feature type ranges from small discrete deposits to large debris concentrations. Often these are found along trails or roads, complicating temporal and cultural assignments. The Project is located within the former boundaries of the DTC/C-AMA, which was a large-scale military training facility during WWII. Directly south of the BSPP is the Blythe Army Air Base, developed in its present form as an air support and heavy-aircraft training facility for the DTC/C-AMA. Refuse scatters dating to the early 1940s, and particularly the period between 1942 and 1945, are likely representative of DTC/C-AMA activities including ground maneuvers and aircraft training. Most earlier refuse deposits are likely associated with sporadic mining activities in the vicinity, as well as a few brief attempts to establish farms or ranches on the Palo Verde Mesa.

Refuse scatters from the later 20th century may represent a variety of activities which may be difficult to distinguish. From the end of WWII forward, the Palo Verde Mesa has supported limited mining and prospecting, farming and ranching, recreational activity, rock hunting on the pebble terraces (for prized multicolor cobbles), and a brief reoccupation of the area as part of Exercise Desert Strike, a joint Army-US Air Force training maneuver in May 1964.

### ***Fortified Positions***

In addition to temporary military camp sites (bivouacs), the Project also contains remnants of various landscape modifications likely associated with active battles during the training maneuvers of WWII and possibly 1964. Most appear to be fortified positions consisting of shallow dug-out depressions surrounded by low earthen berms and, occasionally, low walls of dry-stacked stones. These are found most commonly in broken terrain, such as the water-cut bajada ridges along the western side of the Project, where some cover and concealment would have been provided by the natural terrain.

### **Isolated Finds**

Isolated finds consist of single, occasionally multiple, prehistoric or historical artifacts. Isolates have been found on a variety of surfaces including desert pavement, gravel beds, and washes. For this Project, isolated finds were defined as four or fewer artifacts separated from other sites or artifacts by at least 30 m.

## **RESEARCH ISSUES AND THEMES**

Most archaeological resources are of significance under state and federal law only insofar as they retain their integrity and can be associated with historic events, historic persons, or important research issues in the study of the past (see LORS discussion in Chapter 1, above). Although the WWII-era materials in the Project are reasonably associated with the training activities of the historic DTC/C-AMA and the life work of General George S. Patton, Jr., many of the Project cultural resources are significant only with respect to the archaeological research issues to which they could contribute useful data.

Research issues in the Colorado Desert region include questions that relate to both the prehistory and history of the region as they may be understood through the lens of archaeological inquiry. These research issues are here categorized into broad research themes, which may be relevant at the regional, state, and/or national level. These themes can be addressed by the identification and analysis of various types of cultural resources, from individual artifacts to entire landscapes. The site types listed above may provide information relevant to one or more of the research themes defined below. These themes, in turn, aid in the construction of the geographically, temporally, and thematically specific historic contexts necessary for the evaluation of cultural resources for California and National Register eligibility (Wyatt 2009).

### **Prehistoric Themes**

#### ***Chronology***

Chronology building continues to be a major research emphasis in the Colorado Desert. Most of the sites known in the region are surface sites consisting of small quantities of lithic and ceramic artifacts. Stratified sites of any kind are very rare in the Colorado Desert and along the lower Colorado River (Cleland and Apple 2003; Schaefer 1994b). The prehistoric concentration of population along the banks of the Colorado River has meant that the majority of intensive habitation sites have been removed from the archaeological record by seasonal flooding. Thus,

various factors have conspired to hinder the development of an adequate cultural chronology of the region.

One of the most important research goals of any prehistoric research program in the Colorado Desert, therefore, should be the refinement of the regional chronological framework. Any site that contains organic cultural remains suitable for radiocarbon dating could prove useful in this endeavor, as would any site with chronologically sensitive artifacts such as projectile points and ceramics. Beyond this general observation, key chronometric topics for the region are (1) the reliability of regional dating methods, (2) the earliest phases of human occupation of the region, (3) the poorly understood Archaic period occupation, and (4) a refinement of the regional ceramic sequence. Site types that may be associated with this theme include any site with in situ organic materials, lithic scatters with temporally diagnostic projectile points, ceramic scatters and pot drops, habitation sites, human cremations or interments, and thermal features or rock rings containing dateable organic materials.

### ***Ritual Activity***

Much of the recent research in the Colorado Desert has focused on sites and trails associated with what might generally be termed ritual activities (Altschul and Ezzo 1994; Ezzo and Altschul 1993). The region contains a remarkable number of geoglyphs, petroglyphs, cairns, and shrine sites, as well as a trail system along which these features tend to cluster (Altschul and Ezzo 1994; Cachora 1994; Johnson 1985; McGuire and Schiffer 1982; Pendleton et al. 1986; Pignuolo et al. 1997; Reed 1981; Rogers 1939; Schaefer 1994a, 1994b; von Werlhof 1987). Desolate stretches of desert pavement like that of the Project may seem uninhabited and insignificant, but as corridors of physical and spiritual travel, they remain important to modern-day Native American groups. As Quechan tribal member and archaeologist Lorey Cachora (2000:79) describes, key landscape features, such as mountains and springs, are connected by a web of power which cannot be broken without affecting “the entire cosmos.” Thus, “although peaks are most important, the valleys between the peaks, and the desert pavements, are also important in that they are pathways for the web that must run through them from one peak to others” (Cachora 2000:79; see also Laird 1976:38).

In the Project vicinity, north-south running trails have been associated with a specific mourning ritual, or *keruk*, following the path of the first mourning ritual that involved a pilgrimage between two powerful peaks: *Akikwalal* at Pilot Knob near Yuma, and *Avikwami* in the Newberry Mountains near Needles (Ezzo and Altschul 1993:7-46). To the east and west of the Project, archaeologists have also recorded significant rock art and geoglyph (intaglio) sites along the Colorado River and in the McCoy Mountains (McCarthy 1982, 1993, von Werlhof 2004). Any archaeological research program in the lower Colorado River region that encounters trails or other ritual-related features and sites has the potential to contribute to our understanding of this theme. Site types possibly associated with the theme are prehistoric cairns, geoglyphs, petroglyphs, prehistoric trails, human cremations and interments, and some lithic and ceramic scatters, particularly those along trails or in association with cairns, geoglyphs, or petroglyphs.



### ***Travel and Trade***

Throughout the Protohistoric and historical periods, the Palo Verde Mesa was part of a long-distance transportation corridor from the Colorado River to the Pacific Coast (Bean and Vane 1978, Davis 1961, King 1981, Sample 1950, Singer 1984). The Palo Verde Mesa is “basically a through-way,” not a habitation zone (von Werlthof 2004:v). A segment of the well-documented Coco-Maricopa Trail (CA-RIV-53T) runs east-west just south of the Project plant site, and parallel to the modern I-10 highway. Several other prehistoric trails have been recorded in the area running both north-south, paralleling the river, and east-west, between the Colorado River, the McCoy Mountains and beyond (McCarthy 1982, 1993). As mentioned above, these prehistoric trails are often associated with ritual landscape features like geoglyphs, petroglyphs, and cairns, but not all travel along them was necessarily, or exclusively, ritual in character.

During the Late Prehistoric and Protohistoric period, long-distance travel became increasingly important in the lifeways of lower Colorado River groups. Travel was conducted for trade, warfare, sociality, and even out of sheer curiosity (Kelley and Fowler 1986; Pendleton 1984; see also *Ethnographic Background* discussion in Chapter 2). Increased travel and interaction can be seen archaeologically in the form of a greater quantity and variety of exotic items including marine shell from the Pacific Coast and the Gulf of California, obsidian and other non-local toolstones, unusual pottery types, and the adoption of foreign artifact types and technologies. Site types of significance to this theme are trails, cairns, and any other prehistoric site type containing exotic raw materials, technologies, or artifact classes.

### ***Ethnicity***

Ethnicity is a significant research theme in all of the Americas, but in the Palo Verde Valley and Mesa area, it is particularly relevant due to the number of documented linguistic and ethnic groups that laid claim to, passed through, and otherwise used the area. The ethnographically documented culture groups most closely associated with the Palo Verde Mesa through historical use and oral history include the Yuman-speaking Mohave, Halchidhoma, and Quechan, and Numic-speaking Chemehuevi along the lower Colorado River, and the Takic-speaking Cahuilla in the deserts and mountains west of the Project (Bean 1972; Bean and King 1974; Bean and Vane 1978; Fowler and Fowler 1971; Laird 1976; Rogers 1939, 1966; Schaefer 2003; Singer 1984). None of these groups are documented to have lived permanently in the Project vicinity on the Palo Verde Mesa, but they all utilized the many resources of the greater region and traveled along traditional trails that cross cut the mesa.

The stretch of the Colorado River immediately adjacent to the Project was notably contentious, changing hands more than once in the Protohistoric period. Prior to 1700, the banks of Colorado River east of Blythe may have been occupied by the Maricopa (Kroeber 1925:800), although this is far from certain. At some point, the Maricopa migrated east and the Halchidhoma settled the area. Generations of near-constant warfare finally drove the Halchidhoma off the river and, ultimately, to their Maricopa allies on the Gila River in Arizona (Kroeber 1925:799). After the Halchidhoma vacated the Parker and Blythe valleys between 1825 and 1830, the Mohave encouraged their traditional allies, the Chemehuevi, to move into the former Halchidhoma territory along the river (Bean and Vane 1982:34). By the mid 1800s, Chemehuevi groups were living along the Colorado River east of Blythe.

All of these lower Colorado River groups, including the Mohave and Quechan traditionally used and traveled through the Palo Verde Valley and Mesa. They all also had trading relationships with groups to the east and west, most notably the Cahuilla around historical Lake Cahuilla. The Cahuilla, as well, traversed the Project visiting their river neighbors. Prior to the Late Prehistoric and Protohistoric period, the ethnic and linguistic affiliation of the region is not known, although it was likely largely in Yuman-speaking peoples hands (Kroeber 1925). Disentangling ethnic and linguistic affiliations from artifactual and other archaeological remains is notoriously difficult (see recent work by Lightfoot [2005] and Silliman [2004]). Nevertheless, recent ceramic analyses suggest that there are notable distinctions between the pottery created in the vicinity of Lake Cahuilla, presumably by the Cahuilla, and that made along the Colorado River, presumably of Yuman manufacture (Schaefer 2004b). Other data classes that might shed light on this theme include projectile points, groundstone implements, ornamental items, and subsistence and settlement patterns. The last data class would be particularly useful in distinguishing the Chemehuevi, who retained many of their more mobile hunter-gatherer ways, from the Yuman groups who had long led a more sedentary, horticultural life. Site types pertinent to this theme are ceramic scatters and pot drops, isolated groundstone objects, lithic scatters with diagnostic tools or production techniques, habitation sites, and possibly some other resource procurement and processing sites such as milling sites or thermal features.

### ***Subsistence and Settlement***

The BSPP is located in an area that has been categorized as a resource procurement area for highly mobile desert and Colorado River populations, utilized most intensively in the Late Prehistoric and Protohistoric periods (Singer 1984). Archaeological research in the Colorado Desert has only begun to address the use of low-yield desert pavement regions with few resources, minimal evidence of human habitation, and no nearby water (e.g. Singer 1984; Flenniken and Spencer 2001). Nevertheless, the remnant river terraces that stretch along the eastern side of the Project provided ready raw materials for stone-tool manufacture, and supported the growth of stands of traditional plant foods, such as mesquite and saltbush, along their western flanks. While the area was clearly most important in prehistory as a transportation corridor, it was also a resource-procurement area and, on occasion, a temporary habitation locale (Schaefer 1994b). Site types in the Project vicinity that may relate to this theme include lithic scatters and flaking stations, ceramic scatters and pot drops, cleared circles, rock rings, thermal features like hearths and roasting pits, and groundstone tools.

### ***Lithic Technology***

Mobile hunter-gatherers and part-time agriculturalists organized the procurement, manufacture, and discard of flaked stone tools with regard to a number of factors: the relative availability and quality of toolstone within a territorial range; the intended tool functions; the extent and character of trade networks; the frequency and nature of residential moves; the organization of work groups; and the nature of labor division based on age, gender, and status (e.g., Bamforth 1990; Beck et al. 2002; Eerkens et al. 2007; Kelly 1988). Therefore, the material remains of lithic tool production, use, refurbishment, and disposal aids in the understanding of more general questions regarding group territoriality, mobility, settlement patterns, social organization, trade and exchange. For example, research suggests that highly mobile peoples often make new tools to replace broken or exhausted tools when they encounter high-quality toolstone (Kelly and Todd

1988). In doing so, they discard curated tools, often from distant sources, and create a concentration of tool-making debris. Furthermore, changes in toolstone procurement behavior may reflect a variety of social changes, including an intensified use of a more restricted territory, a reorganization of seasonal subsistence-related mobility, a change in social relationships between groups, or changes in the subsistence base, such as the inclusion of horticulture.

Unlike most flaked stone tools which are relatively light-weight and easily transported, groundstone tools are heavy. Mobile groups rarely carry groundstone tools with them as they move from camp to camp, preferring to leave the tools behind at habitation locales where they intend to return. Thus, groundstone tools are often excellent indicators of relatively intensive or long-term habitation. Along the Colorado River where river transport was possible, though, the difficulty of moving heavy groundstone tools may have been less of a limiting factor (Schneider 2006). In addition to studying groundstone tool use and disposition, archaeologists have recently investigated the production of groundstone tools along the lower Colorado River (e.g., Huckell 1986; Schneider 2006). Several quarries have been identified along the lower Colorado and Gila Rivers (Ezzo and Altshul 1993; Schneider and Altschul 2000). Of these, the Bullhead City quarry lies approximately 100 miles north of the BSPP, on the Colorado River at what is known as Big Bend. Prehistoric communities mined the quarry for a prized stone material, variously referred to as alkali-olivine basalt and andesite, that was particularly suited to the manufacture of metates (Schneider 2006). Huckell (1986) notes that the Mohave appear to have returned to the Bullhead City quarry for several centuries. Huckell further argues that the distinctive and finely made squared metates of the Mohave indicate a specialized production process geared to regional distribution and exchange, rather than simple production for personal use (1986:56). Site types that may relate to this theme include lithic scatters, flaking stations, quarry and toolstone procurement sites, habitation sites with lithic production debris, and some isolated flaked stone and groundstone tools.

## **Historic Themes**

Previous cultural surveys in the region suggested that historical period resources are present in lower frequency than prehistoric resources in the Colorado Desert, although this has not proven accurate in the Project. Not surprisingly, previous research efforts have focused on prehistory, leaving historical period research questions relatively underdeveloped (but see Schaefer et al. 1998). Based on the cultural resource inventory work previously accomplished in the region, and the preliminary results of the current survey, the following themes appear most relevant to the Project: transportation, mining, agriculture and ranching, and military training.

### ***Transportation***

The main route through the Palo Verde Mesa today is the I-10 highway, which parallels the prehistoric Coco-Maricopa Trail (CA-RIV-53T). In addition to established roads, numerous unpaved historical routes, some following prehistoric routes, are present throughout the Colorado Desert. Two-track roads, unimproved roads, and graded dirt roads often are the remnants of early wagon or automobile routes. Material culture associated with early routes is evident on the landscape as well. Historical debris from early travel across the desert is evident in the form of cans or other refuse associated with vehicle maintenance. Often, debris associated with early automobile use is found adjacent to modern roadways, which may indicate the age and historical

use of the route through time. Site types that may relate to this theme include historical roads, paths, and railroads, as well as route-associated signage, pipes and utilities, and refuse deposits.

### ***Mining***

Although mining was not a significant endeavor on the Palo Verde Mesa, in the surrounding McCoy, Palen, Mule, and Big and Little Maria Mountains, mining has been a consistent, if limited, activity from the 1800s to the present (Butler 1998; Shumway et al. 1980). Local newspaper accounts and other historical references indicate that mining was a modestly successful activity in the region from the end of the 19th century through the 20th century. In the Palo Verde Mesa area, small-scale prospecting was most intense in the late 19th to early 20th century, following the gold strike at Sutter's Mill, with a resurgence during the Great Depression in the 1930s. Larger-scale mining in the McCoy Mountains was focused on the extraction of copper, gypsum, and manganese, the latter of which was only profitably extracted during WWI and WWII (see Historical Background discussion in Chapter 2, above).

In the immediate Project vicinity, remnants of prospecting pits, claim markers (e.g., wooden stakes, rock cairns and associated cans and bottles), and scatters of food debris, tools, and hardware reflect the presence of hopeful prospectors. Along the western edge of the Project and into the flanks of the McCoy Mountains, other signs of prospecting and mining include tailings, adits, shafts, machinery, large trash dumps, concrete foundations, and structures. Identifying prospecting and mining activities informs on the economic development of the Project vicinity and the Colorado Desert region as a whole. Manganese mining activities during WWI and WWII inform on the war mobilization efforts at a regional and national level. In the Project, site types and features associated with this theme are prospecting pits, wooden stakes, historical rock cairns, temporary camps, and historical refuse scatters of food debris, automobile parts, and miscellaneous hardware and tools.

### ***Agriculture and Ranching***

California's agricultural economy boomed with the advent of the Gold Rush, and expanded further in the late 19th century with the passage of the Homestead Act in 1862, the California Swamp and Overflow Act of 1874, and the Desert Land Act of 1877. Passage of these acts allowed agriculture to develop in the Palo Verde Valley adjacent to the Project. Agriculture, though did not develop in the immediate environs of the Project, as water was unavailable and the sandy soils are unsuitable to most crops. Though agriculture never became a major industry in the immediate Project vicinity, agriculture continues to be the most significant contributor to the economy of the city of Blythe and the greater Palo Verde Valley.

Periodically, ambitious ranchers attempted to tame the Palo Verde Mesa, but with limited success. Early 20th century ranching attempts in the Project are evident as structures, water troughs and pipes, well heads, and associated debris. The ranching-related material appears to be concentrated in the northeastern portion of the Project bordering the periodically verdant McCoy Wash. Ranching on the mesa may have been limited to short-term sheep grazing (Spencer et al. 2001) after infrequent, large flood events of the McCoy Wash (Palo Verde 2005:68). Site types and features potentially relevant to this theme are residential structures and features of various

kinds (including wells, fences, privies, ramps, and other features), temporary camps, and historical refuse scatters.

### ***Military Training***

Finally, the most significant historical research theme for the Project is the area's use as a military training facility during WWII and again in 1964, before the country's entry into the Vietnam War. The history of the WWII-era DTC/C-AMA has been well documented (see Bischoff 2000; Henley 1989; Meller 1946; and discussion in Chapter 2, above), but the use and nature of the actual maneuver areas outside of the field camps is not well known. The DTC/C-AMA was the largest military training facility ever operated by the United States. By July 1943, the DTC/C-AMA encompassed 35 million acres and was larger than the entire country of England (Captain Herbert Chase 1943, as quoted in Baty and Maddox 2004:88). Physical evidence of divisional camps, controlled-fire ranges, mock maneuvers, and temporary encampments is visible throughout the region (Bischoff 2000). These various uses and activities may be identified through the careful analysis of the scattered material remains preserved within the former DTC/C-AMA. Presently, the least explored sites and features associated with the operation of the DTC/C-AMA are the remnants of maneuvers, including numerous tank tracks, fortified positions, bivouac areas, and scattered refuse deposits.

WWII-era military activity was not the only military use of the Project area. Subsequent to the abandonment of the DTC/C-AMA facility, in May 1964, the U.S. armed services came back to the region to conduct an extensive joint Army–U.S. Air Force exercise, code-named Exercise Desert Strike (see Historical Background discussion in Chapter 2, above). The exercise was conceived as a realistic training event testing the tactical coordination of Army and Air Force resources in the nuclear age (U.S. Army, n.d.; Time Staff 1964). Enormous in scope, Desert Strike was the most expensive military training exercise of its time, incorporating almost 90,000 men and roughly 8,000 wheeled and tracked vehicles, and 800 aircraft. Due to its expense and perceived lapses in prior planning, Exercise Desert Strike was judged to be a limited success (U.S. Army n.d.:321). The exercise was the last large-scale training exercise in the country before the United States entered the conflict in Vietnam. Since that time, the lessons learned in the western deserts during the summer of 1964 and the WWII years, have continued to inform U.S. military training and tactics (Gorman 1992).

Debris from military training activities on the desert is evident in the form of tank tracks, military ration cans, oil and fuel cans, beer cans, munitions, aircraft parts, and a number of land-modification features like tent pads and fortified positions. While metal cans tend to have wide dates of manufacture, several identifiable aspects, such as opening methods and size, have been extremely useful in distinguishing between early mining and ranching activities, WWII-era military training, and later activities. Cans are often overlooked in terms of their potential to yield information about a site, especially when artifacts like bottles are more easily dated. This can lead to archaeologists ignore or incompletely record the details of can artifacts (Busch 1981:102). Nonetheless, the proper identification and documentation of cans have proven critical in more precisely dating the use of historical period archaeological sites. Site types and features that might be interpreted with reference to this theme include formal military camps, temporary

camps (bivouacs), tent pads/cleared areas, fortified positions, collections of tank tracks, historical cairns and geoglyphs, airplane crash sites, and historical refuse scatters containing military-issue ration cans, oil and fuel cans, munitions, ordnance, utensils, and miscellaneous hardware.



## CHAPTER 5

### SURVEY RESULTS

Between March 30 and June 26, 2009, Project archaeologists conducted an archaeological survey of the Cultural Resources Survey Area (CRSA), a roughly 7,850-acre area encompassing the proposed Project disturbance areas, preliminary transmission alignment, and requisite CEC buffers around those. The Project physical parameters have since changed, as described in Chapter 1, but the current Project APE remains within the boundaries of the CRSA surveyed in spring and summer 2009. The CRSA is located approximately 10 miles west of Blythe, California, adjacent to the Blythe Airport (formerly the Blythe Army Air Base) on the Palo Verde Mesa in Riverside County. The survey of the CRSA was conducted in association with a broader program of environmental evaluation for the BSPP, a new thermal solar energy facility proposed by Solar Millennium and Chevron Energy Solutions, and under the regulatory purview of the CEC and the BLM (see Chapter 1 for a more detailed description of the project and project area).

As specified in the *BLM Manual*, and in keeping with the Secretary of the Interior's Standards and Guidelines for Historic Preservation, the survey of the CRSA was a Class III archaeological survey, defined as an intensive pedestrian survey designed to identify and evaluate all of the cultural resources in the Project that are "locatable from surface and exposed profile indications" (BLM 2004:19; see methods discussion in Chapter 4). Owing to the general lack of vegetation in the Project, ground visibility was extremely good, ranging between 95 and 100 percent. This allowed for a more complete and more reliable identification of Project cultural resources. Within the CRSA, qualified survey crews inventoried a total of 1,214 isolates and 228 archaeological sites, of which 224 had not been recorded previously (Plate 13). Of the 228 archaeological sites, 194 are historic, 31 are prehistoric, and 3 contain both historical and prehistoric materials. Overviews of the archaeological survey area, with the locations of sites and isolates plotted on 7.5-minute USGS topographic maps, are included in Attachment 4. Department of Parks and Recreation (DPR) site record forms are provided in Attachment 5. (Note that both of these attachments are confidential.)

Due to design changes after the completion of the cultural resources survey, 29 of the recorded archaeological sites and 65 of the isolates are no longer within the proposed Project. Those sites and isolates are reported here, but they are not evaluated for significance as they will not be impacted by the Project, as currently proposed. In addition, ten archaeological sites are located in the 200-ft buffer around the current Project disturbance limits. Sites in the buffer are not assessed at this time as direct impacts to those sites may be avoided if they are properly protected during the construction and use of the BSPP. All sites identified in the CRSA, whether they are currently inside the Project, outside of the Project, or in the buffer are described in this chapter and clearly identified as such.



**Plate 13. Survey crew recording a historical can at the BSPP.**

More than 90 percent of the isolated artifacts and 85 percent of sites identified in the BSPP are historical in age, and consist predominantly of metal cans, with smaller quantities of glass bottles and jars, milled lumber, broken ceramics, and sundry metal items. Historical features include survey markers, rock features, prospect pits, and stone and wooden structures, as well as cleared areas, fortified positions, refuse dumps, aircraft parts, smoke land mines, and tank tracks associated with the WWII-era use of the Project vicinity as part of the DTC/C-AMA. Prehistoric cultural materials include flaked stone tools and debitage, groundstone items, tested cobbles, ceramic sherds, fragmentary bone, and thermal cobble features. A summary of the identified archaeological sites is provided in Table 9, below.

Ultimately, the cultural resources of the BSPP cannot be adequately assessed with reference only to themselves. To address the cultural significance of the resources within the current Project, we must place the identified resources within broader prehistoric, historical, and environmental contexts. Much of the background information necessary to place the Project in context is presented in Chapter 2, and the prehistoric and historic themes relevant to the region and the Palo Verde Mesa are presented in Chapter 4. This chapter will revisit some of that information, adding specific details as warranted by the actual materials found in the CRSA. We also discuss how a landscape approach may offer a more comprehensive and nuanced understanding of the millennia of archaeological materials identified by our survey crews during four months of survey in 2009.

**Table 9. Archaeological Sites Identified in the BSPP**

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
<i>Newly Recorded Archaeological Sites</i>					
SMB-H-107	Historical refuse scatter	Prospecting/Ranching	hole-in-top can, other cans	Early 20th century	Buffer
SMB-H-109	Historical refuse scatter	DTC/C-AMA (possible Desert Strike)	military ration cans, aluminum-top pull-tab can	1942-1944 (WWII) and late 20th century	In Project
SMB-H-110	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-111	Historical refuse scatter and cairns	Prospecting/Ranching	rock cairns associated with prospecting pits and debris	Early 20th century	Buffer
SMB-H-113	Historical refuse scatter and cairns	Prospecting/Ranching and DTC/C-AMA	aircraft parts, cairns	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-114	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-115	Historical refuse scatter	DTC/C-AMA	military ration cans, bullet casing, metal wire	1942-1944 (WWII)	In Project
SMB-H-116	Historical refuse scatter	Prospecting/Ranching	hole-in-cap cans, can embossed "SANITARY"	Early 20th century	In Project
SMB-H-118	Historical refuse scatter	DTC/C-AMA	military ration cans, fuel can, military mess-kit spoon (embossed with "U.S."), bullets, metal wire	1942-1944 (WWII)	In Project
SMB-H-119	Historical refuse scatter	Prospecting/Ranching	evaporated milk cans, key-wind meat can	Late 19th to early 20th century	In Project
SMB-H-120	Historical refuse scatter	Prospecting/Ranching	sardine cans, key-wind sanitary can	Late 19th to early 20th century	In Project
SMB-H-121	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-122	Historical refuse scatter	DTC/C-AMA	military ration cans, military mess-kit spoon (embossed with "U.S.")	1942-1944 (WWII)	In Project
SMB-H-123	Historical refuse scatter	DTC/C-AMA	military ration cans, glass jar	1942-1944 (WWII)	In Project
SMB-H-124	Historical refuse scatter	Prospecting/Ranching	key-wind sardine can, baking powder can, other sanitary cans	Late 19th to early 20th century	In Project
SMB-H-125	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, key-wind meat can	Late 19th to early 20th century and 1942-1944 (WWII)	In Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-H-126	Historical refuse scatter	DTC/C-AMA	military ration cans, glass jar	1942-1944 (WWII)	In Project
SMB-H-127	Historical refuse scatter	Historical use of the Palo Verde Mesa	sanitary cans	20th century	In Project
SMB-H-129	Historical refuse scatter	Prospecting/Ranching	sardine can, sanitary cans, glass Coke bottles	Early 20th century	In Project
SMB-H-130	Historical refuse scatter	DTC/C-AMA (possible Desert Strike)	military ration cans; aluminum-top beer can, glass jug	1942-1944 (WWII) and late 20th century	In Project
SMB-H-131	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-132	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-133	Historical refuse scatter and hearth	DTC/C-AMA	military ration cans, hearth	1942-1944 (WWII)	In Project
SMB-H-134	Historical refuse scatter	DTC/C-AMA	military ration cans, amber bottle glass	1942-1944 (WWII)	In Project
SMB-H-135	Historical refuse scatter	DTC/C-AMA	military ration cans, glass bottle fragment, metal band, smoke land mine	1942-1944 (WWII)	In Project
SMB-H-136	Historical refuse scatter	DTC/C-AMA	military ration cans, brass bullet, sheet metal, glass jar (embossed with 1943 date)	1942-1944 (WWII)	In Project
SMB-H-137	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, wooden lathe, survey marker (dated 1917)	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-138	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-139	Historical refuse scatter	DTC/C-AMA	military ration cans, other cans	1942-1944 (WWII)	In Project
SMB-H-140	Historical refuse scatter	DTC/C-AMA	military ration cans, military mess-kit spoon, bullet shells, lathe	1942-1944 (WWII)	In Project
SMB-H-143	Historical refuse scatter and well	Prospecting/Ranching	key-wind meat can, other sanitary cans, milled lumber, well head	Late 19th to early 20th century	In Project
SMB-H-144	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, hole-in-cap cans	Late 19th to early 20th century and 1942-1944 (WWII)	In Project
SMB-H-145	Historical refuse scatter	Prospecting/Ranching	church-key-opened can, hole-in-cap can, glass jar, glass bottle	Early 20th century	In Project
SMB-H-147	Historical refuse scatter	DTC/C-AMA (possible Desert Strike)	military ration cans, aluminum-top beer can	1942-1944 (WWII) and late 20th century	In Project
SMB-H-148	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, hole-in-cap can, other sanitary cans	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-151	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, other rotary-opened food cans	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-152	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, rotary-opened food cans, key-wind meat can	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-153	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	tapered meat can, other cans, metal bracket with military-style coating	Late 19th to early 20th century and 1942-1944 (WWII)	In Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-H-154	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, butchered bone, boot sole, flat glass fragment, knife-punctured solder-dot cans	Late 19th to early 20th century and 1942-1944 (WWII)	In Project
SMB-H-155	Historical refuse scatter	DTC/C-AMA	military ration cans, glass jar, wooden lathe and plank, embossed sheet metal	1942-1944 (WWII)	In Project
SMB-H-156	Historical refuse scatter	DTC/C-AMA (possible Desert Strike)	military soluble coffee can, military ration cans, church-key-opened cans, glass bottles, aluminum-top pull-tab beer can	1942-1944 (WWII) and late 20th century	In Project
SMB-H-157	Historical refuse scatter	DTC/C-AMA	garbage can lid (embossed with 1942 date), evaporated milk can, military ration can	1942-1944 (WWII)	In Project
SMB-H-158	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-159	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, key-wind meat can, baking powder can	Late 19th to early 20th century and 1942-1944 (WWII)	In Project
SMB-P-160	Lithic scatter	Lithic reduction	flakes	Prehistoric	In Project
SMB-H-161	Historical refuse scatter	Prospecting/Ranching	hole-in-cap cans, key-wind meat can, metal band	Late 19th to early 20th century	In Project
SMB-H-162	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, glass jug fragments	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-163	Fortified positions	DTC/C-AMA	military ration cans, auto parts, metal wire, fortified positions	1942-1944 (WWII)	In Project
SMB-H-164	Historical refuse scatter and hearth	Prospecting/Ranching	baking powder can, hole-in-top milk can, other cans, glass bottles and fragments, metal post, band, and wire, hearth	Early 20th century	In Project
SMB-H-165	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, key-wind meat cans, church-key-opened beer cans	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-166	Historical refuse scatter	Prospecting/Ranching	hole-in-cap cans, key-wind meat can, X-cut can, glass jar	Late 19th to early 20th century	In Project
SMB-H-167	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, fuel can, metal bucket, smoke mine, hole-in-cap can, key-wind meat can, X-cut can, glass bottles	Late 19th to early 20th century and 1942-1944 (WWII)	In Project
SMB-H-168	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, key-wind meat can, ceramic fragment, glass bottle fragments, miscellaneous metal	Late 19th to early 20th century and 1942-1944 (WWII)	In Project
SMB-H-169	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, hole-in-cap cans	Late 19th to early 20th century and 1942-1944 (WWII)	In Project
SMB-H-170	Historical hearth	Historical use of the Palo Verde Mesa	sanitary can, rock ring hearth with charcoal fragments	20th century	In Project
SMB-H-171	Historical refuse dump	DTC/C-AMA	military ration cans, oil and fuel cans, mess-kit spoon embossed with "U.S.", glass bottles	1942-1944 (WWII)	In Project
SMB-H-173	Historical refuse scatter	Prospecting/Ranching	hole-in-cap can, key-wind meat can, other food cans	Late 19th to early 20th century	In Project
SMB-H-175	Historical refuse scatter and hearth	DTC/C-AMA	military ration cans, glass fragments, hearth	1942-1944 (WWII)	In Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-H-176	Historical refuse scatter and hearth	Prospecting/Ranching	cans, metal wire, metal bar, wood pile, hearth	Early 20th century	In Project
SMB-H-177	Historical refuse scatter	Prospecting/Ranching (possible Desert Strike)	church-key-opened beer cans, sardine can, milk cans, other sanitary cans, aluminum-top pull-tab beer cans	Early and late 20th century	In Project
SMB-H-178	Historical refuse dump	Historical use of the Palo Verde Mesa	hundreds of cans, propane tank, jack, vehicle tire, hack saw, glass bottle, rock alignment	20th century	In Project
SMB-H-179	Historical refuse scatter	Prospecting/Ranching	hole-in-cap cans, other sanitary cans	Late 19th to early 20th century	In Project
SMB-H-180	Historical refuse scatter	DTC/C-AMA (possible Desert Strike)	P38-opened cans, military ration cans, aluminum-top pull-tab beer cans	1942-1944 (WWII) and late 20th century	In Project
SMB-H-181	Historical refuse scatter	Historical use of the Palo Verde Mesa (possible Desert Strike)	hole-in-cap can, other cans, aluminum-top pull-tab beer can, glass jar	20th century	In Project
SMB-H-182	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, key-wind meat can, spice can, ceramic fragments, glass jar, glass bottles, other glass fragments	Late 19th to early 20th century and 1942-1944 (WWII)	In Project
SMB-H-183	Historical refuse scatter	Historical use of the Palo Verde Mesa	church-key-opened beer cans	Mid-20th century	In Project
SMB-H-184	Historical refuse scatter	Historical use of the Palo Verde Mesa (possible Desert Strike)	military ration cans, hole-in-cap can, aluminum-top pull-tab beer can	20th century	In Project
SMB-H-185	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-186	Historical refuse scatter	DTC/C-AMA	bayonet-punctured cans	1942-1944 (WWII)	In Project
SMB-H-189	Historical refuse scatter	Historical use of the Palo Verde Mesa (possible Desert Strike)	military ration cans, church-key-opened beer cans, X-cut cans, aluminum-top pull-tab beer cans, glass bottles	20th century	In Project
SMB-H-190	Historical refuse scatter	Historical use of the Palo Verde Mesa	church-key-opened cans, military ration can, key-wind opened meat can, aluminum-top pull-tab beer cans	20th century	In Project
SMB-H-191	Historical refuse scatter	DTC/C-AMA	bayonet-punctured cans, glass bottle, glass jar	1942-1944 (WWII)	In Project
SMB-H-192	Historical refuse scatter	DTC/C-AMA	P38-opened cans	1942-1944 (WWII)	In Project
SMB-H-193	Historical refuse scatter	DTC/C-AMA	bayonet-punctured cans	1942-1944 (WWII)	In Project
SMB-H-194	Historical refuse scatter	Prospecting/Ranching	church-key-opened cans, hole-in-cap cans, glass jar	Early to mid-20th century	In Project
SMB-H-195	Historical refuse scatter	DTC/C-AMA (possible Desert Strike)	military ration can, other cans, glass jar, aluminum-top pull-tab beer can	1942-1944 (WWII) and late 20th century	In Project
SMB-H-197	Historical refuse scatter	Prospecting/Ranching	hole-in-cap cans, fuel can, church-key-opened beer can, broken glass bottles	Early 20th century	In Project
SMB-H-198	Historical refuse scatter	Historical use of the Palo Verde Mesa	church-key-opened beer cans, other sanitary cans, metal pipe fragment, metal cable	20th century	In Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-H-199	Historical refuse scatter	Historical use of the Palo Verde Mesa (possible Desert Strike)	oval sardine can, church-key-opened cans, aluminum-top pull-tab beer can, other cans	20th century	In Project
SMB-H-200	Historical refuse scatter	DTC/C-AMA	can, munitions casing, metal wire	1942-1944 (WWII)	In Project
SMB-H-202	Historical refuse scatter	Prospecting/Ranching	church-key-opened cans, hole-in-cap cans, wooden post, metal wire	Early 20th century	In Project
SMB-H-203	Historical cleared areas	DTC/C-AMA	cleared areas arrayed in a line, possibly aerial markers	1942-1944 (WWII)	In Project
SMB-H-204	Historical refuse scatter	Prospecting/Ranching	key-wind meat can, fuel can, other sanitary cans	Early 20th century	In Project
SMB-H-205	Fortified positions	DTC/C-AMA	military ration cans, oil cans, glass fragments, metal wire, fortified positions	1942-1944 (WWII)	In Project
SMB-H-206	Historical refuse scatter	Historical use of the Palo Verde Mesa	cans, metal pipe fragments, vehicle parts, glass fragments, boot sole	20th century	In Project
SMB-H-207	Fortified positions	DTC/C-AMA	can lids, grenade spoon, shell casing, metal strapping, fortified positions	1942-1944 (WWII)	In Project
SMB-H-208	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)	military ration cans, glass ink well, key-wind meat can, aluminum-top pull-tab beer can	1942-1944 (WWII) and 20th century	In Project
SMB-H-209	Historical refuse scatter	Historical use of the Palo Verde Mesa	cans, cement block with post, lathe	20th century	In Project
SMB-H-210	Fortified positions	DTC/C-AMA	military ration cans, milled lumber, ammunition clips, metal strapping, fortified positions	1942-1944 (WWII)	In Project
SMB-H-212	Historical refuse scatter	DTC/C-AMA	military ration cans and can lids	1942-1944 (WWII)	In Project
SMB-H-213	Historical refuse scatter	Historical use of the Palo Verde Mesa	can, metal pipe fragment, metal spring and rod, glass jar	20th century	In Project
SMB-M-214	Thermal cobble feature and can	Prehistoric and historical use of the Palo Verde Mesa	sanitary can and thermal cobble feature	Prehistoric and 20th century	In Project
SMB-H-215	Historical refuse scatter	DTC/C-AMA	military ration cans, oil can, grenade part	1942-1944 (WWII)	In Project
SMB-H-216	Historical refuse scatter	DTC/C-AMA	military-issue soluble coffee can, oil cans, P38-opened cans, glass fragments, wire, miscellaneous metal	1942-1944 (WWII)	In Project
SMB-H-218	Historical refuse scatter and hearth	Prospecting/Ranching	automobile parts, metal, wire, hearth	Early 20th century	In Project
SMB-H-219	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-220	Historical refuse scatter	DTC/C-AMA	military ration cans, glass jar	1942-1944 (WWII)	In Project
SMB-H-221	Historical refuse scatter	Historical use of the Palo Verde Mesa	cans, glass bottle fragments, metal rods	20th century	In Project
SMB-H-222	Historical hearth and rock features	DTC/C-AMA	military ration can lid, hearth, letters and figures created from alignments of quartz rocks	1942-1944 (WWII)	In Project
SMB-H-223	Fortified positions	DTC/C-AMA	military ration cans, fortified positions	1942-1944 (WWII)	In Project



Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-H-224	Historical refuse dump	DTC/C-AMA	military ration cans, glass jar, glass fragments, ceramic fragments, metal teapot, metal screen, miscellaneous metal wire, bands, and sheets	1942-1944 (WWII)	In Project
SMB-H-226	Historical cairns and rock feature	Historical use of the Palo Verde Mesa	rock ring sundial feature, cairns	20th century	Buffer
SMB-H-227	Historical refuse scatter	Historical use of the Palo Verde Mesa	rotary-opened cans and can lids	20th century	In Project
SMB-P-228	Lithic scatter	Lithic reduction	quartzite flakes, hammerstone	Prehistoric	In Project
SMB-H-229	Historical refuse scatter	Historical use of the Palo Verde Mesa	military ration can, paint can, pull-tab beverage cans	20th century	In Project
SMB-H-230	Historical refuse scatter	DTC/C-AMA	military ration cans, glass bottle	1942-1944 (WWII)	In Project
SMB-H-231	Historical refuse scatter	Prospecting/Ranching	key-wind-opened sardine can, rotary-opened cans	Early 20th century	In Project
SMB-H-232	Historical refuse scatter	DTC/C-AMA	military ration cans, can lids, glass bottle	1942-1944 (WWII)	In Project
SMB-H-233	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-234	Historical refuse scatter and cairn	DTC/C-AMA (possible Desert Strike)	military ration cans, aluminum-top pull-tab beer cans, small cairn	1942-1944 (WWII) and late 20th century	In Project
SMB-H-235	Historical refuse scatter	DTC/C-AMA	military ration cans, metal wire, sheet metal	1942-1944 (WWII)	In Project
SMB-H-236	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-P-237	Lithic scatter	Lithic reduction	flakes, biface fragment, hammerstone	Prehistoric	Buffer
SMB-P-238	Lithic scatter	Lithic reduction	flakes, flake core, hammerstone	Prehistoric	In Project
SMB-P-241	Lithic scatter and cairn	Lithic reduction	flakes, hammerstone, cairn	Prehistoric	In Project
SMB-P-242	Lithic scatter	Lithic reduction	flakes, hammerstone	Prehistoric	Buffer
SMB-H-243	Historical refuse scatter and hearth	DTC/C-AMA	military ration cans, bottle crown cap, metal wire, hearth	1942-1944 (WWII)	In Project
SMB-P-244	Lithic scatter	Lithic reduction	flakes, hammerstones, flake core	Prehistoric	In Project
SMB-H-245	Historical refuse scatter and rock features	DTC/C-AMA	military ration cans, hearth, rock features	1942-1944 (WWII)	In Project
SMB-H-246	Historical refuse scatter	DTC/C-AMA	fuel cans, other food cans, glass jar	1942-1944 (WWII)	In Project
SMB-H-247	Historical cleared areas	DTC/C-AMA	probable tent pads, military ration can	1942-1944 (WWII)	In Project
SMB-H-248	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	milk can, church-key opened beer can, P38-opened can, other cans	Early 20th century and 1942-1944 (WWII)	In Project
SMB-P-249	Lithic scatter	Lithic reduction	flakes, hammerstone	Prehistoric	In Project
SMB-H-250	Historical cleared area	Historical use of the Palo Verde Mesa	circular cleared area	20th century	In Project
SMB-H-251	Historical cleared areas	Historical use of the Palo Verde Mesa	circular cleared areas	20th century	In Project
SMB-P-252	Lithic scatter	Lithic reduction	flakes, hammerstones	Prehistoric	In Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-H-253	Historical refuse scatter	DTC/C-AMA	military ration cans, can lids, handle, metal strapping, glass jar	1942-1944 (WWII)	Out of Project
SMB-H-254	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, X-cut-opened cans, can lids, wooden lathe	Early 20th century and 1942-1944 (WWII)	Out of Project
SMB-H-255	Historical refuse scatter	Prospecting/Ranching	sardine can, church-key-opened beer cans, other cans, aluminum-top pull-tab beer can	Early and late 20th century	Out of Project
SMB-H-256	Historical refuse scatter	Historical use of the Palo Verde Mesa	sanitary cans	20th century	Out of Project
SMB-H-257	Historical refuse scatter	Historical use of the Palo Verde Mesa	sanitary cans	20th century	Out of Project
SMB-H-258	Historical refuse scatter	DTC/C-AMA	church-key-opened beer can, military ration can, glass bottle	1942-1944 (WWII)	Out of Project
SMB-H-259	Historical refuse scatter	Historical use of the Palo Verde Mesa (possible Desert Strike)	church-key-opened beer cans, aluminum-top pull-tab beer cans, glass bottle fragments	20th century	Out of Project
SMB-H-260	Historical refuse scatter	Prospecting/Ranching	hole-in-cap milk cans, other cans glass jar, glass fragments	Early 20th century	Out of Project
SMB-H-261	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	key-wind opened meat can, vertical-pocket tobacco tin with hinged lid, military ration cans, milled lumber, glass bottles	Early 20th century and 1942-1944 (WWII)	Out of Project
SMB-H-262	Historical refuse scatter and hearth	Prospecting/Ranching	cans, cinder blocks, milled lumber, metal pipe, glass, hearth	Early 20th century	Out of Project
SMB-H-263	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	hole-in-cap can, key-wind-opened sardine can, military ration can, can lid	Early 20th century and 1942-1944 (WWII)	Out of Project
SMB-H-265	Historical refuse scatter	Historical use of the Palo Verde Mesa	military ration cans, other cans, glass fragments	20th century	Out of Project
SMB-H-266	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	hole-in-cap milk cans, military ration cans	Early 20th century and 1942-1944 (WWII)	Out of Project
SMB-H-267	Historical refuse scatter	DTC/C-AMA (possible Desert Strike)	military ration cans, church-key-opened beer cans, aluminum-top pull-tab beer cans, oil cans, coffee cans	1942-1944 (WWII) and late 20th century	Out of Project
SMB-H-268	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	church-key-opened beer cans, hole-in-cap milk can, military-issue soluble coffee can	Early 20th century and 1942-1944 (WWII)	Out of Project
SMB-H-269	Historical refuse dump	Historical use of the Palo Verde Mesa	hundreds of cans, military ration cans, metal pail, milled lumber, glass fragments	20th century	Out of Project
SMB-P-270	Lithic scatter and cairn	Prehistoric use of the Palo Verde Mesa	flakes, flake core, cairn	Prehistoric	Out of Project
SMB-H-271	Historical refuse scatter	Historical use of the Palo Verde Mesa	church-key-opened beer cans, rotary-opened cans, military ration cans, other cans, metal, brick, glass bottles, historical ceramics	20th century	Out of Project
SMB-P-272	Lithic scatter	Lithic reduction	flakes, cores, chopper, hammerstone, recent cobble-collection debris	Prehistoric	Out of Project
SMB-H-274	Historical refuse scatter	Historical use of the Palo Verde Mesa (possible Desert Strike)	mixed cans, glass bottles, miscellaneous metal, AA battery, aluminum foil, car parts	20th century	Out of Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-P-275	Lithic scatter	Lithic reduction	tested cobbles, flakes	Prehistoric	Out of Project
SMB-H-276	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)	P38-opened ration cans, military ration cans, oil can, key-wind-opened meat can, hole-in-cap milk can, glass jar, aluminum-top pull-tab beer can	Early 20th century and 1942-1944 (WWII)	Out of Project
SMB-H-279	Historical refuse scatter	DTC/C-AMA	P38-opened ration cans, oval sardine cans, military ration can, glass jar	1942-1944 (WWII)	Out of Project
SMB-H-282	Historical refuse scatter	DTC/C-AMA	military ration cans, oval sardine can	1942-1944 (WWII)	Out of Project
SMB-H-283	Historical refuse scatter	Historical use of the Palo Verde Mesa	cans, glass bottle	20th century	In Project
SMB-H-284	Historical refuse scatter	Prospecting/Ranching	baking powder can, other cans	Late 19th to early 20th century	In Project
SMB-H-285	Fortified position	DTC/C-AMA	fortified position	1942-1944 (WWII)	In Project
SMB-H-286	Fortified position	DTC/C-AMA	can, fortified position	1942-1944 (WWII)	In Project
SMB-H-287	Historical refuse scatter	Historical use of the Palo Verde Mesa	car parts, glass fragments	20th century	In Project
SMB-H-288	Historical refuse scatter	Prospecting/Ranching	car parts, clock parts, gasket	Early 20th century	In Project
SMB-H-290	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)	P38-opened cans, hole-in-cap can, church-key-opened cans, other cans	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-291	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)	hole-in-cap cans, church-key-opened cans, bayonet-opened cans, aluminum-top pull-tab beer cans	1942-1944 (WWII) and 20th century	Buffer
SMB-H-401	Historical refuse scatter	Prospecting/Ranching	food cans, vertical-pocket tobacco tin with hinged lid	Early 20th century	In Project
SMB-H-402	Historical refuse scatter	Prospecting/Ranching	hole-in-cap cans	Early 20th century	In Project
SMB-H-403	Historical refuse dump	DTC/C-AMA	oil can dump	1942-1944 (WWII)	In Project
SMB-H-404	Historical ranch	Prospecting/Ranching and DTC/C-AMA	stone and concrete structures, watering trough, sheet metal, metal pipes, vehicle parts, metal chicken wire, cans, milled lumber, glass fragments, miscellaneous debris	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-406	Historical refuse scatter	Prospecting/Ranching	sanitary cans, tobacco can with hinged lid, wood pile, cluster of quartz rocks	Early 20th century	In Project
SMB-H-407	Historical refuse scatter	Prospecting/Ranching	church-key-opened beer can, milled lumber, can reused as pail, one isolated lithic flake	Early 20th century	In Project
SMB-H-408	Historical refuse scatter and hearth	Prospecting/Ranching	food cans, saw-cut faunal bone, possible hearth	Early 20th century	In Project
SMB-H-409	Historical refuse scatter	Prospecting/Ranching	sanitary cans, tobacco can with hinged lid, glass soda bottle (embossed with 1938 date)	Early 20th century	In Project
SMB-P-410	Trail	Prehistoric trails	north-south running trail segment (200 meters long)	Prehistoric	In Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-H-411	Historical cleared area	DTC/C-AMA	cleared linear feature, possibly an aerial marker	1942-1944 (WWII)	In Project
SMB-H-413	Historical refuse scatter	Prospecting/Ranching	cans, glass jars, glass fragment	Early 20th century	In Project
SMB-H-414	Historical refuse scatter	Prospecting/Ranching	key-wind meat can, metal wire, wood pile	Early 20th century	In Project
SMB-H-415	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	P38-opened cans, hole-in-cap cans, vertical-pocket tobacco tin, sun-colored amethyst glass fragments	Late 19th to early 20th century and 1942-1944 (WWII)	In Project
SMB-H-416	Historical refuse scatter and wooden ramp	DTC/C-AMA	military ration cans, wooden ramp	1942-1944 (WWII)	In Project
SMB-H-417	Historical refuse scatter	DTC/C-AMA	oil cans, food cans	1942-1944 (WWII)	In Project
SMB-H-418	Historical refuse scatter and hearth	Prospecting/Ranching	tobacco can with hinged lid, glass bottle, hearth containing one tested cobble (collected historically)	Early 20th century	In Project
SMB-H-419	Historical refuse scatter and wooden ramp	DTC/C-AMA	military ration cans, glass fragments, metal wire, metal nail and sundry hardware, bullet clips, wooden ramp	1942-1944 (WWII)	In Project
SMB-H-420	Historical refuse scatter	Prospecting/Ranching	oval sardine can, milk cans, milled lumber	Late 19th to early 20th century	In Project
SMB-H-423	Airplane crash site	DTC/C-AMA (possible Desert Strike)	aircraft parts, military ration cans, aluminum-top pull-tab beer cans	1942-1944 (WWII) and late 20th century	In Project
SMB-H-424	Historical refuse scatter	DTC/C-AMA (possible Desert Strike)	military ration cans, military soluble coffee can, fuel can, glass jar, lathe, aluminum-top pull-tab beer can	1942-1944 (WWII) and late 20th century	In Project
SMB-H-426	Historical refuse scatter	Prospecting/Ranching	knife-cut cans, glass bottle	Early 20th century	In Project
SMB-H-427	Historical refuse dump	DTC/C-AMA	military ration can dump, munitions casing, oil cans	1942-1944 (WWII)	In Project
SMB-H-430	Historical refuse dump	Historical use of the Palo Verde Mesa	hundreds of church-key-opened cans, glass bottles, glass jug, glass fragments, metal bands	Mid-20th century	Buffer
SMB-H-432	Historical structure foundation	Historical use of the Palo Verde Mesa	church-key-opened can, concrete foundation	Mid-20th century	In Project
SMB-P-434	Thermal cobble features	Prehistoric use of the Palo Verde Mesa	concentrations of fire-affected cobbles	Prehistoric	In Project
SMB-P-435	Thermal cobble features	Prehistoric use of the Palo Verde Mesa	concentrations of fire-affected cobbles	Prehistoric	Buffer
SMB-P-436	Thermal cobble features	Prehistoric use of the Palo Verde Mesa	concentrations of fire-affected cobbles	Prehistoric	In Project
SMB-P-437	Thermal cobble feature	Prehistoric use of the Palo Verde Mesa	concentration of fire-affected cobbles	Prehistoric	In Project
SMB-P-438	Thermal cobble feature	Prehistoric use of the Palo Verde Mesa	concentration of fire-affected cobbles	Prehistoric	In Project
SMB-H-439	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-P-440	Thermal cobble feature	Prehistoric use of the Palo Verde Mesa	concentration of fire-affected cobbles	Prehistoric	In Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-P-441	Thermal cobble features	Prehistoric use of the Palo Verde Mesa	concentrations of fire-affected cobbles	Prehistoric	In Project
SMB-H-442	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, vertical-pocket tobacco tin with hinged lid, pail handle, glass bottles	Early 20th century and 1942-1944 (WWII)	In Project
SMB-H-444	Historical refuse scatter	Historical use of the Palo Verde Mesa (possible Desert Strike)	fuel can, food cans, aluminum-top pull-tab beer cans	20th century	In Project
SMB-P-445	Lithic scatter and thermal cobble feature	Prehistoric use of the Palo Verde Mesa	flakes, flake cores, tested cobbles, thermal cobble feature, cleared circles	Prehistoric	In Project
SMB-H-447	Historical refuse scatter	Prospecting/Ranching (possible Desert Strike)	Coors beer can, hole-in-cap cans, other food cans	Early and late 20th century	In Project
SMB-P-448	Thermal cobble feature	Prehistoric use of the Palo Verde Mesa	concentration of fire-affected cobbles	Prehistoric	In Project
SMB-H-450	Historical refuse scatter	DTC/C-AMA	military ration cans, glass jar	1942-1944 (WWII)	In Project
SMB-H-452	Historical refuse scatter and hearth	DTC/C-AMA	military ration cans, possible hearth	1942-1944 (WWII)	In Project
SMB-P-453	Lithic scatter	Lithic reduction	flakes, flake cores, hammerstones, tested cobbles	Prehistoric	In Project
SMB-P-454	Thermal cobble feature and ceramic scatter	Prehistoric use of the Palo Verde Mesa	ceramic sherds, faunal bone fragments (possibly modern), thermal cobble feature	Prehistoric	In Project
SMB-H-460	Historical refuse scatter	DTC/C-AMA	military ration cans, fuel cans, sardine can, braided wire	1942-1944 (WWII)	In Project
SMB-H-505	Historical refuse scatter	Prospecting/Ranching	church-key-opened beer can, key-wind meat can, tobacco can with hinged lid, glass jar, glass bottles, ceramic fragment	Early 20th century	In Project
SMB-H-507	Historical refuse scatter	Historical use of the Palo Verde Mesa (possible Desert Strike)	hole-in-cap can, military ration can, aluminum-top pull-tab beer cans	20th century	In Project
SMB-H-508	Historical refuse scatter	Historical use of the Palo Verde Mesa (possible Desert Strike)	aluminum-top pull-tab beer cans, other food can	20th century	In Project
SMB-H-509	Historical refuse scatter	DTC/C-AMA	military ration can, other cans, glass jar	1942-1944 (WWII)	In Project
SMB-M-511	Lithic scatter with historical refuse scatter	Lithic reduction and DTC/C-AMA	military ration cans, lithic flakes, flake cores, tested cobbles	Prehistoric and 1942-1944 (WWII)	In Project
SMB-M-512	Lithic scatter with historical refuse scatter	Lithic reduction and DTC/C-AMA	military ration cans, lithic flakes, flake cores, tested cobbles	Prehistoric and 1942-1944 (WWII)	Buffer
SMB-H-513	Historical refuse scatter	Prospecting/Ranching (possible Desert Strike)	key-wind meat can, hole-in-cap can, aluminum-top pull-tab beer can	Early and late 20th century	In Project
SMB-H-514	Historical refuse scatter and features	Prospecting/Ranching	sanitary cans, milled lumber, metal wire and nails, cinder blocks, wooden-frame structure, outhouse, rock feature	Early 20th century	In Project
SMB-H-515	Historical refuse scatter	DTC/C-AMA	military ration cans, glass jug	1942-1944 (WWII)	In Project
SMB-H-516	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, medicine bottle, hole-in-cap cans, modified can	Late 19th to early 20th century and 1942-1944 (WWII)	In Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
SMB-H-517	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA	military ration cans, hole-in-cap cans, glass fragments	Late 19th to early 20th century and 1942-1944 (WWII)	In Project
SMB-H-518	Historical refuse scatter	Historical use of the Palo Verde Mesa	cans, metal wire and nails, miscellaneous metal hardware, bullet casing, concrete fragments, glass fragments, coin dated 1940	20th century	Out of Project
SMB-H-519	Historical refuse scatter	Prospecting/Ranching	tobacco tins, fuel can, milk can, church-key-opened beer cans, other cans, ceramic fragments, milled lumber, metal wire, mesh screen, sheet metal, metal bottle cap	Early 20th century	Out of Project
SMB-H-520	Historical refuse scatter	Historical use of the Palo Verde Mesa	aerosol can, hole-in-cap can, aluminum-top pull-tab beer can, other cans, metal band, milled lumber	20th century	Out of Project
SMB-H-522	Historical refuse scatter	Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)	hole-in-cap milk cans, military ration cans, church-key-opened beer cans, metal tray, sheet metal, milled lumber, glass fragments, aluminum-top pull-tab beer can	1942-1944 (WWII) and 20th century	Out of Project
SMB-H-525	Historical refuse dump	Historical use of the Palo Verde Mesa (possible Desert Strike)	hundreds of cans and lids, church-key-opened and aluminum-top beer cans, military ration cans, bottle caps, milled lumber, cable, scrap metal, lantern, buckets, metal conduit, washing basin, bed frame, car seat, wire, bricks, metal lock, license plate	20th century	Out of Project
SMB-H-527	Historical refuse scatter	Historical use of the Palo Verde Mesa	military ration cans, church-key-opened beer can, hole-in-cap can, aluminum-top pull-tab beer can	20th century	In Project
SMB-H-528	Historical refuse scatter	DTC/C-AMA	military ration cans	1942-1944 (WWII)	In Project
SMB-H-529	Historical refuse scatter	DTC/C-AMA	military ration cans, milled lumber	1942-1944 (WWII)	In Project
SMB-P-530	Lithic scatter	Lithic reduction	quartz flakes and flake cores	Prehistoric	In Project
SMB-P-531	Lithic scatter	Lithic reduction	quartz flakes and flake cores	Prehistoric	In Project
SMB-P-532	Lithic scatter	Lithic reduction	quartz flakes and flake cores	Prehistoric	In Project
SMB-H-600	Historical road	Early 20th century roads	unnamed dirt two-track road and narrow-gauge pipeline running north-south from I-10 to Arlington Mine Road	20th century	In Project
SMB-H-601	Historical road	Early 20th century roads	dirt two-track road, currently named Mesa Drive, running north-south along a 1917 USGS survey section line from Blythe Army Air Base to an unnamed road south of the McCoy Wash	20th century	In Project

Temporary Number	Site Type	Preliminary Cultural Context	Representative Cultural Constituents	Chronological Assessment	Location
<i>Previously Recorded Archaeological Sites</i>					
CA-RIV-1464	Trail	Prehistoric trails	path through desert pavement running east-west for 700 meters; 90-degree turn to south at west end – probable modern feature associated with private property boundary	Prehistoric	In Project
CA-RIV-2846	Quarry	Lithic reduction	sparse, extensive flaked stone scatters and other features across Pleistocene pebble terrace	Prehistoric	In Project
CA-RIV-3419	Quarry	Lithic reduction	sparse, extensive flaked stone scatters and other features across Pleistocene pebble terrace	Prehistoric	In Project
CA-RIV-7175	Lithic scatter	Lithic reduction	3 bifaces (heat-treated chalcedony, dart-sized point blanks), 80 biface reduction flakes, 1 metavolcanic mano	Prehistoric	Buffer

## SITE DISCUSSION

The Palo Verde Mesa is a dry, desolate and forbidding place, where daytime temperatures regularly exceed 100° F. With the exception of infrequent floods from monsoon-like summer rains, no surface water exists on the mesa, nor any reliable springs. For much of the year, the mesa's sparse desert scrub and few hardy trees look more dead than alive, and offer little shade from the unrelenting sun. On particularly hot days, the densely packed rocks of the desert pavement trap so much heat that the temperature at ground level is effectively ten or more degrees hotter than the ambient air above; hot enough to burn skin and even destroy shoes, as indicated by the abandoned boot soles found scattered across the Project.

Located atop the Palo Verde Mesa, the approximately 7,850-acre Project CRSA encompasses a sizable swath of arid, rocky land. From west to east, the CRSA stretches across two miles of desert pavement, from the deeply cut bajada along the base of the McCoy Mountains, to raised pebble terraces formed in the Pleistocene by the Colorado River. From north to south, the CRSA spans roughly 6 miles of largely undeveloped desert and crosses the I-10 at a point east of Black Rock, a prominent topographic feature marking the southern extent of the McCoy Mountains.

This stretch of the Palo Verde Mesa was never a hospitable place. The few historical attempts to settle the land were brief and, ultimately, unsuccessful (Chapter 2). Prehistorically, a small number thermal cobble features and cleared circles suggest only the briefest of stays on the mesa. For millennia, then, the Project vicinity was “basically a through-way,” not a place to settle down: “given the environment with few resources, there was no reason . . . to establish a community on the mesa” (von Werlhof 2004:v). Nevertheless, people did come to this place, repeatedly.

In spite of its appearance as a desolate wasteland, the Project CRSA contained a surprisingly large number of archaeological materials, as enumerated above. During the archaeological



survey of the CRSA, as weeks of work expanded into months, we began to realize that the Palo Verde Mesa, far from a wasteland devoid of human activity, was a rich repository of human activity from prehistoric times to the present. More than half of that activity occurred between 1942 and 1944 (and mostly in 1942, see Chapter 2), as part of the extensive military training exercises of the DTC/C-AMA. Nevertheless, a substantial number artifacts and sites dating to other historical periods, and to prehistoric periods, are present in this hot, dry place.

The archaeological remains in the CRSA suggest that most visits to the area were brief, merely respites in longer journeys and larger activities. To assess the cultural resources of the BSPP, then, we must understand both what drew people to this lonely stretch of the desert, *and* what the nature and extent were of the larger activities that shaped the use of this place. To address these interrelated questions, and to better assess the significance of the Project cultural resources, we have adopted a multi-scalar landscape approach.

## **A Landscape Approach**

Since the early 1990s, the study of cultural landscapes, rather than isolated sites or artificially circumscribed study areas, has become increasingly popular in American and European archaeology. Generally speaking, research on large-scale projects has sifted from an emphasis on individual sites, to the construction of holistic *landscapes* comprised of sites, isolates, and natural features. Although the boundaries of landscape archaeology are far from clear (Fisher and Thurston 1999), two distinct brands have emerged. Principally in Europe, a more interpretative, contextual, and symbolic approach to prehistoric land use is gaining momentum (Bender 1993; Bradley 1997; Tilley 1994; Thomas 1993; see also, Ashmore and Knapp 1999 for an American example). Many North American scholars, though, adhere to a landscape approach firmly rooted in the ecological and positivist tradition of American settlement studies (e.g., Allen et al. 1990; Rossignol and Wandsnider 1992). Discussing the two landscape trends, Rossignol (1992:4) makes a distinction between the humanistic landscape archaeology initially popularized by British scholars, and the decidedly scientific American landscape approach, incorporating “ecological and geological system variables.” Generally speaking, the antipodal concerns of *meaning* and *adaptation* define the division between landscape theorists.

In recent years, a number of archaeologists have suggested a sort of intellectual detente between the two landscape factions by tacitly accepting the multifaceted nature of current inquiries into landscape (Anshuetz et al. 2001; Crumley 1994; Crumley and Marquardt 1987, 1990; Knapp and Ashmore 1999). In so doing, they decouple positivism and environment on the one hand, and humanism and meaning on the other, allowing these categories to intermingle in discussions of landscape. In fact, a number of researchers currently engage in a sort of landscape archaeology that incorporates scientific rigor and ecological variables with historical particulars and symbolic interpretations (e.g., Erickson 1999; Lekson 1996; Vanderpot and Altschul 2003). These authors uphold the capacity of the natural environment to structure human behavior, but also acknowledge the significance of human constructions in shaping human behavior and actions on the land. That is, landscapes are not simply a collection of environmental factors – landforms, hydrology, flora, and fauna – but rather, the varied use and interpretation of those environmental factors by human groups. Landscapes are not neutral backdrops upon which the human drama unfolds. They are ongoing cultural constructions tied to, but not equivalent with, the

environment. From the undifferentiated mass of rivers and rocks, mountains and groves, humans define places (*sensu* Feld and Basso 1996) and imbue them with meaning. This approach is based in part on the work of cultural geographers who have long argued for a culturally mediated conception of landscape (e.g., Sauer 1925; Tuan 1977; cf. Ingold 1986).

At a minimum, landscape archaeology or a landscape approach should attach as much significance to the apparently unoccupied spaces between documented archaeological sites, as to the sites themselves. In this approach, natural features may take on archaeological significance equal to human-modified spaces, and systems of locales, rather than individual sites may become the logical units of analysis. Taken further, individual artifacts may become the focus of analysis in an entirely “siteless” archaeology (Dunnell and Dancy 1983; Dunnell 1992). As Dunnell and colleagues have repeatedly argued, the concept of *site* in archaeology is a difficult one, defined as much by the archaeologist as the archaeological materials themselves. In many instances, particularly in the case of diffuse refuse scatters, the sites we identify are not inherently meaningful cultural entities, but rather mere concentrations of artifacts and features, possibly no more culturally or temporally related to one another than to similar materials located outside the site boundaries.

For the BSPP, we have moved strongly in the direction of a siteless archaeology, treating isolated artifacts as “data points” comparable to artifacts located within defined sites. In fact, the sheer number of isolates recorded within in the CRSA (n = 1,214) suggests that, at least during the historical period, the area might be more accurately understood as an enormous, diffuse, and largely continuous scatter of materials with some apparent concentrations and patterning reflected in the groupings we have called sites. These sites, in turn, might be better conceived as management tools allowing for the avoidance of cultural materials, rather than as discrete episodes of activity. Further, the spaces between these sites, containing isolated artifacts and natural features, should not be considered vacant, so much as lightly used.

By using a landscape approach, though, we are not implying that the CRSA, an area defined by modern development priorities, is a meaningful or logical landscape unto itself. Further, we are not suggesting that the CRSA is equivalent to a complete “cultural landscape” as defined by the National Park Service: a “setting we have created in the natural world” that reveals “fundamental ties between people and the land” (NPS 1998). In fact, the CRSA contains portions of several cultural and temporally specific landscapes whose boundaries extend beyond our current survey.

### **Landscapes of the Palo Verde Mesa**

In attempting to understand the identified cultural resources of the CRSA from a landscape rather than a site-focused perspective, we are faced with the question of scale. How big is a landscape? The best-documented landscape in the region is the WWII-era DTC/C-AMA, a vast facility of which the Project is one tiny piece. How much of that immense expanse is part of the “landscape” of the DTC/C-AMA? As Patrick Andrus observes in the National Register guidelines for identifying and evaluating historic battlefields, “in surveying a battlefield, a basic issue is where do battlefields start and end?” (Andrus 1992:1). Similar questions could be asked for prehistoric landscapes of long-distance trade, or historical landscapes of peripatetic

prospecting and mining. Ultimately, the question is not just *where* is a landscape, but also *when*, and by *whom*, and for *what* purpose?

The Palo Verde Mesa was repeatedly visited over several millennia, but the nature of those visits changed identifiably over time. Thus, the landscape of the mesa is not a thing that can be defined on purely spatial grounds, nor is it unitary. The prehistoric and historical landscapes of which the Palo Verde Mesa was a part can be conceived as the intersection of time, space, activity, and meaning. From a cultural resources management perspective, these landscapes may be defined as the spatial manifestations of any temporally bounded cultural or historic contexts, such as those described for the Project in Chapter 4. Therefore, on the Palo Verde Mesa, we can speak of a landscape of prehistoric travel and trade, a landscape of prehistoric subsistence, a landscape of early 20th century ranching, or a landscape of WWII-era military training. Within each of those “landscapes” further refinements could be made, reflecting more specific temporal and contextual associations. All of these landscapes may overlap entirely or in part, and all of them logically extend beyond the boundaries of the CRSA.

For the present discussion of survey data, we have defined four broad landscapes that preliminarily allow us to disentangle the various archaeological materials on the basis of time and cultural context.

- (1) Prehistoric use of the Palo Verde Mesa
- (2) Early 20th century ranching and prospecting
- (3) WWII-era military training associated with the DTC/C-AMA
- (4) Non-specific 20th century use of the Palo Verde Mesa

Further refinements could be made to the prehistoric and 20th century landscapes with testing-level data. We have also noted a small number of artifacts, primarily beer cans, which are likely associated with the joint military training exercise Desert Strike of May 1964. Incorporating all of the Project cultural materials, whether within or outside of sites, we have created a series of frequency maps classed by time and context. These maps begin to model the physical contours of the landscapes of which the Palo Verde Mesa was a part, with regard to time, culture, and place (Figures 5 through 9).

### **Patterns on the Mesa**

Although the entire CRSA contains a diffuse scatter of debris, the distribution of that debris is patterned with respect to natural and constructed landscape features. This observation does not mean that the natural and built features unavoidably *determined* the patterning of activity and, therefore, the archaeological remains. The influence of these features is undeniable, but their specific use and meaning at any given time, and by any given group of visitors, was culturally mediated and open to novel use or outright avoidance.

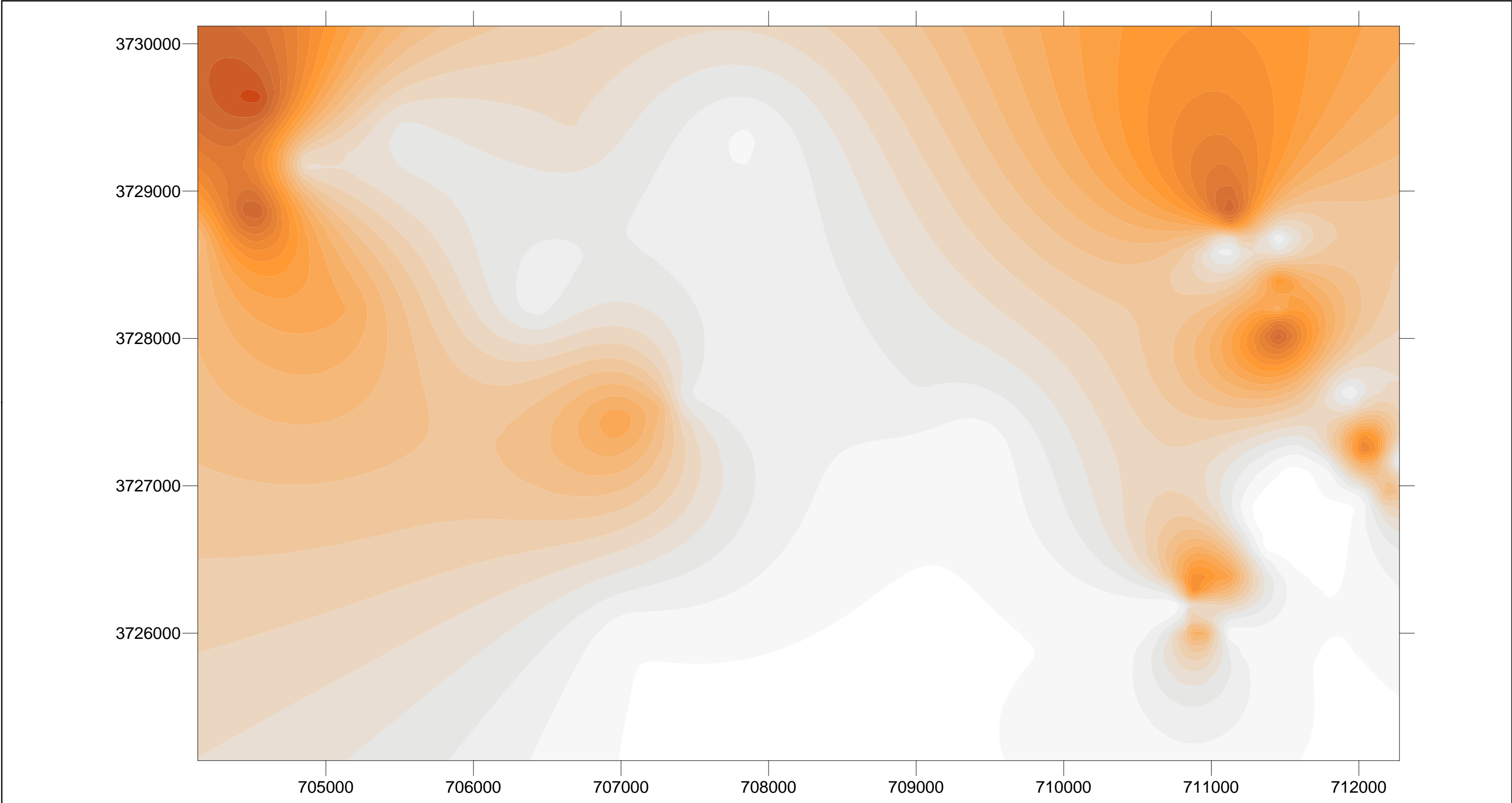
Two natural landscape features were clearly important factors in the disposition of human activity across the CRSA: the Pleistocene pebble terraces, to the east, and the deeply cut ridges of the McCoy Mountain bajada, to the west (Plate 14). People repeatedly visited these landscape features to collect stone cobbles and to find some small shelter from the unforgiving desert. In

the CRSA, prehistoric sites are disproportionately concentrated along the pebble terraces and on the cut ridges. Early 20th century mining sites are also concentrated along the cut ridges, as are most fortified positions dating to the WWII-era. Not all uses of the mesa, though, focused on these two landscape features. Early 20th century ranchers seem to have largely avoided both the cut ridges and the pebble terraces, preferring the flat desert pavement and sporadically verdant McCoy Wash.

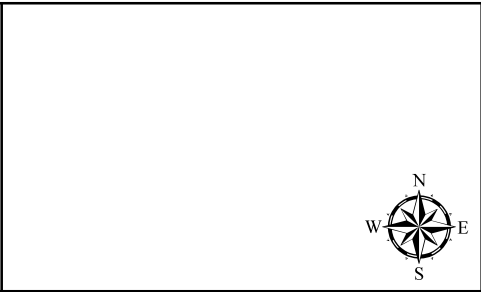
In the early years of the 20th century, two new built landscape features refocused activity on the mesa: north-south running dirt roads along the western (SMB-H-600) and eastern (SMB-H-601) extent of the Project. Ranching activity seems to be concentrated along the eastern road (SMB-H-601), which skirts a possible ranching station (SMB-H-404) and terminates at the McCoy Wash. In addition, generalized refuse deposits, often containing vehicle parts, are common along the two roads and along the course of the present-day I-10. These road-side accumulations range from relatively sparse scatters to dense deposits containing the varied debris of illegal, or “wildcat,” dumping. Most of the larger dumps are concentrated along the I-10.



**Plate 14. Deeply cut bajada at the base of the McCoy Mountains.**



Legend



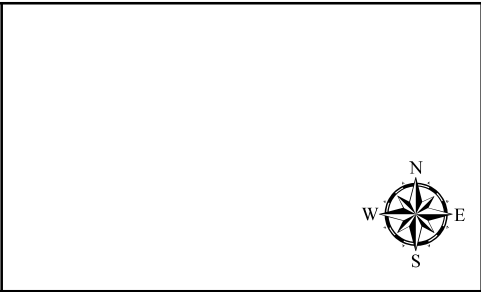
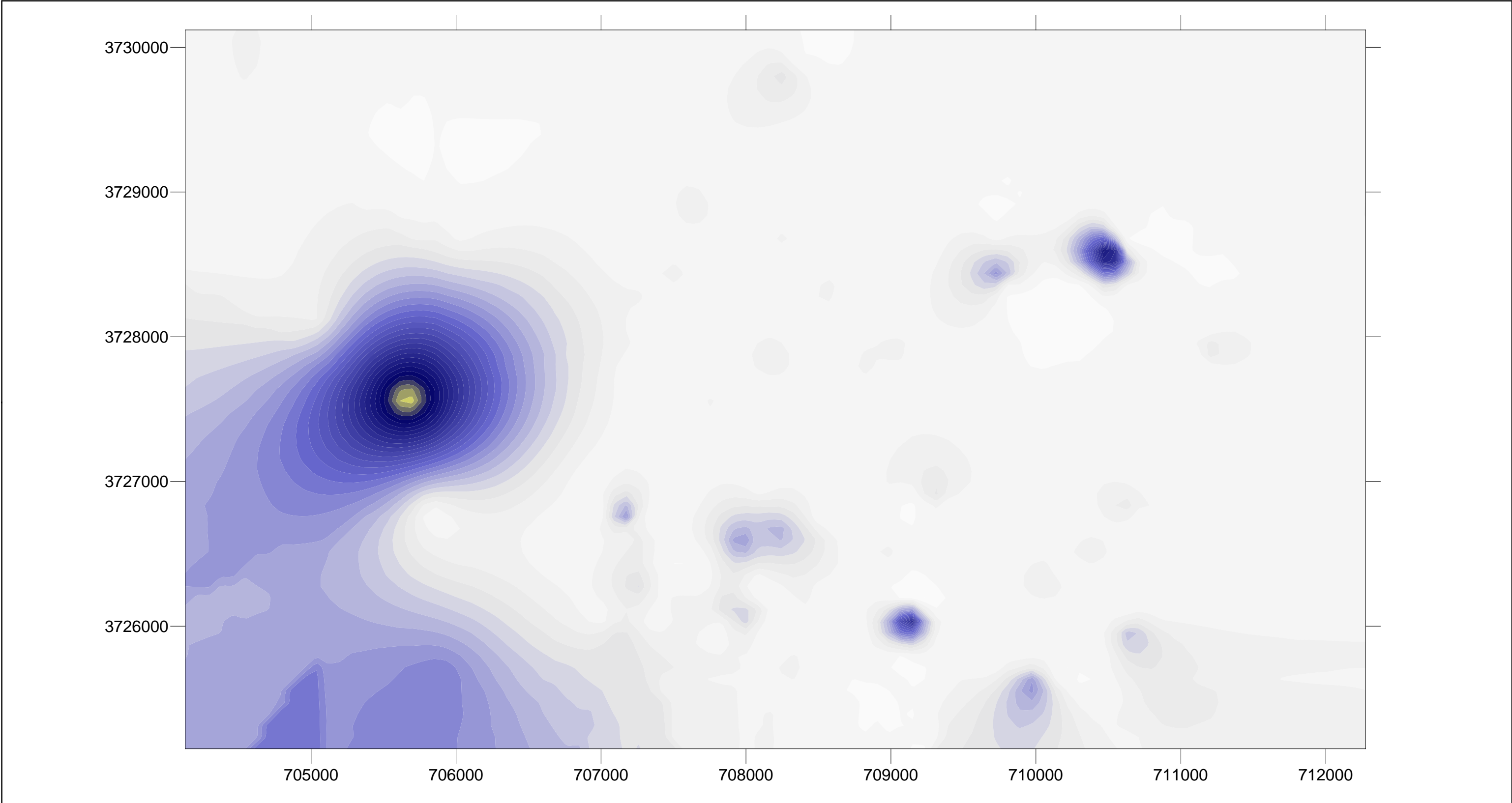
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**Figure 5  
Distribution Map Modeling the  
Frequency of Prehistoric Artifacts  
at the BSPP**



Date: September 2009





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Survey Report**

**Figure 6  
Distribution Map Modeling the  
Frequency of Early 20th Century  
Possible Prospecting Artifacts  
at the BSPP**

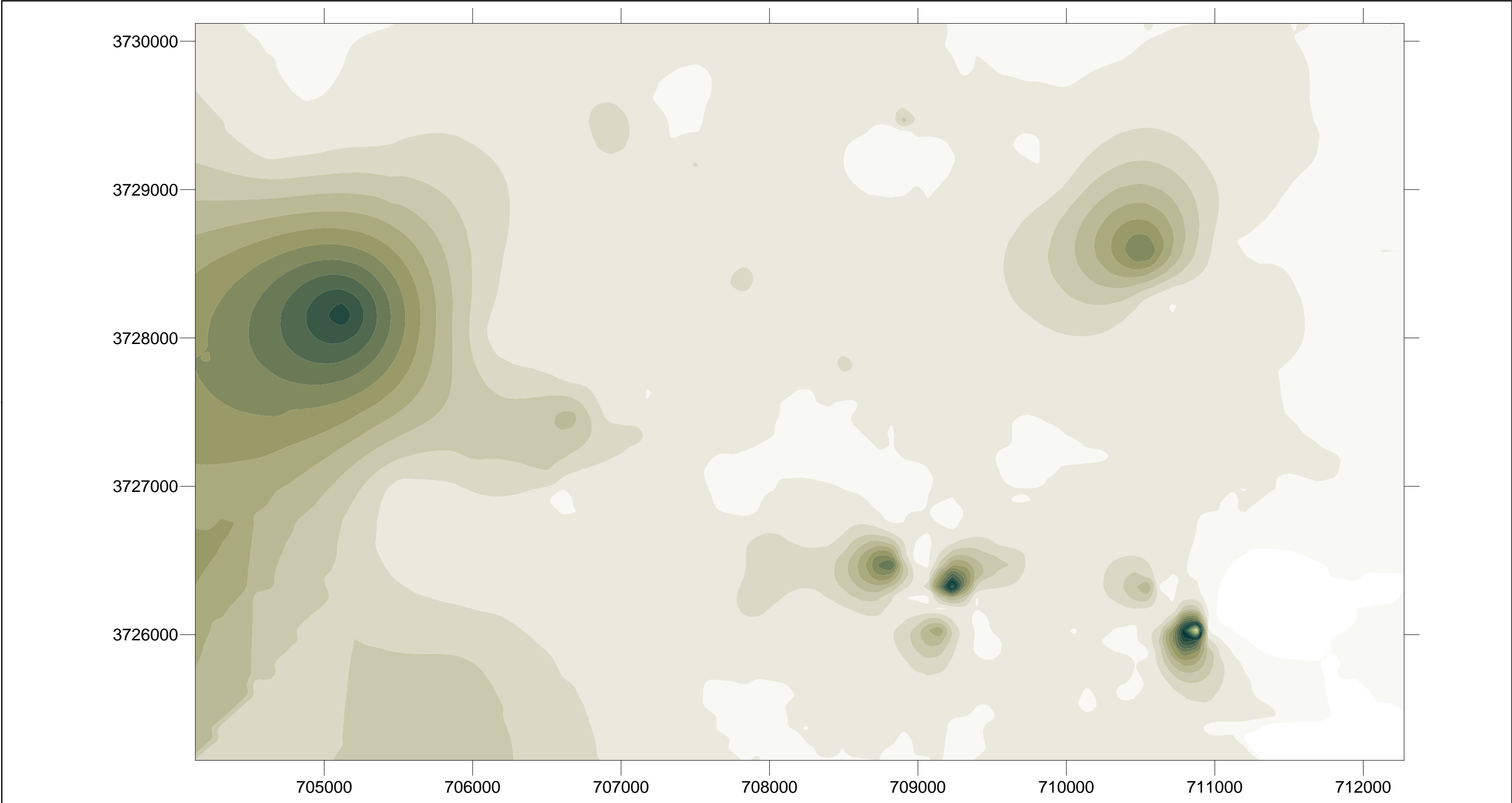




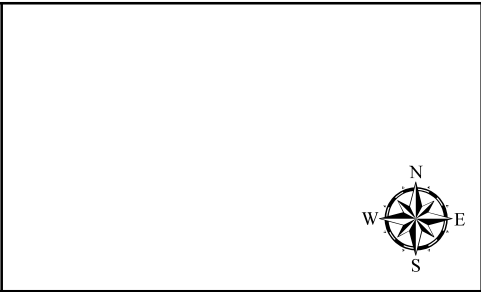
Date: September 2009







Legend



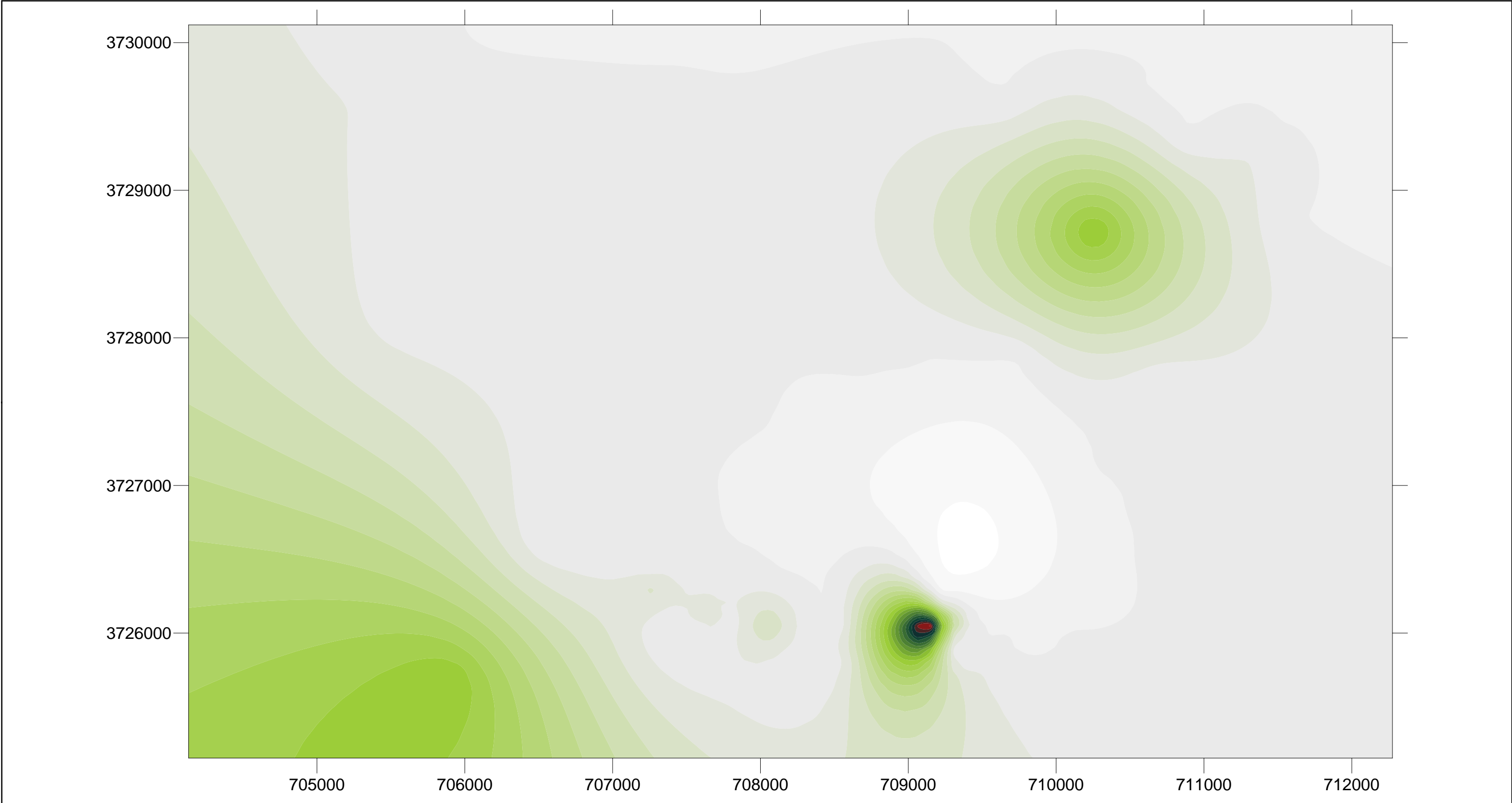
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**Figure 7  
Distribution Map Modeling the  
Frequency of Early 20th Century  
Possible Ranching Artifacts  
at the BSPP**

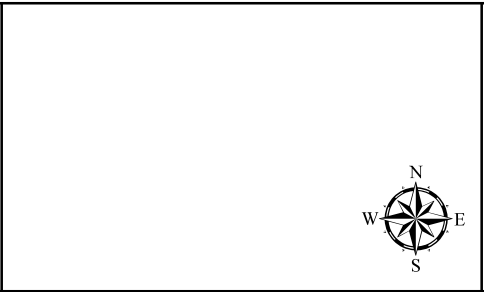


Date: September 2009





Legend



**Blythe Solar Power Project  
Cultural Resources Class III  
Survey Report**

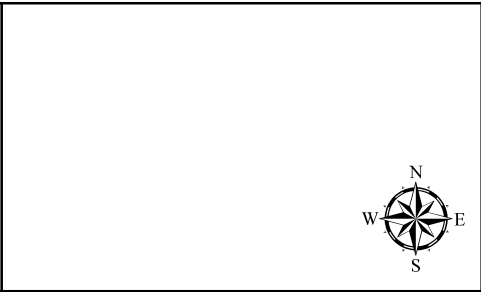
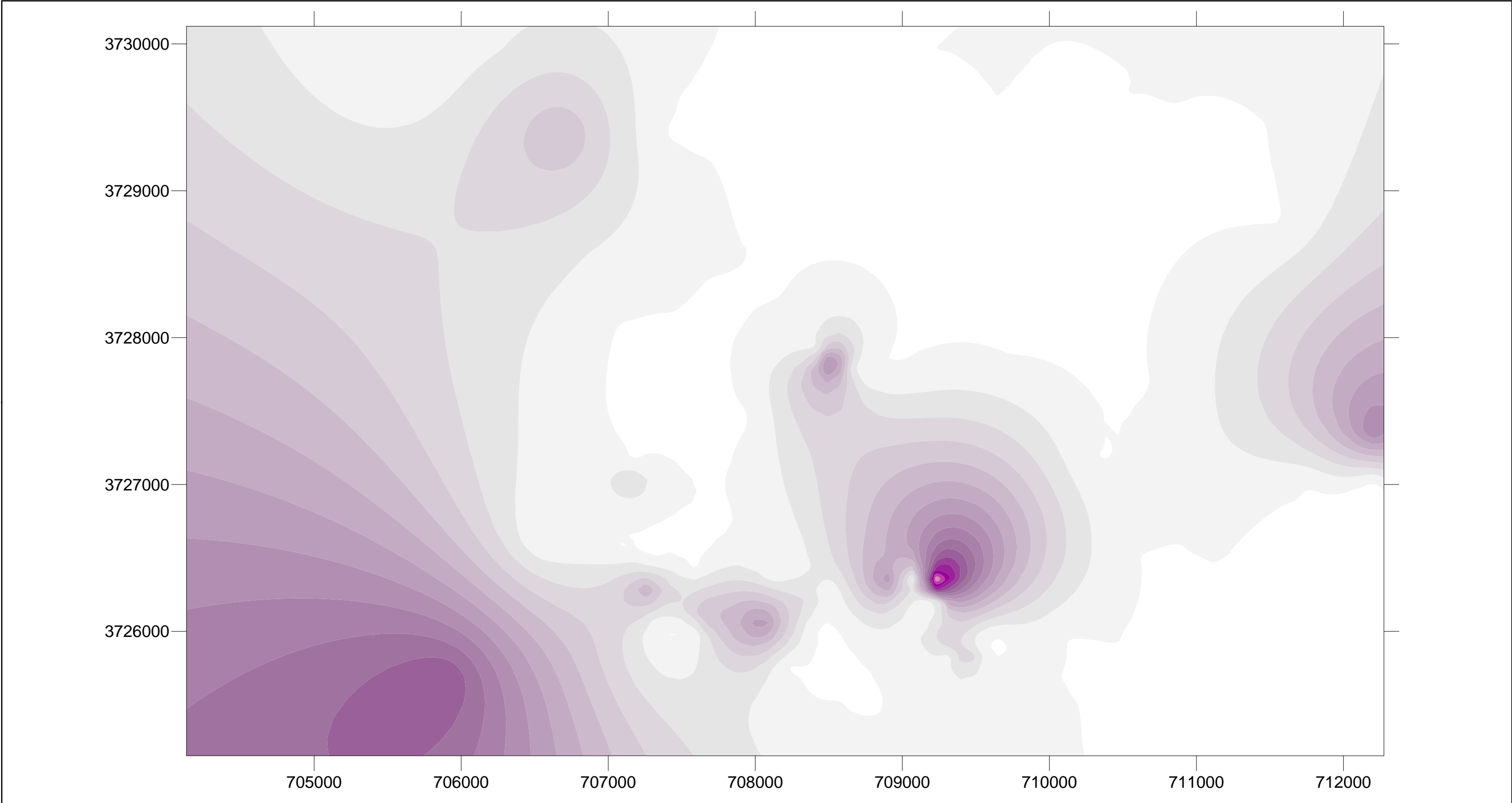
**Figure 8  
Distribution Map Modeling the  
Frequency of WWII-Era Artifacts  
at the BSPP**

 **Solar  
Millennium**

 **AECOM**

Date: September 2009





**Blythe Solar Power Project  
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**Figure 9  
Distribution map modeling the  
frequency of non-specific 20th century  
artifacts at the BSPP**





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## **SITE ASSESSMENT**

Most archaeological properties or resources are of significance under state and federal law only insofar as they retain their integrity and can be associated with historic events, historic persons, or important research issues in the study of the past (see LORS discussion in Chapter 1, above). Important prehistoric and historic research issues and themes for the Project, and the Colorado Desert generally, are presented in Chapter 4, above. All of the sites identified in the BSPP may yield some information relevant to one or more of the defined themes, and more than half of them contain materials dating to the WWII-era use of the Palo Verde Mesa as part of the historic DTC/C-AMA (California Historic Landmark #985). Nevertheless, not all of the sites rise to the level of “significance” as defined by law. The two factors most important in this determination are *integrity* and *research potential*.

### **Integrity**

The condition and disturbance of a resource are contributing factors in assessing integrity, but condition is not equivalent to integrity. Sites in good condition, with minimal disturbances may still lack integrity. The integrity of a cultural resource is specifically defined by law as the retention of seven critical factors: location, design, setting, materials, workmanship, feeling, and association. Of these, location, setting, and association are most significant to non-structural archaeological resources. A cultural resource retains its *location* and *setting* if it has not been moved and if the surrounding natural and constructed milieu is largely unchanged since the deposition or construction of the resource. Resources retain their *association* when they can be meaningfully tied to specific issues or themes in human history and prehistory. Sites with indeterminate associations, such as many indiscriminate roadside dumps, typically lack integrity and have limited research potential.

The proposed BSPP location is largely undeveloped desert owned by the BLM and scarcely visited today for recreation or other activities. Due to the lack of recent development and activity at the BSPP, most archaeological sites, regardless of age are considered in “good” or “fair” condition, and most retain their integrity of location, setting, and association, as well as feeling. AECOM survey crews noted numerous vehicle tracks, from wheeled and tracked vehicles, crossing the entire Project, but even in those instances where tracks cross through sites, they have not disturbed the cultural materials sufficiently to destroy completely the integrity of the sites. Along the seasonally active washes, some sites have clearly been affected by water action which has reworked both the land and the artifacts. In most instances, water flow appears to have moved artifacts relatively short distances, creating recognizable concentrations of artifacts, but not completely undermining the location and setting of an entire site.

### **Research Potential**

The research potential of a cultural resource is tied to its integrity. Resources with compromised integrity invariably have limited research potential. Sites with integrity, though, do not necessarily retain significant research potential. The research potential of many small, surface

sites with limited artifact collections may be exhausted by an intensive survey program entailing the detailed mapping of artifacts and competent in-field artifact analysis. This is not to say that these sites are useless in refining our understanding of the past, but simply that the careful recording of these sites supplies all of the necessary data. Further, some sites may be so ubiquitous as to not warrant individual analysis every time they are encountered. In assessing research potential, though, the archaeologist must take care not to overlook unusual aspects of an otherwise unremarkable resource, nor to ignore new investigative techniques and research questions which may elevate previously “exhausted” resources to significance.

Within the CRSA, we assess the research potential of classes of sites by time period and cultural association. Although not all sites are identified as possibly eligible to either the CRHR or NRHP, as components of larger landscapes of activity, they are all valuable data points. Those sites that are not recommended as possibly significant with reference to the relatively strict state and federal criteria, should nevertheless be addressed as part of a larger Project-wide testing program, if avoidance is not possible (see recommendations in Chapter 6).

## **Prehistoric Sites**

Prehistoric sites at BSPP are summarized in Table 10 at the bottom of this section.

### ***Lithic Scatter Sites***

Diffuse lithic scatters are the most common prehistoric site type in the CRSA (Plate 15). All contain a scattering of flakes and flake fragments (shatter), and many contain cores and or hammerstones directly related to the production of the site debitage collection. The lithic debris at these sites consists of a limited variety of toolstones – quartz, quartzite, chalcedony, and chert – all of which are readily available in cobble form on the pebble terraces. No obvious exotic materials were observed. At three sites, CA-RIV-7175, SMB-P-237, and SMB-P-272, surveyors recorded preforms (tool blanks) or finished tools.

Those lithic scatter sites that fall within the boundaries of the Project are in good to fair condition, and retain their integrity of location, setting, association, and feeling. In light of Flenniken and Spencer’s (2001) recent careful analysis of lithic debris on the Palo Verde Mesa, particularly small, single-event lithic reduction loci, we suggest that all of the sites within the Project APE retain sufficient research potential to warrant their treatment under the CARIDAP designed for sparse lithic scatters, if they cannot be avoided (see Chapter 6). These sites have the potential to offer information relevant to a number of research themes, such as lithic technology, chronology, travel, subsistence, and possibly ritual activity. The last theme is suggested by local Native American accounts of ritual observances involving the breaking or knapping of quartz materials prior to beginning a ritual or entering ritual space (Altschul and Ezzo 1994; Cachora 1994).



**Plate 15. Bifaces relocated at site CA-RIV-7175.**

### *Quarry Sites*

Both of the quarry sites in the CRSA were previously recorded as prehistoric sites, CA-RIV-2846 and CA-RIV-3419, and have been the subject of several studies (Flenniken and Spencer 2001; Mitchell 1989; Reed 1984a, 1984b; Schaefer et al. 1998; Wilson 1984). These sites encompass two remnant sections of the raised pebble terraces created by the Colorado River in the Pleistocene. Naturally abundant cobbles were collected (quarried) and tested at these sites, resulting in diffuse lithic scatters across the whole of the pebble terrace surfaces (Plate 16). These sites also contain cleared circles that may be prehistoric, as well as evidence of recent cobble and other rock collection including buckets, disturbed collection areas, and vehicle tracks (Mitchell 1989; Parker and Parker 2008).

Despite recent disturbances by cobble collectors, both of these quarry sites are in fair to good condition, the northern site, CA-RIV-2846, being in slightly better condition overall. The sites also retain their integrity of location, setting, association, and feeling. Although previous researchers have suggested that these sites be considered ineligible for inclusion on the NRHP (Mitchell 1989; Reed 1984a, 1984b), we concur with Parker and Parker's (2008) site update for CA-RIV-3419, and assert that the sites retain significant research potential, particularly in light of a more recent lithic analysis of these sites (Flenniken and Spencer 2001). Sites CA-RIV-2846 and CA-RIV-3419 have the potential to inform on the prehistoric themes of chronology, travel and trade (cf., Singer 1984), subsistence, lithic technology, and possibly ethnicity and ritual activity depending on the scope of the analysis. If the portions of these sites that fall within the Project cannot be avoided, we suggest that they be subject to further testing (see Chapter 6).





**Plate 16. Tested cobbles on the pebble terrace within site CA-RIV-2846.**

### ***Prehistoric Sites with Features***

All but one of the prehistoric sites with features contain what we have termed thermal cobble features, a distinctive feature type previously unreported on the Palo Verde Mesa. Site SMB-P-270, which lies outside of the Project as currently proposed, contains a small cairn, or pile of rocks, surrounded by a sparse lithic scatter. The cairn may be prehistoric in age, although historic and recent cairns are also common in the CRSA. The rest of the sites consist of thermal cobble features, and are located along the western boundary of site CA-RIV-2846, where periodic flood water flow has deposited finer sediments allowing stands of mesquite to grow (see geomorphology discussion in Chapter 2).

The thermal cobble features are circular to oval concentrations of fire-affected cobbles, likely collected from the adjacent pebble terrace (Plate 17). The features measure between 0.5 and 2 m in largest dimension, and many appear to be partially embedded in the surrounding soil suggesting some subsurface extension (Plate 18). Based on surface indications, these thermal cobble features are likely deflated roasting pits, or possibly the “clean-out” remains of nearby roasting pits. Various prehistoric groups used roasting pits, or rock-lined earth ovens, to roast plant foods, including mesquite and saltbush which grow on the Palo Verde Mesa (see Chapter 4 for a longer description of these features). One of the sites, SMB-P-445, also contains a lithic scatter and cleared circles suggesting a somewhat more intensive use of the vicinity, possibly overnight stays.





**Plate 17. Thermal cobble feature at site SMB-P-435.**



**Plate 18. Thermal cobble feature eroding out of wash cut at site SMB-P-440.**

Within the Project, all of the prehistoric sites with features are in good or good to fair condition with minimal recent disturbance. Located in the lee of a large pebble terrace, the thermal cobble feature sites are relatively remote from historical and recent travel, likely contributing to their good preservation. The sites retain their integrity of location, setting, association, and feeling. Based upon surface remains, the thermal cobble features within the Project clearly retain significant research potential as a previously unknown class of features in the vicinity, although similar features are known in the region (Shackley 1984). The sites have the potential to provide information relevant to the prehistoric research themes of chronology, settlement and subsistence, and possibly ethnicity and ritual activity. All of them may have subsurface components, and therefore require some form of testing to fully assess their spatial limits and significance. Ideally, some, if not all, of these features would be avoided and protected. Any sites that cannot be avoided should be subject to further testing as outlined in Chapter 6, below.

### ***Prehistoric Trails***

Two possible prehistoric trails have been recorded in the Project, site SMB-P-410, and site CA-RIV-1462 recorded during a 1978 BLM regional survey program (BLM 1978). Of the two, only the newly identified path, SMP-P-410 appears to be of prehistoric age based on present data. During the course of the Class III survey of the BSPP, survey crew members revisited the location of site CA-RIV-1464, identified as a prehistoric trail segment in 1978. What they found was not a prehistoric path, but a graded linear feature associated with a private property boundary. According to the original site record for CA-RIV-1464, the site was a path running east-west for roughly 700 meters with an abrupt 90-degree turn toward the south at the western end of the path. Upon mapping the original location of CA-RIV-1464 on Project base maps, we noted that the path closely matches the northern boundary of a private property holding within BLM land (and not included in the BSPP). The abrupt turn at the western end of the path closely aligns with the northwest corner of the private property tract. The path is now a graded road marking the northern edge of the property. In 1978, when the site was originally recorded, the property boundary may have been more ephemeral, appearing more like a prehistoric landscape feature. Based on current data, site CA-RIV-1464 does not appear to be a prehistoric trail, but rather a more recent feature associated with the survey and boundary maintenance of the existing private property tract. If a prehistoric trail existed in this location, it is not evident anymore.

To the east of the inholding, Project surveyors recorded site SMB-P-410, a segment of a possible prehistoric trail running north-south. The narrow footpath runs approximately 200 m over desert pavement and, looking south from the Project, appears to point to Black Rock, a prominent rock outcrop at the southern tip of the McCoy Mountains. The alignment of paths on landscape features was not uncommon prehistorically (see Altschul and Ezzo 1994). The trail segment is not directly associated with other sites, features, pot drops, or isolates. Although surveyors did not identify any other traces of this path, if SMB-P-410 did extend south to Black Rock, it might have linked with a previously documented portion of the east-west running Coco-Maricopa Trail (CA-RIV-53T) which skirts Black Rock just north of the I-10 freeway. Furthermore, a number of north-south and east-west running trails have been documented in the vicinity (Altschul and Ezzo 1994; Cachora 1994; Cleland and Apple 2003; Johnson 1985; Mitchell 1989; Pendleton et al. 1986; Pignuolo et al. 1997; Schaefer 1994a; Stone 1991, van Werlhof 2004; Woods 1986),

some of which appear tied to ceremonial observance (see prehistoric trail discussions in Chapters 2 and 4). Site SMB-P-410 may be a remnant of a longer trail that linked with the previously documented system of trails in the lower Colorado River region (Figure 10).

Site CA-RIV-1464 is considered ineligible both because it has lost any integrity it may have had in 1973, and because it may never have been a prehistoric feature. Site SMB-P-410 is recommended as possibly significant and eligible for inclusion on the CRHR or NRHP, pending further testing. Although site SMB-P-410 is only a segment of what was likely a much longer trail, the preserved portion is in good condition and retains its integrity of location, setting, association, and feeling. A more detailed documentation of the path, and a concerted effort at identifying other segments of the path in the vicinity are recommended before assessing the eligibility of the site. Survey level data indicates that the site may retain research potential relevant primarily to the prehistoric themes of ritual activity, and travel and trade. If the site cannot be avoided further investigation is recommended (see Chapter 6).

**Table 10. Summary of Prehistoric Sites**

Site Type	Total	In Project	Possibly Eligible	Site Numbers <sup>a</sup>
Lithic Scatter Sites	17	11	11	SMB-P-160, SMB-P-228, <i>SMB-P-237</i> , SMB-P-238, <i>SMB-P-242</i> , SMB-P-244, SMB-P-249, SMB-P-252, <i>SMB-P-272</i> , <i>SMB-P-275</i> , SMB-P-435, SMB-M-511, <i>SMB-M-512</i> , SMB-P-530, SMB-P-531, SMB-P-532, <i>CA-RIV-7175</i>
Quarry Sites	2	2	2	<i>CA-RIV-2846</i> , <i>CA-RIV-3419</i>
Sites with Features	13	11	11	<i>SMB-M-214</i> , <i>SMB-P-241</i> , <i>SMB-P-270</i> , <i>SMB-P-434</i> , <i>SMB-P-435</i> , <i>SMB-P-436</i> , <i>SMB-P-437</i> , <i>SMB-P-438</i> , <i>SMB-P-440</i> , <i>SMB-P-441</i> , <i>SMB-P-445</i> , <i>SMB-P-448</i> , <i>SMB-P-454</i>
Prehistoric Trails	2	2	1	<i>SMB-P-410</i> , <i>CA-RIV-1464</i>
<b>Total</b>	<b>34</b>	<b>26</b>	<b>25</b>	

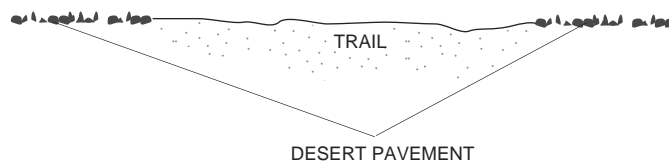
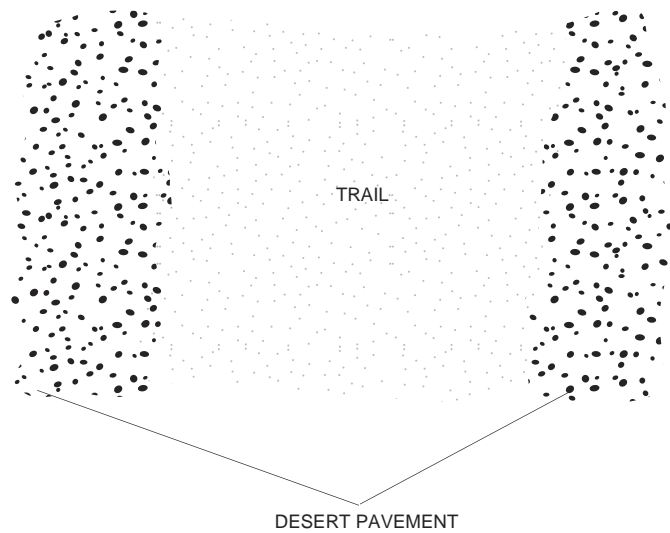
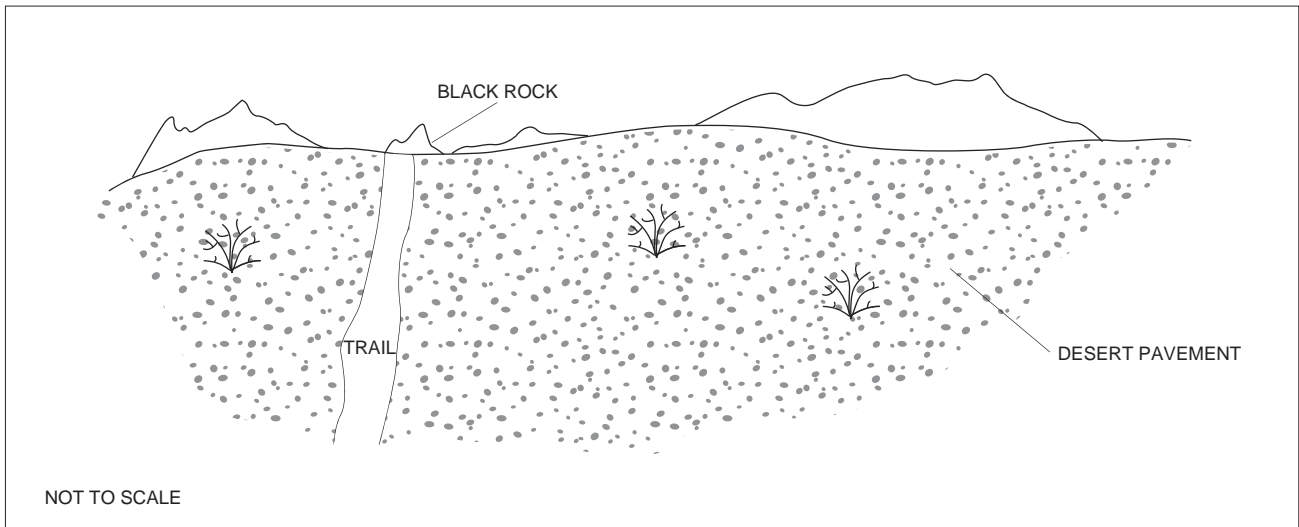
Note: <sup>a</sup> Italicized sites are out of the Project as currently proposed. Underlined sites are possibly significant and eligible for inclusion on CRHR or NRHP.

## Early 20th Century Mining and Ranching Sites

### *Early 20th Century Habitation Site*

Within the CRSA, the only site with standing architecture is SMB-H-404, located along the eastern historical road (SMB-H-601), now known as Mesa Drive (Plate 19). The site is a probable ranch consisting of three stone-and-concrete structures and several associated features, including a water trough, water pipes, fencing fragments, and refuse deposits. The standing structures were constructed out of local cobbles and boulders bound together with cement. The construction technique is distinct from that of WWII-era military structures of rock and cement which were typically created by mortaring stones together with concrete in a traditional brick-mason style. The structures at SMB-H-404 were created with a tamped or poured concrete





#### Map Location



0 10 20 Centimeters



#### Blythe Solar Power Project Cultural Resources Class III Survey Report

#### Figure 10 Drawing of the prehistoric trail at site SMB-P-410



AECOM

Date: September 2009



**Plate 19. Standing structures at site SMB-H-404.**

technique. Close inspection of the walls suggests that wooden forms were constructed and concrete and rocks were poured in and loosely tamped down. Once the concrete hardened, the forms were removed leaving tell-tale impressions. The walls were likely formed in stacked segments, each only a few feet high.

The water trough at SMB-H-404 has a date of “1936” that was scratched into the concrete before it dried (Plate 20). The ranch, though, may have been founded earlier and certainly could have been used later. Based on current research, we believe that SMB-H-404, and several refuse scatters in the vicinity, are the remains of limited ranching enterprises on the Palo Verde Mesa. Most of this ranching activity appears to have focused on the area around site SMB-H-404, and along the adjacent road (SMB-H-601, Mesa Drive) running north to the periodically verdant McCoy Wash (see Chapter 2). During WWII, the ranch site was also the scene of military activity. The stone structures may have been used for cover or camouflage during mock battles. The site contains scatters of munitions, ration cans, and other WWII-era military debris. There is no artifactual or structural evidence to suggest that the ranch was used, as such, after the close of the war.



**Plate 20. Close-up of “1936” date on the cement water trough at site SMB-H-404.**

Site SMB-H-404 is in fair to good condition considering its age and use during WWII training maneuvers. Although all three stone structures have collapsed in part, all retain partially standing walls and their footprints are clearly visible. Other features remain as well, although some materials and machinery, were likely removed when the ranch was abandoned. Despite these factors, the site retains much of its integrity of location, design, setting, materials, workmanship, and feeling. The site retains significant research potential and could yield data relevant to the historic themes of agriculture and ranching, and military training. If the site cannot be avoided, further testing and archival investigation would be warranted to secure its contextual association before making a final recommendation of eligibility.

### ***Early 20th Century Sites with Features***

The ten sites with features dating primarily to the early 20th century are a mix of mining-related, ranching-related, and roadside refuse scatters. Further testing at the two sites with significant structural features, SMB-H-143 (well head) and SMB-H-514 (fallen wooden-frame structures), would greatly aid in distinguishing between the various activities and contexts of these sites. Generally speaking, the sites along the western edge of the Project, atop the cut ridges (sites SMB-H-111, -113, and -218) are more clearly associated with prospecting. Sites SMB-H-111 and -113 both contain probable claim cairns, and prospect pits are present at SMB-H-111 (Plate 21).

Sites along the eastern side of the Project, including sites SMB-H-143, -408, -418, and -514, appear to be related to ranching endeavors, possibly sheep herding as suggested by Spencer and colleagues (2001; see Chapter 2). The remaining two sites, SMB-H-164 and -176 are located



adjacent to the western dirt access road (SMB-H-600), and they may relate to roadside rest stops or opportunistic dumping, rather than any concerted efforts to utilize this portion of the mesa.



**Plate 21. Rock cairns likely associated with mining claims at site SMB-H-111.**

Of the sites with features dating to the early 20th century, eight are not considered significant or eligible for inclusion on the CRHR or NRHP. These sites largely retain their integrity of location, association, and feeling, although the roadside sites lack a strong contextual association. These sites, though, do not hold significant research potential, either because of their limited cultural materials or ubiquity on the mesa.

The two remaining early 20th century sites with features, ranching-related sites SMB-H-143 and -514, are recommended as possibly significant and eligible to the CRHR or NRHP. Both sites are in good to fair condition and retain much of their integrity of location, design, setting, materials, workmanship, association, and feeling. These two sites contain preserved structural features which could add a great deal to our presently deficient understanding of the early 20th century use of the mesa. Particularly, they have the potential to yield critical information about early 20th century ranching activities, of which we have very little archival or archaeological evidence. This data would be relevant to the historic theme of agriculture and ranching. If they cannot be avoided, further testing and archival research would be warranted (see Chapter 6).

### ***Early 20th Century Refuse Scatter Sites***

In the CRSA, Project surveyors recorded 64 early 20th century refuse scatter sites, of which 30 contain WWII-era materials as well. These diffuse scatters contain predominantly food cans and a small number of beer cans, tobacco tins, glass bottles, and sundry artifacts. Those cans likely dating to the early 20th century are somewhat larger than the ration cans of WWII, and were opened with distinctive knife cuts, or key-wind openings for packed fish and meat cans. Also common are hole-in-cap cans which date predominantly, although not exclusively, to the early 20th century (Rock 1987:46).

The WWII-era materials are also largely food cans, although one smoke dummy land mine, and some church-key-opened beer cans may date to the WWII-era as well. Most of the key-wind military ration cans are distinctively sized cans (ca. 2 3/4" in tall x 3" diameter), and are easily recognizable. Also evident are various sizes of cans opened with military P-38 can openers developed in the summer of 1942, and issued to troops almost immediately with C-rations and K-rations (Foster 1986, 2009; see the more lengthy discussion of the P-38 below).

Many of these refuse scatter sites are in good or fair condition, although the condition of some sites in washes is poor. Most of the sites largely retain their integrity of location, setting, association, and feeling. Despite this, none hold substantively more research potential beyond their already recorded cultural constituents. Additionally, in most instances these sites are extremely unlikely to have subsurface extensions due to their relatively recent age and location on stable desert pavements. Thus, none of the refuse scatters dating to the early 20th century, some with WWII-era materials, are recommended as significant or eligible to the CRHR or NHRP.

### **WWII-era DTC/C-AMA Sites**

#### ***WWII-era Sites with Features***

Beyond the ubiquitous tank tracks, the most recognizable remains of the enormous battles enacted in the DTC/C-AMA are relatively unassuming features: fortified positions, cleared areas, temporary hearths, and small cairns and other rock features. A number of these kinds of features were recorded in the CRSA, all of them within the current Project APE. Seven of these sites (SMB-H-163, -205, -207, -210, -223, -247, -285, and -286) contain what appear to be small fortified positions large enough for one or two men, possibly sentinels (Plate 22). The fortified positions are all on the cut-ridges of the McCoy Mountains bajada, and most appear to be facing (or defensible from) the north, as if looking toward the far northern end of the mesa. Sites SMB-H-207, -285, and -286 are clustered together in the cut ridges at the eastern edge of the Project.

Other notable features are two sites (SMB-H-203, and -411) with enigmatic rectangular cleared areas, one site (SMB-H-247) with probable cleared tent pads, and one site (SMB-H-222) with several textual rock alignments. The unusual cleared areas are repeated rectangular and square cleared areas that may be aerial markers designed to be viewed from the air by reconnaissance or support aircraft. The tent pads are similar to those identified by previous researchers (Schaefer 1998:68), and are roughly man-sized cleared rectangular areas, possibly cleared for sleeping bags

**Table 11. Summary of Early 20th Century Mining and Ranching Sites**

Site Type	Total	In Project	Possibly Eligible	Site Numbers <sup>a</sup>
<b>Habitation Site</b>	1	1	1	<u>SMB-H-404</u>
<b>Sites with Features</b>	10	8	2	<i>SMB-H-111</i> , SMB-H-113, <u>SMB-H-143</u> , SMB-H-164, SMB-H-176, SMB-H-218, <i>SMB-H-262</i> , SMB-H-408, SMB-H-418, <u>SMB-H-514</u>
<b>Refuse Scatter Sites</b>	34	30	0	<i>SMB-H-107</i> , SMB-H-116, SMB-H-119, SMB-H-120, SMB-H-124, SMB-H-129, SMB-H-145, SMB-H-161, SMB-H-166, SMB-H-173, SMB-H-177, SMB-H-179, SMB-H-194, SMB-H-197, SMB-H-202, SMB-H-204, SMB-H-231, <i>SMB-H-255</i> , <i>SMB-H-260</i> , SMB-H-284, SMB-H-288, SMB-H-401, SMB-H-402, SMB-H-406, SMB-H-407, SMB-H-409, SMB-H-413, SMB-H-414, SMB-H-420, SMB-H-426, SMB-H-447, SMB-H-505, SMB-H-513, <i>SMB-H-519</i>
<b>Refuse Scatter Sites (with WWII-era refuse)</b>	30	22	0	SMB-H-125, SMB-H-137, SMB-H-144, SMB-H-148, SMB-H-151, SMB-H-152, SMB-H-153, SMB-H-154, SMB-H-159, SMB-H-162, SMB-H-165, SMB-H-167, SMB-H-168, SMB-H-169, SMB-H-182, SMB-H-208, SMB-H-248, <i>SMB-H-254</i> , <i>SMB-H-261</i> , <i>SMB-H-263</i> , <i>SMB-H-266</i> , <i>SMB-H-268</i> , <i>SMB-H-276</i> , SMB-H-290, <i>SMB-H-291</i> , SMB-H-415, SMB-H-442, SMB-H-516, SMB-H-517, <i>SMB-H-522</i>
<b>Total</b>	<b>75</b>	<b>61</b>	<b>3</b>	

*Note:* <sup>a</sup> Italicized sites are out of the Project as currently proposed. Underlined sites are possibly significant and eligible for inclusion on CRHR or NRHP.

rather than tents as tents and cots were not considered appropriate for maneuvers, even in training (Patton 1942, in Province 2002:212). Site SMB-H-222 contains three rock alignments made of quartz cobbles: the word “NEELS” (with a final apostrophe), a numeral “8” or infinity sign, and a cross. The meaning of these is unclear, but as with the cleared areas, the rock alignments might have been created to be seen from the air.

Although airplane parts are scattered across the CRSA, a testament to the number of crashes during the WWII training at the Blythe Army Air Base, only site SMB-H-423 contains the remains of what appears to be an actual crash site (Plate 23). Numerous plane parts are present, although some parts have clearly been removed, probably by contemporaneous investigators and subsequent curiosity seekers. Project researchers reviewed archival material and local newspaper articles from the WWII-era, but the exact crash associated with this site is not clear. Further work at this site, and at the other previously mentioned sites with features, would likely address these lingering identification issues.





**Plate 22. Fortified positions at site SMB-H-210.**



**Plate 23. Airplane crash debris at site SMB-H-423.**



All of the above mentioned sites with fortified positions, cleared areas, tent pads, rock alignments, or a crash site are considered possibly significant and eligible for inclusion on the CRHR and NRHP. These sites are in good or fair condition, and they retain their integrity of location, setting, association, and feeling. These sites hold the potential to yield further information relevant to the historic research theme of military training. In particular, further investigation of the features at these sites promises to elucidate something of the nature of the inadequately documented maneuver areas within the DTC/C-AMA. As pieces of the larger landscape of war in WWII, these sites retain significant research potential. If they cannot be avoided, these sites would require further testing to assess their eligibility for inclusion on the CRHR or NRHP (see Chapter 6).

The remaining WWII-era sites with features contain less-informative features, such as small hearths, rock cairns, and wooden ramps (the latter possibly associated with early 20th century activities; see Schaefer 1998:67 and Spencer et al. 2001). These sites contain military ration cans or other WWII-era debris linking them temporally to the use of the DTC/C-AMA. Although these sites are in good to fair condition and retain some integrity of location, setting, association, and feeling, they do not hold significant research potential. The information value of these sites is largely exhausted through survey-level recording. These sites are recommended as ineligible for inclusion on the CRHR or NRHP.

### ***WWII-era Refuse Dump Sites***

Within the CRSA, surveyors identified four large deposits of WWII-era refuse that we have classified as “dumps” on the basis of the density and frequency of artifacts. These deposits are largely comprised of cans including food ration cans, oil cans, and fuel cans. Other common artifacts are glass fragments, munitions, and fragments of sheet metal. Two sites, SMB-H-171 and -427 in the center of the Project, are generalized WWII-era dumps with roughly 100 food, oil, and other cans each along with glass bottles and some other materials.

Site SMB-H-224 contains a more diverse collection of military-issue cans, including spice cans, as well as glass and ceramic fragments, a metal teapot, and metal screening, sheets, and bands. The site is located on the cut ridges at the base of the McCoy Mountains, and the collection of artifacts is interpreted as the remains of a makeshift kitchen possibly associated with a bivouac in the vicinity. Although most meals were taken with one’s vehicle on maneuvers, in some instances, particularly where some coverage could be found as on the cut bajada ridges, group cooking using the greatly preferred B-rations was allowed (Patton 1942, in Province 2002:38).

Finally, site SMB-H-403 is an oil can dump (largely S.A.E 20W or 30W) located in a isolated spot in the northeast quadrant of the Project. This site may be the remains of a tank and/or vehicle maintenance stop where several vehicles were serviced. General practice during DTC/C-AMA maneuvers was to service all vehicles “immediately upon halting at the close of each day’s march or maneuver” (Patton 1942, in Province 2002:202). This site may be the remains of such a service stop, although vehicles were also, usually, required to remain dispersed even during refueling and bivouac (Patton 1942, in Province 2002:202, 208).

All of these WWII-era dump sites are in good to fair condition, although water action has probably rearranged some of the artifacts at site SMB-H-224. All also largely retain their integrity of location, setting, association, and feeling. These dump sites, more so than more refuse diffuse scatters with fewer artifacts, hold the potential to yield further information relevant to the historic research theme of military training. In particular, the dump sites promise to elucidate something of the nature of the inadequately documented maneuver areas within the DTC/C-AMA. As pieces of the larger landscape of war in WWII, these sites retain significant research potential. If they cannot be avoided, these sites would require further testing to assess their eligibility for inclusion on the CRHR or NRHP (see Chapter 6).

### ***WWII-era Refuse Scatter Sites***

The 56 refuse scatter sites containing largely or exclusively WWII-era materials are the most numerous single site type in the CRSA, reflecting the intensive use of the area as part of the DTC/C-AMA (Table 12). Most of the artifacts are military ration cans opened with a key-wind strip, a P-38, or, less frequently, bayonet punches. Most of the key-wind military ration cans are distinctively sized cans (ca. 2 3/4" in tall x 3" diameter), and are easily recognizable. Some of these diffuse scatters also contain glass fragments and bottles, munitions, smoke dummy land mines, wire, and mess-kit spoons embossed with "U.S."

Although many of the ration cans in the Project were opened with key-wind strips, a fair number appear to have been opened with P-38 tools. The P-38 can opener was created for military use in the summer of 1942, and it was almost immediately shipped with rations to troops overseas and in training (Foster 1986). Military journalist Renita Foster attributes the invention of the P-38 to Major Thomas Dennehy, who purportedly designed the tool in just "30 days in the summer of 1942 . . . at the Subsistence Research Laboratory in Chicago" (Foster 2009). Although similar tools had been designed earlier (Moody 2008), they do not appear to have been in general use. The military-issue P-38, though was widely distributed. Initially, several P-38 tools were included with multi-ration packs, but it soon became apparent that the men were keeping their P-38s, not disposing of them. In fact, the utility, compactness, and durability of the P-38 made it uncommonly well-loved, and many soldiers saved their P-38 tools long after returning from the war. As WWII-veteran John Bandola observed, "this P-38 is a symbol of my life then, the Army, the training, my fellow soldiers, all the times we shared during a world war" (Foster 1986).

Many of the WWII-era refuse scatter sites are in good or fair condition, although the condition of some sites in washes is poor. Most of the sites retain their integrity of location, setting, association, and feeling. Despite this, none hold substantively more research potential beyond their already recorded cultural constituents. Additionally, in most instances these sites are extremely unlikely to have subsurface extensions due to their relatively recent age and location on stable desert pavements. Thus, none of the refuse scatters dating to the WWII-era are recommended as significant or eligible to the CRHR or NHRP.

**Table 12. Summary of WWII-era DTC/C-AMA Sites**

<b>Site Type</b>	<b>Total</b>	<b>In Project</b>	<b>Possibly Eligible</b>	<b>Site Numbers <sup>a</sup></b>
<b>Sites with Features</b>	20	20	12	SMB-H-133, <u>SMB-H-163</u> , SMB-H-175, <u>SMB-H-203</u> , <u>SMB-H-205</u> , <u>SMB-H-207</u> , <u>SMB-H-210</u> , <u>SMB-H-222</u> , <u>SMB-H-223</u> , SMB-H-234, SMB-H-243, SMB-H-245, <u>SMB-H-247</u> , <u>SMB-H-285</u> , <u>SMB-H-286</u> , <u>SMB-H-411</u> , SMB-H-416, SMB-H-419, <u>SMB-H-423</u> , SMB-H-452
<b>Refuse Dump Sites</b>	4	4	4	<u>SMB-H-171</u> , <u>SMB-H-224</u> , <u>SMB-H-403</u> , <u>SMB-H-427</u>
<b>Refuse Scatter Sites</b>	56	51	0	SMB-H-109, SMB-H-110, SMB-H-114, SMB-H-115, SMB-H-118, SMB-H-121, SMB-H-122, SMB-H-123, SMB-H-126, SMB-H-130, SMB-H-131, SMB-H-132, SMB-H-134, SMB-H-135, SMB-H-136, SMB-H-138, SMB-H-139, SMB-H-140, SMB-H-147, SMB-H-155, SMB-H-156, SMB-H-157, SMB-H-158, SMB-H-180, SMB-H-185, SMB-H-186, SMB-H-191, SMB-H-192, SMB-H-193, SMB-H-195, SMB-H-200, SMB-H-212, SMB-H-215, SMB-H-216, SMB-H-219, SMB-H-220, SMB-H-230, SMB-H-232, SMB-H-233, SMB-H-235, SMB-H-236, SMB-H-246, <u>SMB-H-253</u> , <u>SMB-H-258</u> , <u>SMB-H-267</u> , <u>SMB-H-279</u> , <u>SMB-H-282</u> , SMB-H-417, SMB-H-424, SMB-H-439, SMB-H-450, SMB-H-460, SMB-H-509, SMB-H-515, SMB-H-528, SMB-H-529
<b>Total</b>	80	75	16	

Note: <sup>a</sup> Italicized sites are out of the Project as currently proposed. Underlined sites are possibly significant and eligible for inclusion on CRHR or NRHP.

## Other Historical Sites

Other historical sites at BSPP are summarized in Table 13 at the bottom of this section.

### *Transportation Routes*

Two dirt roads were blazed in the historical period through the Project. The western road (SMB-H-600), connects the I-10 corridor to the Arlington Mine Road in the north (Plate 24). This road may have been constructed as an access road during WWI to the then-active Blackjack Mine, adjacent to the WWII-era Arlington Mine. The eastern road (SMB-H-601), runs due north from the I-10 corridor along a section line surveyed in 1917. Today this road is known as Mesa Drive, although it is largely unimproved.

The condition of these roads is difficult to assess. They both appear to be in their original locations, as any deviations would be evident on the fragile desert pavement. Both continue to be used today, and have likely been cleared or graded during their life histories. They are, therefore, no longer intact representatives of early 20th century roads, and they lack integrity of design and workmanship. The routes themselves, though retain their integrity of location and setting. The historical association of the routes is not entirely clear, although the western road seems related to mining, and particularly access to the manganese mines in the northern reaches of the McCoy

Mountains, whereas the eastern road allows access to the ranch site (SMB-H-404) and appears to have been frequented more often by ranchers. Neither road is recommended as eligible to the CRHR or NRHP, because their historical integrity is compromised, and their research potential, beyond survey-level mapping and recording, is minimal.



**Plate 24. Dirt road recorded as site SMB-H-600.**

#### ***Non-specific 20th Century Sites with Features***

Most sites with features in the CRSA could be assigned to a time period and cultural context, but five sites could not due to a lack of temporally diagnostic artifacts. Two sites, SMB-H-170 and -432 contain one each, which did not offer a sufficient basis for temporal assignment. Site SMB-H-226 consists of several cairns, a rock ring or hearth, and a sundial feature that surveyors believed was very recent. This site is located on the cut ridges, near several WWII-era dumps and features, and the site features may be associated with that period. The cairns, alternatively might be early 20th century mining clams, or even recent features. This site, like the two mentioned above, cannot be clearly associated with a period or context. Due to their lack of specific association, the integrity of these sites is severely compromised. The research potential of these sites is also very limited and none of them are recommended as significant or eligible to the CRHR or NRHP.

Two of the non-specific 20th century sites with features warrant further scrutiny: sites SMB-H-250 and -251. These two adjacent sites contain large circular cleared areas of indeterminate age and function. Circular cleared areas, also known as sleeping circles, are relatively common prehistoric features on the desert, and examples exist within the large quarry sites, CA-RIV-2648 and CA-RIV-3419, along the east edge of the Project. Sites SMB-H-250 and -251, though, are located on the cut ridges, nearby site SMB-H-247 which contains WWII-era tent pads. The condition of these sites is good, but their integrity is impaired by their lack of association. Nevertheless, cleared areas in prehistoric and historical periods are important indications of longer-term occupation on the Mesa. If these sites cannot be avoided, further testing and documentation would be necessary to assess their association, significance, and potential for inclusion on the CRHR or NRHP (see Chapter 6). As part of that testing, researchers should attempt to address Lorann Pendleton's (1984) suggestion that some cleared circles without associated artifacts are not cultural, but natural features created by wind action around creosote bushes.

#### ***Non-specific 20th Century Refuse Dump Sites***

Four very large dumps consisting of hundreds of cans, as well as bottles, tools, other metal objects, and sundry materials were identified in the CRSA. The two largest dumps, SMB-H-269 and -525, are located outside of the current Project, near the I-10 highway and astride dirt roads that run a short distance from the I-10 frontage roads. These contain materials dating from the early 20th century to the present day; everything from church-key-opened beer cans and military ration cans to a wash basin and a bed frame. These sites are the result of opportunistic, or "wildcat," dumping along the highway, likely from vehicles.

The other two sites are located to the north. One of them, SMB-H-430 in the buffer and adjacent to an unnamed dirt road that parallels the McCoy Wash and intersects with modern Mesa Road (site SMB-H-601). Like the sites to the south along I-10, this site contains hundreds of cans and other trash likely dumped here from a vehicle. This deposit, though, appears to be somewhat earlier in time, as most of the cans are church-key-opened beverage cans most common from the 1930s to the 1950s. This site, like the two mentioned above, cannot be clearly associated with a period or context. Due to their lack of specific association, the integrity of these sites is severely compromised. As none of these sites should be impacted by the construction of the BSPP as currently planned, they are not assessed for significance at this time.

The final dump site, SMB-H-178, is located within the Project and it does not appear to be a roadside dump. The site contains hundreds of cans as well as unusual items like a propane tank, a jack and vehicle tire, and a hacksaw. These materials cannot be associated with a specific time period or context, but they seem likely to be primarily related to early 20th century ranching activity. If this site cannot be avoided, further testing and documentation is warranted before assessing the site's significance, association, and eligibility for inclusion on the CRHR or NRHP.

#### ***Non-specific 20th Century Refuse Scatter Sites***

Within the CRSA, 28 refuse scatter sites either did not contain sufficient data to place them in a period and context, or contained materials related to all of the defined historical periods and contexts. Most sites contain diffuse, mixed debris from the early 20th century, the WWII-era, and the modern era. Most of the site artifacts are cans, including diagnostic hole-in-top cans,

knife-cut cans, church-key-opened beverage cans, military ration cans, and aluminum-top pull-tab beer cans.

Many of these refuse scatter sites are in good or fair condition, although the condition of some sites in washes is poor. Most of the sites retain their integrity of location and setting but their association is compromised as they cannot be meaningfully associated with a particular historical period, activity, or theme. In addition, none of these refuse scatters hold substantively more research potential beyond their already recorded cultural constituents. In most instances, these sites are extremely unlikely to have subsurface extensions due to their relatively recent age and location on stable desert pavements. Thus, none of the refuse scatters dating generally to the 20th century are recommended as significant or eligible to the CRHR or NHRP.

**Table 13. Summary of Other Historical Sites**

Site Type	Total	In Project	Possibly Eligible	Site Numbers <sup>a</sup>
Transportation Routes	2	2	0	SMB-H-600, SMB-H-601
Sites with Features	5	4	2	SMB-H-170, <i>SMB-H-226</i> , <u>SMB-H-250</u> , <u>SMB-H-251</u> , SMB-H-432
Refuse Dump Sites	4	1	1	<u>SMB-H-178</u> , <i>SMB-H-269</i> , <i>SMB-H-430</i> , <i>SMB-H-525</i>
Refuse Scatter Sites	28	20	0	SMB-H-127, SMB-H-181, SMB-H-183, SMB-H-184, SMB-H-189, SMB-H-190, SMB-H-198, SMB-H-199, SMB-H-206, SMB-H-209, SMB-H-213, SMB-H-221, SMB-H-227, SMB-H-229, <i>SMB-H-256</i> , <i>SMB-H-257</i> , <i>SMB-H-259</i> , <i>SMB-H-265</i> , <i>SMB-H-271</i> , <i>SMB-H-274</i> , SMB-H-283, SMB-H-287, SMB-H-444, SMB-H-507, SMB-H-508, <i>SMB-H-518</i> , <i>SMB-H-520</i> , SMB-H-527
<b>Total</b>	<b>39</b>	<b>27</b>	<b>3</b>	

*Note:* <sup>a</sup> Italicized sites are out of the Project as currently proposed. Underlined sites are possibly significant and eligible for inclusion on CRHR or NRHP.

## SITE DESCRIPTIONS

In this section, we briefly describe all of the newly identified sites within the Project CRSA. The sites are described in numerical order, disregarding H, M, and P designations. Due to the large number of sites in the CRSA, and in an effort to reduce redundancy, site eligibility recommendations, integrity assessments, and other management discussions are discussed in a grouped fashion, above, and in Chapter 6. This presentation format is intended to provide a concise and convenient assessment document of use to cultural resources managers and future researchers, while also allowing interested readers to find detailed information concerning specific sites more easily.

### SMB-H-107

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 46 m (NS)      *Width:* 10 m (EW)

*Location:* Buffer

*Significance:* Not evaluated

Site SMB-H-107 is a historical refuse scatter consisting of five cans: three fruit or vegetable cans, one hole-in-top milk can developed in 1885 (Rock 1987:46), and one can with unknown contents. The site artifacts date to the late 19th to the early 20th century. The materials may be associated with ranching or mining activities on the Palo Verde Mesa.

The site sits on a flat desert pavement comprised of light brown silty soil with gravel. The ephemeral washes and drainages run primarily east to west the site. Vegetation consists of creosotes, sage bushes, grasses and small palo verde trees. There are vehicle tracks running through the site.

### SMB-H-109

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 40 m (EW)      *Width:* 28 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-109 is a historical refuse scatter consisting of six cans: two fruit or vegetable cans, one military ration can, one aluminum-top pull-tab beer can introduced in the 1950s (Rock 1987:29), one can with unknown contents, and one can lid. Based on the can artifacts, the site dates from the WWII-era to the late 20th century. The aluminum-top pull-tab beer can may relate to the use of the area in 1964 as part of Exercise Desert Strike.

The site is situated within a braided wash cutting through light brown sandy silts and gravels. Vegetation consists of creosotes, sage bushes, grasses and small palo verde trees. There are vehicle tracks running through the site.

### SMB-H-110

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 4 m (NS)      *Width:* 1 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness



Site SMB-H-110 is a historical refuse scatter consisting of only four cans, all of which are military ration cans. The ration cans date to the WWII-era use of the area as part of the DTC/C-AMA military training facility.

The site is situated within a braided wash cutting through light brown sandy silts and gravels. Vegetation consists of creosotes, sage bushes, grasses and small palo verde trees.

#### SMB-H-111

*Type:* Historical refuse scatter and cairns

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 3 m (NS)      *Width:* 2 m (EW)

*Location:* Buffer

*Significance:* Not evaluated

Site SMB-H-111 is a historical site consisting of two cairns: Features 1A and 1B. The cairn features are located within 13 feet of one another in a north-south line. The cairn features do not appear to be embedded within the ground surface and are comprised of small quartzite, sandstone and schist cobbles. Feature 1A is 5 ft north of the site datum and consists of approximately 26 cobbles arranged in a pile that measures 7 x 6 ½ x 4 in. Feature 1B is located approximately 6 ½ ft south of the site datum and consists of approximately 24 cobbles arranged in a pile that measures 9 x 9 x 4 ½ in. Based on the appearance of the features and their proximity to prospecting pits, both features are likely associated with regional mining activity of the early 20th century.

The site is situated on a desert pavement terrace and is bounded to the north and south by wide east-west running washes that are greater than 40 ft deep in places. Vegetation on SMB-H-111 is limited to the washes and consists of creosote, salt bushes, sage, acacia trees and grasses. Soils on site are comprised of a desert pavement with schist and quartz pebbles. Site SMB-H-111 is surrounded by evidence of high-volume vehicle traffic, and tire tracks are visible within the site itself.

#### SMB-H-113

*Type:* Historical refuse scatter and cairns

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 13 m (NS)      *Width:* 7 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-113 consists of historical cobble cairn features and miscellaneous aircraft metal hardware. The cairns (Feature 1A and 1B) are adjacent to the cairns from site SMB-H-111, and may be similarly historical features associated with early 20th century mining in the region. Feature 1A is located 49 ft north/northeast of the site datum and consist of 18 small cobbles in a pile measuring approximately 20 ½ by 11 ½ by 5 ½ inches high. Feature 1B is approximately 39

ft north/northeast of the site datum and consists of 9 small cobbles in a pile measuring approximately 29 ½ by 16 by 5 inches high. Artifacts found amongst the cairns are all miscellaneous aircraft hardware, including a small, thin sheet metal embossed with "COIL C-114" and "LOADING," with a latch and insulated braided wire attached. The aircraft parts date to the WWII-era use of the area as part of the DTC/C-AMA. Although the cairns appear similar to other early 20th century mining-associated cairn features, they may date to the WWII-era as well.

The site is situated on a narrow ridge of desert pavement bounded to the north and south by washes. The washes are approximately 10 ft deep and maximally 130 ft wide. Vegetation is confined to the washes, and consists of palo verde trees, sage bushes, creosotes, salt bushes, acacia trees, and grasses. The desert pavement is comprised of tightly packed quartzite, sandstone, schist, and quartz gravels. Both wheeled and tracked vehicle tracks are found throughout the site.

#### SMB-H-114

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 22 m (SW/NE)      *Width:* 2 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-114 is a historical refuse scatter consisting of eight cans: three military ration cans, two fruit or vegetable cans, and three cans with unknown contents. The military ration cans suggest a WWII-era date for the site.

The site is located along a drainage cutting into developed desert pavement. The ephemeral washes and drainages run primarily east to west through all sites. Vegetation consists of creosotes, sage bushes, grasses and small palo verde trees.

#### SMB-H-115

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 55 m (SW/NE)      *Width:* 41 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-115 is a historical refuse scatter consisting of eight cans: five military ration cans, one key-wind-opened meat can of a type introduced in the mid-1890s (Rock 1987:107), one church-key-opened beer can, a method introduced in 1935 (Rock 1987:112), and one can lid. The site also contains a munitions casing embossed with "43/LC," which indicates a date of 1943, and four pieces of braided wire. Based on can types, opening methods and other artifacts, the site dates the use of the area during WWII as part of the DTC/C-AMA military training facility.

The site is located along a drainage cutting into developed desert pavement. The ephemeral washes and drainages run primarily east to west through all sites. Vegetation consists of creosotes, sage bushes, grasses and small palo verde trees.

#### SMB-H-116

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 48 m (EW)    *Width:* 24 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-116 is a scatter of historical debris consisting of 19 metal cans and one can lid. Of the 19 cans, 18 were identifiable as 15 fruit or vegetable cans, and three milk cans. All of the cans were partially embedded in the ground surface indicating possible subsurface materials and primary depositional locations. Several cans have chronologically diagnostic attributes. One can is embossed with “SANITARY,” a practice of the 1800s (Rock 1987:14). The three milk cans are hole-in-top, a sealing technique that began in 1885 (Rock 1987:47, 471-5). These artifacts indicate a late 19th to early 20th century date for the site, most likely associated with intermittent mining activities in the region. However, the site is also crosscut by several tank tracks, indicating a later use of the site area during WWII, when the Palo Verde Mesa was part of the DTC/C-AMA military training facility.

Site SMB-H-116 is situated on relatively flat desert pavement. Running through the site are shallow east-west trending ephemeral drainages that are 6 in wide by ¼ in deep. Vegetation on site is dense and consists of brittle bushes, creosotes, and grasses. There are wheeled and tracked vehicle tracks present throughout the surrounding desert pavement.

#### SMB-H-118

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 305 m (EW)    *Width:* 111 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-118 is a historical refuse scatter consisting of cans, munitions casings, a munitions clip, a spoon, wire, and glass. Of the 29 can items recorded, 12 are military ration cans and the remaining are four milk cans, three fruit or vegetable cans, two beer cans, two juice cans, one sardine can, one fuel can, and four can lids. Other artifacts include 11 munitions casings, one munitions clip, one military-issue spoon embossed with “U.S.”, a length of wire that appears to be military communications wire, and one clear glass bottle. The majority of the site artifacts are associated with military training activities dating to the WWII-era use of the area as part of the DTC/C-AMA.

The site sits on flat desert pavement comprised of light brown silty soil with gravel. The ephemeral wash and drainages run primarily east to west through the site. Vegetation consists of creosotes, brittle bushes, and grasses. There are vehicle tracks at the site.

#### SMB-H-119

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 54 m (EW)    *Width:* 27 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-119 is a small historical debris scatter consisting of five cans. The cans were identified as two fruit or vegetable cans, two milk cans, and one key-wind-opened meat can of a type introduced in the mid-1890s (Rock 1987:107). The milk cans are hole-in-cap cans on the market as early as 1885 (Rock 1987:47, 471-5). Based on the documented artifacts, site SMB-H-119 dates to late 19th century to the early 20th century, and is likely associated with the limited mining activity in the region at that time.

The site is situated adjacent to east-west trending ephemeral drainages that are 6 ft wide and 4 in deep. Soils are tan in color with sandy silts and gravel. Vegetation on site is sparse and consists of creosotes, grasses, brittle bushes, and ironwood trees. There are vehicle tracks throughout the site including an established east-west trending dirt road cut into the desert pavement. The dirt road is approximately 6 ft south of the southernmost artifact at the site. A wooden stake was also observed approximately 20 ft north-northwest of the site datum. Surveyors noted that the stake appeared modern, likely associated with the recent use of the dirt road.

#### SMB-H-120

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 5 m (EW)    *Width:* 6 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-120 is a historical debris scatter consisting of four cans. The cans were identified as three sardine cans and one key-wind-opened sanitary can. The sardine cans were opened with a church-key opener, a tool introduced in 1935. The fruit or vegetable can had a key-wind opening of a type introduced in the mid-1890s (Rock 1987:58, 107, 112). Based on recorded artifacts, the site dates to the late 19th to early 20th century, and is likely associated with mining activity in the region at that time.

The site is situated on relatively flat desert pavement comprised of loose silty sand with gravel. The site is cut by northwest-southeast trending ephemeral drainages that are maximally 8 in

deep. Vegetation on site consists of creosotes, sage bushes, brittle bushes, and grasses. There are vehicle tracks present northwest of and south of the site.

#### SMB-H-121

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 29 m (NS)      *Width:* 20 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-121 is a historical refuse scatter consisting of 15 military ration cans and 11 can lids. The site is associated with the military training activities of the DTC/C-AMA during WWII.

The site sits on a flat desert pavement that is bounded to the north and south by east-west trending braided washes. Vegetation on site consists of creosotes, salt bushes and grasses, and sage. There are vehicle tracks present the site.

#### SMB-H-122

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 53 m (NW/SE)      *Width:* 24 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-122 is a historical refuse scatter consisting of four military ration cans, one can with unknown contents and one military-issue spoon embossed with “U.S.” The site is associated with the military training activities of the DTC/C-AMA during WWII.

The site is situated within an east-west trending braided wash comprised of light brown silty soil with gravels consisting of schist and quartz. Vegetation on site consists of creosotes, salt bushes and grasses, and sage. There are vehicle tracks present the site.

#### SMB-H-123

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 27 m (NW/SE)      *Width:* 20 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-123 is a historical refuse scatter consisting of two military ration cans, one church-key-opened beer can, a method introduced in 1935 (Rock 1987:112), a can with unknown

contents, five can lids, and a clear glass bottle. The site is associated with the military training activities of the DTC/C-AMA during WWII.

The site is situated within an east-west trending braided wash comprised of light brown silty soil with gravels consisting of schist and quartz. Vegetation on site consists of creosotes, salt bushes and grasses, cholla, and sage. There are vehicle tracks present the site.

#### SMB-H-124

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 74 m (EW)    *Width:* 18 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-124 is a historical refuse scatter consisting of nine fruit or vegetable cans, two key-wind-opened sardine cans which were introduced into the market as early as 1866 (Rock 1987:58), and one can lid thus, dating the site with the late 19th century and/or the early 20th century. The site constituents are likely associated with small scale prospecting and mining in the region at that time.

The site is situated within an east-west trending braided wash comprised of light brown silty soil with gravels consisting of schist and quartz. Vegetation on site consists of creosotes, salt bushes and grasses, and sage. There are vehicle tracks present the site.

#### SMB-H-125

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 59 m (EW)    *Width:* 11 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-125 is a historical refuse scatter consisting of five cans: three military ration cans, one fruit or vegetable can, and one key-wind-opened meat can dating to as early as the mid-1890s (Rock 1987:107). Based on the key-wind-opened meat can and the military ration cans, the site constituents date from two distinct time periods: the late 19th to early 20th century, and the WWII-era. The earlier materials may be refuse from prospecting activities in the region.

The site is situated within an east-west trending braided wash comprised of light brown silty soil with gravels consisting of schist and quartz. Vegetation on site consists of creosotes, salt bushes and grasses, and sage. There are vehicle tracks present the site.

### SMB-H-126

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 13 m (SW/NE)      *Width:* 38 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-126 is a historical refuse scatter consisting of three military ration cans, one fruit or vegetable can, and one clear glass jar. The site is associated with the military training activities of the DTC/C-AMA during WWII.

The site is situated within an east-west trending braided wash comprised of light brown silty soil with gravels consisting of schist and quartz. Vegetation on site consists of creosotes, salt bushes and grasses, and sage. There are vehicle tracks present the site.

### SMB-H-127

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 3 m (SW/NE) *Width:* 3 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-127 is a historical refuse scatter consisting of four cans with unknown contents that are partially buried, and are likely associated with 20th century activities.

The site is located on desert pavement with no visible water courses or vegetation. Vegetation on site consists of creosotes, salt bushes and grasses, and sage. There are vehicle tracks present the site.

### SMB-H-129

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 17 m (SW/NE)      *Width:* 19 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-129 is a historical refuse scatter consisting of cans, a can lid, glass jars and a wooden lathe. There were three fruit or vegetable cans recorded one of which is a hole in cap can which dates between 1810 to the WWII-era (Rock 1987:471-6), another is a military ration can and the third is a key-wind-opened oval-shaped sardine can and based on the shape, the can dates to as early as 1919 (Rock 1987:59). Also discovered on site were three glass bottles and one wooden lathe. The three glass bottles discovered are all embossed with the city and year in which



they were manufactured. Two of the bottles are embossed with a 1941 date and the third is embossed with a 1938 date. Based on the embossed glass bottles and the cans, the site is probably associated with early 20th century and/or WWII-era activities however, the purpose of the wooden lathe discovered within the site, is unclear.

The site is situated within east-west trending compound alluvial fan, with light brown sandy silts and gravel. Vegetation is comprised of creosotes, brittle bushes and grasses.

#### SMB-H-130

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 15 m (EW)    *Width:* 24 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-130 is a historical refuse scatter consisting of two cans and two glass jugs. Of the two cans recorded, one is an aluminum-top pull-tab beer can, introduced into the market in the 1950s (Rock 1987:29) and the second is a fruit or vegetable can opened with a military-issue P38 tool which was created in 1942 and commonly found amongst the military personal kits. Both of the clear glass jugs are embossed with an Owens Illinois makers mark with one, embossed with a date of 1952. Based on the cans and the embossed date on the glass jug, the site is associated with WWII-era and/or mid-20th century activities.

The site is situated within east-west trending compound alluvial fan, with light brown sandy silts and gravel. Vegetation is comprised of creosotes, brittle bushes and grasses. SMB-H-130 is bounded to the south by a raised desert pavement terrace with visible vehicle tracks.

#### SMB-H-131

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 37 m (EW)    *Width:* 24 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-131 is a historical refuse scatter consisting of five cans – four fruit or vegetable cans one of which is opened with a military-issue P38 tool (introduced in 1942), and one military ration can. Based on the P38-opened can and the military ration can, the site is likely associated with WWII-era use of the area as part of the DTC/C-AMA.

The site is situated within east-west trending compound alluvial fan, with light brown sandy silts and gravel. Vegetation is comprised of creosotes, brittle bushes, cholla, and grasses.

### SMB-H-132

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 51 m (NW/SE)      *Width:* 29 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-132 is a small historical refuse scatter consisting of five fruit or vegetable cans, two military ration cans, one military-issue soluble coffee can and two can lids. Based on the presence of ration cans, it is likely that SMB-H-132 is associated with WWII-era use of the area as part of the DTC/C-AMA.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages or washes in this site. Vegetation at this site consists primarily of creosotes, brittle bushes, grasses, and salt bushes. Vehicle tracks are present at this site.

### SMB-H-133

*Type:* Historical refuse scatter and hearth

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 7 m (SW/NE) *Width:* 4 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-133 is a small scatter of historical debris consisting of two cans and a historical rock feature. One of the cans is a key-wind-opened military ration can. The second can is a flat round can with an internal-friction lid similar in shape to military-issue military-issue soluble coffee cans during WWII. The rock feature is approximately 6 feet south-southwest of the site datum and consists of a cluster of rocks that may be a deflated hearth or cairn. The rocks do not exhibit any external thermal alteration. The site artifacts date to the WWII-era use of the area as part of the DTC/C-AMA military training facility. The rock feature likely also dates from that time period, possibly constructed as a small hearth or locational marker.

The site is situated on relatively flat and open terrain. Cutting through the southern portion of the site are shallow ephemeral washes running northwest to southeast. Vegetation on site consists of creosotes, grasses, brittle bushes, and ironwood trees, most of which are clustered along the ephemeral washes. Soils on site are light brown sandy silt with gravel. Disturbances on site are water- and wind-related activities that may have played a factor in the now scattered location of the cans.

#### SMB-H-134

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 25 m (EW)    *Width:* 14 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-134 is a historical refuse scatter consisting of two military ration cans, one sardine can and two glass bottles. Based on the presence of military ration cans, the site is associated with military training activities dating to the WWII-era use of the area as part of the DTC/C-AMA.

The site is situated within a braided wash comprised of light brown sandy-silty soil with gravel. Vegetation on this site consists of creosotes, brittle bushes, grasses, palo verde trees, acacia trees, and salt bushes. There are no visible disturbances at this site.

#### SMB-H-135

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 216 m (EW)    *Width:* 85 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-135 is a historical refuse scatter consisting of 19 cans, a metal band, a smoke landmine, and two glass bottle fragments. The 19 cans are five military ration cans, four cans with unknown contents, three fruit or vegetable cans, three milk, three beer cans, and one possible paint can. Based on the presence of a “dummy” smoke landmine and military ration cans, the site likely dates to the WWII-era use of the area as part of the DTC/C-AMA.

The site is situated within a braided wash comprised of light brown sandy silty soil with gravel. Vegetation consists of creosotes, brittle bushes, grasses, palo verde trees, acacia trees, and salt bushes. SMB-H-135 is bisected by a north-south trending dirt access road from which the vehicle tracks within the site may originate.

#### SMB-H-136

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 130 m (EW)    *Width:* 77 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-136 is a historical refuse scatter consisting of 16 cans: six military ration cans, two meat cans, one fruit or vegetable can, one can with unknown contents and six can lids. Other

artifacts include one munitions casing embossed with a date of 1942, a piece of sheet metal, and one glass jar. Based on the presence of military ration cans and the munitions casing, it is likely SMB-H-136 is associated with WWII-era use of the area as part of the DTC/C-AMA.

Site SMB-H-136 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages or washes in this site. Vegetation at this site consists primarily of creosotes, brittle bushes, grasses, and ironwood trees. Vehicle tracks are present at this site.

#### SMB-H-137

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 61 m (EW)    *Width:* 38 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-137 is a historical refuse scatter consisting of seven military ration cans, one sardine can, a beer can, seven pieces of wooden lathes and a United States General Land Survey marker embossed with a date of 1917. Based on the presence of military ration cans and the P38-opened can, it is likely that SMB-H-137 is associated with WWII-era use of the area as part of the DTC/C-AMA. However, the wooden lathes and the U.S. GLO marker, suggest that at least some of the site constituents may date to the early 20th century when the area was first surveyed.

Site SMB-H-137 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages or washes in this site. Vegetation at this site consists primarily of creosotes, brittle bushes and grasses. Vehicle tracks are present at this site.

#### SMB-H-138

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 25 m (EW)    *Width:* 6 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-138 is a historical refuse scatter consisting of a military ration can and three military-issue soluble coffee cans. Based on the presence of military ration cans, it is likely that SMB-H-138 is associated with WWII-era use of the area as part of the DTC/C-AMA.

SMB-H-138 is located within a southeast sloping compound alluvial fan comprised of silty sandy soil. There are east-west trending ephemeral drainages or washes in this site. Vegetation at this site consists primarily of creosotes, brittle bushes and grasses. Vehicle tracks are present at this site.

### SMB-H-139

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 41 m (NS)    *Width:* 34 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-139 is a historical refuse scatter consisting of a military ration can, and five key-wind-opened cans, and two cans with unknown contents. Based on the military ration can and key-wind-opened cans which may also be military issue, the site is probably associated with the WWII-era use of the area as part of the DTC/C-AMA military training facility.

Site SMB-H-139 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages or washes in this site. Vegetation at this site consists primarily of creosotes, brittle bushes and grasses. There are no visible disturbances at this site.

### SMB-H-140

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 93 m (EW)    *Width:* 42 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-140 is a historical refuse scatter consisting of five fruit or vegetable cans, four military ration cans, three beer cans, five cans with unknown contents, one military-issue soluble coffee can, a milk can, one aerosol can, and nine can lids. Other artifacts include ten munitions casings four of which are still attached to the munitions cartridge, one “U.S.”-embossed spoon, and two wooden lathes. Based on the presence of military ration cans, the munitions casing, and the spoon, it is likely that SMB-H-140 is associated with the WWII-era use of the area as part of the DTC/C-AMA.

Site SMB-H-140 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages or washes in this site. Vegetation at this site consists primarily of creosotes, brittle bushes, grasses, and cholla. Vehicle tracks are present at this site.

### SMB-H-143

*Type:* Historical refuse scatter and well

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 21 m (EW)    *Width:* 7 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-H-143 is a small scatter of historical debris associated with a well feature. The debris consists of three cans, two can lids, a 15-in length of non-dimensional milled lumber (4" x 4") with a 6" nail, and a 12-in strip of shear-trimmed galvanized metal. One of the cans is a key-wind-opened meat can of a type first developed in the mid-1890s. The other two cans likely contained fruits or vegetables, and one of them is a hole-in-cap can of a type in use between roughly 1810 and 1930 (Rock 1987:12, 107). The feature within the site is a well head that measures approximately 10 ¼ inches in diameter, and rises 2 7/8 in above the ground surface. Surveyors indicated that the well was 20 ft deep to a muddy bottom. The well is made of curved sheet metal that is approximately 1/8 in thick. The seams are bound by ½-inch-diameter rivets spaced 1 ½ in apart. The association between the well and the other artifacts is unclear and no other features are located in the immediate vicinity.

The site is situated on gravelly desert pavement and is bounded in all directions by slightly elevated gravel pavement sections. South of the site datum there is a flat compound alluvial fan that slopes down to the east-southeast, and a small drainage running west to east. Vegetation on site SMB-H-143 consists of creosote bushes. Cutting through the west half of the site, approximately 2 ½ ft west of the well head, is a north-south trending, single-track vehicle path.

### SMB-H-144

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 70 m (EW)    *Width:* 33 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-144 is a historical refuse scatter consisting of six cans and two can lids. The cans are three fruit or vegetable cans, one military ration can, one hole-in-cap milk can of a type introduced as early as 1885 (Rock 1987:47, 471-5), and one can with unknown contents. Most of the site artifacts date to the late 19th to early 20th century, possibly from mining activity in the region at that time. The one military ration can dates to the WWII-era use of the area as part of the DTC/C-AMA military training facility.

Site SMB-H-144 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages or washes in

this site. Vegetation at this site consists primarily of creosotes, brittle bushes, grasses, and cholla. Vehicle tracks are present at this site.

#### SMB-H-145

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 53 m (NW/SE)      *Width:* 25 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-145 is a small historical refuse scatter consisting of two church-key-opened beer cans (an opening method introduced in 1935 [Rock 1987:112]), one fruit or vegetable can, one hole-in-cap milk can, one can lid, one glass jar, and one glass bottle. Based on the church-key-opened beer cans and the hole-in-cap can, the site likely dates to the late 19th to early 20th century. The site may be refuse from small-scale prospecting and mining activities in the region at that time.

Site SMB-H-145 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages or washes in this site. Vegetation at this site consists primarily of creosotes, brittle bushes and grasses. Vehicle tracks are present at this site.

#### SMB-H-147

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 59 m (EW)      *Width:* 29 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-147 is a historical refuse scatter consisting of two fruit or vegetable cans, one military ration can, one milk can, one baking powder can, and one aluminum-top pull-tab beer can that was introduced into the market in the 1950s (Rock 1987:29). Most of the site constituents date to the WWII-era use of the area as part of the DTC/C-AMA military training facility. The later aluminum beer can may be associated with the 1964 reuse of the area for Exercise Desert Strike.

Site SMB-H-147 is scattered along a braided wash. Soils at this site are comprised of light brown sandy silt with gravel. Vegetation at this site consists of creosotes, brittle bushes, salt bushes, grasses and cholla. Vehicle tracks are present at this site.



#### SMB-H-148

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 63 m (SW/NE)      *Width:* 33 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-148 is a historical refuse scatter consisting of three fruit or vegetable cans, one military ration can, one hole-in-cap milk can, one can with unknown contents, and a can lid. Based on the hole-in-cap milk can, a type developed as early as 1885 (Rock 1987:471-5) and the military ration can, the site artifacts date to both the late 19th to early 20th century, and the WWII era.

SMB-H-148 is situated along a single northwest-east trending wash. Soils at this site are comprised of light brown sandy silt with gravel. Vegetation at this site consists of creosotes, brittle bushes, salt bushes, grasses and cholla. There are no visible disturbances at this site.

#### SMB-H-151

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 68 m (NS)      *Width:* 36 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-151 is a historical refuse scatter consisting of ten cans and one can lid. The cans are seven rotary-opened cans with unknown contents, two fruit or vegetable cans, and one military-issue soluble coffee can. Based on the presence of the military-issue soluble coffee can, at least some of the site constituents are associated with WWII-era use of the area for military training. The rotary-opened cans of undefined contents suggest an earlier 20th century use of the site, as well.

Site SMB-H-151 is situated within a braided wash that is east-west trending and comprised of light brown sandy silty soil with gravel. Vegetation on this site consists of creosotes, brittle bushes, grasses, ironwoods, salt bushes and cholla. Disturbances within a site are found at SMB-H-151 and consist of north-south trending vehicle tracks at the northern half of the site and modern conduit pieces.

### SMB-H-152

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 42 m (SW/NE)      *Width:* 19 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-152 is a historical refuse scatter consisting of 11 fruit or vegetable cans two key-wind-opened meat cans that date to as early as the mid-1890s (Rock 1987:107), and one military ration can lid. The cans date to two distinct time periods: the late 19th to early 20th century, and the WWII-era.

Site SMB-H-152 is situated within a braided wash that is east-west trending and comprised of light brown sandy silty soil with gravel. Vegetation on this site consists of creosotes, brittle bushes, grasses and ironwoods. There are no visible disturbances at this site.

### SMB-H-153

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 35 m (EW)      *Width:* 6 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-153 is a historical refuse scatter consisting of two milk cans, one fruit or vegetable can, one tapered meat can, and a metal bracket with a common military-style coating. Like many of the small refuse scatters in this part of the Project, the site contains cans from two distinct time periods: the late 19th to early 20th century, and the WWII-era.

Site SMB-H-153 is within a single wash that is east-west trending and comprised of light brown sandy silty soil with gravel. Vegetation on this site consists of creosotes, brittle bushes, grasses and ironwoods. There are no visible disturbances at this site.

### SMB-H-154

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 281 m (EW)      *Width:* 111 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-154 is a historical refuse scatter consisting of two, distinct concentrations of historical debris consisting of cans, glass fragments, faunal bone, and a boot sole. The larger of the two concentrations contains six fruit or vegetable cans, two military-issue military-issue soluble coffee cans, six military ration cans, three butchered faunal bone fragments, one flat

glass fragment, and a boot sole. Based on the presence of numerous military ration and coffee cans, the concentration is likely associated with the WWII-era use of the area as part of the DTC/C-AMA military training facility. The smaller concentration, located at the west end of the site, appears to be a separate, discrete episode of use. The second concentration consists of 23 fruit or vegetable cans, some of which are solder-dot cans dating to the late 19th to early 20th century (Rock 1987:7-8, 12). Many of the cans were opened with T-shaped knife cuts, an opening technique commonly found on cans from early 20th century mining sites. This concentration is a small trash deposit possibly associated with mining activity in the region at the turn of the last century.

The site is situated within a west-east trending braided wash that is approximately 395 ft wide. The wash cuts through slightly elevated stable desert pavement surfaces. Vegetation is sparse on the desert pavements, comprised of creosotes only. Within the wash and the site area, the vegetation consists of ironwood trees, creosotes, cholla, salt bushes, grasses, and brittle bushes. Soils on site are light brown sandy silt with gravel comprised of schist, quartz and quartzite. Water flow has clearly affected the distribution of the artifacts, serving to distribute them along and within the seasonally active wash. The surrounding desert pavement is marked by vehicle tracks.

#### SMB-H-155

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 74 m (NS)      *Width:* 69 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-155 is a small scatter of historical debris consisting of cans, glass, sheet metal, wooden lathe, and a wooden plank. Surveyors recorded five cans: two military ration cans, one can that has been modified with wire handle, one coffee can, and one paint-type can (possibly a military-issue dubbing can). The other artifacts were a clear glass Mason jar, a bent piece of embossed sheet metal, two wooden lathes, and a wooden plank. The military ration cans and the embossed sheet metal indicate date to the WWII-era use of the area as part of the DTC/C-AMA. Several of the other artifacts, though – particularly the coffee can, modified can with handle, and wooden items – suggest a non-military use, possibly related to late 19th to early 20th century mining activities in the region.

The site is situated on relatively flat land bounded on the north and south by east-west trending ephemeral washes. Vegetation on site is concentrated along the washes and consists of ironwood trees, creosotes, salt bushes, grasses, cholla, and brittle bushes. Soil on site is light brown sandy silt with gravel. There were no visible disturbances within the site.

### SMB-H-156

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 50 m (SW/NE)      *Width:* 49 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-156 is a historical refuse scatter consisting of 15 beer cans, seven fruit or vegetable cans, five military ration cans, four milk cans, three military-issue soluble coffee cans, three cans with unknown contents, one sardine can, two can lids and two glass bottles – one embossed with a Glass Container Company maker's mark and the other an Owens Illinois maker's mark. Several of the beer cans were open with a church-key, a tool introduced to the market in 1935 (Rock 1987:112), and others were much later aluminum-top pull-tab cans from the 1950s or 1960s. The collection of artifacts at this site date primarily to the mid-20th century forward. The ration cans clearly date to the WWII-era use of the area as part of the DTC/C-AMA military training center. The aluminum beer cans may have been deposited during Exercise Desert Strike in 1964.

Site SMB-H-156 is patterned along a braided wash. Soils at this site are comprised of light brown sandy silt with gravel. Vegetation at this site consists of creosotes, brittle bushes, salt bushes, grasses and cholla. Vehicle tracks are present at this site

### SMB-H-157

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 40 m (NS)      *Width:* 12 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-157 is a historical refuse scatter consisting of a military ration can, four fruit or vegetable cans, two milk cans and an army-issued trash can lid embossed with a date of 1942. Based on the presence of military ration cans including the embossed trash can lid, this site is likely associated with WWII-era military training activities.

Site SMB-H-157 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel with east-west orienting patches of desert pavement. Vegetation on this site consists of creosotes, ironwood trees, brittle bushes, grasses, and cholla. There were no visible disturbances within the site.

#### SMB-H-158

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 40 m (EW)    *Width:* 8 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-158 is a historical refuse scatter consisting of a military ration can and three fruit or vegetable cans. Based on the presence of military ration cans, this site is likely associated with military training activities of the WWII-era.

SMB-H-158 is located within an east-west trending wash with sandy silty soil with gravel. Vegetation on this site consists of creosotes and ironwood trees. There were no visible disturbances within the site.

#### SMB-H-159

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 88 m (EW)    *Width:* 39 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-159 is a historical refuse scatter consisting of six cans: three possible baking powder cans, one military ration can, one fruit or vegetable can, one milk can, and one key-wind meat can. Most of the cans, including the key-wind meat can, date to the late 19th to early 20th century. The single ration can dates to the WWII-era use of the area as part of the DTC/C-AMA military training facility.

SMB-H-159 is scattered along a braided wash and is bounded to the south by desert pavement terrain. Soils at this site are comprised of light brown sandy silt with gravel. Vegetation at this site consists of creosotes, brittle bushes, salt bushes, grasses and cholla. There are no visible disturbances at this site.

#### SMB-P-160

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 3 m (NS)    *Width:* 2 m (EW)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-160 is a prehistoric lithic scatter consisting of 11 pieces of debitage of a chert material, in an area measuring 2.6 x 8 meters. The debitage pieces range in size from 2 x 2 cm to 5.7 x 3.3 cm.

The site is situated on a slightly elevated desert pavement terrace. Adjacent to the site, there is an east-west trending wash that is approximately 15 ft wide in places. Vegetation on site consists of creosotes, brittle bushes, grasses and ironwood trees. There are vehicle tracks present throughout the site.

#### SMB-H-161

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 22 m (NS)    *Width:* 12 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-161 is a historical refuse scatter consisting of six cans and one metal band. The cans are four fruit or vegetable cans, one hole-in-top milk can, and one key-wind-opened meat can. The hole-in-top is of a type introduced as early as 1885 (Rock 1987:471-5), and the key-wind-opened meat can was introduced into the market in the mid-1890s (Rock 1987:107). These cans indicate a date for the site in the late 19th to early 20th centuries, possibly in association with the mining activities in the region at that time.

Site SMB-H-161 is situated within a small northwest-southeast trending wash that is comprised of light brown sandy silty soil with gravel. The site is bounded to the north and south by desert pavement terrain. Vegetation at this site consists of creosotes, grasses and ironwood trees. There are vehicle tracks present on desert pavement terrain to the north and south of site SMB-H-161.

#### SMB-H-162

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 30 m (EW)    *Width:* 19 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-162 is a historical refuse scatter consisting of five cans and a number of glass fragments. The cans are one hole-in-cap milk can and four possible fruit or vegetable cans, including one that was opened with a military-issue P38, a tool developed in 1942. With the cans are approximately ten glass fragments, one of which is embossed with an Owens Illinois maker's mark. The artifacts may date to two distinct time periods: the late 19th to early 20th century and the WWII-era.

Site SMB-H-162 is situated within a small northwest-southeast trending wash that is comprised of light brown sandy silty soil with gravel. Vegetation at this site consists of creosotes, grasses

and ironwood trees. There are northeast-southwest orienting vehicle tracks bisecting site SMB-H-162.

#### SMB-H-163

*Type:* Fortified positions

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 185 m (EW) *Width:* 81 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-163 is a small scatter of historical debris consisting of cans, can lids, a car part, metal wire, and four fortified position features. Surveyors recorded 37 cans: nine fruit or vegetable cans, five military ration cans, five motor oil cans, five cans with unknown contents, three beer cans, one milk can, one tobacco tin, and one fuel can, as well as four can lids. Other artifacts include six metal wire pieces and a metal car part. Site SMB-H-163 also contains two features (Features 1 and 2), both of which appear to be fortified positions associated with the military training activities of the WWII-era DTC/C-AMA.

Feature 1 is a shallow depression and encircling low berm shaped like a semi-circle measuring 18 ft x 55 in. The depression is roughly 14 in deep and the berm is 10 in high. Feature 2 is approximately 65 ft east of Feature 1. Feature 2 is comprised of a cluster of three foxhole-like fortified positions (Features 2A, 2B and 2C) similar to Feature 1 in general construction. Feature 2A measures 9 ft x 9 ft and is 20 in deep, with a berm 8 in high. Feature 2B is approximately 5 ft east of Feature 2A and measures 95 in x 83 in and is 15 in deep. Feature 2C is oval-shaped and measures 11 ft x 7 ft and is 12 in deep. Based on the military ration cans and the military fortified position features, the site is associated with military training dating to the use of the area by the DTC/C-AMA during the WWII-era.

The site is situated on relatively flat desert pavement comprised of light brown silty soil with gravel inclusions. East-west trending drainages, 30 in wide by 10 in deep, cut through the northern half of the site. Vegetation on site is sparse and consists of creosotes, brittle bushes, grasses and ironwood trees. There is a north-south trending vehicle track through the western half of the site.

#### SMB-H-164

*Type:* Historical refuse scatter and hearth

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 167 m (EW) *Width:* 102 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness



SMB-H-164 is a historical refuse scatter consisting of 36 cans, five can lids, glass fragments, and miscellaneous other trash, as well as a possible deflated hearth. The cans are 23 fruit or vegetable cans, six beer cans, three cans with unknown contents, two military ration cans, one baking powder can, and one milk can. Other artifacts include a metal bottle cap, a metal band, lengths of wire, a metal sign post without the sign, a metal spring for a car hood, and 43 glass bottle fragments, including a glass jar embossed with “CLOROX”. Also recorded within the site is a possible deflated hearth at the southern end of the site near a north-south running dirt access road. With the exception of two aluminum-top pull-tab beer cans, the artifacts at the site are consistent with materials from the early 20th century. The contextual association of the artifacts remains unclear, though, and the artifacts may simply be a roadside debris collection.

Site SMB-H-164 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending drainages that are 24 in wide by 6 in deep. Vegetation at this site consists of creosotes, brittle bushes, grasses, palo verde trees and ironwood trees. SMB-H-164 is impacted by a bisecting north-south orienting dirt access road and a pipeline corridor berm just east of the site.

#### SMB-H-165

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 148 m (NS)    *Width:* 142 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-165 is a historical refuse scatter consisting of 23 fruit or vegetable cans, four milk cans, four beer cans, two military ration cans, one key-wind meat can, one sardine can, and two can lids. The site contains several chronologically diagnostic artifacts, including a tapered key-wind-opened meat can first produced in the mid-1890s, church-key-opened beer cans likely dating to the late 1930s to 1940s (Rock 1987:112), and several cans opened with a P38 tool created in 1942 for military usage, as well as key-wind military ration cans. The materials at the site date to the early 20th century to the WWII-era. The materials are likely associated with mining at the turn of the last century as well as military training activities during the WWII-era.

Site SMB-H-165 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages ranging from 24 inches to 3 feet wide by 6 inches deep. Vegetation at the site consists of creosotes, grasses, brittle bushes, cholla, and ironwood trees. No visual disturbances are present at this site.

#### SMB-H-166

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 96 m (NW/SE)    *Width:* 82 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-166 is a historical refuse scatter consisting of 26 fruit or vegetable cans, six hole-in-top milk cans, three cans with unknown contents, one key-wind-opened meat can, one can lid, and one glass jar. Most of the artifacts date to the late 19th to the early 20th century, including several diagnostic cans: hole-in-top milk cans dating to as early as 1885 (Rock 1987:471-5), the key-wind-opened meat can, fruit or vegetable cans opened with an x-cut method utilized prior to the 1920s (Rock 1987:113). The site is probably associated with mining activities in the region at that time.

Site SMB-H-166 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages ranging from 24 inches to 3 feet wide by 6 inches deep. Vegetation at the site consists of creosotes, grasses, brittle bushes, cholla, and ironwood trees. Vehicle tracks are present at this site.

#### SMB-H-167

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 136 m (EW) *Width:* 83 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-167 is a historical refuse scatter consisting of 36 cans, two can lids, a metal bucket, two glass jars, and a smoke landmine. The cans consist of 30 fruit or vegetable cans, two cans with unknown contents, one key-wind-opened meat can, one military ration can, one hole-in-top milk can, and one spice can. The key-wind-opened meat can, hole-in-top milk can, and one can opened with a knife in an X shape date to the late 19th to early 20th century. Most of the other artifacts, though, date to the WWII-era, including a number of cans opened with a military-issue P38 opener, the military ration can, and the smoke “dummy” landmine. The site, therefore, is associated with two distinct contexts: late 19th to early 20th century mining activities, and WWII-era military training.

Site SMB-H-167 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages ranging from 24 inches to 3 feet wide by 6 inches deep. Vegetation at the site consists of creosotes, grasses, brittle bushes, and cholla. No visual disturbances are present at this site.

#### SMB-H-168

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 85 m (SW/NE) *Width:* 24 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-168 is a scatter of historical debris consisting of cans, miscellaneous metal, glass bottle fragments, and ceramic bottle fragments. Surveyors recorded 93 artifacts within the site, of which 62 are cans including fruit or vegetable cans, milk cans, sardine cans, key-wind-opened meat cans, fuel cans, and military ration cans opened with key-wind strips and military-issue P38 openers. Some of the artifacts were partially embedded within the ground surface. The military ration cans date to the WWII-era use of the area as part of the DTC/C-AMA military training facility. Most of the other artifacts, though, are more consistent with small mining camp sites dating the late 19th to early 20th century.

The site is situated on relatively flat desert pavement comprised of light brown silty soil with gravel. Cutting through the site are east-west trending ephemeral drainages measuring 26 in wide by 6 in deep. Vegetation on site consists of creosotes, brittle bushes, grasses, cholla, and ironwood trees along the wash. There are no visible disturbances to the site other than natural wind and water factors that may play a role in the depositional pattern of the artifacts.

#### SMB-H-169

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 125 m (NW/SE)      *Width:* 46 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-169 is a historical refuse scatter consisting of four cans. The cans are two P38-opened fruit or vegetable cans, one hole-in-cap milk can, one can with unknown contents and one military ration can. The site contains artifacts dating to the late 19th to early 20th century and the WWII-era.

Site SMB-H-169 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. Vegetation at the site consists of creosotes, grasses, ironwood trees, and palo verde trees. No visual disturbances are present at this site.

#### SMB-H-170

*Type:* Historical hearth

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 10 m (SW/NE)      *Width:* 4 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-170 consists of a metal can and a hearth feature. The can is a sanitary can of a type introduced in 1904 (Rock 1987:14) which likely contained fruits or vegetables. Located 20 ft southeast of the can, the hearth feature is a semi-circle, 7 ft in diameter, of 25 small- to medium-sized rocks. The hearth stones are partially embedded in the ground surface, and charcoal fragments were recorded within the hearth. Both the can and the hearth probably date to the early 20th century. The specific cultural context of this site is unclear. The hearth and can could be

related to mining activities, itinerant ranching, travel and recreation, or some other activity on the Palo Verde Mesa.

The site is situated on relatively flat and open terrain. There is a wash running southwest to northeast approximately 2 ft south of the hearth feature. To the north of the site, there are two drainages within 5 ft of the site datum. Vegetation consists of palo verde trees, brittle bushes, creosotes, and grasses. Soils on the site consist of loosely compacted tan sandy silts with sub-angular gravel. The site appears to have suffered some wind and water disturbance, that may have scattered and enlarged the hearth feature.

#### SMB-H-171

*Type:* Historical refuse dump

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 295 m (EW) *Width:* 128 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-171 is a small but dense deposit of historical debris consisting of numerous cans, can lids, glass bottle fragments, and a military-issue metal spoon. At the site, surveyors recorded 166 cans: 94 fruit or vegetable cans, 24 military ration cans, 18 beer cans, ten milk cans, seven sardine cans, three motor oil cans, two fuel cans, two military-issue soluble coffee cans, one key-wind-opened meat can, one tobacco tin, and four cans with unknown contents, as well as three can lids. Other artifacts were eight glass bottle fragments, one glass jar, a metal screw-top jar lid, and one military-issue spoon embossed with "U.S." on the handle.

Site SMB-H-171 contains a mixed assortment of chronologically diagnostic artifacts: church-key-opened beer cans, a method introduced in 1935 (Rock 1987:112); military-issue soluble coffee cans, ration cans, and a spoon from WWII; and aluminum-top pull-tab beer cans that date most commonly to the 1960s (Rock 1987:471-6). The site appears to be a dump site associated primarily with the WWII-era use of the area for military training as part of the DTC/C-AMA, although some earlier and later 20th century materials are also present.

The site is situated on relatively flat desert pavement comprised of light brown silty soil with gravel. The southern half of the site is cut by east-west trending drainages that are 30 in wide by 12 in deep. Vegetation on site is denser along the drainages and consists of creosotes, brittle bushes, grasses, and ironwood trees.

### SMB-H-173

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 22 m (NS)    *Width:* 12 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-173 is a concentration of historical debris consisting of 13 cans. The cans are nine fruit or vegetable cans, three hole-in-top milk cans, and one large key-wind-opened meat can. Most of the cans were discovered in a concentration and partially embedded in the ground surface. Chronologically, the hole-in-top cans were common from the late 19th to the early 20th century, while key-wind-opened meat cans were introduced in the mid-1890s (Rock 1987:47, 107, 471-5). Based on the recorded artifacts, the site dates to the late 19th to the early 20th century, and may be related to intermittent mining activity in the region at that time.

The site is situated just south of a 20-ft-wide, shallow wash that is northwest-southeast trending. Site soils are comprised of light brown sandy silt with gravel. Vegetation on site consists of creosotes, grasses, ironwood trees, and salt bushes.

### SMB-H-175

*Type:* Historical refuse scatter and hearth

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 90 m (EW)    *Width:* 48 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-175 is a historical refuse scatter consisting of nine fruit or vegetable cans, two military ration cans, two beer cans, two can lids and four pieces of glass containers, two of which are jars. The military ration cans date to the WWII-era, and the remainder of the site artifacts may date to the same time period in association with the military training activities of the DTC/C-AMA.

Site SMB-H-175 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west orienting ephemeral drainages that are 20 in wide by 6 in deep. Vegetation at this site consists of creosotes, grasses, ironwood trees, and brittle bushes. Vehicle tracks are found at this site including a north-south orienting dirt access road approximately 33 feet west of SMB-H-175.

### SMB-H-176

*Type:* Historical refuse scatter and hearth

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 24 m (EW)    *Width:* 15 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-176 consists of two features and a small historical refuse scatter. The two features are a hearth (Feature 1), and a wood pile (Feature 2). The hearth feature is a roughly circular scatter of charcoal, and does not contain any rocks. It is comprised of chunks of charcoal that are slightly embedded into the ground surface, and measures 1.2 m in diameter. Feature 2 is the remains of a wood stockpile, presumably for the purpose of feeding the fire at Feature 1. It consists of approximately 25 fragments of locally derived native wood scattered in an area approximately 3 m in diameter. The wood fragments at Feature 2 measure an average of 10 in long by 1½ in wide. The debris scatter is made up of one piece of miscellaneous metal, two food cans, and three pieces of wire. One of the pieces of wire is wound and curved as though it was used as a handle. This site is likely associated with early 20th century mining or ranching activities on the Palo Verde Mesa.

This site is located on a flat open space with developing desert pavement, and northwest-southeast trending ephemeral drainages. The vegetation on the site consists of creosote, brittle bush, grasses, and ironwood trees. A fairly recent motorcycle track runs roughly north/south through the site about 5 m to the east of the site datum.

### SMB-H-177

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching (possible Desert Strike)

*Age:* Early and late 20th century

*Length:* 88 m (NS)    *Width:* 66 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-177 is a small scatter of historical debris consisting of 12 cans: three fruit or vegetable cans, four milk cans (Rock 1987:113), four beer cans, and one sardine can. Two of the beer cans were opened with a church-key opener, introduced in 1935 (Rock 1987:112). The other two beer cans are aluminum-top pull-tab cans date to the 1960s (Rock 1987:471-6). The remainder of the cans are consistent with cans from the early 20th century. Site SMB-H-177 dates primarily to the early 20th century, and the trash deposit is possibly related to mining activities in the region at that time. The two aluminum-top pull-tab beer cans are clearly later, possibly associated with the Exercise Desert Strike maneuvers of May 1964.

The site is situated within and around an east-west trending wash that is approximately 3 ft deep and 39 ft wide. Vegetation on site consists of creosotes, ironwood trees, grasses, sage bushes,

and brittle bushes. Soils on site are tan sandy silt with sub-angular gravels. The wash may have played a role in the depositional pattern of the cans within the site.

#### SMB-H-178

*Type:* Historical refuse dump

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 524 m (EW) *Width:* 309 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-H-178 is a historical refuse dump with one cobble feature. The feature is comprised two discrete cobble clusters and one lone cobble. The cobbles are arranged in such a way that they appear to be an arrow pointing south. The two cobble clusters are trapezoid shaped, and narrow towards the lone cobble, with the lone cobble forming the point of the arrow. The entire feature measures 10 ft 8 in by 4 ft, and is likely an aerial marker associated with a nearby survey monument. The debris scatter consists of a total of 105 food cans, 92 beverage cans, 25 motor oil cans, four fuel cans, one pail, one propane tank, one tire, one metal saw blade, and one glass bottle. This site is comprised of a mix of cans representing DTC/C-AMA activities, and the historic use of the Palo Verde Mesa, that have been deposited over time by wind and water. The artifact density gradually decreases in the eastern side of the site.

This site is situated in a wide, shallow, braided wash. The ground surface is primarily a light brown sandy silt with gravel. There is mounding of the soil at the base of the creosote, and small patches of desert pavement throughout the site. The vegetation on the site includes creosote, grasses, cholla, salt bush, brittlebush and ironwood, palo verde, and acacia trees. Disturbances to this site include wind, water, animal burrows, vehicle tracks, and modern trash.

#### SMB-H-179

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 22 m (NS) *Width:* 18 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-179 is a historical refuse scatter consisting of two hole-in-cap milk cans, of a type dating to as early as 1885 (Rock 1987:471-5), one fruit or vegetable can, and one can with unknown contents. Based these artifacts, the site is probably associated with late 19th century to early 20th century mining activities.

Site SMB-H-179 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages present at the site. Vegetation at this site consists of creosotes, grasses, salt bushes and ironwood trees. No visual disturbances are present at this site.



### SMB-H-180

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 57 m (NW/SE)      *Width:* 34 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-180 is a historical refuse scatter consisting of five cans. The cans are two fruit or vegetable cans opened with a military-issue P38 opener, one military ration can, one can with unknown contents, and an aluminum-top pull-tab beer can dating to the 1950s to 1960s (Rock 1987:29). The site artifacts are associated with the WWII-era military training of the DTC/C-AMA. The single aluminum beer can may relate to the reuse of the area during Exercise Desert Strike.

Site SMB-H-180 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages present at the site. Vegetation at this site consists of creosotes, grasses, salt bushes and ironwood trees. No visual disturbances are present at this site.

### SMB-H-181

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 165 m (EW)      *Width:* 50 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-181 is a historical refuse scatter consisting of 30 cans and one glass jar. The cans are 25 fruit or vegetable cans, three cans with unknown contents, one hole-in-top milk can, and one aluminum-top pull-tab beer can. The glass jar embossed with a Hazel Atlas maker's mark. The site artifacts date from the early 20th century to the 1960s. Based on these artifacts, the temporal and contextual assignment of this site is necessarily general.

Site SMB-H-181 is situated on relatively flat developing desert pavement terrain comprised of light brown silty sandy soil with gravel. Vegetation at this site includes creosotes, salt bushes and grasses. Vehicle tracks are present at SMB-H-181.

### SMB-H-182

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 39 m (NW/SE)      *Width:* 16 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-182 is a historical refuse scatter consisting of 39 cans, one can lid, glass and ceramic fragments, and a tape dispenser. The cans are 35 fruit or vegetable cans, two meat cans, and one spice can. Other artifacts include three flat glass fragments, one glass bottle base portion, three glass bottles with (one embossed with a Hazel Atlas makers mark and another with an Owens Illinois makers mark), five ceramic fragments, and one tape dispenser. The two meat cans are a tapered type and a key-wind type, both dating to the late 19th century to early 20th century (Rock 1987:55, 107). Other temporal diagnostics are several P38-opened fruit or vegetable cans opened with a military-issue P38 tool, created in 1942 for military. The artifacts indicate that this site contains debris from both the turn of the last century and the WWII-era.

Site SMB-H-182 is situated on relatively flat developing desert pavement terrain comprised of light brown silty sandy soil with gravel. There are northwest-southeast trending braided ephemeral washes at SMB-H-182. Vegetation at this site includes creosotes, brittle bushes and ironwood trees. There are no visual disturbances at this site.

### SMB-H-183

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* Mid-20th century

*Length:* 34 m (EW)      *Width:* 9 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-183 is a historical refuse scatter consisting of two church-key-opened beer cans, an opening method introduced in 1935 (Rock 1987:112), and two fruit or vegetable cans. These cans suggest a mid-20th century date for the site, but the specific contextual association is unclear.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty sandy soil with gravel. There are east-west trending ephemeral drainages at SMB-H-183. Vegetation at this site includes creosotes, brittle bushes and grasses. Vehicle tracks are present at SMB-H-183.

#### SMB-H-184

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 146 m (EW) *Width:* 69 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-184 is a historical refuse scatter consisting of 18 cans and two can lids. The cans are six beer cans (some aluminum-top pull-tab), eight fruit or vegetable cans opened with a military-issue P38 tool, three hole-in-top milk cans, and a military ration can. The site contains artifacts from a variety of time periods, from the turn of the last century to the 1960s. The military ration cans and P38-opened cans clearly date to the WWII-era use of the area as part of the DTC/C-AMA military training facility

Site SMB-H-184 is situated on relatively flat developing desert pavement terrain comprised of light brown silty sandy soil with gravel. There are east-west trending ephemeral drainages at SMB-H-184. Vegetation at this site includes creosotes, brittle bushes, and ironwood tree. Vehicle tracks are present at SMB-H-184.

#### SMB-H-185

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 36 m (NS) *Width:* 6 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-185 is a historical refuse scatter consisting of two P38-opened fruit or vegetable cans, one fuel can, and one can with unknown contents. Site SMB-H-185 is associated with the WWII-era use of the area as part of the DTC/C-AMA.

Site SMB-H-185 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages present at the site. Vegetation at this site consists of creosotes, grasses, and salt bushes. Vehicle tracks are present at this site.

#### SMB-H-186

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 71 m (NS) *Width:* 40 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-186 is a historical refuse scatter consisting of eight cans. The cans are five fruit or vegetable cans opened with a bayonet-method that was probably executed with a military-issue weapon, one hole-in-cap milk can, one possible coffee can, and one can with unknown contents. The cans suggest a primary date in the WWII-era, in association with military training at the DTC/C-AMA.

Site SMB-H-186 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages present at the site. Vegetation at this site consists of creosotes, grasses, and salt bushes. Vehicle tracks are present at this site.

#### SMB-H-189

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 89 m (NW/SE)      *Width:* 52 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-189 is a historical refuse scatter consisting of six beer cans, two fruit or vegetable cans, one motor oil can, one milk can, one military-issue soluble coffee can, one military ration can, and five glass bottles. The site contains artifacts from the whole of the 20th century, including fruit or vegetable cans opened with X-cuts common prior to the 1920s (Rock 1987:113), beer cans opened with church key tools introduced in 1935 (Rock 1987:112), WWII-era military ration cans, and aluminum-top pull-tab beer cans dating to the 1950s and 1960s (Rock 1987:29). The site is mixed collection of debris not associated exclusively with any particular temporal or thematic context. Rather, the site reflects the whole of the use of the mesa from turn-of-the-century mining to WWII-era military training, to possibly the 1964 military training in Exercise Desert Strike.

Site SMB-H-189 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages and/or washes present at the site ranging from 20 inches to 7 feet wide by 6 inches to 10 inches deep. Vegetation at the site consists of creosotes, brittle bushes, grasses, and cholla. No visual disturbances are present at this site.

#### SMB-H-190

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 54 m (NW/SE)      *Width:* 27 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-190 is a historical refuse scatter consisting of six cans. The cans are two fruit or vegetable cans, one key-wind-opened meat can of a type introduced in the mid-1890s (Rock

1987:107), one church-key-opened beer can, one aluminum-top pull-tab beer can, and one WWII-era military ration can. Based on the resources present at site SMB-H-190, the site is associated with activities from the 19th century forward, including the WWII-era military training.

Site SMB-H-190 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages and/or washes present at the site ranging from 20 inches to 7 feet wide by 6 inches to 10 inches deep. Vegetation at the site consists of creosotes, brittle bushes, grasses, ironwood trees, and cholla. No visual disturbances are present at this site.

#### SMB-H-191

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 54 m (SW/NE)      *Width:* 32 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-191 is a historical refuse scatter consisting of four bayonet-opened fruit or vegetable cans and two glass bottles. Based on these artifacts, the site is probably associated with WWII-era military training activities.

Site SMB-H-191 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages present at the site. Vegetation at this site consists of creosotes, grasses, and salt bushes. No visual disturbances are present at this site.

#### SMB-H-192

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 17 m (EW)      *Width:* 7 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-192 is a historical refuse scatter consisting of four cans. The cans are two fruit or vegetable cans opened with a military-issue P38 tool, and two cans with unknown contents. The site artifacts suggest a WWII-era date. The site is probably associated with WWII-era military training activities of the DTC/C-AMA.

Site SMB-H-192 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at the site consists of creosotes and grasses. No visual disturbances are present at this site.

### SMB-H-193

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 52 m (EW)    *Width:* 14 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-193 is a historical refuse scatter consisting of four cans. The cans are two fruit or vegetable cans opened with a bayonet-method that was probably executed with a military personnel weapon, and two cans with unknown contents. The site artifacts indicate an association with the WWII-era military training activities of the DTC/C-AMA.

SMB-H-193 is situated within east-west trending braided ephemeral washes comprised of light brown sandy silty soil with gravel. Vegetation at the site consists of creosotes, brittle bushes and grasses. No visual disturbances are present at this site.

### SMB-H-194

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early to mid-20th century

*Length:* 38 m (NS)    *Width:* 22 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-194 is a historical refuse scatter consisting of one hole-in-top milk can, a fruit or vegetable can, two church-key-opened cans, and one can with unknown contents. These cans suggest an early to mid-20th century date for the site. The contextual association of the site is unclear.

Site SMB-H-194 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at the site consists of creosotes, brittle bushes and grasses. No visual disturbances are present at this site.

### SMB-H-195

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 50 m (EW)    *Width:* 26 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-195 is a historical refuse scatter consisting of four cans and one clear glass jar. The cans are one military ration can, one aluminum-top pull-tab can dating to the 1950s to 1960s (Rock 1987:29), one fruit or vegetable can, and one corrugated can with unknown contents. Most of the

site artifacts date to the WWII-era and are associated with the use of the area as part of the DTC/C-AMA military training facility. The aluminum can suggests a later reuse of the site area, possibly in association with Exercise Desert Strike in 1964.

SMB-H-195 is situated within east-west trending braided ephemeral washes comprised of light brown sandy silty soil with gravel. Vegetation at the site consists of creosotes, brittle bushes and grasses. Vehicle tracks are present at SMB-H-195.

#### SMB-H-197

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 27 m (EW)    *Width:* 24 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-197 is a scatter of historical debris consisting of three cans and numerous glass bottle fragments. The cans are identified as one hole-in-cap milk can, one church-key-opened beer can, and one small fuel can. Strewn around these cans are approximately 40 fragments of glass bottles of various colors, including clear, amber, and green. Most of the bottle fragments appear to be from alcohol bottles, and several are identifiable as pint bottles. The cans indicate an early 20th century date for the site, although some of the bottle fragments appear more recent. The artifacts are possibly associated with mining activities of the early 20th century.

The site is situated on desert pavement terrain located between east-west trending washes that are 30 cm wide by 47 cm deep and is comprised of light brown sandy silt with gravel. Vegetation on site consists of grasses, creosotes, cholla, ironwood trees and salt bushes. There are vehicle tracks present throughout the site including some that directly cross over the artifacts.

#### SMB-H-198

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 131 m (EW)    *Width:* 46 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-198 is a scatter of historical debris consisting of cans and miscellaneous metal hardware. Surveyors recorded ten artifacts, seven of which are cans: one milk can, one fuel can, two fruit or vegetable cans, and three beer cans. The other artifacts include two sections of braided steel cable, both ½-inch diameter, and a torch-cut steel pipe that measures 1 ft 3/8 in long and 4 ½ inches in diameter. Opening methods recorded for the cans include two church-key-opened metal beer cans, a method introduced in 1935, and one aluminum-top ring-pull beer can from the 1950s to 1960s (Rock 1987:112, 471-6). The steel cable and pipe sections were found adjacent to a berm created to support a narrow-gauge pipe that runs parallel to a north-south two-



track access road that ultimately leads to the Arlington Mine, in operation during WWII. Based on the opening methods of the cans and the possible pipeline related materials, the site is probably associated with the pipeline corridor activities of the 20th century.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages measuring 20 in wide by 6 in deep , throughout the site. Vegetation on site consists of creosotes, brittle bushes, grasses and ironwood trees. The site is immediately east of a dirt access road and a pipeline corridor berm with vehicle tracks originating from the adjacent road present throughout the site.

#### SMB-H-199

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 101 m (NW/SE)      *Width:* 60 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-199 is a historical refuse scatter consisting of 22 cans. The cans are 11 fruit or vegetable cans, seven cans with unknown cans, two beer cans, one milk can, and one oval sardine can. The site contains several temporally sensitive artifacts, including one oval-shaped sardine can of a type introduced in 1919 (Rock 1987:59), a church-key-opened beer can (Rock 1987:112), and an aluminum-top pull-tab beer can dating to the 1950s to 1950s (Rock 1987:29). The site is not exclusively associated with any one time period or theme, but rather reflects varied use from the early to late 20th century.

SMB-H-199 is patterned within and along an east-west trending ephemeral wash that is approximately 20 inches deep with soil that is light brown sandy silty with gravel. Vegetation at this site consists of creosotes, grasses and ironwood trees. Vehicle tracks are found at this site.

#### SMB-H-200

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 52 m (EW)      *Width:* 30 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-200 is a scatter of historical debris consisting of three cans, a munitions casing, and metal wire. Two of the cans likely contained either fruit or vegetables, and one is consistent with a flat, round tunafish can. The site is immediately west of a dirt access road and it is possible that the resources within the site are direct results of road refuse dumping activities of the 20th century. The munitions casing likely dates to the WWII-era use of the area for military training maneuvers as part of the DTC/C-AMA.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There is an east-west trending ephemeral drainage at the northern half of the site and a patch of desert pavement to the south. Vegetation on site consists of creosotes, salt bushes and grasses. The site is approximately 30 ft west of a dirt access road from which vehicle tracks originate and are present throughout the site.

#### SMB-H-202

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 46 m (NW/SE)      *Width:* 35 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-202 is a historical refuse scatter consisting of 12 cans, a length of braided wire, and a wooden post. The cans are ten beer cans, a hole-in-top milk can, and one fruit or vegetable can. All but one of the ten beer cans is church-key-opened, an opening method introduced in 1935 (Rock 1987:112). The other beer can is marked “COORS.” Four of the cans have been damaged by bullet holes. A north-south running dirt access road is approximately 13 feet east of the site. The proximity of the road and the bullet holes in the beer cans suggest a recreational use of the site, possibly in the mid-20th century.

SMB-H-202 resources are patterned along east-west trending ephemeral washes with soil that is light brown sandy silt with gravel and is bisected by a wide and shallow northwest-southeast trending wash that is approximately 30 ft wide by 16 in deep. Vegetation at this site consists of creosotes, brittle bushes, grasses, palo verde trees and ironwood trees. There are no visual disturbances at this site.

#### SMB-H-203

*Type:* Historical cleared areas

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 25 m (EW)      *Width:* 4 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-203 consists of 16 cleared areas that vary slightly in width, however, all are approximately 7 ft long. The cleared areas are sections of desert pavement that have been “cleared” of the uppermost layer of patinated cobbles and gravel, revealing a lighter subsurface. No artifacts were associated with the cleared areas. The purpose of these features is unclear, but the presence of tank tracks in the vicinity suggests a WWII-era date and association. The cleared areas may have been created to be seen from aerial reconnaissance planes, or to support temporary military features.

The site is situated on a desert pavement ridge that is approximately 13 ft above a wash system to the east. There is no vegetation on the desert pavement. The adjacent wash system supports creosotes and ironwood trees. The desert pavement is comprised of cobbles and pebbles including angular green schist material. The site is impacted by vehicle tracks that run in every direction.

#### SMB-H-204

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 41 m (NW/SE)      *Width:* 17 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-204 is a historical refuse scatter consisting of one motor oil can, one fruit or vegetable can, one can with unknown contents, and one key-wind-opened meat can of a type introduced in the mid-1890s (Rock 1987:107). The oil can appears to be of a type marketed in 1936 (Rock 1987:57), and the other cans could date to that time as well. The contextual association of the site is unclear, but it may relate to the intermittent mining activities in the area.

Site SMB-H-204 is situated within an east-west trending wash comprised of light brown sandy silt with gravel and is bounded to the north and south by desert pavement terraces. Vegetation on the site consists of creosotes, grasses, brittle bushes, and ironwood trees. Vehicle tracks are present on desert pavement at this site and include tank tracks at SMB-H-204.

#### SMB-H-205

*Type:* Fortified positions

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 161 m (NW/SE)      *Width:* 65 m (SW/NE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-205 is a small scatter of historical debris consisting of cans, glass and wire associated with what appear to be fortified positions of some sort. Surveyors recorded 38 artifacts within the site, 30 of which are cans: four fruit or vegetable cans, one possible beverage can, 24 oil cans, and two military ration cans. Other artifacts include six glass fragments and a metal wire. Based on the presence of the oil cans in conjunction with the numerous surrounding vehicle tracks and military ration cans, the site is likely associated with military training activities from the WWII era. Among the recorded artifacts, are two historical features that consist of mounds and divots. The mounds measure approximately 5 in tall by 2 ft 6 inches in diameter and the divots are approximately 2 in deep by 2 ft 6 inches in diameter. These features may be related to the placement of mines, sleeping trenches, toilets, or other entrenchments related to the creation of a bivouac or defensive position.

The site is situated on a slightly elevated desert pavement that is surrounded by ephemeral washes. Vegetation on the desert pavement is very sparse and consists of creosotes only. The surrounding vegetation is not as sparse and includes creosotes, grasses, salt bushes and brittle bushes. The site is impacted with numerous vehicle tracks.

#### SMB-H-206

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 238 m (SW/NE)      *Width:* 176 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-206 is a scatter of historical debris consisting of cans, glass bottle fragments, a ceramic fragment, a boot sole, and miscellaneous metal hardware. Of the recorded artifacts, 37 are cans: three fruit or vegetable cans, one sardine can, one military-issue soluble coffee can, one beer can, four tobacco cans, 17 cans with unknown contents, and ten can lids. Other artifacts include five glass bottle fragments, a historical ceramic fragment, a boot sole, and 30 pieces of miscellaneous metal hardware such as possible stove, automobile water heater parts, a wash basin, and a spark plug. The presence of a church-key opened beer can, an opening method introduced in 1935 (Rock 1987:112), a WWII-era soluble coffee can, and various 20th century metal hardware elements suggest a range of dates for the site. All of these artifacts are located within a wash further suggesting that the site consists of artifacts deposited here secondarily by periodic high-velocity flow events in the wash.

The site is situated on a flood plain within a north-south trending wash that measures approximately 500 ft wide. Vegetation on site consists of creosotes, grasses and cholla. Just beyond the site boundaries are ironwood trees. Soils on site consist of gravel and cobbles layered over a light brown silty sand. The wash likely to played a role in the depositional pattern of the resources within the site.

#### SMB-H-207

*Type:* Fortified positions

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 148 m (EW)      *Width:* 34 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-207 is a small scatter of historical debris associated with fortified position features. Surveyors recorded 17 artifacts, six of which are cans: four fruit or vegetable cans, one can with unknown contents that is embossed with “GRENADE”, one military-issue military-issue soluble coffee can, and eight can lids. Other artifacts include two grenade spoons and one shell casing. Among the recorded resources are 22 military fortified position features. These features are

comprised of stacked rocks that create one- to three-sided, low barriers that were possibly used by military personnel for cover from enemy fire or detection. These fortified positions were constructed so that they face in either a north or south direction. Based on the presence of the fortified position features, the munitions, and the military ration cans, the site is associated with WWII-era military training of the DTC/C-AMA.

The site is situated on a desert pavement ridge comprised of gravel and cobbles. There were no visible water courses observed within the site. Vegetation on site consists of creosotes and cholla. The site is impacted with numerous tracked vehicle tracks that are likely associated with military activities.

#### SMB-H-208

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and 20th century

*Length:* 142 m (EW) *Width:* 64 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-208 is a scatter of historical debris consisting of cans and glass. Surveyors recorded nine cans: six fruit or vegetable cans, one beer can, one military ration can, and one key-wind-opened meat can. Among these cans is one clear glass ink-well shaped bottle with a metal screw cap. Chronologically diagnostic cans include a military ration can from the WWII-era, a key-wind-opened meat can dating to as early as the mid-1890s, and an aluminum-top pull-tab beer can from the 1950s to 1960s (Rock 1987:107, 471-6). Based on the resources described, the site is likely associated with a variety of activities from the late 19th century to the 20th century including the WWII-era military training.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown sandy silt with gravel. There are east-west trending ephemeral drainages that are maximally 25 in wide and 8 in deep. Vegetation on site consists of creosotes, palo verde trees, and grasses. In the eastern half of the site, a north-south running pipeline corridor and adjacent dirt access road run through the site. Vehicle tracks cross the site and originate from the north-south running dirt road.

#### SMB-H-209

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 60 m (NW/SE) *Width:* 55 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-209 is a small scatter of historical debris consisting of cans, a can lid, wooden lathes and a cement block with rebar. Surveyors recorded ten artifacts, of which five are cans: four fruit or vegetable cans, and one possible beer can. The wooden lathes and cement block appear

modern and are likely associated with the adjacent pipeline corridor or dirt access. The cans are probably associated with 20th century activities based on the presence of the church key opened beer can, a beer can opening method that was not introduced until 1935 (Rock 1987:112).

The site is situated on relatively flat terrain that is bisected by the dirt access road and pipeline corridor. There is an east-west trending ephemeral drainage within the site approximately 10 feet south of the site datum. Vegetation on site consists of creosotes, salt bushes, grasses and brittle bushes. Soil on site is light brown sandy silt with gravel. Both the dirt access road and pipeline corridor activities including wind and water factors may have played a role in the depositional pattern of the resources within the site.

### SMB-H-210

*Type:* Fortified positions

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 117 m (EW) *Width:* 113 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-210 is a small scatter of historical debris consisting of cans, can lids, metal strapping, munitions clips and milled lumber including fortified position and cairn features. There were 30 artifacts recorded within the site, seven of which are cans: three military-issue soluble coffee cans, four military ration cans, and 23 can lids. Other artifacts consist of four pieces of metal strapping, four munitions clips, and three pieces of milled lumber. Among the resources are two cairn features and eight fortified position features. One of the cairns consists of six cobbles and measures approximately 19 in x 31 in. The second cairn feature consists of five cobbles and measures approximately 15 in x 16 in. The eight fortified position features consist of dug out areas situated in the hillsides and on top of ridges that appear to face to the east. The dug-out fortified positions range in size from 19 in x 27 in to 19 ft x 19 ft. The fortified positions, munitions clips, and ration cans indicate that the site is associated with desert military training of the WWII era.

The site is situated primarily in a wash that runs roughly east-west between two ridges. Vegetation on site consists of creosotes, grasses, salt bushes, and cholla. Soil in the surrounding area is desert pavement that is comprised of cobbles and gravels. Vehicle tracks were observed throughout the site on the desert pavement areas and may also be associated with the military training activities.

### SMB-H-212

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 63 m (EW)    *Width:* 17 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-212 is a scatter of historical debris consisting of cans and can lids. Surveyors recorded six cans: four military ration cans, and two military-issue soluble coffee cans, as well as 20 can lids. All the can items are military issue, associated with the WWII military desert training activities of 1942-1944.

The site constituents are scattered along a steep wash that runs down a hillside comprised of gravel and cobbles of schist and quartz material. There is a northwest-southeast trending drainage that bisects the site. Vegetation on site consists of creosotes, salt bushes, grasses and cholla. There is a northeast-southwest trending vehicle track at the western half of the site.

### SMB-H-213

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 44 m (SW/NE)    *Width:* 36 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-213 is a historical refuse scatter consisting of one fruit or vegetable can, a clear glass jar, and miscellaneous metal hardware such as a metal rod, a metal spring, and a piece of metal pipe. Based on the metal artifacts and the presence of a north-south oriented dirt access road just east of the site, the site may be associated with travel along the road during the 20th century.

Site SMB-H-213 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. Vegetation at this site consists of creosotes, grasses, brittle bushes and/or salt bushes, and cholla. There are vehicle tracks present at this site. Other disturbances include a north-south trending dirt access road and pipeline corridor just east of SMB-H-213.

### SMB-M-214

*Type:* Thermal cobble feature and can

*Context:* Prehistoric and historical use of the Palo Verde Mesa

*Age:* Prehistoric and 20th century

*Length:* 20 m (NS)    *Width:* 6 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-M-214 is a historical refuse scatter consisting of a metal can and a prehistoric hearth feature. The can recorded within the site once contained either fruit or vegetables and opened with the rocker method probably dating it to the early 20th century. The hearth feature found within the site is possibly a roasting pit and consists of approximately 100 quartz cobbles with a maximum length of 10 cm. The feature measures approximately 3 m east-west by 2 m north-south and is slightly embedded within the ground surface. The feature contains two cobbles that exhibit thermal alteration on the exterior surface by fire however, there were no charcoal fragments present within the surrounding area. The relationship between the feature and can is unclear but, based on the deposition of the feature, the site is likely to be prehistoric in origin.

The site is situated on desert pavement that is adjacent to a braided wash. The desert pavement is comprised of schist and quartz pebbles. Vegetation on the desert pavement is sparse and consists of creosotes and grasses. Surrounding vegetation is present within the washes and consists of creosotes, mesquite trees and bushes. The washes within the site are approximately 30 cm deep by 1 m wide. Disturbances include vehicle tracks that are present on the desert pavement throughout the site and animal burrows located within 1 m of the hearth feature.

#### SMB-H-215

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 168 m (EW) *Width:* 71 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-215 is a historical refuse scatter consisting of 11 military ration cans, nine motor oil cans, five fruit or vegetable cans, one beer can, three can lids, and a military grenade component. All of the site artifacts are likely associated with the WWII-era use of the area as part of the DTC/C-AMA military training facility.

Site SMB-H-215 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and is bounded to the north and south by desert pavement terrain. There are drainages present at this site that are east-west trending and are 24 in wide by 10 in deep. Vegetation at this site consists of creosotes, grasses, and ironwood trees. There are vehicle tracks present at this site.

#### SMB-H-216

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 227 m (EW) *Width:* 58 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness



Site SMB-H-216 is a historical refuse scatter consisting of numerous cans, glass bottle pieces, metal wire, a metal band and possible electrical metal conduit. The cans are 29 fruit or vegetable cans, 14 motor oil cans, four cans with unknown contents, one hole-in-top milk can, one military-issue soluble coffee can, and three can lids. Some of the fruit or vegetable cans were opened with a P38 tool that was invented in 1942 for military use. Most of the artifacts date to the WWII-era use of the area as part of the DTC/C-AMA military training facility.

Site SMB-H-216 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are drainages present at this site that are east-west trending and are 24 in wide by 10 in deep. Vegetation at this site consists of creosotes, grasses, brittle bushes and/or salt bushes, and ironwood trees. There are vehicle tracks present at this site.

### SMB-H-218

*Type:* Historical refuse scatter and hearth

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 62 m (NW/SE)      *Width:* 48 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-218 is a small scatter of historical debris associated with an abandoned vehicle, cans, miscellaneous metal hardware, wire, plastic, a button, and a hearth feature. The abandoned vehicle appeared to be a 1940s delivery van that measures approximately 11 ft long by 5 ft wide by 4 ft 8 in high. Associated with the vehicle are running boards, nails, a bolt, washers, window glass, and wood. Non-vehicle artifacts include four cans (a possible milk can, one food can, and two oil cans), a button made of bone, metal wire, miscellaneous metal fragments, and plastic. Based on the presence of one matchstick-filler can, also referred to as a vent-hole can, introduced into the market after 1900 (Rock 1987:471-6), the cans and Other artifacts within the site may date to the early 20th century.

Surveyors also recorded a hearth feature within the site, approximately 131 ft north of the abandoned vehicle. The hearth is comprised of a circle (43 in x 65 in) of approximately 24 cobbles, none of which appear to be embedded in the ground. The hearth contains charcoal and wire cut nails, suggesting a historical age for the hearth, possibly contemporaneous with the abandoned vehicle and other sundry artifacts.

The site is situated within a large east to west trending drainage that measures approximately 980 ft wide. Vegetation on site consists of creosotes, grasses and ironwood trees. Soil on site is light brown sandy silt with cobbles and gravel. There is a set of vehicle tracks that runs roughly north to south approximately 8 ft west of the abandoned vehicle. The tracks may be associated with the vehicle. The vehicle itself appears to have numerous bullet holes that are probably a result of WWII-era training or recreational activities.

### SMB-H-219

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 5 m (EW)      *Width:* 1 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-219 is a historical refuse scatter consisting of four military ration cans and five military ration can lids. All of the site artifacts are directly related to the WWII-era use of the area for military training as part of the DTC/C-AMA.

SMB-H-219 is located within an east-west trending narrow and shallow wash that is bounded to the north and south by slightly elevated desert pavement terraces. Vegetation at this site consists of creosotes, grasses, brittle bushes and/or salt bushes, and cholla. There are vehicle tracks present at this site, including the presence of tank tracks just west of the cans.

### SMB-H-220

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 82 m (EW)      *Width:* 17 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-220 is a historical refuse scatter consisting of four military ration cans, three fruit or vegetable cans, one military-issue soluble coffee can, three can lids, and a clear glass bottle embossed with “JERGENS LOTION” on the base. Based on the presence of military ration cans, this site is likely associated with military training activities of the WWII-era.

Site SMB-H-220 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel with east-west orienting patches of desert pavement. Vegetation on this site consists of creosotes, ironwood trees, brittle bushes, and grasses. Vehicle tracks are present throughout the desert pavement terrain.

### SMB-H-221

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 4 m (NS)      *Width:* 3 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-221 is a scatter of historical debris consisting of three cans, broken glass bottle fragments, and miscellaneous metal hardware. The three cans are two fruit or vegetable cans, and

one can with unknown contents. Other artifacts include approximately 70 glass bottle fragments and two metal rods both with a diameter of 1/8 in. The artifacts are likely refuse deposits from the adjacent dirt access road, and could date anywhere within the 20th century.

The site is situated on a slightly elevated desert pavement comprised of schist and quartz cobbles with a shallow and narrow east-west trending wash to the south. Vegetation on the desert pavement is sparse and consists of creosotes only. Just south of the desert pavement in the wash are creosotes, salt bushes and grasses. The western half of the site is bisected by the pipeline corridor and the dirt access road is located just west of the site from which all the north-south trending vehicle tracks within the site originate.

#### SMB-H-222

*Type:* Historical hearth and rock features

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 51 m (EW)    *Width:* 24 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-222 consists of a single military ration can lid, and four rock features. There are features are two textual rock features, one rock alignment, and one hearth. Feature 1 is a textual rock feature that is comprised of approximately 20 quartz cobbles with an average length of 3 inches, that appears to spell out NEELS' (with the apostrophe) in white quartz. The feature measures 2 ft 4 in north-south by 10 ft 7 in east-west, and is oriented so that the reader is facing north. The presence of an apostrophe at the end of NEELS' may indicate possessive construction. Feature 2 is also a textual rock feature and appears to be the numeral "8" in white quartz. Feature 2 is comprised of approximately 62 quartz cobbles with an average length of 2 in. The feature measures 4 ft long by 2 ft wide and, if the feature is indeed the numeral "8," then it is oriented in a west-northwest direction. Feature 3 appears to be a deflated hearth measuring 3 ft 2 in long by 1 ft 2 in wide and is located southeast of the textual rock features. The hearth is comprised of roughly seven cobbles, two pieces of wood, and charcoal fragments. Feature 4 is a rock alignment that is located approximately 131 ft west of the textual rock features. The rock alignment is composed of 30 cobbles arranged in what appears to be a cross or crucifix symbol. The feature measures 8 ft north-south by 2 ft 6 in east-west and oriented with the vertical axis in a north-south direction. The center, crossing point of Feature 4 appears to have been excavated and then backfilled. All of the features appear to have been created within the same time frame by the same individuals and are likely associated with the desert military training of WWII, based on the presence of the military ration can lid and tank tracks on the desert pavement.

The site is situated on a linear east-west trending patch of desert pavement that is bounded to the north and south by slightly elevated desert pavement terraces. There are east-west trending drainages present throughout the site that measure approximately 13 ft wide and 3 ft deep. Vegetation on site consists of creosotes, brittle bushes, grasses and ironwood trees all of which is denser along the drainages. Soil on site is light brown sandy silt with gravel on the developing

desert pavement areas. There are visible vehicle tracks including tank tracks, on the neighboring desert pavement terraces and some that go through the features as well.

**SMB-H-223**

*Type:* Fortified positions

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 141 m (EW) *Width:* 32 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-223 consists of a historical debris scatter and fortified position features. Surveyors recorded four cans: three fruit or vegetable cans and one military ration can. Also present within the site are eight fortified position features, possibly foxholes, that are shallow dug-out areas with low encircling berms. These features are arranged in a linear east-west manner on a desert pavement terrace and are approximately 36 ft from each other.

Feature 1 is the easternmost feature, and measures 6 ft 3 in north-south by 8 ft 9 in east-west with a berm located on the south half of the hole that is approximately 3 in high. Feature 2 is located west of Feature 1 and measures 10 ft north-south by 10 ft 2 in east-west with a berm located on the west half of the hole that is approximately 6 in high. Feature 3 is west of Feature 2 and measures 6 ft 8 in north-south by 7 ft 10 in east-west with a berm located on the north side that is approximately 4 in high. Feature 4 is west of Feature 3 and measures 7 ft north-south by 9 ft 3 in east-west with a berm of the hole located on all sides of the hole except for the south side that is approximately 5 in high. Feature 5 is west of Feature 4 and measures 38 in north-south by 39 in east west with a berm on the north side that is approximately 3 ½ in high. Feature 6 is located west of Feature 5 and measures 3 ft north-south by 3 ft east-west with a berm on the south side that is approximately 8 in high. Feature 7 is located west of Feature 6 and measures 2 ½ ft north-south by 4 ft east-west with a berm on the south side that is approximately 5 in high. Feature 8 is located at the westernmost position, and measures 3 ft north-south by 5 ½ ft east-west with a berm on the south side that is approximately 8 in high. Based on the presence of the fortified positions, the military ration cans and tank tracks, the site is very likely associated with the military desert training of the WWII era.

The site is situated primarily on a desert pavement terrace and within an east-west trending wash to the north. The site is approximately 980 ft north of an established desert pavement road. The wash to the north measures 40 in wide by 12 in deep. Vegetation on the desert pavement is sparse but, denser along the wash and consists of creosotes, brittle bushes, grasses and ironwood trees. Soils on the desert pavement consist of gravels and pebbles and within the wash is light brown sandy silt. There are vehicle tracks, including tank tracks, present throughout the site and some directly adjacent to or directly over the fortified position features.

### SMB-H-224

*Type:* Historical refuse dump

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 159 m (EW) *Width:* 23 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-224 is a concentration of historical debris consisting of cans, glass, ceramic and miscellaneous metal elements. Of the artifacts, 110 are can items that include seasoning, meat, fruit, vegetable, military ration, beer, and fuel cans, and 8 can lids. All of the cans and lids appear to be military issue or military related. Other artifacts include 63 glass bottle pieces, six ceramic fragments, and miscellaneous metal items including a teapot, a tray, a plate, wire, and sheet metal. The materials are concentrated in the eastern portion of the site and appear to be scattered via water and wind down slope to the west. The site appears to be a trash dump, possibly a makeshift military kitchen from a bivouac associated with the military training exercises during WWII.

The site is situated within a wash between two desert pavement terraces comprised of cobbles and gravel. The east-west trending wash is approximately 22 in wide by 10 in deep with light brown silty soil. Vegetation on site consists of creosotes, brittle bushes, grasses, ironwood trees and cholla. Water flow within the wash may have played a role in the depositional pattern of the debris scatter that may have once originated in the resource concentration to the east.

### SMB-H-226

*Type:* Historical cairns and rock feature

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 42 m (EW) *Width:* 10 m (NS)

*Location:* Buffer

*Significance:* Not evaluated

Site SMB-H-226 contains four cairns (Cairns 1-4), a sundial feature comprised of 38 stones, and a single food can. Cairn 1 consists of four stones, and measures 30 cm by 36 cm and is 14 cm tall. Cairn 2 consists of two stones, and measures 64 cm by 28 cm and is 23 cm tall. Cairn 3 consists of two stones, and measures 62 cm by 28 cm and is 24 cm tall. Cairn 4 consists of four stones, and measures 46 cm by 33 cm and is 16 cm tall. The cairns are slightly embedded in the ground surface, and are comprised of locally derived stone. Their locations do not suggest any recognizable pattern. The sundial feature is comprised of a total of 38 stones, twenty nine of which are lightly embedded in the ground in a circle measuring 1.3 m in diameter. The remaining nine stones are in the center of the circle and form the sundial's gnomon; the component of a sundial that casts the shadow. Eight stones are embedded in the ground around a ninth flat stone that protrudes vertically out of the ground. The only artifact at this site is a single food can that is located in the wash that is south of the site, and is likely not associated with this site's features. This site represents historical use of the Palo Verde Mesa.

This site is situated on the northern edge of a large drainage that measures approximately 2 m deep, by 50 m wide. The surface is stable gravelly soil with large, heavily patinated cobbles. The vegetation on site consists of creosote, grasses, and saltbush.

#### SMB-H-227

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 31 m (NW/SE)      *Width:* 29 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-227 is a scatter of historical debris consisting of cans and can lids. Surveyors recorded nine cans: eight fruit or vegetable cans, and one can with unknown contents, along with two can lids. Based on the rotary-opened cans, the site likely dates to the 20th century. Tank tracks are evident to the west of the site.

The site is situated within an east-west trending wash comprised of light brown sandy silt with gravel. There are drainages that parallel the wash that are 2 ft wide by 12 in deep. Vegetation on site consists of creosotes, brittle bushes, grasses, cholla, and ironwood trees. There are vehicle tracks west of the site with two visible on the desert pavement in a southeast-northwest pattern to the south of the site and two that cross the wash in a southwest-northeast pattern one of which is a military tank track.

#### SMB-P-228

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 26 m (NW/SE)      *Width:* 6 m (SW/NE)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-228 is a prehistoric lithic scatter consisting of lithic flakes, shatter, and a hammerstone. There were approximately five quartz flakes discovered in an area measuring 2.5 m x 1 m. The flaked stone ranged in size from 5 x 3.3 x 1.3 cm to 7.2 x 3.6 x 3 cm. Found among the quartz flakes was a quartzite hammerstone tool measuring 12 x 9 x 4 cm. Also discovered within the lithic scatter was a piece of quartz shatter measuring 7.2 x 3.6 x 3 cm with evidence of one flake removal scar.

The site is situated on desert pavement terrain that is bisected by a west-northeast trending ephemeral drainage measuring 3 m wide by 50 cm deep at the eastern half of the site. The soil within the drainage is comprised of light brown silty soil with gravel. Vegetation on site consists of creosotes, cholla and grasses and patterned along the drainage are salt bushes and ironwood trees. There is a north-south trending vehicle track present within the site.

### SMB-H-229

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 53 m (SW/NE)      *Width:* 36 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-229 is a historical refuse scatter consisting of two pull-tab beverage cans, a possible paint can, one can with unknown contents, one fruit or vegetable can, and one military ration can. The artifacts at the site do not suggest an exclusive temporal or thematic association for the site.

The site is situated within a braided wash comprised of light brown sandy silty soil with gravel. Vegetation on all sites consists of creosotes, brittle bushes, grasses, palo verde trees, acacia trees, and salt bushes. There are no visible disturbances at this site.

### SMB-H-230

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 64 m (EW)      *Width:* 19 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-230 is a historical refuse scatter consisting of a military ration can, a fruit or vegetable can, a can with unknown contents, a key-wind-opened meat can that was introduced into the market as early as the mid-1890s (Rock 1987:107), and a can lid. The key-wind-opened meat can and military ration can indicate two temporal associations for the site: the late 19th to early 20th century and the WWII-era. The contextual association is unclear.

The site is situated within a braided wash comprised of light brown sandy silty soil with gravel. Vegetation on all sites consists of creosotes, brittle bushes, grasses, palo verde trees, and salt bushes. There are no visible disturbances at this site.

### SMB-H-231

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 29 m (EW)      *Width:* 10 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-231 is a scatter of historical debris consisting of four cans. The recorded cans are one fruit or vegetable can, one can with unknown contents, one key-wind-opened sardine can,

and one possible baking powder can. Based on the key-wind-opened sardine can, introduced in 1866, and one rotary-opened food can, a method introduced in the mid-1920s, the site probably dates between the mid- 19th century to early 20th century (Rock 1987:58, 111).

The site is situated on developing desert pavement bounded to the south by desert pavement and to the north by an east-west trending wash and is comprised of light brown silty soil with gravel. Vegetation on site consists of creosotes, salt bushes, grasses and brittle bushes. There is a north-south trending vehicle track present west of the site.

#### SMB-H-232

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 32 m (EW)    *Width:* 16 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-232 is a historical refuse scatter consisting of four fruit or vegetable cans, three cans with unknown contents, one military ration can, three military ration can lids and one glass bottle embossed with an Anchor Hawking maker's mark. The military ration cans suggest a WWII-era date for the site.

SMB-H-232 is patterned along a single east-west trending wash comprised of light brown sandy silty soil with gravel. Vegetation on all sites consists of creosotes, brittle bushes, grasses, palo verde trees, and cholla. There are no visible disturbances at this site.

#### SMB-H-233

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 4 m (EW)    *Width:* 3 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-233 consists of 11 cans: nine military ration cans, one fruit or vegetable can, and one can with unknown contents. Based on the military ration cans, the site is associated with military training activities of the WWII-era.

The site sits on flat desert pavement comprised of light brown silty soil with gravel. Vegetation consists of creosotes, brittle bushes, and grasses.



### SMB-H-234

*Type:* Historical refuse scatter and cairn

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 76 m (NS)      *Width:* 40 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-234 is a historical debris scatter consisting of cans, a can lid and a possible rock feature. There were 19 cans: eight military ration cans, seven beer cans, and four fruit or vegetable cans. The presence of military ration cans suggest a WWII-era date for the site, but several aluminum-top pull-tab beer cans indicate a later use of the site during the 1950s or 1960s (Rock 1987:471-6), possibly in association with Exercise Desert Strike in 1964. The rock feature within the site is an collection of rocks that are 8 in long. The scatter is approximately 35 ft northeast-southwest by 20 ft northwest-southeast and does not appear to exhibit any thermal alteration on its exterior surface nor are there any visible carbon elements within the vicinity. Initial observations concluded that the feature was a deflated cairn or hearth, but the purpose of this possible feature, if any, is unclear.

The site is situated on developing desert pavement bounded to the north by a wash, to the west and south by desert pavement terraces and to the east by developing desert terrain. The east-west trending wash is approximately 32 ft north of the site datum. There is a north-south trending wash that hugs the base of the western desert pavement terrace that appears to be purposely dug out for irrigation purposes and is immediately adjacent to the possible feature to the west. Vegetation on site consists of creosotes, brittle bushes, grasses and acacia trees. Soils on site in developing desert pavement areas is light brown sandy silt with gravels and desert pavement areas are comprised of dark grey cobbles and gravel. Vehicle tracks are present throughout the site.

### SMB-H-235

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 38 m (NS)      *Width:* 36 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-235 is a scatter of historical debris consisting of cans and miscellaneous metal hardware. Of the 12 artifacts, nine are cans: three military ration cans, one meat can, one milk can, and three fruit or vegetable cans. Other artifacts include a piece of sheet metal, wire, and a munitions casing. The site is probably associated with WWII-era military training activities based on the presence of military ration cans and a munitions casing.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil and gravel. There are east-west trending ephemeral drainages and a wash that measures 5 ft wide by 12 in deep , within the site. Vegetation on site consists of creosotes, brittle

bushes, grasses and acacia trees. There are vehicle tracks present that appear to originate from a patch of desert pavement approximately 131 ft north of the site.

#### SMB-H-236

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 94 m (SW/NE)      *Width:* 63 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-236 is a historical refuse scatter consisting of 12 cans, two can lids, and one glass jar. Of the 12 cans, six are military ration cans and the remaining cans are one milk can and five cans with unknown. Based on the presence of military ration cans, the site is associated with military training activities of the WWII-era.

The site is situated within an east-west trending wash. The site sits on flat desert pavement comprised of light brown silty soil with gravel. The ephemeral wash and drainages run primarily east to west through the site. Vegetation consists of creosotes, brittle bushes, grasses and acacia trees.

#### SMB-P-237

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 14 m (EW)      *Width:* 10 m (NS)

*Location:* Buffer

*Significance:* Not evaluated

Site SMB-P-237 is a prehistoric lithic scatter consisting of one biface fragment, one worked quartz crystal, numerous flakes, and a hammerstone in an area measuring 10 x 13 meters. There are approximately 150 quartz debitage fragments ranging in size from 1.5 x 1 x 0.4 cm to 9 x 6.5 x 5 cm. The biface fragment measures 6.5 x 4.5 x 1.5 cm. The worked quartz crystal measures 4.2 x 2 x 1.8 cm. The associated hammerstone discovered within the lithic scatter measures 6.5 x 4.5 x 1.5 cm.

The site is situated on desert pavement terrain comprised of large cobbles. The site is located along the base of the McCoy Mountains to the west, on the edge of a small ephemeral drainage. There are east-west trending ephemeral drainages within the site. Vegetation on site consists of creosotes, grasses, brittle bushes and salt bushes.

### SMB-P-238

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 2 m (EW)      *Width:* 2 m (NS)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-238 is a prehistoric lithic scatter consisting of flakes, one core, and a hammerstone in an area measuring 1.5 x 1.5 meters. All the flaked stone artifacts are of the same type of quartz, except for the hammerstone which is a distinctive quartzite. There are approximately 30 flakes ranging in size from 1.9 x 0.6 x 0.3 cm to 10.5 x 4.5 x 2 cm. The flake core measures 13 x 9 x 8 cm, and it is likely the source of the flakes. The associated hammerstone discovered within the lithic scatter measures 7 x 7 x 6.5 cm. The site appears to be a single-episode flaking event, or a flaking station.

The site is situated on the southern edge of a desert pavement terrace that slopes south towards a wash. The wash within the site is in an east-west pattern and measures approximately 2 m deep by 15 m wide. Vegetation on site consists of grasses, brittle bushes with, salt bushes and creosotes in the wash.

### SMB-P-241

*Type:* Lithic scatter and cairn

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 4 m (EW)      *Width:* 3 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-241 is a prehistoric lithic scatter and a cairn feature. The site contains approximately 100 quartz flakes that are slightly embedded in the desert pavement, in an area measuring 3 x 2.7 meters. The flakes range in size from 1.5 x 1.1 x 0.3 cm to 15 x 12 x 8 cm. With the quartz flakes is a quartzite hammerstone that was probably used for the lithic reduction process. The cairn feature is comprised of schist and quartzite cobbles and is currently toppled.

The site is situated on a gently sloping desert pavement ridge. There are no visible water courses on site. Vegetation on site consists of creosotes, salt bushes and grasses. The site does not appear to have been impacted by any means other than water and wind factors that may have played a role in the depositional pattern of the resources.

#### SMB-P-242

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 9 m (EW)      *Width:* 4 m (NS)

*Location:* Buffer

*Significance:* Not evaluated

Site SMB-P-242 is a prehistoric lithic scatter consisting of quartz flakes and a hammerstone in an area measuring 1.4 x 1 meters. There are approximately 24 flakes, ranging in size from 2.3 x 2 x 0.7 cm to 9 x 4 x 3 cm. The associated hammerstone, discovered in two pieces, is of a quartzite material and measures 8.5 x 7.5 x 5 cm when refitted.

The site is situated on desert pavement terrain comprised of large cobbles due to the site's close proximity to the mountain base to the west, and gravel. There are east-west trending washes throughout the site. Vegetation on site consists of creosotes and grasses including salt bushes and brittle bushes in the surrounding area.

#### SMB-H-243

*Type:* Historical refuse scatter and hearth

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 21 m (EW)      *Width:* 12 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-243 is a historical debris scatter consisting of metal cans, a can lid, a crown cap, braided wire, and a hearth feature. Two of the cans are identifiable as military ration cans. The hearth feature contained charcoal fragments and one of the military ration cans. Based on the presence of the ration cans, the site is most likely associated with military training activities of the DTC/C-AMA during WWII.

Site SMB-H-243 is situated on a low ridge of desert pavement bounded to the north and south by east-west trending washes. The vegetation on site consists of grasses, creosotes, salt bushes, and brittle bushes. Soils on site comprised of dark-colored cobbles and gravel layered over light brown sandy silt. There are no visible disturbances within the site.

#### SMB-P-244

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 5 m (NS)      *Width:* 3 m (EW)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-244 is a prehistoric lithic scatter consisting of flakes, one flake core, and two hammerstones in an area measuring 5 x 2 meters. There are approximately 14 flakes of a quartz material, ranging in size from 2 x 2 cm to 6 x 4 cm. The associated core is also of a quartz material and measures 22 x 9 cm and is partially embedded in the ground surface. The two hammerstones are of quartzite and measure 9 x 7 x 5 cm, and 11 x 8 x 6 cm.

The site is situated on desert pavement terrain comprised of large cobbles due to the site's close proximity to the mountain base to the west, and gravel. There are east-west trending ephemeral washes throughout the site. Vegetation on site consists of a single salt bush and within the surrounding area there are creosotes.

#### SMB-H-245

*Type:* Historical refuse scatter and rock features

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 57 m (EW)    *Width:* 42 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-245 consists of 15 cans, seven can lids, a hearth feature and two cobble features. Of the 15 cans recorded, five are fruit or vegetable cans, four are milk cans, three are military-issue soluble coffee cans, two are military ration cans, and the contents of one can are unknown. The hearth feature is a circle of stones approximately 2 feet in diameter. Associated with the hearth are two cobble features each comprised of a 1-ft-diameter cluster of approximately 5 cobbles. The significance of these features is not clear. Based on the military ration cans and the hearth feature, this site is probably a bivouac area associated with military training activities dating to the WWII-era use of the area as part of the DTC/C-AMA.

The site is situated between two washes located between slightly elevated desert pavement terraces. Soils are comprised of light brown silt with gravel that is denser and more compact on the desert pavements. There are east-west trending washes cutting through the site. Vegetation throughout consists of creosotes, grasses and salt bushes, and is sparse on desert pavement areas. Vehicle tracks are found on the site.

#### SMB-H-246

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 63 m (NS)    *Width:* 40 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-246 is a historical refuse scatter consisting of ten cans, two can lids, and a clear glass jar. The ten cans are identified as six fruit or vegetable cans, two fuel cans, one beer can, and one key-wind-opened meat can. Based on the key-wind-opened meat can, introduced into the market in the mid-1890s (Rock 1987:107), and a can opened with a P-38 opener, a tool

commonly found amongst the military personal kit beginning in 1942, the site is likely associated with activities of the early 20th century and military training activities of the WWII-era.

The site is on relatively flat desert pavement, underlain by light brown silt with gravel. There are east-west trending washes cutting through the site. Vegetation consists of sparse creosotes, grasses and salt bushes.

#### SMB-H-247

*Type:* Historical cleared areas

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 20 m (NS)     *Width:* 20 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-247 consists of a single metal can and three features. The can is a food can that once contained fruit or vegetables and was opened with a military-issue P38 opener. The three features are small, roughly rectangular areas from which the upper desert pavement stones have been removed revealing the underlying softer soil. The largest cleared area is approximately 10 ft by 8 ft. Roughly 16 ft east-southeast of the larger cleared area are the remaining two cleared areas, both measuring approximately 6 by 3 ft. The three cleared areas have the general appearance of tent pads, that is areas cleared for the placement of small, one-man tents. Based on the P38-opened can and the rectangular cleared areas that may be tent pads, the site is likely associated with military training activities dating to the WWII-era use of the area as part of the DTC/C-AMA.

The site is situated on a desert pavement terrace between two steep washes located to the north and south of the site. There is no visible vegetation within the site, however, in the surrounding areas near the wash there are creosotes, brittle bushes, salt bushes and cholla. Soils on site comprised of dark-colored cobbles and gravel layered over light brown sandy silt. Vehicle tracks are present on the eastern half of the site.

#### SMB-H-248

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 42 m (EW)     *Width:* 25 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-248 is a historical refuse scatter consisting of six cans: three fruit or vegetable cans, one milk can, one beer can, and one can with unknown contents. Based on the presence of a church-key-opened beer can, an opening method introduced in 1935 (Rock 1987:112), and a can

opened with a P-38 opener, the site is associated with activities of the early 20th century and military training activities of the WWII-era.

SMB-H-248 is on desert pavement, underlain by light brown silt with gravel. There are east-west trending washes cutting through the site. Vegetation consists of sparse creosotes, grasses and salt bushes. Vehicle tracks are found at the site.

#### SMB-P-249

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 3 m (NW/SE) *Width:* 3 m (SW/NE)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-249 is a prehistoric lithic scatter consisting of flakes, shatter, and a hammerstone in an area measuring approximately 3 meters in diameter. There are eight flakes and five shatter fragments of quartzite material, ranging in size from 3 x 5 cm to 35 x 3 cm. The associated quartzite hammerstone measures 10 x 6 x 6.5 cm.

The site is situated on developing desert pavement terrain comprised of light brown silty soil and gravel. There is an east-west trending ephemeral drainage to the south of the site. Vegetation on site consists of grasses and within the surrounding area there are creosotes, salt bushes and palo verde trees. There is a southwest to northeast oriented vehicle track that impacts the site at the northern half.

#### SMB-H-250

*Type:* Historical cleared area

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 7 m (NS) *Width:* 7 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-H-250 is comprised of a large circular cleared area produced by removing stones from the desert pavement to create a cleared, light-colored area. This feature is a large circular cleared area measuring approximately 19 ½ ft in diameter. No artifacts are associated with this feature. Although the cleared area is overlain by some of the vehicle tracks across the desert pavement terrace, the clean boundaries of the feature suggest a relatively recent date in the 20th century.

The site is situated on a desert pavement terrace, and the feature is located on the northern edge of the terrace where it slopes down into a drainage. Vegetation on the desert pavement is very sparse consisting of only one salt bush however, in the wash to the north of the site vegetation is denser and includes creosotes, cholla and brittle bushes. Soils on site is comprised of dark

colored cobbles and gravel layered over light brown sandy silt. Vehicle tracks are present throughout the site and directly over the feature.

#### SMB-H-251

*Type:* Historical cleared areas

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 8 m (SW/NE) *Width:* 5 m (NW/SE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-H-251 is comprised of two large circular cleared areas on desert pavement where dark patinated stones have been removed revealing lighter underlying soils. The larger clearing measures approximately 8 ft north-south by 13 ft east-west. The smaller clearing is 6 ft southwest of the larger clearing, and measures 6 ½ ft north-south by 8 ft east-west. There are no artifacts associated with these cleared features. The relatively sharp-looking edges of the cleared areas suggest that they were made recently in the 20th century. The purpose of the features is not certain, although they may have been made in association with military training activities in the area during WWII, or more recently.

The cleared areas are situated on developed desert pavement. There is no vegetation visible within the site or immediate surrounding area. Vegetation in a wash located approximately 200 ft south of the site consists of creosotes, grasses, salt bushes and brittle bushes. Soils on site is comprised of dark, patinated cobbles and gravel layered over light brown sandy silt. There are vehicle tracks present throughout the site.

#### SMB-P-252

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 21 m (EW) *Width:* 5 m (NS)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-252 is a prehistoric lithic scatter consisting of two discrete areas of lithic reduction activity: flaking station 1 (FS-1) and flaking station 2 (FS-2). FS-1 and FS-2 are roughly 18 meters apart. FS-1 consists of approximately 50 flakes and two hammerstones in an area measuring 1.6 x 1.8 meters, and all of the artifacts are of a quartzite material. The two hammerstones discovered in FS-1 measure 13 x 10 x 4 cm, and 15 x 13 x 5 cm. FS-2 consists of approximately 50 quartz flakes in an area measuring 3 x 1.3 meters. The flakes discovered from both FS-1 and FS-2 range in size from 1 x 1 x 0.4 cm to 10 x 7 x 5 cm.



The site is situated on the southern edge of a desert pavement terrace that slopes towards a shallow wash to the south. Vegetation on site consists of creosotes, grasses, brittle bushes and salt bushes. There are vehicle tracks on the desert pavement throughout the site.

#### SMB-H-253

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 106 m (NS) *Width:* 35 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-253 is a historical refuse scatter consisting of 20 cans, three can lids, one can handle, two pieces of metal strapping, and one glass jar. Diagnostic artifacts include a motor oil can embossed with a date of 1963 and a military ration can. Most of the artifacts appear to be associated with the WWII-era use of the area as part of the DTC/C-AMA military training activity.

Site SMB-H-253 is situated within east-west trending compound alluvial fans comprised of light brown sandy silty soil with gravel and is bounded to the north and south by slightly elevated desert pavement terraces. Vegetation at the site consists of creosotes, grasses, brittle bushes, sage, milkweed and cholla. Disturbances such as vehicle tracks and dirt roads are found at this site.

#### SMB-H-254

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 124 m (EW) *Width:* 34 m (NS)

*Location:* Out of Project

*Significance:* Not evaluated

SMB-H-254 is a historical refuse scatter consisting of ten cans, two can lids, and a wooden lathe. The cans include military ration cans and X-cut-opened cans, a method utilized prior to the 1920s (Rock 1987:113). The site constituents date to two distinct time periods: the early 20th century and the WWII-era.

Site SMB-H-254 is situated within east-west trending compound alluvial fans comprised of light brown sandy silty soil with gravel and is bounded to the north and south by slightly elevated desert pavement terraces. Vegetation at the site consists of creosotes, grasses, brittle bushes, sage, milkweed and cholla. Disturbances such as vehicle tracks and dirt roads are found at this site.

### SMB-H-255

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early and late 20th century

*Length:* 48 m (EW)    *Width:* 47 m (NS)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-255 is a scatter of historical debris consisting of cans and can lids. Surveyors recorded 18 cans: five beer cans, nine fruit or vegetable cans, one sardine can, and three of unknown contents, along with two can lids. Based on the presence of church-key-opened beer cans, a method introduced in 1935 (Rock 1987:112), and an aluminum-top pull-tab beer can that dates to the 1950s to 1960s (Rock 1987:112, 471-6), the site is not clearly associated with any one time period or use. With the exception of the aluminum-top beer can, though, the remainder of the materials likely date to the early 20th century use of the area for mining and ranching. The aluminum-top pull-tab beer can may be associated with Exercise Desert Strike in May 1964.

The site is situated on a low lying portion of a compound alluvial fan between two northwest to southeast oriented patches of desert pavement. Soil on site is comprised of light brown silty sand. Vegetation on site consists of creosotes, brittle bushes, sage bushes, cholla and milkweed. There are vehicle tracks present throughout the site.

### SMB-H-256

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 105 m (NW/SE)    *Width:* 32 m (SW/NE)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-256 is a historical refuse scatter that is bisected by a heavily traveled dirt road. The refuse scatter consists of a mixture of military and non-military food cans, military-issue soluble coffee cans, a medicine bottle, and cut lumber. The debris is not associated with a particular time period or cultural context and may reflect opportunistic dumping along the road. Some of this site's cans are crushed, and signs soil erosion are present.

This site is situated just off a NW/SE trending desert pavement extending from the McCoy Mountains down toward Blythe. The ground surface is comprised of sandy silt with gravel. The vegetation on site consists of creosote, brittle brush, sage, grasses, and cholla. There are a few live ironwood trees, and several ironwood stumps along the edge of the desert pavement.

### SMB-H-257

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 53 m (SW/NE)      *Width:* 27 m (NW/SE)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-257 is a sparse historical refuse scatter consisting of a total of nine cans: one food can, one liquid can, and seven military-issue ration cans. The food can and the liquid food can may also be military issue. The cans appear to have been concentrated here by periodic water flows.

This site is located in an area containing ephemeral washes and mounding of soil at the bases of the creosote. The ground surface is made up of a light brown sandy silt with gravel, and the vegetation on the site consists of creosote, saltbush, and grasses.

### SMB-H-258

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 36 m (SW/NE)      *Width:* 18 m (NW/SE)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-258 is a historical refuse scatter consisting of three cans and a glass bottle. The cans include a church-key-opened beer can, a method introduced in 1935 (Rock 1987:112), and a military ration can. The cans date to the mid-20th century, possibly all from the WWII-era use of the area as part of the DTC/C-AMA.

SMB-H-258 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at the site consists of creosotes, grasses, and cholla. Disturbances such as vehicle tracks and dirt roads are found at this site.

### SMB-H-259

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 21 m (NS)      *Width:* 19 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-259 is a historical refuse scatter consisting of four cans and two glass bottle fragments. Two of the cans are aluminum-top pull-tab beer cans dating to the 1950s (Rock

1987:29), and the other two are church-key-opened beer cans likely dating to the 1930s to 1950s. The site seems to be largely a later 20th century collection.

Site SMB-H-259 is situated within east-west trending compound alluvial fans comprised of light brown sandy silty soil with gravel and is bounded to the north and south by slightly elevated desert pavement terraces. Vegetation at the site consists of creosotes and grasses. No visual disturbances are present at this site.

#### SMB-H-260

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 7 m (NW/SE) *Width:* 4 m (SW/NE)

*Location:* Out of Project

*Significance:* Not evaluated

SMB-H-260 is a historical refuse scatter consisting of ten cans, a complete glass jar and a glass jar base portion. Some of the cans are hole-in-cap milk cans of a type produced as early as 1885 (Rock 1987:471-5). The site as a whole may also date to the early 20th century, possibly in association with small-scale mining or prospecting in the area.

The site is situated within east-west trending compound alluvial fans comprised of light brown sandy silty soil with gravel. Vegetation at the site consists of creosotes and grasses. No visual disturbances are present at this site.

#### SMB-H-261

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 252 m (NS) *Width:* 129 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

SMB-H-261 is a historical refuse scatter consisting of 42 cans, five glass bottles, and milled lumber. The cans include temporally diagnostic types, including a key-wind-opened meat can introduced in the mid-1890s (Rock 1987:107), a vertical-pocket tobacco tin with a hinged lid introduced ca. 1905 (Rock 1987:75), and military ration cans. The cans date to two distinct time periods and contexts: late 19th to early 20th century mining activities, and WWII-era military training activities.

SMB-H-261 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at the site consists of creosotes, grasses, salt bushes, cholla, ironwood trees, and palo verde trees. Disturbances such as vehicle tracks and dirt roads are found at this site.

### SMB-H-262

*Type:* Historical refuse scatter and hearth

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 170 m (NS)    *Width:* 58 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-262 is a small scatter of historical debris consisting of cans, miscellaneous metal hardware, cinder and brick blocks, milled lumber, glass, a hearth and two rock features. Of the 32 artifacts recorded, eight are cans: one milk can, seven fruit or vegetable cans, and a can lid. Other artifacts include a metal bucket, a metal bracket, two metal pipes, wire, a glass bottle and three glass fragments, 11 pieces of milled lumber, three wheels, and various components of a possible stove.

Feature 1 is a hearth comprised of seven schist rocks and five cinder blocks. The feature measures 3 ft northeast-southwest by 27 ½ in northwest-southeast with possible subsurface materials and is located in a wash. Feature 2 is a cluster of cinder blocks filled with concrete and measures 14 ft 2 in by 7 ft 9 in. The feature is possibly a hearth based on the presence of charcoal fragments located within the feature. Feature 3 is a quartz cobble cluster. Based on the resources found within the site and the elements used to construct Features 1 and 2, the site is probably associated with ranching activities of the early 20th century.

The site is situated on relatively flat terrain and is bounded to the east and west by large washes. Vegetation on site consists of creosotes, salt bushes, cholla, ironwood trees and palo verde trees. Vegetation is denser along and within the washes. Soil on site is comprised of light brown sandy silt with gravel and cobbles of schist, quartz and quartzite material. Vehicle tracks are present within the site.

### SMB-H-263

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 37 m (NS)    *Width:* 11 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

SMB-H-263 is a historical refuse scatter consisting of three hole-in-cap milk cans, a key-wind-opened sardine of a type introduced into the market in 1919 (Rock 1987:59), a military ration can, and a can lid. These artifacts date from the early 20th century to the WWII-era.

Site SMB-H-263 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at this site consists of creosotes and grasses. Vehicle tracks are present at this site.

### SMB-H-265

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 331 m (NS)    *Width:* 85 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-265 is a scatter of historical debris consisting of cans and glass. There were 98 resources recorded within the site, 75 of which are can items and 23 are glass fragments. The cans include late 19th to 20th century food and beverage cans, including military ration cans from the WWII era. It is likely that the debris on site is associated with military desert training from 1942-1944 and refuse activities from the adjacent Interstate 10.

The site is situated on relatively flat developing desert terrain comprised of light brown silt with gravel. There are east-west trending ephemeral drainages measuring 20 in wide by 6 in deep throughout the site. Vegetation on site is sparse and consists of creosotes, brittle bushes and grasses. The site is bounded to the north by Interstate 10, a north-south dirt road with power lines bisects the site and vehicle tracks are present throughout the site.

### SMB-H-266

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 22 m (SW/NE)    *Width:* 11 m (NW/SE)

*Location:* Out of Project

*Significance:* Not evaluated

SMB-H-266 is a historical refuse scatter consisting of five cans and two can lids. One of the cans is a hole-in-top milk can, and others are military ration cans. The site artifacts date to the WWII-era use of the area, and possibly before.

SMB-H-266 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at the site consists of creosotes and grasses. Disturbances such as vehicle tracks and dirt roads are found at this site.

### SMB-H-267

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 95 m (SW/NE)    *Width:* 51 m (NW/SE)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-267 is a scatter of historical debris consisting of cans and a can lid. Surveyors recorded 14 cans: two military ration cans, seven beer cans, one motor oil can, one coffee can, and three cans with unknown contents, along with one can lid. Based on the presence of church-key opened beer cans, an opening method introduced in 1935 (Rock 1987:112), WWII-era military ration cans, and aluminum-top pull-tab beer cans that date to the 1950s to 1960s (Rock 1987:471-6), the site is associated with activities of the later 20th century including the WWII era and after.

The site is situated on relatively flat terrain comprised of light brown silty soil. There are ephemeral drainages present within the site. Vegetation within the site consists of creosotes and grasses. An east to west dirt access road is located approximately 9 ft south of the site and may play a role in the depositional pattern of the resources.

#### SMB-H-268

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 37 m (EW)    *Width:* 26 m (NS)

*Location:* Out of Project

*Significance:* Not evaluated

SMB-H-268 is a historical refuse scatter consisting of three church-key-opened beer cans, one hole-in-cap milk can, two cans with unknown contents, and one military-issue soluble coffee can. These artifact could all date to the WWII-era use of the area as part of the DTC/C-AMA, although the hole-in-cap cans may be older.

Site SMB-H-268 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at this site consists of creosotes and grasses. Vehicle tracks are present at this site.

#### SMB-H-269

*Type:* Historical refuse dump

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 764 m (EW)    *Width:* 78 m (NS)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-269 is a scatter of historical debris consisting of 360 cans, miscellaneous metal hardware, a metal pail, milled lumber, and glass fragments. The cans include late 19th to 20th century food and beverage cans, including military ration cans from the WWII era. It is likely that the debris on site is associated with military desert training from 1942-1944 and refuse activities from the adjacent Interstate 10. The site appears to be a wildcat dump site with a wide range of dated materials.

The site is situated on relatively flat developing desert terrain comprised of light brown silty soil. There are east-west trending ephemeral drainages measuring 20 in wide by 6 in deep throughout the site. Vegetation on site consists of creosotes, brittle bushes, grasses and ironwood trees. The site is bounded to the north by Interstate 10, a dirt access road to the east and a dike to the west. The presence of power lines, dirt access roads and the I-10 may play a role in the depositional pattern of the resources. There are vehicle tracks present throughout the site.

#### SMB-P-270

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 103 m (EW) *Width:* 56 m (NS)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-P-270 is a prehistoric lithic scatter consisting of flakes, one flake core, and a cairn. Surveyors recorded 60 flakes of various materials such as quartzite, chert, jasper, and chalcedony. The core is of a quartzite material. The cobble feature consists of approximately 30 cobbles ranging in length from 2.5 cm to 13 cm. The feature is possibly a prehistoric cairn feature that measures approximately 82 x 58 x 10 cm.

The site is situated on a pebble terrace that is bounded to the north and south by developing desert pavement, to the east by a dike and to the west by another pebble terrace. There are east-west trending drainages present at the base of the terrace that are approximately 76 cm wide by 15 cm deep. Vegetation on the terrace consists of creosotes only with creosotes, brittle bushes, salt bushes, ironwood trees and grasses in the surrounding areas. There are vehicle tracks present throughout the pebble terrace site.

#### SMB-H-271

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 59 m (NS) *Width:* 53 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-271 is a historical debris scatter consisting of approximately 40 historical glass fragments from various bottles, 60 metal cans, bricks, ceramic plate fragments, and miscellaneous metal fragments. The bottles include soda bottles, cosmetics jars, condiment jars, and alcohol bottles. The cans include a few military ration cans, church-key-opened beer cans, and a majority of rotary-opened food cans of general 20th century date. The site is a mixed deposit of trash likely dumped here because of the proximity of I-10.



The site is situated just off of a pebble terrace that is bounded to the north and south by developing desert pavement. Vegetation site consists of creosotes, brittle bushes, salt bushes, ironwood trees and grasses. There are vehicle tracks present throughout the site.

#### SMB-P-272

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 268 m (NW/SE)      *Width:* 60 m (SW/NE)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-P-272 is a prehistoric lithic scatter and a probable recent cleared area feature. The resources discovered on site are associated with prehistoric stone tool acquisition activity evidenced by the presence of 119 flakes, four cores, one chopper, and one hammerstone of chert, quartzite, and chalcedony. The probable recent feature is a circular clearing on the pebble terrace that measures 66 in north-south x 65 in east-west and approximately 7 in deep. Immediately adjacent to the feature is a metal bucket that contains cobbles, two vehicle tires and a set of vehicle tracks that end at the feature. Based on the presence of these recent components, the feature may be associated with the commercial collection of cobbles for landscaping purposes which became common in the 1980s.

The site is situated on a pebble terrace that is bounded to the north by developing desert pavement, to the east by another pebble terrace, to the south by a strip of developing desert pavement that is approximately 10 m wide and to the west is the extension of the pebble terrace of the site. There are no water courses visible on the pebble terrace however, there are east-west trending drainages at the base of the terrace that measure 76 cm wide by 15 cm deep. Vegetation on the terrace is sparse and consists of creosotes and brittle bushes. At the base of the terrace, vegetation is denser and is comprised of creosotes, brittle bushes, salt bushes, grasses and ironwood trees. There are vehicle tracks present throughout the pebble terrace.

#### SMB-H-274

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 232 m (NS)      *Width:* 81 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-274 is a scatter of historical and modern debris consisting of cans, glass, car parts, and miscellaneous metal artifacts. Surveyors recorded 27 cans: eight beer cans, six corrugated food cans that possibly contained fruits or vegetables, five fruit or vegetable cans, four cans with unknown contents, one paint can, one military ration can, one chocolate powder milk can that is possibly modern, and one milk can. The glass artifacts consist of approximately 19 clear glass baby food jars and associated metal jar lids, and 15 glass bottle fragments in various colors including clear, green, and amber. Metal artifacts include various car parts, a car gas tank, eight

wire hangers, a church-key opener embossed with “COORS,” a metal fork, a modern AA battery, and aluminum foil. The site contains several chronologically diagnostic cans: a military ration can, aluminum-top pull-tab beer cans that were introduced into the market in the 1950s (Rock 1987:471-6), and corrugated food cans dating to the late 20th century. The site appears to be a dump site with mixed materials dating to the WWI-era to the later 20th century. The site is located adjacent to the I-10, and may be a wildcat dump associated with the highway.

The site is situated in a north-south trending wash along the southern boundary of a pebble terrace. The soil within the wash is comprised of light brown sandy silt with gravel and the pebble terrace consists of chert and quartzite cobbles. The drainages within the wash are also north-south trending. Vegetation on site consists of creosotes, salt bushes, grasses, and milkweed.

#### SMB-P-275

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 318 m (EW) *Width:* 218 m (NS)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-P-275 is a small lithic scatter consisting of six primary and secondary flakes, and two tested cobbles. Four of the flakes are of quartzite, and two are chert. Both of the tested cobbles are quartzite. No other artifacts were encountered with this small lithic collection.

The site is situated in a north-south trending wash along the southern boundary of a pebble terrace. The soil within the wash is comprised of light brown sandy silt with gravel and the pebble terrace consists of chert and quartzite cobbles. The drainages within the wash are also north-south trending. Vegetation on site consists of creosotes, salt bushes, grasses, and milkweed.

#### SMB-H-276

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 75 m (NS) *Width:* 36 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-276 is a historical refuse scatter consisting of twenty cans, one can lid, and a glass jar. The cans are ten cans with unknown contents, four fruit or vegetable cans opened with a military-issue P38 tool, two military ration cans, one motor oil can, one key-wind-opened meat can, one hole-in-top milk can, and one aluminum-top pull-tab beer can. The site constituents date from the early 20th century, the WWII-era, and the 1960s. Most of the artifacts are associated with the military training activities of the DTC/C-AMA.

Site SMB-H-276 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at this site consists of creosotes, grasses, and salt bushes. Vehicle tracks are present at this site.

#### SMB-H-279

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 34 m (EW)    *Width:* 29 m (NS)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-279 is a historical refuse scatter consisting of 13 cans with unknown contents, eight fruit or vegetable cans with some opened with a P38 tool, three oval-shaped sardine cans dating to around 1916 (Rock 1987:59), a military ration can and a glass jar. The site constituents primarily date to WWII-era military training activities of the DTC/C-AMA.

Site SMB-H-279 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at this site consists of creosotes, grasses, and salt bushes. No visual disturbances are present on this site.

#### SMB-H-282

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 24 m (EW)    *Width:* 9 m (NS)

*Location:* Out of Project

*Significance:* Not evaluated

SMB-H-282 is a historical refuse scatter consisting of eleven cans. The cans are six fruit or vegetable cans, three likely military key-wind-opened cans with unknown contents, an oval-shaped sardine can, and a can with unknown contents. The site is likely related to the WWII-era use of the area as part of the DTC/C-AMA military training facility.

Site SMB-H-282 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at this site consists of creosotes and grasses. No visual disturbances are present on this site.

#### SMB-H-283

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 73 m (NS)    *Width:* 42 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-283 is a scatter of historical debris consisting of cans and one clear glass bottle base. The 12 cans are one beer can, six fruit or vegetable cans, a fuel can, two milk cans, one can with unknown contents, and one can lid. The site likely dates to the early to mid-20th century based on the presence of a church-key opened beer can, an opening method introduced in 1935 (Rock 1987:112).

The site is situated within east-west trending braided washes. There are washes located at the northern and southern half of the site comprised of light brown sandy silty soil with gravel. Vegetation on site consists of creosotes, grasses and salt bushes. Disturbances on site are wind and water related and may have played a role in the depositional pattern of the resources.

#### SMB-H-284

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 39 m (SW/NE)      *Width:* 19 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-284 is a historical refuse scatter consisting of seven cans with unknown contents, two fruit or vegetable cans, one fuel can, and one baking powder can. The baking powder can has an external friction lid dating to as early as the 1880s (Rock 1987:471-10) which probably associates the site with late 19th to early 20th century activities.

SMB-H-284 is situated on desert pavement terrain located above a wash. Vegetation on the site consists of creosotes and grasses. Vehicle tracks are present on desert pavement at this site.

#### SMB-H-285

*Type:* Fortified position

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 2 m (EW)      *Width:* 1 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-285 consists of a military fortified position feature. This feature is comprised of a shallow depression surrounded by stacked rocks on three sides creating a defensible position which may have been used for cover or camouflage. The fortified position was constructed so that it faced north. This feature is very likely associated with WWII-era military training of the DTC/C-AMA.

The site is situated on a desert pavement ridge comprised of gravel and cobbles. There were no visible water courses observed within the site. Vegetation on site consists of creosotes and

cholla. The site is impacted with numerous tracked-vehicle tracks that are likely associated with military activities.

#### SMB-H-286

*Type:* Fortified position

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 6 m (NW/SE) *Width:* 2 m (SW/NE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-286 consists of a can and a military fortified position feature. The can found within the site was too badly deteriorated to determine its contents. This feature is comprised of a shallow depression surrounded by stacked rocks on three sides creating a defensible position which may have been used for cover or camouflage. The fortified position was constructed so that it faced north. This feature is very likely associated with WWII-era military training of the DTC/C-AMA.

The site is situated on a desert pavement ridge comprised of gravel and cobbles. There were no visible water courses observed within the site. Vegetation on site consists of creosotes and cholla. The site is impacted with numerous vehicle tracks that are likely associated with military activities.

#### SMB-H-287

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 81 m (NS) *Width:* 54 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-287 is a historical refuse scatter consisting of 82 miscellaneous metal car parts and 21 glass fragments. The site is 200 feet west of the ranch site, SMB-H-404, which likely dates to the 1930s. The car parts and glass fragments are likely related to the use of the ranch site.

Site SMB-H-287 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages present at the site that range from 15 inches to 33 inches wide by ¼ inches to 10 inches deep. Vegetation at the site consists of creosotes, brittle bushes, grasses and salt bushes. SMB-H-287 is in close proximity to a north-south orienting dirt access road from which vehicle tracks within the site originate.

### SMB-H-288

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 22 m (SW/NE)      *Width:* 8 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-288 is a historical refuse scatter consisting of two cans, two alarm clock components, and one possible car gasket. The cans are one milk can and one fruit or vegetable can. The site is approximately 100 east of the ranch site, SMB-H-404, and the artifacts here may be related to the use of the ranch. The use ranch dates to the 1930s, and possibly before.

Site SMB-H-288 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages present at the site that range from 15 inches to 33 inches wide by ¼ inches to 10 inches deep. Vegetation at the site consists of creosotes, brittle bushes and grasses. SMB-H-288 is in close proximity to a north-south orienting dirt access road from which vehicle tracks within the site originate.

### SMB-H-290

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 62 m (SW/NE)      *Width:* 50 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-290 is a historical refuse scatter consisting of three church-key-opened cans, two hole-in-cap milk cans, and five fruit or vegetable cans, some opened with a P38 tool. All of the cans could date to the WWII-era, although the church-key and hole-in-cap cans could be earlier.

Site SMB-H-290 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. Vegetation at this site consists of creosotes, grasses, salt bushes, and ironwood trees. There are no visible disturbances at either site.

### SMB-H-291

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and 20th century

*Length:* 23 m (EW)      *Width:* 21 m (NS)

*Location:* Buffer

*Significance:* Not evaluated

Site SMB-H-291 is a historical refuse scatter consisting of a hole-in-cap milk can, one church-key-opened beer can, and one possible fruit or vegetable can opened with a bayonet method

which was probably executed with a military personnel weapon, one fuel can, and one aluminum-top pull-tab beer can. With the exception of the later aluminum can, all of the artifacts could date to the WWII-era. The hole-in-cap and church-key cans, though, may be older. The aluminum can may be associated with the 1964 Exercise Desert Strike.

SMB-H-291 is situated within east-west trending braided ephemeral washes. Vegetation at this site consists of creosotes, grasses, and salt bushes. There are no visible disturbances at either site.

#### SMB-H-401

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 19 m (NS)      *Width:* 9 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-401 is a scatter of historical debris consisting of four cans and a can lid. The cans are three fruit or vegetable cans and one vertical-pocket tobacco can with a hinged lid. There is a heavily used north-south dirt access road that is approximately 16 ft east of the site. Based on the tobacco can, of a type introduced into the market ca. 1905 (Rock 1987:75), the site is probably associated with activities from the early 20th century.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and is bounded to the east by a north-south dirt access road. There are northwest-southeast trending ephemeral drainages that are 20 in wide by 4 in deep. Vegetation on site is sparse and consists of creosotes, brittle bushes and grasses. The adjacent dirt access road may have played a factor in the depositional pattern of the resources within the site.

#### SMB-H-402

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 14 m (NS)      *Width:* 12 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-402 is a scatter of historical debris consisting of four cans: three milk cans and one fruit or vegetable can. All of the cans are partially embedded, indicating possible subsurface materials. Of the three milk cans, one is corrugated, however, all of the cans are hole-in-cap, dating to as early as 1885 (Rock 1987:47, 471-5). The site is probably associated with activities from early 20th century.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There is a northwest-southeast trending ephemeral drainage located

at the north-northeastern half of the site that is 10 in wide by 1/2 in deep. Vegetation on site consists of creosotes, brittle bushes and grasses.

#### SMB-H-403

*Type:* Historical refuse dump

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 149 m (EW) *Width:* 59 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-403 is a concentration of historical debris consisting of cans. There were 67 cans recorded within the site, all of which are motor oil cans. Based on the number of oil cans, the site is likely associated the WWII-era use of the area as part of the DTC/C-AMA, possibly as a dump or vehicle maintenance locale associated with a nearby bivouac.

The site is situated on a patch of an east-west oriented patch of developing desert pavement terrain comprised of light brown silty soil and gravel. The site is bounded in all directions by desert pavement. There are no visible water courses within the site. Vegetation on site is sparse and consists of creosotes, brittle bushes and grasses. There are vehicle tracks present throughout the site and based on their deposition within the desert pavement, they are not recent and may be associated with military activities.

#### SMB-H-404

*Type:* Historical ranch

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 434 m (NW/SE) *Width:* 159 m (SW/NE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-404 consists of historical debris scatter, hearth features, and structural elements. Various artifacts related to the abandoned structures as well as consumer and military elements were recorded within the site, including miscellaneous metal hardware, milled lumber, fencing elements, cinder blocks, personal items (i.e. purse), vehicle parts, cans, a bucket, glass, ceramic, munitions elements, and military dummy bombs. There were two modern hearths constructed of cinder blocks, similar to those strewn about the site.

The three structures on site are rudimentary in construction but functional based on the presence of wall remnants, windows and a basement, all constructed from locally derived large cobbles mixed with cement and are located approximately 160 ft west of a dirt access road. Structure 1 measures approximately 25 ft x 20 ft and is located at the northernmost position. Structure 2 includes a basement attached to the west wall and combined, they measure approximately 20 ft x



32 ft and are located at the central position. Structure 3 measures approximately 10 ft x 15 ft and is located at the southernmost position.

Amongst the three structures recorded within the site, there is a segmented trough with a combined measurement of 9 ft 11 ½ in long by 3 ft 11 in wide, located in between the three structures, and etched in the cement trough is the date “1936”. Of the various debris elements strewn about the site there was a license plate embossed with “1928X409959” with the first four numerals probably indicating the date. Military munitions were also found, one embossed with “L C 43” indicating that the bullet was made in 1943. Various cans were recorded including aluminum-top pull-tab beer cans, common in the 1950s and 1960s (Rock 1987:471-6). Based on these factors, the site was used by both civilians and military personnel from the early 20th century to WWII and after. The three structures were initially described by surveyors as a possible ranch. In the site record forms for sites CA-RIV-7174 and CA-RIV-7179, previous researchers mention oral histories that describe the use of this area for sheep grazing in the late 19th and early 20th centuries.

The site is situated on relatively flat terrain comprised of light brown silty soil with gravel. Throughout the site are east-west trending ephemeral washes. Vegetation on site consists of creosotes, salt bushes, grasses and iron wood trees. The site has vehicle tracks throughout the site that originate from the adjacent north-south dirt access road.

#### SMB-H-406

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 36 m (NW/SE)      *Width:* 26 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-406 is a scatter of historical debris consisting of cans and a quartz rock collection pile. Of the seven can items recorded, five are fruit or vegetable cans, one is a tobacco can and one is a can lid. In addition to the cans, surveyors recorded a pile of approximately 45 locally derived quartz rocks. The quartz collection appears to have been purposefully transported to the site and placed in a distinct area within the site. The purpose of this collection is unclear. Among cans was a pile of branches gathered from local vegetation, possibly for a campfire, however, no charcoal was visible. Based on the wood collection pile, the hole-in-cap cans, which date between 1810 and 1942, and the tobacco hinged-lid pocket can introduced in the market ca. 1905, the site is probably associated with a temporary camp of the late 19th to early 20th century (Rock 1987:12, 75).

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil and gravel. There are east-west trending ephemeral drainages to the north and south of the site measuring 6 in deep by 24 in wide. Vegetation on site consists of creosotes, brittle bushes and grasses. There are vehicle tracks present throughout the site.

#### SMB-H-407

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 68 m (NW/SE)      *Width:* 26 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-407 is a small scatter of historical debris consisting of cans, lumber, wire and a possible prehistoric flake. The 11 artifacts area two fruit or vegetable cans, one military ration can, one beer can, one milk can, a possible lard pail, one large can with unknown contents, milled lumber, and braided wire that may have been utilized as a handle. With the exception of the one military ration can, the site artifacts appear to date to the early 20th century. The reuse of one can, the possible lard pail, as well as the milled lumber and the church key opened beer can, introduced to the market in 1935 (Rock 1987:112), suggest that this was associated with mining activity in the area during the early 20th century. Amongst the historical resources, is a single chert flake on the desert pavement in the northern half of the site.

The site is situated on relatively flat and open developing desert terrain with a small patch of a slightly elevated desert pavement that is located south of the compound alluvial fan which slopes to the southeast with washes no more than 1 m wide and 50 cm deep. Vegetation on site is found on developing desert pavement along the small washes where it is dense and consists of grasses, sage bushes and creosotes. There is no vegetation on the desert pavement. Soils on site consist mostly of silty-gravelly type. The site has been impacted by a southwest to north two-tracked vehicle at the northern portion of the site approximately 10 m north-northwest of the site datum which may have compromised the integrity of the possible prehistoric flaked stone tool. Other disturbances within the site include various roughly east-west washes throughout the site which may have affected the depositional location of the resources.

#### SMB-H-408

*Type:* Historical refuse scatter and hearth

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 21 m (SW/NE)      *Width:* 18 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-408 is a small scatter of historical debris consisting of cans, faunal bone and a possible historical hearth feature. Of the five artifacts, four are fruit or vegetable cans, and one is a saw-cut butchered faunal bone. The possible historical hearth feature consists of approximately 20 quartzite fragments that appear to exhibit a thermally altered exterior surface, possibly fire affected. All the materials likely date to the early 20th century based on the general use of sanitary cans by 1922 (Rock 1987:471-4).

The site is situated on a silty-sandy portion of the compound alluvial fan that slopes southeast from the McCoy Mountains to the west. Large east-west drainages approximately 19 in deep and 3 ft wide are present throughout the site. Vegetation on site consists of a large ironwood tree in a wash with creosotes, grasses, brittle bush and cholla along the drainages. The disturbances observed on site are water related factors that may have affected the depositional pattern of the resources.

#### SMB-H-409

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 31 m (NS)    *Width:* 10 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-409 is a small scatter of historical debris consisting of three cans and a glass soda bottle. One can contained fruit or vegetables, one is a tobacco tin, one can's contents are unknown. Based on the presence of the vertical-pocket tobacco tin with hinged lid, which came on the market ca. 1905, and the glass bottle embossed with a "1938" date, the site probably dates to the early 20th century (Rock 1987:75).

The site is situated on relatively flat and open terrain. Drainages that run roughly north-northwest to south-southeast are located approximately 5 ft south of the site datum. Vegetation on site consists of creosotes and grasses and is generally sparse across the site but becomes denser along the drainages. Soils on site consist of gravel covered silty-sand that is tan to beige in color. The site has been impacted by a modern southwest to northeast two-tracked vehicle at the southeastern portion of the site approximately 25 ft east-southeast of the site datum.

#### SMB-P-410

*Type:* Trail

*Context:* Prehistoric trails

*Age:* Prehistoric

*Length:* 200 m (NS)    *Width:* 1 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-410 is a probable prehistoric trail segment that is approximately 200 m long. The trail is north-south trending and is visible across slightly elevated desert pavements but not within the washes in between. From the northern extent of the trail, looking south, the trail appears to point to Black Rock, a prominent landscape feature at the southern end of the McCoy Mountains. A segment of the Coco-Maricopa Trail (CA-RIV-53T) has been documented running east-west just south of Black Rock. If site SMB-P-410 is a prehistoric trail, it may be part of the larger network of trails that cross the desert in the Project vicinity.

The site is situated on desert pavements comprised of angular and sub-angular cobbles, pebbles and gravels with light brown silty soil underneath. Vegetation on the desert pavement is sparse and consists of creosotes only however, on the edges of the desert pavements vegetation is denser and is comprised of creosotes, brittle bushes, cholla, grasses, milkweed, ironwood trees and mesquite trees. There are vegetation and vehicle tracks that impact the trail segment at some points.

#### SMB-H-411

*Type:* Historical cleared area

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 10 m (SW/NE)      *Width:* 3 m (NW/SE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-411 consists of a cleared area that may be a geoglyph or military-related feature, possibly an aerial marker. The exterior of the cleared area measures 30 ft long by 9 ft wide with a height of 3 in and the interior measures 24 ft long by 3 ft wide. No artifacts were associated with the feature. The cleared feature may be a military related aerial marker. The origin and purpose of the feature remains unclear, but a WWII-era date and association seem likely.

The site is situated on a section of southeast-northwest oriented desert pavement comprised of gravels, pebbles, angular quartz and locally derived cobbles from a terrace to the east. No water courses or vegetation visible within the site. Vehicle tracks are present throughout the site including military tank tracks.

#### SMB-H-413

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 26 m (EW)      *Width:* 8 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-413 is a historical refuse scatter consisting of two hole-in-cap evaporated milk cans, one large coffee can, two condiment jars, and one condiment jar base fragment. The site artifacts date to the early 20th century, and the site may be associated with small-scale prospecting or ranching in the area at that time.

This site is situated on flat open terrain with sparse vegetation at the eastern terminus of desert pavement, and is crossed by a shallow 75 cm wide wash. The ground surface is composed of loose silt and gravels.

#### SMB-H-414

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 8 m (NS)      *Width:* 5 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-414 is a small scatter of historical debris consisting of cans, wire, and possible fire wood. There are 20 artifacts within the site: five cans, two can lids, one bundle of wire with two separate wire pieces, and approximately ten pieces of wood. Of the five cans, one is a meat can, three are fruit or vegetable cans, and one is a milk can. The wire found on site is approximately 1/16 inch thick and looped, possibly used for handle construction. The collection of wood found within the site, are branches from an ironwood tree that appear to be purposefully collected for use as fire wood for a campfire. The presence of the key wind meat can which was introduced into the market in the mid-1890s (Rock 1987:107) and the pile of possible fire wood indicate that the site may have been used as a temporary mining camp dating between the 19th century and early 20th century.

The site is situated on a silty-sandy portion of a slightly elevated desert pavement terrace. A single small drainage is located approximately 10 ft south of the site datum. There is no visible vegetation on the desert pavement. However, within the silty-sandy portion of the site to the south, are creosotes, brittle bushes, sage bushes and grasses. Soils on site consist of silty-sand, gravels and pebbles from the desert pavement. The site has been impacted by two vehicle tracks approximately 12 ft north-northeast of the site.

#### SMB-H-415

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 133 m (NS)      *Width:* 69 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-415 is a historical refuse scatter consisting of 18 fruit or vegetable cans opened with a military-issue P38 tool, three cans with unknown contents, two milk cans, one baking powder can, one military-issue soluble coffee can, one vertical-pocket tobacco tin with hinged lid, and five fragments of sun-colored amethyst glass. The artifacts date to two distinct time periods: the late 19th to early 20th century and the WWII-era.

Site SMB-H-415 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages present at the site. Vegetation present at the site is sparse and consists of creosotes, brittle bushes, and grasses. There are vehicle tracks at SMB-H-415.

#### SMB-H-416

*Type:* Historical refuse scatter and wooden ramp

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 59 m (EW)    *Width:* 13 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-416 is a scatter of historical debris consisting of cans and a wooden ramp. Five cans were recorded within the site: two military ration cans, one fruit or vegetable can, one milk can, and one motor oil can. The wooden ramp found amongst the cans measures 42 in x 32 in x 12 in and is comprised of milled lumber and wire cut nails. The site is likely associated with military activities based on the presence of military ration cans and oil can. The ramp within the site may have been used for the loading and unloading of military equipment such as a vehicle, based on the presence of a motor oil can.

The site is situated within an east-west trending braided ephemeral wash. The site is bounded to the south by desert pavement and another east-west trending wash to the north. Vegetation on site is sparse and consists of creosotes, grasses and salt bushes. Soil on site is light brown silty sand with gravel. The site has vehicle tracks present that originate from the desert pavement to the north.

#### SMB-H-417

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 17 m (SW/NE)    *Width:* 6 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-417 is a small scatter of historical debris consisting of six cans: four motor oil cans, one fruit or vegetable can, and one milk can. Based on the presence of the motor oil cans which were introduced into the market around 1932-1936, the site is likely associated with the WWII training era.

The site is situated within a compound alluvial fan that slopes gently to the southeast from the northwest and is located between two desert pavement surfaces that are elevated approximately 20 in above the ground surface. Small braided washes are located between the two desert pavements and exhibit minimal alluvial action. Vegetation on site includes creosotes, grasses, brittle bushes and cholla. Soils on site consist of silty sediments with gravels on top. The site has been impacted by a drainage located at the northern half of the site approximately 3 ft north-northwest of the site datum.

### SMB-H-418

*Type:* Historical refuse scatter and hearth

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 52 m (EW)    *Width:* 15 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-418 consists of a small scatter of historical debris and a hearth. Nine artifacts were recorded at the site, of which two are fruit or vegetable cans, two are hinged lid tobacco cans, one is a possible milk can, one is a crushed lard pail, and one is an indeterminate crushed can. One clear bottle with embossing on the base that indicates its use as a condiment container for ketchup. Based on the presence of the lard pail and the tobacco hinged lid (vertical pocket) cans which were introduced into the marked ca. 1905 (Rock 1987:75), the site is probably associated with the temporary mining camps of the early 20th century. The hearth feature is a cluster of rocks consisting of approximately seven stream rounded cobbles. The cobbles range in size from 5 cm to 2.5 cm in greatest dimension. The cobbles appear to be partially embedded. One of the cobbles making up the hearth is an assayed quartzite core fragment with flake scars was observed. The tested cobble, presumably prehistorically flaked, measures approximately 7.6 cm long by 5 cm wide and 2.5 cm thick. This is the only prehistoric item at the site, and it was likely collected historically for use in the hearth.

The site is situated on developing desert pavement between two more distinct desert pavements to the north-northeast and south-southwest. A small wash bisects the site from a north-northwest to south direction at the southwestern half of the site approximately 8 ft south of the site datum. Vegetation on site is sparse and consists of creosotes, grasses and ironwood trees. Soils on site consist mostly of a silty-sandy type, grey gravel with pebbles on the developing desert pavement, and sand at the base of the small wash. Disturbances on site are related to the drainage flow which may have affected the depositional pattern of the cans.

### SMB-H-419

*Type:* Historical refuse scatter and wooden ramp

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 58 m (NW/SE)    *Width:* 18 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-419 is a small scatter of historical debris consisting of cans, miscellaneous metal hardware, wooden ramps and glass. There are two distinct concentrations within the site boundaries: Locus 1 and Locus 2. The concentration to the north (Locus 1) consists of two wooden ramps, approximately 20 pieces of flat window glass, seven pieces of miscellaneous metal hardware, ten metal munitions clips, several pieces of wire, one fruit or vegetable food can, and one fuel can. The concentration to the south of the site (Locus 2) is approximately 50 ft southeast of Locus 1 and consists of four cans three of which are fruit or vegetable cans, and one is a hinged-lid can with unknown contents. The resources observed in both Locus 1 and Locus 2

are all probably associated with military WWII training activities based primarily on the presence of the munitions clips.

The site is situated on desert pavement with most of the resources deposited along the fairly ephemeral drainage to the south-southwest of the site. There is no visible vegetation on the desert pavement. However, within the desert pavement to the south along the drainage running roughly northwest to southeast, are two small silty depressions that contain creosotes, grasses and brittle bushes. Soils on site consist of silt and grey-gravelly desert pavement. There are multiple vehicle tracks that cover the surrounding desert pavement terrain including tank tracks. Yet, the site is only impacted by one single-tracked vehicle that crosses the desert pavement of the site at the southwestern corner of the site in a northwest to southeast direction.

#### SMB-H-420

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Late 19th to early 20th century

*Length:* 63 m (NW/SE)      *Width:* 31 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-420 is a historical refuse scatter consisting of three fruit or vegetable cans, three sardine cans, two milk cans, one can with unknown contents, and a piece of milled lumber. Based on the presence of the milk cans and oval-shaped sardine cans introduced into the market around 1916 (Rock 1987:59), the site is probably associated with late 19th to early 20th century mining activities.

SMB-H-420 is located within an ephemeral wash that is bounded to the north by desert pavement. Vegetation at the site consists of creosotes, grasses, and salt bushes. No visual disturbances are present at this site.

#### SMB-H-423

*Type:* Airplane crash site

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 283 m (NS)      *Width:* 163 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-423 is an airplane crash site and associated scatter of historical debris. The airplane crash site debris consists of more than 300 pieces of miscellaneous metal hardware including electrical components, munitions casings and metal sheeting with military style designs on the exterior. Surveyors also recorded 28 cans: ten military ration cans, nine fruit or vegetable cans, five milk cans, one military-issue soluble coffee can, and three beer cans, as well as two can lids. The military ration cans and the airplane debris are associated with the military training of



WWII. Present amongst the WWII-era resources, are aluminum-top pull-tab beer cans common in the 1950s and 1960s (Rock 1987:112), possibly related to the use of the area during Exercise Desert Strike.

The site is situated on relatively flat developing desert terrain comprised of light brown silty sand with gravel. The site is bounded to the east, west and south by developing desert terrain and to the north by a desert pavement terrace. There are east-west trending ephemeral washes throughout the site. Vegetation on site consists of creosotes, brittle bushes, grasses and ironwood trees. There are no visible disturbances to the site other than natural water or wind factors that may have affected the depositional pattern of the resources.

#### SMB-H-424

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and late 20th century

*Length:* 153 m (EW)    *Width:* 89 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-424 is a historical refuse scatter consisting of 15 cans with unknown contents, 13 fruit or vegetable cans, four milk cans, one sardine can, one beer can, one military ration can, one military-issue soluble coffee can, one fuel can, one glass jar, and one wooden lathe. Most of the artifacts date to the WWII-era use of the area as part of the DTC/C-AMA military training center. One aluminum-top pull-tab beer can may be associated with the reuse of the area during Exercise Desert Strike in 1964.

Site SMB-H-424 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. Vegetation at the site consists of creosotes, grasses, ironwood trees, palo verde trees, and salt bushes. Vehicle tracks are present at this site.

#### SMB-H-426

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 4 m (NS)    *Width:* 4 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-426 is a small scatter of partially embedded historical debris consisting of 13 cans and a glass bottle. Of the cans, 11 probably contained liquid and based on their knife-punch openings, most likely milk or oil (Rock 1987:113), and two of the cans contained either fruit or vegetables. The cans suggest a date for the site in the early 20th century, possibly related to mining in the region.

The site is situated on desert pavement. No visible water courses on the desert pavement. Vegetation on the desert pavement is nearly non-existent except for the remnants of a creosote

bush. The site has been impacted by two vehicle tracks. One northwest to southeast two-tracked vehicle at the western half of the site and a northeast to southwest two-tracked vehicle that intersects the center of the site between a partially embedded can and the site datum.

#### SMB-H-427

*Type:* Historical refuse dump

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 7 m (SW/NE) *Width:* 7 m (NW/SE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria

Site SMB-H-427 is a concentration of historical refuse consisting of 93 cans, a can lid, glass fragments, and bullet casings. Of the cans, 87 likely contained fruit or vegetables (including some military ration cans), one contained cocoa powder, two are spice cans, two are beer or beverage cans, and one is a fuel can. Amongst the concentration, were nine glass bottle fragments, one glass condiment jar, and approximately 25 munitions casings. Based on the presence of military ration cans and munitions casings, it is very likely that the resources within the site are associated with the military training of the WWII era.

The site is situated on relatively flat and open terrain that borders a slightly elevated desert pavement. No real drainage courses except for small channels present. Vegetation within the site boundaries consists of a creosote bush. The site has been impacted by the north-south access road approximately 175 ft to the east of the site datum and several vehicle tracks originating from access road to the north and the south of the site.

#### SMB-H-430

*Type:* Historical refuse dump

*Context:* Historical use of the Palo Verde Mesa

*Age:* Mid-20th century

*Length:* 3 m (EW) *Width:* 3 m (NS)

*Location:* Buffer

*Significance:* Not evaluated

Site SMB-H-430 is a concentration of partially embedded historical debris consisting of cans, metal bands and glass. There were 105 visible cans recorded, all of which were opened with a church key opener and are soda or beer cans. Other artifacts include seven metal bands and approximately ten glass bottle fragments, two of which are complete bottles. One of the complete bottles is embossed with the Glass Container Company makers mark and the second bottle is embossed with an Owens Illinois makers mark. All of the resources are 25-75% embedded in an artificial dirt mound located directly beneath a creosote bush and is very likely to yield subsurface materials. Although the church key was created for the opening of metal beer cans in 1935 (Rock 1987:112), this particular site had an abundance of soda cans with this opening

method. Based on the resources described, the site probably dates between the early to mid-20th century.

The site concentration is situated beneath a creosote bush that is mounded at the base by what appears to be artificial and wind-blown soil deposition and is approximately 8 feet in diameter. The soil of the mound and the immediate surrounding area is comprised of light brown silt with gravel. There are no visible water courses within the site. Vegetation on site is sparse and consists of creosotes, brittle bushes and grasses.

#### SMB-H-432

*Type:* Historical structure foundation

*Context:* Historical use of the Palo Verde Mesa

*Age:* Mid-20th century

*Length:* 12 m (EW)    *Width:* 6 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-432 consists of a single church-key-opened beer can and a concrete foundation. The structural feature is rudimentary in construction, comprised of cinderblocks and concrete with wire cut nails protruding from what appear to be wall remnants at some points and a concrete slab foundation. The foundation measures approximately 40 ft x 20 ft and is located approximately 500 ft west of a pebble terrace. The origin or purpose of the structure is unknown, but the method of construction appears similar to other structures recorded in the area that date to the early to mid-20th century. That date is supported by the beer can opened with a church key, a tool introduced in 1935 (Rock 1987:112).

The site is situated on relatively flat developing desert terrain comprised of light brown silty soil with gravel. A pebble terrace is located approximately 500 ft to the east of the site. There is an ephemeral wash immediately northeast of the structural feature and measures approximately 20 in wide by 4 in deep. Vegetation on site is sparse and consists of creosotes, brittle bushes and grasses. There are two vehicle tracks present within the vicinity of the feature that do no impact the feature or resource directly.

#### SMB-P-434

*Type:* Thermal cobble features

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 31 m (SW/NE)    *Width:* 18 m (NW/SE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-434 is a prehistoric site consisting of three thermal cobble features that are arguably deflated hearths or the remains of roasting pits. The thermal cobble features are comprised of locally derived river cobbles measuring 5cm to 15cm in largest dimension. All three features contain cobbles that exhibit thermally altered exterior surfaces. Feature 1 is composed of 26

cobbles and measures 3.1 m northwest-southeast by 1.4 m northeast-southwest. Feature 2 is a concentration of 51 cobbles measuring 3.5 m northwest-southeast by 2.2 m northeast-southwest. Features 1 and 2 are very close to one other, and they may have at one point been part of the same hearth or roasting pit. Both also have cobbles that are partially embedded in the ground surface indicating possible subsurface materials. Feature 3 is a concentration of 38 cobbles measuring 4.7 m northwest-southeast by 2.3 m northeast-southwest, and it does not appear to contain subsurface materials.

The site is situated on developing desert pavement comprised of light brown silty soil and gravel and approximately 400 meters east of the site is a pebble terrace. There are east-west trending ephemeral drainages that are approximately 50 cm wide by 15 cm deep. Vegetation on site consists of creosotes, brittle bushes and grasses.

#### SMB-P-435

*Type:* Thermal cobble features

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 32 m (NS)      *Width:* 15 m (EW)

*Location:* Buffer

*Significance:* Not evaluated

Site SMB-P-435 consists of three thermal cobble features that are presumably deflated hearths or roasting pits. The cobble features consist of locally derived cobbles measuring 5cm to 16cm in largest dimension, and all three features contain cobbles that exhibit thermally altered exterior surfaces. Feature 1 is comprised of 12 cobbles and is approximately 2 m north-south by 1 m east-west. Feature 2 is comprised of 12 visible cobbles on the ground surface and measures 1 m north-south by 0.8 m east-west. Both Feature 1 and 2 have cobbles that are partially embedded in the ground surface indicating possible subsurface materials. Feature 3 is comprised of approximately 52 cobbles and measures 2 meters in diameter and does not appear as embedded in the ground surface as Features 1 and 2.

The site is situated on developing desert pavement comprised of light brown silty soil and gravel and approximately 50 meters east of the site is a pebble terrace. There are no visible water courses within the site. Vegetation on site consists of creosotes, brittle bushes and grasses. There are two north-south trending vehicle tracks that were observed within the site.

#### SMB-P-436

*Type:* Thermal cobble features

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 42 m (NS)      *Width:* 11 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-436 is a prehistoric site consisting of two thermal cobble features. The cobble features are comprised of stream-rounded quartzite cobbles that range in size from 3 cm to 12 cm in length. Feature 1 consists of approximately 30 cobbles that exhibit a thermally affected exterior surface. Feature 2 is located approximately 25 m south-southwest of Feature 1 and consists of approximately 8 cobbles and shares the same characteristics as Feature 1 however, Feature 2 is situated on a creosote mound, and is partially embedded, possibly indicating subsurface materials.

The site is situated on an elevated portion of a large wash that drains to the south that is approximately 50 - 100 m west of a pebble terrace. There are several large channels throughout the site that are approximately 3 m wide and several smaller channels to the east. These channels are situated between eroding banks. Vegetation on site is dense and consists of ironwoods, creosotes, grasses and brittle bushes. Soils on site are silty tan sand. The site has been impacted by small washes that appear to play a role in the erosion of the channel banks. One channel bisects the southern portion of the site in a southwest to northeast direction approximately 5 m north-northwest of the site datum.

#### SMB-P-437

*Type:* Thermal cobble feature

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 16 m (EW)    *Width:* 11 m (NS)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-437 consists of a thermal cobble feature that is most likely a deflated hearth or roasting pit. The cobble feature consists of thermally altered quartzite cobbles measuring 5cm to 9cm in largest dimension. The feature is comprised of approximately 35 cobbles and measures approximately 2 m north-south by 2 m east-west. The feature appears to be eroding out of a sandy low-dune area that is just east of a braided wash.

The site is situated on developing desert pavement comprised of light brown silty soil and gravel and approximately 25 meters east of the site is a pebble terrace. There are east-west trending ephemeral washes measuring 25 in wide by 6 in deep in largest dimension throughout the site. Vegetation on site consists of creosotes, brittle bushes and grasses.

#### SMB-P-438

*Type:* Thermal cobble feature

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 12 m (NS)    *Width:* 11 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-438 is a prehistoric site consisting of a thermal cobble feature. The thermal cobble feature is possibly a hearth or roasting pit and is comprised of stream-rounded quartzite cobbles that range in size from 5 cm to 15 cm in length. The cobbles were very likely acquired from the local pebble terrace approximately 50 m to the west of the site. The feature appears to be a deflated hearth or roasting pit that is possibly a result of the “cleaning out” process by the prehistoric individuals that constructed it or by natural erosion processes. The cobbles exhibit thermally affected exterior surfaces.

The site is situated on an elevated portion of a large wash that drains to the south. There are several large roughly north-south channels throughout the site that are approximately 3 m wide and several smaller channels to the east. These channels are situated between eroding banks. Vegetation on site is dense and consists of ironwoods, creosotes, grasses and brittle bushes. Soils on site are a silty tan sand. The integrity of the site may have been compromised by the numerous channels that are located approximately 25 m to the west of the site datum.

#### SMB-H-439

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 34 m (EW)    *Width:* 19 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-439 is a historical refuse scatter consisting of seven cans. The cans are three military ration cans, one meat can, one milk can, one fruit or vegetable can, one can with unknown contents, and one military ration can lid. The military ration cans indicate a WWII-era date for the site, although some cans may be older.

Site SMB-H-439 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages present at the site that range from 15 inches to 33 inches wide by ¼ inches to 10 inches deep. Vegetation at the site consists of creosotes, brittle bushes and grasses. Vehicle tracks are present at SMB-H-439.

#### SMB-P-440

*Type:* Thermal cobble feature

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 2 m (NW/SE) *Width:* 1 m (SW/NE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-440 is a thermal cobble feature consisting of four cobbles eroding out of a stream bank and it may be the remnants of a hearth or roasting pit similar to other thermal cobble

features recorded in the area. The feature is comprised of cobbles that measure 7 cm to 9 cm in diameter in largest dimension and exhibit thermal alteration on the exterior surfaces – results of oxidation or fire cracking. The feature measures 65 cm north-south by 35 cm east-west and may have subsurface materials.

The site is situated on developing desert pavement comprised of light brown silty soil and gravel. There is a north-south trending drainage that measures 4 m wide by 1 m deep with branching east-west trending ephemeral drainages measuring 56 cm wide by 15 cm deep, throughout the site. Vegetation on site consists of creosotes, brittle bushes, grasses and ironwood trees. The site is impacted by a single vehicle track.

#### SMB-P-441

*Type:* Thermal cobble features

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 48 m (NS)      *Width:* 25 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-441 consists of three thermal cobble features that are likely roasting pits or hearths eroding out of wash banks. The cobble features consist of locally derived quartzite cobbles measuring 5 cm to 12 cm in diameter, and all three features contain cobbles that exhibit thermally altered exterior surfaces. Feature 1 is comprised of three broken cobbles and measures 130 cm north-south by 20 cm east-west. Feature 2 is comprised of 13 cobbles and measures 1 m north-south by 90 cm east-west. Associated with Feature 2 is a bifacial flake that is light brown in color. Feature 3 is comprised of nine cobbles and are loosely scattered. All three features have cobbles that are partially embedded in the ground surface indicating possible subsurface materials

The site is situated on developing desert pavement comprised of light brown silty soil and gravel and approximately 40 meters east of the site is a pebble terrace. There is a north-south trending wash approximately 7 ft wide by 2 ft deep from which east-west trending ephemeral drainages branch out. Vegetation on site consists of brittle bushes, creosotes, grasses and ironwood trees. There are vehicle tracks and modern refuse present within the site.

#### SMB-H-442

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Early 20th century and 1942-1944 (WWII)

*Length:* 74 m (NW/SE)      *Width:* 47 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-442 consist of two concentrations of historical debris consisting of cans, various metal resources, and bottles. The concentration in the northern portion of the site is

approximately 60 ft north-northwest of the site datum. The northern concentration contains more than 50 fragments of various types of glass, including bottle and flat structural glass, four metal crown tops (for glass bottles), a metal handle, wire, a nail, and a bucket – all of which probably date to the early 20th century. To the south, the site contains a more dispersed, sparse scatter of 25 cans, two can lids, wire, and another metal pail handle. The 25 cans are: 23 fruit or vegetable cans, one military ration can, one spice can, and one tobacco can. Most of the cans are opened with a military-issue P38 opener, suggesting a WWII-era date for this site, although the handles and glass fragments suggest an earlier date for some of the materials, particularly those in the northern concentration.

The site is situated on relatively flat and open silty-gravelly terrain. There are numerous small ephemeral drainages throughout the site in a northwest to southeast direction that are approximately 4-8 in deep and 3-6 ft wide. Vegetation on site is sparse and consists of creosotes, sage bushes, brittle bushes and grasses along the drainages. The site has been impacted by a north-northwest two-tracked vehicle approximately 12 ft west of the site datum and a north-northwest to south-southeast ephemeral drainage approximately 75 ft east of the site datum.

#### SMB-H-444

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 65 m (EW)    *Width:* 58 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-444 is a scatter of historical debris consisting of nine cans: four beer cans, two fruit or vegetable cans, one milk can, one fuel can, one can with unknown contents. With the exception of the aluminum-top pull-tab beer cans, common in the 1950s and 1960s (Rock 1987:471-6), the site materials likely date to the early to mid-20th century. The later beer cans may be related to the reoccupation of the region during Exercise Desert Strike in May 1964.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There is a southwest-northeast trending ephemeral drainage that is 26 in wide by 6 in deep that bisects the site. Vegetation on site consists of creosotes, brittle bushes, grasses, palo verde trees, ironwood trees and cholla. There is a north-south dirt access road approximately 100 ft east of the site.

#### SMB-P-445

*Type:* Lithic scatter and thermal cobble feature

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 393 m (NS)    *Width:* 227 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria



Site SMB-P-445 is a prehistoric lithic scatter consisting of flakes, cores, tested cobbles, a cobble feature, and cleared area features. Due to the extent of the lithic materials, surveyors recorded the cultural materials in six arbitrary sample units (SU-1, SU-2, SU-3, SU-4, SU-5 and SU-6) measuring 10 x 10 meters each, with a total of 600 square meters sampled. In all, surveyors recorded 69 quartzite and chert flakes, nine cores (ranging in size from 4.5 x 3.5 x 1.5 cm to 11 x 10 x 6 cm) and 12 tested cobbles (ranging in size from 6.5 x 4.3 x 3 cm to 23 x 15 x 10 cm).

Feature 1 is a thermal cobble feature that is arguably the remains of a roasting pit or a deflated hearth. The feature measures 66 cm north-south by 45 cm east-west, and is composed of approximately 25 cobbles which exhibit thermal alteration on their exterior surfaces. The cobbles range in size from 6 cm to 15 cm in length, and they are partially embedded in the surrounding ground surface, indicating possible subsurface materials. Features 2 and 3 are circular clearings on the desert pavement surface that may have once served as clearings for sleeping circles. Feature 2 measures 1.8 m north-south by 2 m east-west and is located approximately 10 meters east of Feature 3, which measures 1.6 m north-south by 1.4 m east-west.

The site is situated on a pebble terrace that is bounded to the south and west by developing desert pavement, to the north by a wash and to the east by desert pavement. The wash is located to the north of the terrace is patterned in an east-west direction and numerous other drainages are located to the east of the site and are also east-west trending. Vegetation on the terraces consists of creosotes and brittle bushes and in the surrounding area there are creosotes, brittle bushes, grasses and ironwood trees. There are vehicle tracks present throughout the terrace with a set directly over Feature 3 and other vehicle tracks that touch upon Sample Unit 2 (SU-2).

#### SMB-H-447

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching (possible Desert Strike)

*Age:* Early and late 20th century

*Length:* 50 m (EW)    *Width:* 16 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-447 is a small scatter of historical debris consisting of ten cans: two meat cans, one beer can, and seven fruit or vegetable cans. The site likely dates to the late 19th to early 20th century based on the presence of the hole-in-cap cans which were introduced into the market in 1810 and were largely taken out of production by WWII (Rock 1987:12).

The site is situated on open terrain within a depression between two sections of developing desert pavement to the north and south. One ephemeral drainage meanders through the site in a north-northwest to east-southeast direction. Vegetation on site is sparse and consists of creosotes, brittle bushes, grasses and sage bushes. Soils on site consist mostly of a silty-sandy type.

#### SMB-P-448

*Type:* Thermal cobble feature

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 32 m (NS)    *Width:* 26 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-448 is a thermal cobble feature that is likely a deflated hearth or the remnants of a roasting pit. The feature is comprised of approximately 45 cobbles that range in size from 5 cm to 15 cm in diameter and exhibit thermal alteration on their exterior surfaces. The feature measures 1.4 m north-south by 1.2 m east-west and may have subsurface materials.

The site is situated on developing desert pavement comprised of light brown silty soil and gravel and is located approximately 200 meters west of a pebble terrace. There are no visible water courses within the site. Vegetation on site is generally sparse except to the east which is denser, and consists of creosotes, brittle bushes, grasses and palo verde trees. There are vehicle tracks and modern refuse present within the site.

#### SMB-H-450

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 83 m (EW)    *Width:* 37 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-450 is a small scatter of historical debris consisting of seven cans and a glass bottle. The cans are five fruit or vegetable cans, and two military ration cans. The presence of hole-in-cap cans, common in the 19th and early 20th centuries, and military ration cans suggest multiple uses of this site area. Most of the cans, though were clearly opened with a military-issue P38 opener, suggesting a largely WWII-era date for the deposit.

The site is situated on relatively flat developing desert pavement cut by ephemeral drainages running east to west. Vegetation on site is sparse and consists of creosotes, brittle bushes, grasses and sage bushes. The site is bisected by a north-south dirt access road. Vehicle tracks originating from the access road run through the site in an east to west direction.

### SMB-H-452

*Type:* Historical refuse scatter and hearth

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 26 m (NS)    *Width:* 12 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-452 consists of historical debris and a possible hearth feature. There are two cans within the site: one fruit or vegetable can and one key-wind military ration can, both likely dating to the WWII-era use of the area as part of the DTC/C-AMA military training facility. The hearth feature situated between 2 ephemeral washes, is comprised of approximately 20 water-rounded cobbles that are 8 cm in length in greatest dimension. The loosely scattered hearth measures 3 m northeast-southwest by 1.8 m northwest-southeast.

The site is situated on relatively flat developing desert terrain comprised of light brown silty-sandy soil with gravel. There are north-south trending ephemeral drainages measuring 24 in wide by 6 in deep. Vegetation on site consists of creosotes, brittle bushes, grasses and ironwood trees. Wind and water factors may have played a role in the depositional pattern of the cans and the erosion of the hearth feature.

### SMB-P-453

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 255 m (NS)    *Width:* 147 m (EW)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-453 is a prehistoric lithic scatter consisting of flakes, cores, tested cobbles, and hammerstones, within an area measuring 240 m north-south by 160 m east-west. The site contains approximately 37 flakes, three cores (ranging in size from 5.5 x 4 x 3 cm to 13 x 6.5 x 6.5 cm), and ten assayed cobbles (ranging in size from 6 x 3.5 x 2.4 to 18 x 10 x 7.5 cm). All of these are of quartzite or chert materials. Associated with the flaked stone artifacts are three quartzite hammerstones, ranging in size from 7.2 x 5.6 x 2.7 cm to 10 x 7.5 x 3.3 cm.

The site is situated on the remnants of a pebble terrace that is relatively flat. There are east-west trending ephemeral drainages at the southern half of the site that are 50 cm wide by 15 cm deep. Vegetation on the terrace consists of creosotes only with creosotes, brittle bushes, grasses and ironwood trees in the surrounding area. Vehicle tracks are present throughout the site that may have affected the integrity of the resources recorded.

#### SMB-P-454

*Type:* Thermal cobble feature and ceramic scatter

*Context:* Prehistoric use of the Palo Verde Mesa

*Age:* Prehistoric

*Length:* 8 m (SW/NE) *Width:* 6 m (NW/SE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-P-454 is a prehistoric site consisting of a ceramic scatter, faunal bone fragments, and a cobble feature that is presumably a deflated hearth or roasting pit. The site constituents are situated atop an animal burrow mound. There were ten grey to light buff pottery sherd fragments (likely a variety of Colorado buffware) discovered in an area measuring approximately 3 m north-south by 5 m east-west. The thermal cobble feature located northeast of the ceramic scatter, is comprised of approximately 35 cobbles that range in size from 5 cm to 10 cm in diameter in an area measuring 2 m north-south by 4 m east-west. The cobbles exhibit thermal alteration on their exterior surfaces. Also discovered just northwest of the feature were faunal bone fragments that did not appear to be butchered or burned, although their good condition suggested a recent/modern date.

The site is situated on a mound of developing desert pavement terrain comprised of light brown silty soil and gravel and is located approximately 25 meters from slightly elevated pebble terraces to the northeast and southeast. There are east-west trending ephemeral drainages that are 19 in wide by 6 in deep. Vegetation on site is dense along the drainages and consists of creosotes, brittle bushes and grasses and immediately surrounding the cobble feature and associated resources are three ironwood tree trunks that appear burnt. There are vehicle tracks to the west of the site.

#### SMB-H-460

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 62 m (NW/SE)      *Width:* 24 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-460 is a small scatter of historical debris consisting of eight cans and two lengths of braided wire, all of which are partially embedded in the ground surface. The cans are two military ration cans, one fruit or vegetable can, one sardine can, one baking soda can, and two large square fuel cans. The presence of military ration cans and large fuel cans suggest a WWII-era date for the site.

The site is situated on relatively flat and open terrain with loose silty-sandy and gravelly soil. The water courses within the site consist of braided washes in a northwest to southeast direction. Vegetation on site consists of ironwoods, creosotes, grasses, cholla and shrubs along the washes.

The site has been impacted by a southwest to northeast two-tracked vehicle at the southeastern section of the site immediately adjacent to the site datum to the north-northwest.

#### SMB-H-505

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 66 m (EW)    *Width:* 16 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-505 is a scatter of historical debris consisting of cans, glass containers, and one historical ceramic fragment. Surveyors recorded 27 cans: two cans with unknown contents, one military ration can, nine fruit or vegetable cans, three beer cans, seven milk cans, one tobacco can, one coffee can, one key-wind meat can, one seasoning can, and one can lid. Other artifacts include four glass bottles, one glass jar, one glass cup, and one white ceramic fragment. Based on the presence of a key-wind meat can, church-key opened beer cans, an opening method introduced in 1935, and a vertical-pocket tobacco tin with hinged lid, introduced in ca. 1905, the bulk of the site materials likely date to the early 20th century and are consistent with the remains at temporary mining or prospecting camps.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil and gravel. There are east-west trending ephemeral drainages that measure 20 in wide by 6 in deep throughout the site. Vegetation on site is generally sparse but dense along the drainages and consists of creosotes, brittle bushes and grasses. The site is bisected by a north-south oriented dirt access road from which numerous vehicle track originate from and impact the site.

#### SMB-H-507

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 27 m (EW)    *Width:* 26 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-507 is a historical refuse scatter consisting of hole-in-cap milk can which dates to as early as 1885 (Rock 1987:471-5), one fruit or vegetable can, one can with unknown contents, one military ration can, and one aluminum-top pull-tab beer can. The site constituents date to the entire 20th century with no exclusive temporal or contextual association.

Site SMB-H-507 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages and/or washes present at the site ranging from 20 inches to 7 feet wide by 6 inches to 10 inches deep. Vegetation at the site consists of creosotes, brittle bushes, grasses, and acacia trees. Vehicle tracks are present at the site.

### SMB-H-508

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 80 m (SW/NE)      *Width:* 24 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-508 is a historical refuse scatter consisting of four aluminum-top pull-tab beer cans and one fruit or vegetable can. The beer cans date to the 1950s to 1960s, and the other sanitary can is non-diagnostic.

Site SMB-H-508 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages and/or washes present at the site ranging from 20 inches to 7 feet wide by 6 inches to 10 inches deep. Vegetation at the site consists of creosotes, brittle bushes and grasses. Vehicle tracks are present at the site.

### SMB-H-509

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 10 m (NW/SE)      *Width:* 2 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-509 is a scatter of historical debris consisting of three cans and one glass jar fragment. The cans are one military ration can, one milk can, and one can with unknown contents. The clear glass fragment discovered is probably a canning jar that is embossed with “DURAGLAS”. The one military ration can dates to the WWII-era use of the area as part of the DTC/C-AMA military training facility, and the other artifacts may date to that time as well.

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There is an east-west trending ephemeral drainage that is 19 in wide by ½ in deep. Vegetation on site is sparse and consists of creosotes and brittle bushes. There are vehicle tracks present at the northern and southern half of the site.

### SMB-M-511

*Type:* Lithic scatter with historical refuse scatter

*Context:* Lithic reduction and DTC/C-AMA

*Age:* Prehistoric and 1942-1944 (WWII)

*Length:* 133 m (NW/SE)      *Width:* 75 m (SW/NE)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-M-511 consists of both historical debris and a prehistoric lithic scatter. The historical refuse consists of five cans: three military ration cans and two fruit or vegetable cans. The military ration cans associate the site with military desert training of the WWII era. Scattered among the cans are prehistoric flaked stone artifacts. The prehistoric collection consists of 68 flakes, seven cores, and one tested cobble, of chert, quartz, and quartzite materials.

The site is situated on slightly elevated pebble terrace bounded to the north and south by east-west trending ephemeral drainages. Vegetation present around the pebble terrace consists of creosotes, brittle bushes, and grasses. There are vehicle tracks present throughout the site including tank tracks.

### SMB-M-512

*Type:* Lithic scatter with historical refuse scatter

*Context:* Lithic reduction and DTC/C-AMA

*Age:* Prehistoric and 1942-1944 (WWII)

*Length:* 141 m (SW/NE)      *Width:* 106 m (NW/SE)

*Location:* Buffer

*Significance:* Not evaluated

Site SMB-M-512 consists of both historical and a prehistoric materials. The historical collection consist of three military ration cans. The majority of the site artifacts are lithic production debris. Surveyors recorded 367 flakes, 18 flake cores, and 33 tested cobbles all produced from local chert, quartzite, and chalcedony cobbles.

The site is comprised of three separate segments of slightly elevated pebble terrace - Locus A, B and C, divided by east-west trending ephemeral drainages measuring 19 in wide by 6 in deep. Vegetation on site is patterned along the drainages and consists of creosotes, brittle bushes, grasses and cholla. There are vehicle tracks present throughout the site including tank tracks

### SMB-H-513

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching (possible Desert Strike)

*Age:* Early and late 20th century

*Length:* 59 m (EW)      *Width:* 35 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

SMB-H-513 is a historical refuse scatter consisting of two key-wind-opened meat cans, one aluminum-top pull-tab beer can, one hole-in-cap milk can, one fruit or vegetable can, and one can with unknown contents. The cans primarily date to the late 19th to early 20th century, although the one aluminum can is from the 1950s to 1960s. The older artifacts may be related to small-scale prospecting in the region.

Site SMB-H-513 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages and/or washes present at the site ranging from 20 inches to 7 feet wide by 6 inches to 10 inches deep. Vegetation at the site consists of creosotes, brittle bushes and grasses. Vehicle tracks are present at the site.

#### SMB-H-514

*Type:* Historical refuse scatter and features

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 31 m (NS)      *Width:* 17 m (EW)

*Location:* In Project

*Significance:* Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria

Site SMB-H-514 is a scatter of historical debris consisting of milled lumber, miscellaneous metal hardware, three structural features, and a rock arrangement. Feature 1 is the remnants of a wood-framed structure comprised of three standing wooden posts held together by bailing wire and wire cut nails. Feature 2 is a hearth measuring 63 x 87 inches, constructed from cinder block bricks. Within the hearth feature are charcoal fragments and approximately 50 wire cut nails. Feature 3 is the remnants of a crudely constructed outhouse. The feature is comprised of a standing 2 x 4 inch wooden post approximately 6 ft tall, a toilet constructed from what appears to be an old wooden chair held together by glue, dowels and bailing wire and a toilet seat constructed from a piece of ply wood with a characteristic "toilet seat" hole cut out. Feature 4 is a rock arrangement comprised of quartzite and chert cobbles likely derived from the pebble terrace approximately 130 ft southwest of the feature. The rock feature consists of three separate cobble piles arranged in circular mosaics aligned and oriented in a north-south direction. The features and the associated debris scatter may be related to sheep grazing in the vicinity early in the 20th century, as suggested by oral histories collected by previous researchers (see site record forms for CA-RIV-7171 and CA-RIV-7179).

The site is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil and gravel. A pebble terrace is located approximately 200 ft from the site. There are east-west trending ephemeral drainages measuring 6 in deep by 6 in wide. Vegetation on site consists of creosotes, brittle bushes, grasses and ironwood trees. There are vehicle tracks present throughout the site.



### SMB-H-515

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 49 m (NS)      *Width:* 24 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-515 is a historical refuse scatter consisting of four military ration cans, two fruit or vegetable cans, one military-issue soluble coffee lid and one portion of a glass jug. The site constituents date to WWII-era use of the area as part of the DTC/C-AMA.

Site SMB-H-515 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at the site consists of creosotes, brittle bushes and grasses. No visual disturbances are present at this site.

### SMB-H-516

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 104 m (NW/SE)      *Width:* 32 m (SW/NE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-516 is a historical refuse scatter consisting of several cans, a can lid, glass fragments, and a modified can. The cans are seven fruit or vegetable cans, four military ration cans, four cans with unknown contents, and two possible fish cans, and one hole-in-cap milk can. The glass artifacts include three pieces of a possible medicine bottle, and one glass bottle. The modified can measures 13 ½ inches in height by 9 ¼ by 9 ¼, that has been modified to what appears to be a sieve with a simply made wire handle. The site artifacts date to two distinct time periods: the late 19th to early 20th century and the WWII-era.

Site SMB-H-516 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at the site consists of creosotes, brittle bushes and grasses. Vehicle tracks are present at the site.

### SMB-H-517

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA

*Age:* Late 19th to early 20th century and 1942-1944 (WWII)

*Length:* 29 m (NS)      *Width:* 5 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-517 is a historical refuse scatter consisting of two military-issue soluble coffee cans, one hole-in-cap milk can, one can with unknown contents, and six glass pieces. The artifacts date to the late 19th to early 20th century, and the WWII-era.

Site SMB-H-517 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west trending ephemeral drainages. Vegetation at the site consists of creosotes, brittle bushes and grasses. Vehicle tracks are present at the site.

#### SMB-H-518

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 23 m (NW/SE)      *Width:* 8 m (SW/NE)

*Location:* Out of Project

*Significance:* Not evaluated

SMB-H-518 is a historical refuse scatter consisting of one metal bucket, milled lumber, wire, a cylindrical metal bracket, approximately 30 bottle caps, wire cut nails with some embedded in wood pieces, a glass fragment, a munitions casing, four pieces of concrete, and a nickel dated 1940. The site artifacts may date to the whole of the 20th century and are not clearly associated with any one historical context.

Site SMB-H-518 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and northwest-southeast trending ephemeral drainages. Vegetation at the site consists of creosotes, brittle bushes and grasses. Vehicle tracks are present at the site.

#### SMB-H-519

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching

*Age:* Early 20th century

*Length:* 36 m (SW/NE)      *Width:* 26 m (NW/SE)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-519 is a historical refuse scatter consisting of cans, ceramics, milled lumber, miscellaneous metal hardware, and a metal bottle cap. Of the 15 cans recorded, six are of unknown contents and the remainder are five tobacco cans, one beer can, one fruit or vegetable can, one milk can, and one fuel can. Other artifacts include six ceramic fragments, milled lumber, a metal bottle cap, two pieces of wire, one wire mesh screen, and two metal bands. Scattered among the artifacts are small charcoal fragments, a concentration of which was recorded at the base of a creosote bush. Based on the charcoal fragments, the tobacco cans dating to ca. 1905 (Rock 1987:75), church-key-opened beer cans, an opening method introduced in 1935 (Rock 1987:112), as well as the milled lumber and mesh screening, the site is likely a temporary mining campsite dating to the early 20th century.

The site is located on relatively flat desert pavement characterized by light brown silty soil with cemented gravel. Ephemeral drainages, 4 to 6 inches in depth, cut through the site. Vegetation consists of creosotes, brittle bushes, and grasses. Site SMB-H-519 also encompasses a dead acacia tree. Vehicle tracks are present at the site.

#### SMB-H-520

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 58 m (SW/NE)      *Width:* 34 m (NW/SE)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-520 is a historical refuse scatter consisting of cans, milled lumber and a metal band. Of the 13 cans recorded, eight are identifiable as three fruit or vegetable cans, two milk cans, one beer can, one motor oil can, and one aerosol spray can. Site SMB-H-520 contains a mixed collection of temporally diagnostic artifacts including one hole-in-cap milk can, a method used as early as 1885 (Rock 1987:47, 471-5), an aerosol spray can, introduced into the market in 1947 (Rock 1987:67), and an aluminum-top pull-tab beer can, dating to the 1950s to 1960s (Rock 1987:29, 471-6). The site appears to be a diffuse dump with materials dating to the late 19th century to the later 20th century.

The site is located on relatively flat desert pavement characterized by light brown silty soil with cemented gravel. Ephemeral drainages, 4 to 6 inches in depth, cut through the site. Vegetation consists of creosotes, brittle bushes, and grasses. Vehicle tracks are present at the site.

#### SMB-H-522

*Type:* Historical refuse scatter

*Context:* Prospecting/Ranching and DTC/C-AMA (possible Desert Strike)

*Age:* 1942-1944 (WWII) and 20th century

*Length:* 81 m (EW)      *Width:* 65 m (NS)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-522 is a historical refuse scatter consisting of 43 cans, 33 glass items, approximately 30 ceramic fragments, a metal tray, a metal sheet and a piece of milled lumber and based on the presence of the diagnostic hole-in-cap milk cans, church-key-opened beer cans, military ration cans and aluminum-top pull-tab beer can, the site is probably associated with late 19th to early 20th century, and the WWII-era. The proximity of an access road may explain the location of this mixed collection of artifacts.

SMB-H-522 is situated on relatively flat developing desert pavement and is bounded to the south by possible remnants of Highway 99 and to the east by a north-south orienting dirt access road. Vegetation at the site consists of creosotes, grasses, brittle bushes, ironwood trees, and acacia trees. Disturbances such as vehicle tracks and dirt roads are found at this site.

### SMB-H-525

*Type:* Historical refuse dump

*Context:* Historical use of the Palo Verde Mesa (possible Desert Strike)

*Age:* 20th century

*Length:* 740 m (NS)    *Width:* 142 m (EW)

*Location:* Out of Project

*Significance:* Not evaluated

Site SMB-H-525 is a historical refuse scatter consisting of 638 cans, 51 can lids, three bottle caps, milled lumber, two pieces of cable, ten pieces of scrap metal, a lantern, two buckets, three pieces of metal conduit, a possible washing basin, two pieces of a bed frame, remnants of a car seat, four pieces of wire, two bricks, a metal lock, a license plate and a piece of miscellaneous metal. Diagnostic resources include church-key-opened beer cans, fruit or vegetable cans opened with a P38 tool, a vertical-pocket tobacco with hinged lid can and an aluminum-top pull-tab beer can. The artifacts at this site are temporally and contextually mixed, possibly as a result of wildcat dumping in association with I-10.

SMB-H-525 is situated on relatively flat developing desert pavement and is bounded to the south by the I-10, to the southwest by a deep wash and to the north by possible remnants of HWY 99. Vegetation at the site consists of creosotes, grasses, salt bushes, and ironwood trees. No visual disturbances are present at this site.

### SMB-H-527

*Type:* Historical refuse scatter

*Context:* Historical use of the Palo Verde Mesa

*Age:* 20th century

*Length:* 104 m (SW/NE)    *Width:* 45 m (NW/SE)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-527 is a historical refuse scatter consisting of four military ration cans, two fruit or vegetable cans, two aluminum-top pull-tab beer cans, one church-key-opened beer can and one hole-in-cap milk can. The artifacts date to the entire 20th century with no clear contextual association.

Site SMB-H-527 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel. There are east-west trending ephemeral drainages and/or washes present at the site ranging from 20 inches to 7 feet wide by 6 inches to 10 inches deep. Vegetation at the site consists of creosotes, brittle bushes, grasses, and acacia trees. No visual disturbances are present at this site.

### SMB-H-528

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 96 m (EW)    *Width:* 50 m (NS)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-528 is a historical refuse scatter consisting of five fruit or vegetable cans, five key-wind-opened meat cans, two military ration cans, one hole-in-cap milk can, one juice can, one fuel can and one can lid. As with many of the sites in this area, the artifacts date to the entire 20th century and reflect a variety of activities.

Site SMB-H-528 is situated on relatively flat developing desert pavement terrain comprised of light brown silty soil with gravel and east-west orienting ephemeral drainages that are 20 in wide by 6 in deep. Vegetation at this site consists of creosotes, grasses and ironwood trees. Vehicle tracks are found at this site including tank tracks at SMB-H-528.

### SMB-H-529

*Type:* Historical refuse scatter

*Context:* DTC/C-AMA

*Age:* 1942-1944 (WWII)

*Length:* 211 m (NS)    *Width:* 134 m (EW)

*Location:* In Project

*Significance:* Not significant – does not meet NRHP or CRHR criteria, or criteria for uniqueness

Site SMB-H-529 is a historical refuse scatter consisting of 33 cans, two can lids and three pieces of milled lumber. The 33 cans are identified as: 15 fruit or vegetable cans, 10 military ration cans, five beer cans, one milk can, and two cans with unknown contents. Most of the site artifacts appear to date to the WWII military training activities, although two of the beer cans are aluminum-top pull-tab beer cans, introduced in the 1950s to 1960s (Rock 1987:29).

The site sits on flat desert pavement comprised of light brown silty soil with gravel. The ephemeral wash and drainages run primarily east to west through the site. Vegetation consists of creosotes, brittle bushes, grasses and acacia trees. There are vehicle tracks at the site.

### SMB-P-530

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 4 m (EW)    *Width:* 3 m (NS)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-530 is a prehistoric lithic scatter consisting of quartz flakes and flake cores within an area measuring 5 m by 1 m. Surveyors recorded approximately 50 flakes, ranging in length

from 2 to 12 cm. Seven flake cores of the same quartz material were identified among the flakes, the largest core being 9 cm in greatest dimension.

The site is situated on a strip of east-west oriented desert pavement. There is an east-west trending ephemeral drainage approximately 20 m south of the site datum that is 50 cm wide by 15 cm deep. Vegetation on site consists of creosotes, brittle bushes and grasses. A north-south trending vehicle track is located 10 m east of the resource concentration.

#### SMB-P-531

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 4 m (EW)      *Width:* 3 m (NS)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-531 is a prehistoric lithic scatter consisting of quartz flakes and cores within an area measuring 2 m north-south by 4 m east-west. The site contains approximately 100 flaked stone artifacts including flakes, shatter, cores, and core fragments. Flake fragments are maximally 2 cm long, and complete flakes are maximally 9 cm in largest dimension. The site also contains four multi-directional flake core fragments and one bifacially flaked core that measures 10 x 7 x 4 cm.

The site is situated on a slightly elevated desert pavement that dips down to the east. There is an east-west trending ephemeral wash approximately 25 m to the south of the site. Vegetation is present within the wash and consists of creosotes, verbena, grasses and ironwood trees.

#### SMB-P-532

*Type:* Lithic scatter

*Context:* Lithic reduction

*Age:* Prehistoric

*Length:* 5 m (EW)      *Width:* 4 m (NS)

*Location:* In Project

*Significance:* Appears to meet requirements for CARIDAP

Site SMB-P-532 is a prehistoric lithic scatter consisting of quartz flakes and cores within an area measuring 4 m by 3 m. The site contains approximately 60 flakes or flake fragments, and eight cores. The flake fragments are 2cm long, and complete flakes are maximally 6 cm long. Most of the flake cores are multi-directional cores that range from 6 to 11cm in length.

The site is situated on the southern edge of a slightly elevated desert pavement that dips to the south-southeast. There is an east-west trending ephemeral wash located approximately 7 m to the south of the site that is 1.8 m wide by 0.91 m deep. Vegetation on site consists of creosotes, brittle bushes and grasses.

## ISOLATED FINDS

A total of 1,214 isolated finds of four or fewer artifacts were identified during the Class III survey. Isolates identified at the BSPP are listed in Table 14 below. Note that individual historical artifacts are listed on separate lines. Due to changes in the Project subsequent to field surveys, 65 of these isolates are now outside of the Project. The overwhelming majority of isolated finds are historical items, and most are individual metal food and beverage cans dating from the end of the 19th century to the mid-20th century.

**Table 14. Isolated Artifacts Identified at the BSPP**

Isolate Number (SMB-I-)	Description
1001	1 sanitary can, knife cut
1002	1 sanitary can, church key opened
1003	1 sanitary can, church key opened
1004	1 sanitary can
1004	1 can
1005	1 can, knife cut
	1 can, turn key
	1 can, knife cut
1006	1 can, church key opened
	1 can
1007	1 can, knife cut
1008	1 can, knife cut
1009	1 sanitary can
	1 oval sardine can, circle sliced
	1 can, circle sliced
1010	1 sanitary can, church key opened
1011	1 sanitary can, knife cut
1012	1 sanitary can
1013	1 sanitary can, circle sliced
	1 sanitary can, circle sliced
1014	1 sanitary can, knife cut
1015	1 can
1016	1 wire
1017	1 can
1018	1 sanitary can, knife cut
1019	1 can
1020	1 can, circle sliced
1021	1 solder dot can
	1 square lid
1022	1 can
1023	1 sanitary can
1024	1 can
1025	1 sanitary can, circle sliced
1026	1 condiment bottle, MARK: "Guldens Mustard / Rec US PAT. OFF / 2 [Owens Mark] 3/ Bottle / 5]
1027	1 sanitary can
	1 sanitary can, church key opened

Isolate Number (SMB-I-)	Description
1028	1 can
1029	1 mining claim stake
1030	1 two cans
	1 two cans
1031	1 can
1032	1 can, church key opened
1033	1 flat can, key wind, MARK: "Industria Argentina Esta 86 INS [Poss for P]
	1 Mason jar
1034	1 mining claim stake
	1 mining claim stake
1035	1 mining claim stake
1036	1 deflated cairn
1037	1 mining claim stake
1038	1 mining claim stake
1039	1 cairn
1040	1 cairn
1041	1 aluminum top pull tab can
1042	1 sanitary can, punctured
1043	1 can, church key opened
	1 can, church key opened
1044	1 sanitary can
1045	1 sanitary can, circle sliced
1046	1 can
1047	1 twisted metal cable
1048	1 can, church key opened
1049	1 can, circle sliced
1050	1 can
	1 can
1051	1 oval sardine can
1052	1 mining claim stake
1053	1 solder dot can, knife cut
1054	1 solder dot can, circle sliced
1055	1 soluble coffee can, external friction lid, MARK: Barrington Half/ Pure / Soluble / Coffee
1056	1 can, top cut off below top rim
1057	1 can
1058	1 can, church key opened
1059	1 can, key wind
	1 can, key wind
1060	1 soluble coffee can, external friction lid, MARK: KEEP / TIGHTLY / CLOSED
	1 can, circle sliced
1060	1 soluble coffee can, external friction lid
1061	1 can, church key opened
1062	1 can, church key opened
1063	1 can, church key opened
1064	1 can, church key opened
1065	1 solder dot can
	1 can, church key opened
	1 buried can
1066	1 brown glass bottle (Clorox?), MARK: 692B / [circle with LM] / 20
1067	1 can, church key opened



Isolate Number (SMB-I-)	Description
	1 can, church key opened
1068	1 twisted metal cable
1069	1 can
	1 interlocking side seam can, church key opened
1070	1 embedded can
1071	1 can, church key opened
1072	1 can, circle sliced
	1 can, top cut off
1073	1 can, knife cut
	1 can, top cut off
1074	1 can, church key opened
1075	1 can and lid
1076	1 can
1077	1 can
	1 can
	1 can
1078	1 can, MARK: SANITARY
1079	1 clear glass bottle, 1 gallon, MARK: HA / 7387 / P 2 ; on base = ONE GALLON
1080	1 unopened can
1081	1 aluminium lid; crimped / rip top, rip top
	1 can, church key opened
1082	1 can, church key opened
1083	1 can, circle sliced
1084	1 sardine can
1085	1 brown glass bottle, automatic
	1 can
1086	1 solder dot can
1087	1 embedded can
	1 glass bottle, automatic bottle machine, threaded screw top
1088	1 can, church key opened
1089	1 can, circle sliced
1090	1 solder dot can
1091	1 can with top cut off
1092	1 aluminum top pull tab can, pull tab
1093	1 can
1094	1 deflated cairn
1095	1 mining claim stake
1096	1 can, circle sliced
	1 sardine can, key wind
1097	1 aluminum top pull tab can, pull tab
	1 can, knife cut, puncture, MARK: AN /J
	1 Coors aluminium beer can
	1 solder dot can, knife cut, puncture
1098	1 solder dot can, knife cut, puncture
	1 can
	1 embedded can
1099	1 embedded can
1100	1 unopened can
1101	1 embossed can
	1 aluminum top pull tab can, pull tab
1102	1 can, key wind, MARK: top off by twist key?

Isolate Number (SMB-I-)	Description
1103	1 one can and one metal bucket bucket, church key opened 1 sardine can, knife cut
1104	1 can, church key opened 1 can, key wind, MARK: NBCCH / 4 1 Mason jar, MARK: 6 [makers mark ... illegible ... with H overlay] 5 / 3900
1105	1 can, key wind
1106	1 can
1107	1 can
1108	1 can, key wind
1109	1 oil can, U-shaped puncture, MARK: SAE 30
1110	1 can, circle sliced
1111	1 can, key wind
1112	1 fuel can, screw top spout, MARK: MAUFACTURED BY / THE TEXAS COMPANY / U.S.A [star embossed)
1113	1 sanitary can, knife cut, puncture 1 can, key wind
1114	1 embedded can
1115	1 can 1 coffee can, key wind
1116	1 can, key wind 1 can, key wind
1117	1 can, key wind
1118	1 embedded can
1119	1 can, key wind
1120	1 glass bottle, MARK: Duraglas, OWENS / 13 [maker's mark] 3
1121	1 can, key wind 1 solder dot can
1122	1 can, key wind
1123	1 can, key wind
1124	1 can, knife cut
1125	1 embedded can 1 aluminum top pull tab can
1126	1 embedded can
1127	1 can, key wind
1128	1 paint-can style lid
1129	1 bottle, MARK: [break] ORO? [break] above shoulder?
1130	1 brown bottle fragment (Clorox?), MARK: [break] DES. P [break] on base
1131	1 glass bottle, 1 gallon, MARK: S [maker's mark CS] 2 / 3456 / 8
1132	1 can, key wind
1133	1 can, key wind
1134	1 can, circle sliced
1135	1 can, key wind
1136	1 can, key wind
1137	1 clear glass jar, MARK: 65 24 / 2 / [maker's mark - Ball] on base
1138	1 can, knife cut
1139	1 can, key wind
1140	1 can, key wind 1 can, key wind
1141	1 can
1142	1 can

Isolate Number (SMB-I-)	Description
	1 embedded can, key wind
1143	1 can, key wind
1144	1 can, key wind
	1 can, key wind
1145	1 can, knife cut, puncture
1146	1 external friction lid can, external friction lid
	1 can, key wind
1147	1 solder dot can
1148	1 can
	1 Mason jar, MARK: 0-7 134 / [maker's mark H with ? Underneath] / 9
1149	1 can
	1 Mason jar, MARK: DURAGLASS / 20 [maker's mark Owens] 2 / 12 / 3727-0 [on base]
1150	1 can, key wind
1151	1 oval sardine can, knife cut
1152	1 can, key wind
1153	1 sanitary can, knife cut
	1 can, key wind
1154	1 5 gallon can lid
	1 can, key wind
1155	1 glass bottle fragments, MARK: Coca Cola / TRADEMARK REGISTERED / MIN. CONTENTS 6-FL. OZS. [on body] // BAKERSFIELD / CALIF [on base]
1156	1 can, key wind
1157	1 can, key wind
1158	1 can, circle sliced, MARK: EXTRA COATED TIN
1159	1 hole-in-cap can
1160	1 sanitary can
	1 sanitary can
1161	1 can, key wind
1162	1 can, knife cut, puncture
	1 can, church key opened
1163	1 can
1164	1 can, church key opened
1164	1 can, church key opened
1165	1 can, circle sliced
1166	1 buried can
1167	1 can, punctured
1168	1 embedded can
	1 can, key wind
	1 embedded can, threaded cap
1169	1 embedded can
1170	1 can, key wind
	1 embedded can
1171	1 can, key wind
1172	1 embedded can
1173	1 sanitary can
1174	1 solder dot can, punctured
1175	1 paint-can style lid
1176	1 can, rotary opened
1177	1 external friction lid can, external friction lid
1178	1 can, key wind
1179	1 can, circle sliced

Isolate Number (SMB-I-)	Description
1180	1 crimped crown cap with soldered handle, crown top
1181	1 rectangular can
1182	1 can, rotary opened
1183	1 can, rotary opened
1184	1 oil can, 1 quart, church key opened
1185	1 can, MARK: PACKED IN VACUUM / CALIFORNIA 1 banded can, punctured
1186	1 can
1187	1 sanitary can, knife cut, puncture 1 hole-in-cap, solder dot can, knife cut, puncture
1188	1 can, key wind
1189	1 can, key wind
1190	1 sanitary can, rotary opened
1191	1 can, knife cut, puncture
1192	1 can, circle sliced
1193	1 Canada Dry glass bottle, MARK: 23 [maker's mark letter "I" within oval] 57 / A1 2 / DURAGLAS / 2902-6
1194	1 embedded can
1195	1 glass bottle, 1 gallon, MARK: DURAGLAS / 20 [maker's mark Owens Illinois] 52 / 5C / 1512-W
1196	1 fragmentary can
1197	1 jar, MARK: [maker's mark GC] 4 / 3508
1198	1 sanitary can, rotary opened
1199	1 can, key wind
1200	1 oval sardine can, MARK: PACKED IN VACUUM / CALIFORNIA U.S.A
1201	1 can, key wind
1202	1 oval sardine can
1203	1 sanitary can
1204	1 can, church key opened 1 oval sardine can
1205	1 can, key wind 1 can, circle sliced
1206	1 oval sardine can, MARK: PACKED IN VACUUM / CALIFORNIA U.S.A
1207	1 can, church key opened
1208	1 sanitary can, circle sliced
1209	1 embedded banded can
1210	1 embedded can
1211	1 can, rotary opened
1212	1 aluminum top pull tab can and sanitary can 1 solder dot, matchstick filler can 1 aluminum top pull tab can, pull tab
1213	1 can, knife cut, puncture 1 sanitary can, rotary opened
1214	1 can, key wind 1 can, circle sliced
1215	1 bottle, MARK: 20 [Owens Illinois mark] 0 / 1A / 1602-E [on base] // DURAGLAS [insu (illegible)]
1216	1 solder dot can, knife cut, puncture
1217	1 can, circle sliced
1218	1 metate
1219	1 sanitary can
1220	1 hole-in-cap can, knife cut 1 lard bucket

Isolate Number (SMB-I-)	Description
1221	1 can, rotary opened 1 sanitary can, knife cut, puncture 1 can, knife cut, puncture
1222	1 can, knife cut, puncture
1223	1 can, church key opened
1224	1 can, circle sliced
1225	1 sanitary can, circle sliced
1226	1 sanitary can, knife cut, X shape
1227	1 can, knife cut, puncture
1228	1 oval sardine can
1229	1 fuel can, spout 1 can, circle sliced
1230	1 can, rotary opened, MARK: AG 13 / J(?) 51 1 glass jar, metal screw cap, MARK: [maker's mark Hazel Atlas "H" over "A"] / 6752 / 17
1231	1 can, external screw top
1232	1 glass wine bottle, MARK: E & J GALLOWINERY / 2A 5S / REFILLING / PROHIBITED / 4759 / MODESTO, CALIF. [on base] // 1/2 GALLON [insuep]
1233	1 spoon, military issue, MARK: U.S. [front surface at handle] // SILCO [back of handle]
1234	1 solder dot can, knife cut, puncture
1235	1 can, ice pick punctures
1236	1 can, circle sliced 1 buried can
1237	1 can, circle sliced
1238	1 oval sardine can
1239	1 can, key wind 1 can, key wind
1240	1 can, key wind 1 can, key wind
1241	1 clear glass bottle (automatic bottle machine), external screw top, MARK: 1143 / 4 [on base]
1242	1 can, church key opened 1 sanitary can, rotary opened
1243	1 jar, external screw top, MARK: 20 [ maker's mark Owens Illinois] ? / 2 / 0927-0 [ on base] // DURAGLAS
1244	1 sanitary can, rotary opened
1245	1 , key wind 1 buried can
1246	1 can, circle sliced 1 jar, MARK: 165-15 / 7 / BALL [on base] ABM
1247	1 pull tab can, pull tab
1248	1 jar, MARK: 11 / [maker's mark "H" over "A" - on base]
1249	1 can, rotary opened 1 external friction lid can, external friction lid, MARK: tobacco or coffee?
1250	1 can, knife cut
1251	1 sanitary can, knife cut
1252	1 can, key wind
1253	1 can, key wind
1254	1 can, rotary opened
1255	1 boot sole
1256	1 can
1257	1 sanitary can, rotary opened
1258	1 can, key wind 1 can, circle sliced

Isolate Number (SMB-I-)	Description
1259	1 can, key wind
1260	1 can, church key opened
1261	1 can, church key opened
1262	1 can
	1 can
1263	1 embedded can
1264	1 sanitary can, church key opened, MARK: 7 / (3 or 8?) 9LT [on lid]
1265	1 can, rotary opened
1266	1 can, circle sliced
1267	1 can, circle sliced
1268	1 can, knife cut, puncture
1269	1 buried can
	1 can, circle sliced
	1 can, circle sliced
1270	1 can, rotary opened
1271	1 can, knife cut
1272	1 glass soda bottle, MARK: Coca Cola 66 [maker's mark Owens Illinois] 42 [on body] // El Centro 1942
1273	1 can
	1 jar, external screw top
1274	1 can, circle sliced
	1 can, knife cut
	1 buried can
1275	1 can, knife cut
1276	1 can, church key opened
1277	1 can, church key opened
	1 can, key wind
1278	1 oil can, ice pick punctures, MARK: SAE / 10 / 10W [on base]
1279	1 can, key wind
1280	1 talcum powder canister?, metal screw cap
1281	1 embedded rectangular can
1282	1 sanitary can, rotary opened
	1 solder dot, hole-in-cap can
1283	1 glass soda bottle, MARK: Coca Cola 6 oz BAKERSFIELD, 1941
	1 can, knife cut
1284	1 buried can
	1 can, knife cut
1285	1 can, knife cut
	1 can, circle sliced
	1 can, church key opened
1286	1 external friction lid can, external friction lid
1287	1 can, rotary opened
1288	1 oval sardine can, knife cut, MARK: PACKED IN VACUUM / CALIFORNIA U.S.A
1289	1 can, key wind, MARK: I 1242 / I 704 [on base]
1290	1 can, circle sliced
1291	1 sun-colored amethyst glass jar, external screw top, MARK: SNIDERS [lid top]
	1 can, knife cut, puncture
1292	1 aluminum top pull tab can, pull tab
1293	1 square can, key wind, MARK: EST. 19 [on base]
	1 can, key wind
	1 sanitary can, MARK: TI 623 / I 27 [on base]

Isolate Number (SMB-I-)	Description
1294	1 can, key wind 1 can, circle sliced
1295	1 embedded can, rotary opened
1296	1 can, key wind 1 oil can, U-shaped puncture, MARK: CANCO [on base] // SAE 30 [on top]
1297	1 embedded can, key wind 1 can, key wind
1298	1 can, key wind
1299	1 can, metal screw cap, MARK: 1058 [on base]
1300	1 can, circle sliced, MARK: 1043 [on top]
1301	1 metal hardware
1302	1 can, circle sliced, MARK: 77-AEBZL(?) [on base]
1303	1 embedded can
1304	1 external friction lid can, external friction lid 1 can, key wind
1305	1 external friction lid can, external friction lid
1306	1 can, circle sliced 1 wire cable and metal pipe
1307	1 can, circle sliced 1 can, key wind
1308	1 can, key wind 1 can, rotary opened 1 oil can, MARK: CANCO [on base] SAE 30 [on top]
1309	1 brown glass bottle, external screw top, MARK: CGD / 3 81 / A-10 [on base] 1 can, key wind
1310	1 can, church key opened
1311	1 oval sardine can, circle sliced, MARK: PACKED IN VACUUM / CALIFORNIA U.S.A
1312	1 can, flip top, MARK: TWIN OAKS
1313	1 crown finish bottle, MARK: Hazel Atlas
1314	1 can, church key opened 1 can, church key opened 1 aluminum top pull tab can, pull tab, MARK: BUDWEISER 31R[on lid]
1315	1 can, church key opened
1316	1 can, church key opened
1317	1 aluminum top pull tab can, pull tab
1318	1 can, circle sliced
1319	1 oval sardine can
1320	1 CCS flake
1321	1 can, rotary opened
1322	1 smashed can
1323	1 deteriorated can
1324	1 can, circle sliced
1325	1 can, circle sliced
1326	1 can, key wind
1327	1 solder dot, hole-in-cap can
1328	1 can, rotary opened
1329	1 can, rotary opened
1330	1 oval sardine can
1331	1 can, church key opened 1 can, church key opened 1 metal sheet

Isolate Number (SMB-I-)	Description
1332	1 glass bottle, external screw top, MARK: Hazel Atlas 1 hole-in-cap can, key wind
1333	1 metal box, MARK: large metal box
1334	1 deteriorated can
1335	1 sanitary can, rotary opened
1336	1 irrigation hardware?, MARK: FRESNO IRRIGATION / APPLIANCES / 8 ? / FRESNO, CALIF [on top]
1337	1 brown glass bottle, external screw top, MARK: Illinois maker's mark 1 can, church key opened
1338	1 can, knife cut
1339	1 glass soda bottle, MARK: Pepsi Cola 16 fl. Oz. / NO REFILL DISPOSE OF PROPERLY
1340	1 can
1341	1 can
1342	1 jar, external screw top, MARK: BEST FOODS
1343	1 fragmentary can 1 can, rotary opened 1 aluminum top pull tab can, pull tab
1344	1 white ware plate fragment, MARK: [break[ DERWOOD [break] W.S. George [ break] 412 A [on base]
1345	1 bucket lid
1346	1 sanitary can, rotary opened, MARK: 622 (5 or 6) on lid 1 can, knife cut 1 sanitary can, rotary opened
1347	1 fragmentary can, knife cut, puncture
1348	1 can, church key opened
1349	1 can, rotary opened
1350	1 can, knife cut, puncture 1 embedded can, circle sliced
1351	1 wire cable and metal pipe
1352	1 can, knife cut
1353	1 embedded can
1354	1 tool
1355	1 sanitary can, knife cut 1 sanitary can, knife cut
1356	1 solder dot can, knife cut, MARK: 6V [on top]
1357	1 fragmentary can, knife cut, puncture
1358	1 can, knife cut
1359	1 matchstick filler, hole-in-cap can, knife cut, puncture 1 sanitary can 1 flattened can
1360	1 can, rotary opened 1 smashed can, church key opened 1 can, circle sliced
1361	1 can, church key opened 1 aluminum top pull tab can, pull tab
1362	1 pull tab can, pull tab 1 can, key wind
1363	1 can 1 can
1364	1 can, circle sliced 1 can, knife cut
1365	1 sanitary can, knife cut



Isolate Number (SMB-I-)	Description
	1 can, key wind
1366	1 fuel can, 1 1/2" screw top spout, MARK: MANUFACTURED BY THE TEXAS COMPANY [on top]
1367	1 sanitary can, knife cut
1368	1 can, rotary opened
1369	1 can, circle sliced
	1 can, MARK: M (B or 8) C [on top]
	1 smashed bucket
1370	1 can, punctured
1380	1 can, church key opened
1381	1 can, rotary opened
	1 sanitary can, knife cut
1383	1 fuel can
	1 sanitary can
	1 sanitary can
1384	1 can, key wind
1385	1 aluminum top pull tab can, pull tab
1386	1 aluminum top pull tab can, pull tab
1387	1 smashed can, church key opened
1388	1 can, knife cut, puncture, MARK: ANI 13 [top]
1389	1 can, circle sliced
1390	1 can, circle sliced
1400	1 aluminum top pull tab can, pull tab, MARK: LIFT RING PULL
	1 can
1401	1 deteriorated can
1402	1 can, knife cut, puncture
	1 can, church key opened
1403	1 can, rotary opened
1404	1 fuel can, 1 1/2" screw top spout, MARK: MANUFACTURED BY THE TEXAS COMPANY U.S.A. [on top]
1405	1 embedded can
1406	1 can
	1 can, circle sliced
1407	1 fuel can, spout 1 1/2", MARK: MANUFACTURED BY THE TEXAS COMPANY U.S.A. [on top]
	1 crushed can
	1 banded can
1408	1 can, circle sliced, MARK: 1700 / 28 4 [on base]
1409	1 can, circle sliced
1411	1 can, circle sliced
1412	1 can, circle sliced
1413	1 can, circle sliced
1414	1 can, church key opened
	1 aluminum top pull tab can, pull tab, MARK: OLYMPIA WASHINGTON BREWED AND ??? BY OLYMPIA
1415	1 wooden peg
1416	1 fragmentary can, top cut off
	1 banded can, rotary opened
1417	1 can, key wind
1418	1 clear glass jar, threaded, metal lid, MARK: 20 [Owens Illinois maker's mark] 3 / 3B / 34I-C [on base] // DURAGLAS
1419	1 aluminum top pull tab can, church key opened
	1 can, internal friction lid

Isolate Number (SMB-I-)	Description
1420	1 can, rotary opened
1421	1 bottle, external screw top, MARK: OM [on base]
1422	1 can, rotary opened
1423	1 solder dot can, circle sliced, MARK: V2026 [on base]
1424	1 can, knife cut
1424	1 aluminum top pull tab can, pull tab
1425	1 aluminum top pull tab can, pull tab, MARK: PLEASE DO NOT LITTER / DISPOSE OF PROPERLY [on top]
1426	1 can, church key opened
1427	1 can, knife cut
1428	1 can, rotary opened
1429	1 can, unopened
1430	1 cairn
1431	1 rock alignment parallel to 2-track road
1432	1 tested cobble
1433	1 external friction lid can, external friction lid, MARK: BARRINGTON HALL / SOLUBLE COFFEE
1434	1 can, rotary opened
1435	1 can, knife cut
1436	1 sanitary can, rotary opened
1437	1 can, circle sliced
1438	1 aluminum top pull tab can, pull tab
1439	1 can, church key opened
1440	1 aluminum top pull tab can, top cut off
1440	1 soda can, pull tab, MARK: PEPSI
	1 external friction lid can, external friction lid
1441	1 CCS flake
1442	1 can, circle sliced
	1 interlocking side seam can, knife cut, puncture, MARK: BIG BEAR SPARKLING BEVERAGE IMITATI [illegible]
1443	1 pull tab can, pull tab
1444	1 bottle, key wind
	1 fragmentary can
1446	1 fuel can, 1" screw top spout
	1 aluminum top pull tab can
	1 can, key wind
1447	1 can, knife cut, puncture
1448	1 oil can, U-shaped puncture, MARK: SHELL [on top]
1449	1 can, key wind
1450	1 can, knife cut, puncture
	1 oil can, MARK: AE 10 10W [on lid]
	1 sheet metal
1451	1 CCS flake
1452	1 oil can, U-shaped puncture, MARK: PENNZIOL [on base and lid]
1453	1 mining claim stake
1454	1 metal strapping
1455	1 smashed can, knife cut
1456	1 smashed can, rotary opened
1457	1 oil can, U-shaped puncture, MARK: PENNZOIL / SAE 20 / 20W [on lid]
1458	1 can, knife cut, puncture, MARK: AG 13 / AS [on lid]
1459	1 oval sardine can, circle sliced, MARK: PACKED IN VACUUM [on lid]

Isolate Number (SMB-I-)	Description
1460	1 oil can, U-shaped puncture, MARK: SAE 30 [on top] 1 oil can, U-shaped puncture, MARK: SAE 20 20W [on top]
1461	1 bolt, MARK: SBC 1 metal hardware
1462	1 oil can, U-shaped puncture, MARK: SAE 30 [on top]
1463	1 CCS flake
1464	1 oil can, U-shaped puncture, MARK: SAE 40
1465	1 muffler pipe
1466	1 oil can
1467	1 can, rotary opened
1468	1 can, knife cut
1469	1 internal friction lid can, internal friction lid 1 can
1470	1 can
1471	1 glass
1472	1 cairn
1473	1 glass
1474	1 can
1475	1 metal
1476	1 feature
1477	1 metal
1478	1 cairn
1479	1 can
1480	1 flake
1481	1 glass
1482	1 can 1 can 1 can
1483	1 can 1 can 1 can
1484	1 can 1 can
1485	1 can 1 can 1 can
1486	1 can 1 can
1487	1 can
1488	1 can 1 flake
1489	1 can 1 can
1490	1 can 1 can
1491	1 glass
1492	1 metal
1493	1 can 1 can 1 can
1494	1 can

Isolate Number (SMB-I-)	Description
	1 can
1495	1 can
1496	1 can
1497	1 can
1498	1 can
1499	1 can
1500	1 can
1501	1 can
1502	1 can
1503	1 can
1504	1 cairn
1505	1 metal
1506	1 can
1507	1 can
1508	1 can
1509	1 can
1510	1 can
1511	1 can
1512	1 can
1513	1 feature
1514	1 can
1515	1 can
1516	1 feature
1517	1 can
1518	1 can
1519	1 can/glass
1520	1 can
1521	1 can
1522	1 can
1523	1 metal
1524	1 can
1525	1 cairn
1526	1 metal
1527	1 can
1528	1 can
1529	1 can
1530	1 can/metal
1531	1 can
1532	1 can
1533	1 flake
1534	1 metal
1535	1 can
1536	1 flake
1537	1 post
1538	1 can
1539	1 can
1540	1 can
1541	1 can
1542	1 can
1543	1 can

Isolate Number (SMB-I-)	Description
1544	1 can
1545	1 can
1546	1 can
1547	1 can
1548	1 can
1549	1 can
1550	1 can
1551	1 can
1552	1 can
1553	1 can
1554	1 can
1555	1 milled lumber
1556	1 can
1557	1 can
1558	1 can
1559	1 can
1560	1 can
1561	1 can
1562	1 can
1563	1 can
1564	1 can
1565	1 can
1566	1 core, debitage
1567	1 can
1568	1 can
1569	1 can
1570	1 can
1571	1 can
1572	1 cairn
1573	1 core frag
1574	1 debitage
1575	1 debitage
1576	1 barrel hoop
1577	1 core, debitage
1578	1 debitage
1579	1 can
1580	1 core
1580	1 debitage
1581	1 rock, soil mounds
1582	1 rock feature, cleared pav
1583	1 core, debitage
1584	1 can
1585	1 core, debitage
1586	1 can
1587	1 can
1588	1 core, debitage
1589	1 can
1590	1 can
1591	1 core, debitage
1592	1 core
1593	1 can

Isolate Number (SMB-I-)	Description
1594	1 can
1595	1 cairn
1596	1 debitage
1597	1 bladed disturbance
1598	1 wood post
1599	1 wood post
1600	1 wood post
1601	1 cleared area
1602	1 wood post
1603	1 can
1604	1 wood post
1605	1 wood post
1606	1 can
1607	1 wood post
1608	1 can
1609	1 wood post
1610	1 can
1611	1 wood post
1612	1 can
1613	1 wood post
1614	1 wood post
1615	1 debitage
1616	1 wood post
1617	1 wood post
1618	1 debitage
1619	1 can
1620	1 can
1621	1 can
1622	1 can
1623	1 can
1624	1 can
1625	1 can
1626	1 can
1627	1 bottle
1628	1 cairn
1629	1 can
1630	1 can
1631	1 can
1632	1 can
1633	1 can
1634	1 can
1635	1 can
1636	1 can
1637	1 can
1638	1 can
1639	1 can
1640	1 can
1641	1 can
1642	1 can
1643	1 can

Isolate Number (SMB-I-)	Description
1644	1 can
1645	1 debitage
1646	1 tested cobble
1647	1 can
1648	1 sheet metal
1649	1 can
1650	1 can
1651	1 hearth
1652	1 can
1653	1 debitage
1654	1 tested cobble
1655	1 can
1656	1 can
1657	1 can
1658	1 can
1659	1 can
1660	1 can
1661	1 can
1662	1 tested cobble
1663	1 can
1664	1 can
1665	1 can
1666	1 can
1667	1 can
1668	1 can
1669	1 can
1670	1 core, debitage
1671	1 metal flash suppresser
1672	1 core, debitage
1673	1 core, debitage
1801	1 can
1802	1 jar frag
1803	1 can
1804	1 can
1805	1 can, jar, boot sole frag
1806	1 debitage
1807	1 can
1808	1 can
1809	1 jar
1809	1 metal lid
1810	1 can
1811	1 can
1812	1 can
1813	1 can
1814	1 can
1815	1 wood w/metal brackets
1816	1 can
1817	1 jar w/metal lid
1818	1 can
1819	1 can
1820	1 can

Isolate Number (SMB-I-)	Description
1821	1 can
1822	1 can
1823	1 wood, nails, metal strapp
1824	1 debitage
1825	1 can, lid
1826	1 lithic scatter
1827	1 can
1828	1 can
1829	1 can
1830	1 can
1831	1 can
1832	1 can
1833	1 can
1834	1 can
1835	1 can
1836	1 can
1837	1 can
1838	1 can
1839	1 can
1840	1 can
1841	1 can
2001	1 can, key wind
2002	1 cotter pin
2003	1 military ration can, key wind
2004	1 external friction lid can, external friction lid
2006	1 military ration cans, key wind
2007	1 military ration can, key wind
2008	1 peanut butter can, and other can
2009	1 embedded can
2010	1 embedded can
2011	1 tall cylindrical can, rotary opened
2012	1 knife-opened keywind can, key wind
	1 knife-opened keywind can, key wind
2013	1 soup can, rotary opened
	1 military ration can, key wind
2014	1 can, knife cut, puncture
2015	1 hole-in-cap can
2016	1 juice can, knife cut, puncture
2017	1 can, rotary opened
2018	1 glass jar, steel threaded cap, MARK: Hazelton Atlas
2019	1 cylindrical can, rocker opened, MARK: oval embossing, no lettering
2020	1 can, church key opened
2021	1 can, rocker opened
2022	1 sanitary can
	1 fuel can, rectangular
2023	1 can, rocker opened
2024	1 embedded can
2025	1 can, rocker opened
2026	1 military ration can, key wind
	1 military ration can, key wind



Isolate Number (SMB-I-)	Description
2027	1 glass bottle
2028	1 tin beer can, church key opened
2029	1 smashed can
2030	1 oval sardine can, rotary opened
	1 can with oval embossed on base
2031	1 smashed can
2032	1 sanitary can
2032	1 sanitary can
	1 sanitary can
2033	1 embedded can
2034	1 Duraglas jar fragment
2035	1 rectangular food can, key wind
2036	1 can, rotary opened
2037	1 can, knife cut
2038	1 can
	1 large coffee can
2039	1 can, knife cut
	1 can, knife cut
2040	1 military ration can, key wind
	1 can
2041	1 beverage can, church key opened
4001	1 square tin, cut top
4002	1 square tin, cut top
4005	1 stone pipe fragment
4006	1 embedded can
4007	1 military ration can, key wind
4008	1 oval sardine can
4009	1 7 oz soda bottle, crown top, MARK: Owens Illinois maker's mark
4010	1 2 military ration cans, P-38 opened
4011	1 military ration can, P-38 opened
4012	1 embedded can
4013	1 can, church key opened
4014	1 military ration can, key wind
4015	1 military ration can, key wind
4016	1 military ration can, key wind
4017	1 evaporated milk can, unopened
4018	1 oil can, U-shaped puncture
	1 1 gallon can
4019	1 oil cans, U-shaped puncture
4020	1 oil can, U-shaped puncture
4021	1 12 oz beverage can, knife cut
4022	1 oil can, U-shaped puncture
4023	1 bottle, MARK: late mark
4024	1 embedded can, knife cut, puncture
4025	1 dubbing can and one embedded can, internal friction lid, paint lid type
4026	1 oil can, U-shaped puncture
	1 2 oil cans, U-shaped puncture
	1 beverage can, church key opened
4027	1 oil can, U-shaped puncture
4028	1 3 oil cans, U-shaped puncture
4029	1 2 oil cans, U-shaped puncture

Isolate Number (SMB-I-)	Description
4030	1 oil can, U-shaped puncture
4031	1 oil can, U-shaped puncture
4032	1 oil can, U-shaped puncture
4033	1 oil can, U-shaped puncture
4034	1 oil can, U-shaped puncture
4035	1 oil can, U-shaped puncture
4036	1 oil can, U-shaped puncture
4037	1 oil can, U-shaped puncture
4038	1 oil can, U-shaped puncture
4039	1 oil can, U-shaped puncture
4040	1 oil can, U-shaped puncture
4041	1 pot drop
4042	1 oil can, U-shaped puncture
4043	1 oil can, U-shaped puncture
4044	1 oil can, U-shaped puncture
4045	1 can, rocker opened
4046	1 can, knife cut, "church key" style
4047	1 tobacco tin, external friction lid
4048	1 military ration can, key wind
4049	1 galvanized steel piece
4050	1 galvanized steel piece
4051	1 rusted metal pieces
4052	1 "drum" style can with internal friction lid, internal friction lid
4053	1 pail, external screw top
4056	1 galvanized steel piece
4057	1 beverage can, church key opened
4058	1 evaporated milk can, ice pick punctures
4059	1 12 oz beverage can
4060	1 galvanized metal bucket
4061	1 baking powder tin?, external screw top, MARK: KEEP TIGHTLY CLOSED [on lid] EUS [on base]
4062	1 CCS flake
4063	1 brown glass bottle, 1 quart, external screw top, MARK: FEDERAL LAW FORBIDS SALE OR RE-USE OF THIS BOTTLE [front body] // CALVERT RESERVE [side body] // ONE QUART etc.
4064	1 can, knife cut, puncture
4065	1 chopper and 3 flakes
4066	1 sanitary can, knife cut, puncture
4067	1 vent hole-in-cap 1", punctured
4068	1 hole-in-cap can, punctured
4069	1 external friction lid can, external friction lid
4069	1 hole-in-cap can, cap 1 5/8
4070	1 fuel can, threaded spout 1 1/8"
4071	1 sanitary can, circle sliced
4072	1 hole-in-cap can, knife cut
	1 mining claim stake
4073	1 hole-in-cap can, circle sliced
4074	1 oval sardine can, knife cut, MARK: PACKED IN VACUUM / CALIFORNIA U.S.A. [on lid]
4075	1 CCS flake
4076	1 pail, with handle, external friction lid
4077	1 external friction lid can, external friction lid
4078	1 pail

Isolate Number (SMB-I-)	Description
4079	1 sanitary can, rotary opened
4080	1 17 ceramic sherds
4081	1 fuel can, spout 1 1/2"
4082	1 sanitary can, circle sliced
4083	1 can, key wind
4084	1 banded can, rotary opened
4085	1 banded can, knife cut
4086	1 can and metal bucket
4087	1 2 cans, rocker opened
4088	1 solder dot, evaporated milk can, knife cut
4089	1 juice can, rotary opened
4090	1 metal drum
4091	1 soluble coffee can, external riction lid
4092	1 solder dot, evaporated milk can, knife cut
4093	1 can, rotary opened
4094	1 glass bottle with 1931 date
	1 solder dot can
	1 sanitary can, rocker opened
4095	1 oval sardine can
4096	1 can, external screw top
4097	1 6 oz juice can, ice pick punctures
4098	1 rectangular metal box and milled wood
4099	1 tobacco tin, external friction lid, hinged
4100	1 military ration can, key wind
4101	1 military ration can, key wind
4102	1 sanitary can, rocker opened
	1 external friction lid can, external friction lid
4103	1 3 evaporated milk cans
4104	1 oil can, U-shaped puncture
4105	1 buried can
4106	1 military ration can, key wind
4107	1 evaporated milk can, knife cut, puncture
4108	1 CCS flake
4109	1 CCS flake
4110	1 military ration can, P-38 opened
4111	1 miscellaneous metal and gate hinges
4112	1 military ration can, key wind
4113	1 wire
4114	1 embedded can
4115	1 cracker tin
	1 glass jar
4116	1 can, circle sliced
	1 can, circle sliced
	1 glass jar, screw top
4117	1 2 military ration cans, key wind
4118	1 military ration can, key wind
	1 military ration can, P-38 opened
	1 military ration can, key wind
4119	1 3 military ration cans, key wind
4120	1 can, circle sliced
4121	1 7 oz bottle with crown finish., MARK: Stamped "No Deposit, No Return"

Isolate Number (SMB-I-)	Description
	1 military ration can, key wind
4122	1 military ration can, key wind
4123	1 embedded can
4124	1 coffee can, external friction lid
4125	1 military ration can, key wind
4126	1 CCS flake
4127	1 buried can
4128	1 lumber, military
4129	1 lumber, military
4130	1 buried can
4131	1 military ration can, key wind
4132	1 lumber, military
4133	1 military ration can, key wind
4134	1 soluble coffee can, external friction lid
4135	1 solder dot, evaporated milk can, ice pick punctures
4136	1 smashed can
4137	1 can, rotary opened
4138	1 car parts
4139	1 juice can, knife cut
	1 juice can, knife cut
	1 military ration can, key wind
4140	1 soluble coffee can, external friction lid
4141	1 military ration cans, key wind
4142	1 military ration can, key wind
	1 oval sardine can
4143	1 oval sardine can
4144	1 can, knife cut
4145	1 galvanized washtub
4146	1 can, rotary opened
4147	1 CCS flake
4148	1 evaporated milk can, knife cut
4149	1 soda can, church key opened
4150	1 buried can
4151	1 evaporated milk can, knife cut
4152	1 beverage can, unopened
4153	1 military ration can, key wind
4154	1 oval sardine can
4155	1 can, rotary opened
4156	1 military ration can, key wind
4157	1 oval sardine can and one smashed can
4158	1 can, knife cut
4159	1 evaporated milk can, knife cut
4160	1 military ration can, key wind
	1 solder dot can, knife cut
	1 military ration can, key wind
4161	1 evaporated milk can
4162	1 can
4163	1 can
4164	1 can
4165	1 can

Isolate Number (SMB-I-)	Description
4166	1 can
4167	1 can
4168	1 metal
4169	1 can
4170	1 can
4171	1 can
4172	1 can
4173	1 can
4174	1 can
	1 can
4175	1 can
4176	1 can
4177	1 can
4178	1 can
4179	1 can
4180	1 metal/glass
4181	1 can
4182	1 can
4183	1 can
4184	1 can
4185	1 can
4186	1 can
4187	1 can
4188	1 can
4189	1 can
4190	1 can
4191	1 can
4192	1 can
4193	1 can
4194	1 can
4195	1 can
4196	1 can
4197	1 can
4198	1 glass
4199	1 can
4200	1 can
4201	1 flake
4202	1 can
4203	1 bone
4204	1 can
4205	1 can
4206	1 can
4207	1 can
4208	1 can
4209	1 can
4210	1 can
4211	1 metal
4212	1 can
4213	1 glass
4214	1 can
4215	1 can

Isolate Number (SMB-I-)	Description
4216	1 can
4217	1 can
4218	1 can
4219	1 metal
4220	1 can
4221	1 CCS flake
4222	1 metal
4223	1 metal
4224	1 can
4225	1 can
4226	1 glass
4227	1 bone
4228	1 can
4229	1 can
4230	1 metal
4231	1 metal
4232	1 metal/can
4233	1 can
4234	1 can
4235	1 can
4236	1 flake
4237	1 ceramic sherds
4238	1 fuel can
	1 flake
4239	1 military ration can, key wind
	1 flake
4240	1 can
4241	1 can
4242	1 can
4243	1 can
4244	1 can
4245	1 can
4246	1 can
4247	1 can
4248	1 can
4249	1 can
4250	1 metal
4251	1 can
4252	1 can
4253	1 can
4254	1 can
4255	1 flake
4256	1 metal
4257	1 can
4258	1 can
4259	1 can
4260	1 can
4261	1 can
4262	1 can
4263	1 can

Isolate Number (SMB-I-)	Description
4264	1 can
4265	1 can
4266	1 can
4267	1 metal
4268	1 metal
4269	1 can
4270	1 glass
4271	1 metal
4272	1 can
4273	1 metal
4274	1 can
4275	1 metal
4276	1 can
4277	1 can
4278	1 can
4279	1 can
4280	1 can
4281	1 can
4282	1 can
4283	1 can
4284	1 bone
4285	1 can
4286	1 can
4287	1 flake
4288	1 can
4289	1 can
4290	1 can
4291	1 can
4292	1 can
4293	1 can
4294	1 can
4295	1 can
4296	1 can
4297	1 can
4298	1 can
4299	1 can
4300	1 can
4301	1 can
4302	1 can
4303	1 can
4304	1 can
4305	1 can
4306	1 debitage
4307	1 flake
	1 can
	1 debitage

Isolate Number (SMB-I-)	Description
4308	1 can
	1 can
4309	1 flake
	1 tested cobble
4310	1 can
	1 oil filter
4311	1 debitage
	1 flake
4312	1 can
	1 can, bone
4313	1 can
	1 can
4314	1 can
4315	1 can
	1 can
4317	1 can
4318	1 can
4319	1 can
4320	1 flake
4321	1 flake
4322	1 can
4323	1 can
4324	1 can
4325	1 glass
4326	1 flake
4327	1 flake
4328	1 can
4329	1 can
4330	1 can
4331	1 can
4332	1 flake
4333	1 can
4334	1 can
4335	1 flake
4336	1 can
4337	1 can
4338	1 can
4339	1 can
4340	1 can
4341	1 can
4342	1 can
4343	1 can
4344	1 can
4345	1 can
4346	1 can
4347	1 ceramic sherds
4348	1 can
4349	1 can
4350	1 can
4351	1 can



Isolate Number (SMB-I-)	Description
4358	1 can
4359	1 can
4360	1 can
4361	1 flake
4362	1 can
4601	1 can
4901	1 jar
4902	1 hammerstone
4903	1 condensed milk can
4904	1 jar
4905	1 flakes
5001	1 military ration can, key wind
5002	1 lard bucket
5003	1 oval sardine can
	1 military ration can, key wind
	1 military ration can, key wind
5004	1 military ration can, key wind
	1 aluminum top pull tab can, pull tab
5005	1 military ration can, key wind
5006	1 can, knife cut
5007	1 sanitary can, knife cut
	1 military ration can, key wind
5008	1 sanitary can, knife cut
5009	1 oil can
	1 can, knife cut
5010	1 can
5011	1 can
5012	1 can
5013	1 bottle
5014	1 can
5015	1 can
5016	1 debitage
5017	1 can
5018	1 can
5019	1 can
5020	1 can
5021	1 can, bottle, cairn
5022	1 can
5023	1 can
5024	1 jar
5025	1 can
5026	1 can
5027	1 can
5028	1 can
5029	1 bottle
5030	1 can
5031	1 jar
5032	1 cone top can
	1 military ration can
5033	1 can
5034	1 evaporated milk can, solder dot, ice pick punctures

Isolate Number (SMB-I-)	Description
	1 military ration can
5035	1 can
5036	1 abrader
5037	1 can
5038	1 can
5039	1 can
5040	1 can
5041	1 can
5042	1 can
5043	1 can
5044	1 can
5045	1 can
5046	1 can
5047	1 can
5048	1 can
5049	1 military ration can
	1 lithic flake
5050	1 can
5051	1 can
5052	1 can
5053	1 can
5054	1 military ration can, key wind
	1 tested cobble
5055	1 debitage
5056	1 scraper
5057	1 can
5058	1 can
5059	1 can
5060	1 can
5061	1 can
5062	1 can
5063	1 can
5064	1 can
5065	1 can
5066	1 oil can
5067	1 can
5068	1 can
5069	1 can
5070	1 can
5071	1 sardine can
5072	1 can
5073	1 can
5074	1 military ration can, key wind
5075	1 evaporated milk can, solder dot, knife cut
	1 military ration can, key wind
	1 milled lumber and wire-cut nails
5076	1 fuel can, MARK: Texas Fuel Co.
	1 lithic flake
5077	1 aircraft window
5078	1 can

Isolate Number (SMB-I-)	Description
5079	1 can
5080	1 can
5081	1 can
5082	1 can
5083	1 plane parts
5084	1 flakes
5085	1 tested cobble
5086	1 can
5087	1 can
5088	1 can
5089	1 can
5090	1 can
5091	1 can
5092	1 debitage
5093	1 can
5094	1 can
5095	1 sheet metal
5096	1 can
5097	1 debitage
5098	1 lumber, metal
5099	1 can
5100	1 can
5101	1 can
5102	1 can
5103	1 can
5104	1 can
5105	1 can
5106	1 can
5107	1 can
5108	1 can
5109	1 can
5110	1 can
5111	1 can
5112	1 can
5113	1 can
5114	1 can
5115	1 can, bottle
5116	1 can
5117	1 tested cobble
5119	1 pottery shards
5120	1 scraper
5121	1 can
6000	1 hammerstone
6001	1 deflated cairn
6002	1 can
6003	1 bottle



## **CHAPTER 6**

### **SUMMARY AND MANAGEMENT RECOMMENDATIONS**

#### **SUMMARY**

From March 30 to June 26, 2009, AECOM cultural resources specialists conducted a Class III archaeological survey for the Project. As defined in Section 8110 of the *BLM Manual*, a Class III survey is a “professionally conducted, thorough pedestrian survey of an entire target area” intended to “provide managers and cultural resource specialists with a complete record of cultural properties locatable from surface and exposed profile indications” (BLM 2004:19). For the BSPP, the “target area” was defined as the Project Cultural Resources Survey Area (CRSA), which included the originally proposed Project plant site disturbance areas with 200-foot buffers on all sides, and originally proposed linear features with 50-foot buffers to each side of the proposed alignments, as mandated by the CEC (see Chapter 1).

After the completion of the cultural resources survey, the transmission line route provided by the Applicants was abandoned. The cultural resources found along the abandoned alignment are included in this report, although they are not assessed for significance as they are no longer part of the proposed Project. At present, the route of the transmission line is under discussion. When a new route is chosen for the transmission line, further cultural resources investigations will be conducted and the results provided to the regulatory agencies and other stakeholders.

The intensive pedestrian survey of the CRSA inventoried a total of 228 archaeological sites of which 194 are historic, 31 are prehistoric, and 3 contain both historical and prehistoric materials. Four of the prehistoric sites had been recorded previously. The survey also identified 1,214 new isolated finds. Due to Project design changes subsequent to the cultural resources survey, 29 of the archaeological sites (see Table 9, above) and 65 of the isolates are no longer within the Project disturbance area, and are not evaluated. Ten additional sites are located within the 200-foot buffer around the current Project, and are also not evaluated (see Table 9, above).

In the BSPP, sites and isolated finds include both prehistoric and historical artifacts and features. Most of the sites and isolates are historical in age, and consist predominantly of metal cans, with smaller quantities of glass bottles and jars, milled lumber, broken ceramics, and sundry metal items. Historical features include survey markers, rock features, prospecting pits, and stone and wooden structures, as well as cleared areas, fortified positions, can and trash scatters, aircraft parts, smoke land mines, and tank tracks associated with the use of the Project vicinity during World War II as part of the Desert Training Center/California-Arizona Maneuvers Area (DTC/C-AMA). Prehistoric cultural materials include flaked stone tools and debitage, groundstone items, tested cobbles, ceramic sherds, cairns, and thermal features.

Survey fieldwork at the BSPP was guided by a records and archival research program conducted at the EIC and local historical societies and repositories. In the course of that archival research, Project specialists collected information pertinent to the environment, history, and prehistory of the region generally, and the Palo Verde Mesa, specifically. The substance of that research

informs our interpretations of Project cultural resources, and is presented systematically in Chapters 2 and 3.

Based on surface observations and archival research, 47 of the archaeological sites that may be impacted by the construction of the BSPP are recommended as possibly significant and eligible for inclusion in the CRHR under Criteria 1 or 4, and are unevaluated for the NRHP (Table 15). These are prehistoric and historical sites containing features and/or artifact collections that have the potential to yield information pertinent to history or prehistory at the local, regional, or national level (CRHR Criteria 4). Sites associated with the WWII-era operation of the DTC/C-AMA, which has been designated a California Historic Landmark (#985), are possibly eligible due to their association with an event that made a significant contribution to the broad patterns of our history (CRHR Criteria 1). If these sites cannot be avoided through Project redesign, all of them would require some type of testing, as described below, to assess their significance for the CRHR and NRHP. None of the isolated finds at the BSPP are considered individually eligible for listing in the NRHP or CRHR, although some specific items might warrant collection or further documentation as part of a Project testing program. Potential construction impacts to possibly significant archaeological sites within the BSPP disturbance area, as currently defined, are summarized in Table 15.

## **RECOMMENDATIONS**

Avoidance and preservation of cultural resources is always preferred. Through careful design efforts, the Project could avoid some of the identified cultural resources. Sites that are avoided should not require any additional testing or assessment. If avoidance is not possible, those sites that might be impacted by the construction and maintenance of the BSPP will require further investigation to determine their eligibility for listing in the CRHR and the NRHP. In the interest of resource preservation, any further testing should occur only when the Project consultation and design process is complete, the BSPP has been certified, and the Section 106 process for the NHPA is complete. As stated in the Advisory Council on Historic Preservation's regulation 36 CFR 800.1(c), during the section 106 process only "nondestructive project planning activities" should be carried out, "provided that such actions do not restrict the subsequent consideration of alternatives to avoid, minimize or mitigate the undertaking's adverse effects on historic properties." Once a viable project with an imminent potential to impact archaeological sites exists, then further testing would be warranted. At that time, a Project-specific testing plan reflecting the agreed parameters of the Project should be written to guide further testing and assessment.

### **Treatment of Sparse Lithic Scatters through CARIDAP**

Of the archaeological sites identified as possibly significant, ten are lithic scatter sites that appear to qualify for mitigation under an Office of Historic Preservation programmatic treatment plan known as the *Sparse Lithic Scatter California Archaeological Resource Identification and Data*

**Table 15. Summary of Impacts to Possibly Significant Sites in the BSPP**

<b>Site Number</b>	<b>Site Type – Cultural Context</b>	<b>Chronological Assessment</b>	<b>Significance Potential</b>	<b>Project Impact</b>	<b>Recommended Testing Measure <sup>a</sup></b>
SMB-H-143	Historical refuse scatter and well - Prospecting/Ranching	Late 19th to early 20th century	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-160	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
SMB-H-163	Fortified positions - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-171	Historical refuse dump - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-178	Historical refuse dump - Historical use of the Palo Verde Mesa	20th century	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-203	Historical cleared areas - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-205	Fortified positions - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-207	Fortified positions - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-210	Fortified positions - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-M-214	Thermal cobble feature and can - Prehistoric and historical use of the Palo Verde Mesa	Prehistoric and 20th century	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-222	Historical hearth and rock features - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-223	Fortified positions - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program

<b>Site Number</b>	<b>Site Type – Cultural Context</b>	<b>Chronological Assessment</b>	<b>Significance Potential</b>	<b>Project Impact</b>	<b>Recommended Testing Measure <sup>a</sup></b>
SMB-H-224	Historical refuse dump - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-228	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
SMB-P-238	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
SMB-P-241	Lithic scatter and cairn - Lithic reduction	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-244	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
SMB-H-247	Historical cleared areas - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-249	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
SMB-H-250	Historical cleared area - Historical use of the Palo Verde Mesa	20th century	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-251	Historical cleared areas - Historical use of the Palo Verde Mesa	20th century	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-252	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
SMB-H-285	Fortified position - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-286	Fortified position - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-403	Historical refuse dump - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program



Site Number	Site Type – Cultural Context	Chronological Assessment	Significance Potential	Project Impact	Recommended Testing Measure <sup>a</sup>
SMB-H-404	Historical ranch - Prospecting/Ranching and DTC/C-AMA	Early 20th century and 1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-410	Trail - Prehistoric trails	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-411	Historical cleared area - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-423	Airplane crash site - DTC/C-AMA (possible Desert Strike)	1942-1944 (WWII) and late 20th century	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-427	Historical refuse dump - DTC/C-AMA	1942-1944 (WWII)	Possibly significant and eligible under CRHR Criteria 1 and 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-434	Thermal cobble features - Prehistoric use of the Palo Verde Mesa	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-436	Thermal cobble features - Prehistoric use of the Palo Verde Mesa	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-437	Thermal cobble feature - Prehistoric use of the Palo Verde Mesa	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-438	Thermal cobble feature - Prehistoric use of the Palo Verde Mesa	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-440	Thermal cobble feature - Prehistoric use of the Palo Verde Mesa	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-441	Thermal cobble features - Prehistoric use of the Palo Verde Mesa	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-445	Lithic scatter and thermal cobble feature - Prehistoric use of the Palo Verde Mesa	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-448	Thermal cobble feature - Prehistoric use of the Palo Verde Mesa	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program

Site Number	Site Type – Cultural Context	Chronological Assessment	Significance Potential	Project Impact	Recommended Testing Measure <sup>a</sup>
SMB-P-453	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
SMB-P-454	Habitation site - Prehistoric use of the Palo Verde Mesa	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-M-511	Lithic scatter with historical refuse scatter - Lithic reduction and DTC/C-AMA	Prehistoric and 1942-1944 (WWII)	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-H-514	Historical refuse scatter and features - Prospecting/Ranching	Early 20th century	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
SMB-P-530	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
SMB-P-531	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
SMB-P-532	Lithic scatter - Lithic reduction	Prehistoric	Appears to meet requirements for CARIDAP.	If eligible, impact less than significant with mitigation under CEQA; no adverse effect if addressed under CARIDAP for NHPA.	CARIDAP program
CA-RIV-2846	Quarry - Lithic reduction	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program
CA-RIV-3419	Quarry - Lithic reduction	Prehistoric	Possibly significant and eligible under CRHR Criterion 4, and unevaluated under NRHP Criteria.	If eligible, impact less than significant with mitigation under CEQA; adverse effect under NHPA addressed by consultation between BLM, SHPO, and interested parties.	Project-specific testing program

*Note:* <sup>a</sup> Testing measures recommended *only* in those instances where site avoidance is not possible.

*Acquisition Program* (CARIDAP), for NHPA compliance. To qualify for treatment as a “sparse lithic scatter” under the CARIDAP, a site must meet three criteria (Jackson et al. 1988). The site deposit must:

- (1) contain only flaked stone and lack other classes of archaeological materials,
- (2) lack a substantial subsurface deposit (may have slight subsurface extension as defined in the CARIDAP), and
- (3) exhibit surface densities equal to or less than three flaked stone items per square meter.

Based on careful surface assessments, ten sites (SMB-P-160, -228, -238, -244, -249, -252, -453, -530, -531, and -532) appear to meet these criteria. The CARIDAP requires certain testing and assessment methods, minimally including screened excavation units to assure the superficial nature of the deposit, and the collection and analysis of all site lithics or a representative sample of the lithic tools and production debris at the site. Analysis should be performed by a lithic specialist who can address the largely technological focus of the CARIDAP data requirements. The lithic analyst should also address, to the extent that the lithic materials allow, the other key prehistoric research issues and themes outlined in Chapter 4: chronology, ritual activity, travel and trade, ethnicity, and subsistence and settlement.

If non-flaked stone artifacts, extensive subsurface extensions, or higher-than-allowed densities of lithics are encountered at any of these sites, the involved site(s) would need to be tested using the Project-specific testing plan devised for the remainder of the possibly significant archaeological sites, as described below.

### **Treatment of Identified Sites through a Project-specific Testing Plan**

In addition to the sparse lithic scatters, 37 other sites within the current Project APE have the potential to qualify for the CRHR and are unevaluated for the NRHP (see Table 15). For these sites, if avoidance is not possible, a specially designed testing program is recommended. A Project-specific testing plan addressing the theoretical, methodological, and legal aspects of testing-level research at the BSPP should be written prior to any further research. Testing at the identified sites should include more intensive mapping and limited subsurface tests of various types. The subsurface tests should be designed to define the horizontal and vertical limits of the sites, and to collect samples of the cultural and ecological materials necessary to characterize and assess the significance of the sites.

### **A Landscape Approach: Beyond Site-focused Research**

In keeping with our landscape approach to the BSPP, targeted documentation and/or collection of certain artifact classes, in addition to the site-focused subsurface testing recommended above, may be warranted (cf. Schaefer 2007). A more comprehensive testing program for the BSPP could include the collection of all prehistoric ceramics, groundstone, obsidian items, other exotic toolstone pieces, shell objects, ornamental objects, and diagnostic flaked stone tools. These classes of artifacts, even in relatively small numbers, are inordinately useful in addressing the

key prehistoric research themes of chronology, ritual activity, travel and trade, ethnicity, subsistence and settlement, and lithic technology. Prehistoric ceramics, in particular, are of paramount importance in the region. Ceramic analysis in the lower Colorado River and Lake Cahuilla areas has become increasingly sophisticated in recent years (e.g., Hildebrand et al. 2002; Schaefer 1994a, 2002). The total collection of all non-historical ceramics in the BSPP would allow a more complete analysis from temporal, cultural, and technological perspectives.

For the historical landscapes of the BSPP, the most important pieces of information, in addition to features such as fortified positions and prospect claims, are the metric and diagnostic details of historical artifacts, particularly cans. During our Class III survey, trained archaeologists recorded standard metric and formal observations for each artifact. Therefore, those sites that fall below the threshold of eligibility to the CRHR and NRHP have already been well documented. Arguably, the research potential of those sites could be exhausted through the careful analysis of the observational data collected as part of the intensive Class III survey. This data would be instrumental in the analysis of sites selected for further testing as part of larger landscapes of activity. For more detailed artifact analyses, representative collections of diagnostic artifacts could be amply supplied by site-focused testing at the historical sites identified above. A majority of sites with historical features are included in the testing recommendations above.

In tandem with this field testing program, researchers should also conduct a more intensive archival research program, potentially including an oral history component. The testing plan should include a thorough data analysis program, incorporating the detailed artifactual and spatial data collected as part of this survey program. Those sites and isolates that are not tested or revisited during the testing phase, should nevertheless be represented in the analysis of the BSPP. The inclusion of all of the survey data with the more detailed information from testing program, should allow for a more nuanced and comprehensive discussion of the various overlapping landscapes of the Palo Verde Mesa.

## CHAPTER 7

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**ATTACHMENT 1**

**RESUMES**



**REBECCA MCCORKLE APPLE, RPA****Principal/Manager, Cultural Resources Group/  
Senior Archaeologist****SUMMARY**

Expertise with CEQA/NEPA requirements  
 Experience with Section 106 compliance and mitigation programs  
 Over 20 years experience in cultural resource management

**EDUCATION**

MA, Anthropology, San Diego State University, 1990  
 BA, Anthropology, San Diego State University, 1978

**AFFILIATIONS**

Society for American Archaeology  
 Society for California Archaeology

**CERTIFICATIONS**

Register of Professional Archaeologists  
 Certified Archaeology Consultant, County of San Diego

**ACADEMIC AWARDS AND  
SCHOLARSHIPS**

Phi Kappa Phi  
 Phi Beta Kappa  
 University Scholar, 1987 and 1988

**PAPERS AND PUBLICATIONS**

*Setting the Scene: Interpretive Planning and Implementation in Old Town Historic State Park.* Paper presented at the 42<sup>nd</sup> Annual Meeting for the Society of California Archaeology, Burbank, California (2008).

*Mapping and Managing Pathway to the Past.* Paper presented at the 22<sup>nd</sup> Annual ESRI International User Conference, San Diego, California (2002).

*Introduction to Recent Archeological Investigations at the Salton Sea Test Base, Imperial County California.* Proceedings of the Society for California Archaeology, Volume 12. Fresno, California (1999).

*Introduction to Recent Archaeological Investigations at Salton Sea Test Base, Imperial County, California.* Paper presented at the 32<sup>nd</sup> Annual Meeting for Society for California Archaeology, San Diego (1998).

*A Lake Mojave Period Site Near Silver Lake, California* (with A. York). Presented at the 26<sup>th</sup> Annual Meeting of the Society for California Archaeology, Pasadena (1992).

*Recent Archaeological Investigations in the North Las Vegas Valley* (with J.H. Cleland and M.S. Kelly). In *Crossing the Borders: Quaternary Studies in Eastern California and Southwestern Nevada*. San Bernardino County Museum Association Special Publication (1991).

Rebecca Apple has over 20 years of experience in cultural resource management and serves as senior archaeologist for EDAW. Her experience includes managing cultural resources compliance efforts for large complex projects. She is knowledgeable in the procedures and guidelines associated with implementation of NHPA and CEQA. She has managed numerous cultural resource projects, including prehistoric, historic, and ethnographic studies. She has directed inventories, evaluations, data recovery efforts, and monitoring programs. She has also prepared management plans and conducted feasibility studies. Her work frequently includes consultation with municipal, state, and federal agencies, as well as Native American representatives and the public. As part of interdisciplinary teams, she has managed cultural resources investigations and authored cultural resource sections for ISs, EAs, EIRs, and EISs. Her experience includes cultural resource investigations for pipelines, transmission lines, power plants, highways, landfills, water resource facilities, military installations, and commercial and residential development.

**ENERGY AND TRANSMISSION PROJECTS****CONFIDENTIAL PROJECT****Task Manager****CLIENT:** CONFIDENTIAL CLIENT

Responsible for oversight of archaeological and architectural surveys, technical reports, coordination with CEC staff, and preparation of AFC sections for a 2,000-acre solar project.

**Yuma Lateral Pipeline Project, Yuma, AZ****Project Manager****CLIENT:** North Baja LLC (TransCanada)

Responsible for cultural services, conducting records searches, archival research, Native American consultation, and survey of the preferred alignment. Identified resources included the Yuma Valley Railroad, a National Register-eligible property.

**Harper Lake Cultural Resources Constraints Study,****San Bernardino County, CA****Task Manager****CLIENT:** ENSR/Harper Lake, LLC

Responsible for field reconnaissance and constraints analysis for a proposed 3,300-acre specific plan area. Potential development included a dairy and energy park.

**North Baja Pipeline Project, Ehrenberg, Arizona to Mexican Border****Project Manager****CLIENT:** Foster Wheeler

Responsible for cultural services, conducting records searches, archival research, Native American consultation, survey of the preferred alignment and alternatives, site evaluation, and data recovery.

**DeAnza Pipeline Constraints and Permitting Analysis,****Ehrenberg, AZ to Calexico, CA****Resource Manager****CLIENT:** AEP

Responsible for cultural services, providing information on distribution of natural and cultural resources along the proposed pipeline corridor in report

**REBECCA MCCORKLE APPLE**

format, with accompanying maps showing these resources and other constraints.

**SEMPRA On-call Cultural Services, CA****Resource Manager**

**CLIENT:** SEMPRA

Resource manager for cultural resource task orders. Most recent task order dealt with artifact curation for a City project.

**Imperial Irrigation District Cultural Survey, Imperial County, CA****Project Manager**

**CLIENT:** Imperial Irrigation District

Responsible for cultural resources component of two transmission line studies. Survey and testing were conducted in conjunction with pole replacement along the R and L transmission lines.

**Mead-Adelanto Transmission Line, Clark County, NV, and San Bernardino County, CA****Resource Manager**

**CLIENT:** Los Angeles Department of Water and Power  
Cultural resource survey.

**Sycamore Canyon Substation to Rancho Carmel Substation 69-kV Transmission Line Project, San Diego County, CA****Project Manager**

**CLIENT:** San Diego Gas & Electric

Responsible for cultural resources component of a PEA document for submittal to the CPUC that evaluated the potential environmental impacts of a proposed 69-kV transmission line.

**Coso Known Geothermal Resource Area, Inyo County, CA****Resource Manager**

**CLIENT:** Los Angeles Department of Water and Power

Responsible for data recovery investigations at two geothermal well-pads located in the Sugarloaf Mountain Obsidian Source National Register District.

**Santa Ynez Unit Development, Santa Barbara County, CA****Field Director**

**CLIENT:** Exxon Corporation

Supervised data recovery excavations of a prehistoric coastal site.

**Big Creek Expansion Project Transmission Line, South Central, CA****Data Manager**

**CLIENT:** Southern California Edison

Responsible for cultural resource impact assessment of alternative routes for a proposed transmission line from the Big Creek Hydroelectric Project in the Sierras to the Los Angeles Basin.

**Kern River Gas Transmission Project, WY, UT, NV, and CA****Task and Resource Manager**

**CLIENT:** Kern River Gas Transmission Company

Inventory, evaluation, data recovery, and construction monitoring for California portion of this Class I overview.

**Argus Cogeneration Expansion, San Bernardino and Inyo Counties, CA  
Project Archaeologist**

**CLIENT:** Kerr-McGee

Supervised cultural resource survey and documentation for a water pipeline.

**REBECCA MCCORKLE APPLE****Geothermal Public Power Line Project, North Central CA  
Resource Manager****CLIENT:** Sacramento Municipal Utility District

Responsible for cultural resource surveys for a proposed transmission line from the Geysers Geothermal Area to Sacramento.

**Southwest Powerlink 500-kV Transmission Line EIR/EIS,  
Imperial and San Diego Counties, CA  
Resource Manager****CLIENT:** San Diego Gas & Electric

Participated in Section 106 compliance activities, including data recovery, analysis, and report preparation.

**MILITARY PROJECTS****Integrated Cultural Resources Management Plan and Cultural  
Affiliation Study, Chocolate Mountains Aerial Gunnery Range, Marine  
Corps Air Station Yuma, Riverside, and Imperial Counties, CA  
Co-Principal Investigator****CLIENT:** U.S. Navy, Naval Facilities Engineering Command, Southwest and MCAS Yuma

Preparing an ICRMP for CMAGR to guide cultural resources compliance efforts to facilitate CMAGR mission. ICRMP will summarize existing inventory and provide a process to streamline the inventory and evaluation process. Components of the ICRMP are a Regional Archaeological Research Design and a Cultural Affiliation Study.

**Archaeological Evaluation of Sites on San Clemente Island,  
Los Angeles County, CA  
Principal Investigator****CLIENT:** U.S. Navy Southwest Division and Navy Region Southwest  
Responsible for National Register of Historic Places Evaluation of four archaeological sites on San Clemente Island.**Cultural Resources Survey and Evaluation for Spring Hill and  
Associated Access Roads, Riverside County, CA  
Principal Investigator****CLIENT:** U.S. Navy, Naval Facilities Engineering Command, Southwest and MCAS Yuma

Directed archaeological resource survey of proposed facility to improve communications for aircraft and vehicles with the Chocolate Mountain Aerial Gunnery Range (CMAGR). Two sites were evaluated for eligibility to the National Register of Historic Places. One site appeared to contain very limited information potential and did not qualify for the NRHP. Site CA-RIV-8236 appeared to possess information relevant to addressing regional research issues and was recommended eligible for the NRHP.

**Integrated Cultural Resources Management Plan Naval Base Point  
Loma, San Diego, CA  
Project Manager****CLIENT:** U.S. Navy, Naval Facilities Engineering Command and Naval Base Point Loma

Preparing an ICRMP for CMAGR to guide cultural resources compliance efforts to facilitate CMAGR mission. ICRMP will summarize existing inventory and provide a process to streamline the inventory and evaluation process. Components of the ICRMP are a Regional Archaeological Research Design and a Cultural Affiliation Study.

**REBECCA MCCORKLE APPLE****Archaeological Survey for the Chocolate Mountains Aerial Gunnery Range Central Training Area, Marine Corps Air Station Yuma, Imperial County, CA****Resource Manager****CLIENT:** U.S. Navy, Southwest Division and MCAS Yuma

Responsible for cultural resource survey of proposed central training area on CMAGR. The 1,580-acre survey identified four sites on R-2507S and four on R-2507 N. One of the sites on the South Range (the remains of a ranch complex) and three of the sites on the North Range (rock art, ceramics scatter, and a rock ring) were identified as potentially eligible for the National Register of Historic Places.

**Chocolate Mountains Aerial Gunnery Range: Cultural Resources Survey of 12 Targets and Monitoring of 14 Archaeological Sites, Riverside and Imperial Counties, CA****Principal Investigator****CLIENT:** U.S. Navy, Southwest Division and MCAS Yuma

Directed cultural resource survey of 1,523 acres and site monitoring program on CMAGR. Inventoried site types were lithic scatters, trail segments, pot-drops, rock features, and a mining area. Monitoring program included lithic scatters, rock art, cleared circles, mining complexes, and a segment of historic road.

**Cultural Resources Survey of Six Areas on the Chocolate Mountains Aerial Gunnery Range, Imperial County, CA****Principal Investigator****CLIENT:** U.S. Navy, Southwest Division and MCAS Yuma

Directed cultural resource survey of proposed Forward Air Reporting Position, range access, and target areas.

**Evaluation of 24 Sites at the Chocolate Mountains Aerial Gunnery Range, Imperial County, CA****Principal Investigator****CLIENT:** U.S. Navy, Southwest Division and MCAS Yuma

Responsible for National Register of Historic Places evaluation of 24 sites in the Chocolate Mountains.

**Historic and Archaeological Resources Protection Plan, Chocolate Mountain Aerial Gunnery Range, Imperial and Riverside Counties, CA****Project Manager****CLIENT:** U.S. Navy, Southwest Division and MCAS Yuma

Directed archival archaeological research and field visit for the Chocolate Mountain Aerial Gunnery Range. Prepared HARP Plan for the installation.

**Evaluation of Two Sites, MCAS Yuma, AZ****Project Manager****CLIENT:** U.S. Navy, Southwest Division and MCAS Yuma

Evaluation of two archaeological sites near the MCAS Yuma airfield.

**San Clemente Island Operations Management Plan EIS, Naval Auxiliary Air Field, San Clemente Island, Los Angeles County, CA****Resource Manager****CLIENT:** U.S. Navy, Southwest Division and SRS Technologies

Assessed current cultural resource inventory and supplemented in specific areas. Project involved preparation of technical report documenting inventory efforts, including shipwreck study. Impact analysis conducted for existing and proposed military operations on San Clemente Island.

**REBECCA MCCORKLE APPLE****Indefinite Quantity Contract for Cultural Resource Services, CA and AZ  
Project Manager****CLIENT:** U.S. Navy, Southwest Division

Contract manager for multiple task orders on a variety of projects involving archaeological surveys and archaeological evaluations throughout California and Arizona. Tasks include managing budget, overseeing staff, acting as point of contact, and preparation of final reports.

**Archaeological Support for Environmental Assessment of Wind Farm Project, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA****Resource Manager****CLIENT:** U.S. Navy, Southwest Division

Prepared cultural resource portion of the EA and placed protective signs at nine archaeological sites near or adjacent to the Wind Farm construction area.

**Special Warfare Training and Range Survey, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA****Senior Archaeologist****CLIENT:** U.S. Navy, Southwest Division

Performed cultural resource survey of proposed training ranges on San Clemente Island. Prepared technical report in support of an EA.

**Evaluation of Six Sites near the Missile Impact Range, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA****Project Manager****CLIENT:** U.S. Navy, North Island, Natural Resources Office

Provided technical assistance for the NRHP evaluation of six archaeological sites on the Central Plateau of San Clemente Island.

**Historic and Archaeological Resources Protection Plan, MCAS Yuma, AZ****Project Manager****CLIENT:** U.S. Navy, Southwest Division and MCAS Yuma

Directed archival archaeological research and building inventory for MCAS Yuma. Lead author on Historic and Archeological Resources Protection Plan for the installation.

**Pumped-Hydro Storage Wind/Energy System, Naval Auxiliary Air Field, San Clemente Island, Los Angeles County, CA****Resource Manager****CLIENT:** U.S. Navy, Southwest Division

Relocated and recorded 76 archaeological sites in proposed water storage and wind/energy development area. Prepared existing conditions report.

**Tactical Aircrew Combat Training System Range Upgrade, MCAS Yuma, AZ****Project Manager****CLIENT:** U.S. Navy, Southwest Division

Performed cultural resource survey of proposed transmission line and 17 threat emitter stations. Prepared testing plan.

**Cultural Resource Inventory Survey at Salton Sea Test Base, Imperial County, CA****Project Archaeologist****CLIENT:** U.S. Navy, Southwest Division

Conducted intensive cultural resource survey for approximately 6,000 acres and evaluation program for 170 sites. Survey and test excavations were conducted in compliance with the NHPA, NAGPRA, and other federal regulations.

**REBECCA MCCORKLE APPLE****Historic and Archeological Resources Protection Plans, Los Angeles, Imperial, and San Diego Counties, CA****Resource Manager****CLIENT:** U.S. Navy, Southwest Division

Prepared HARP Plans for the following six Naval installations: Morris Dam Test Facility, Azusa; Naval Air Facility, El Centro; Naval Shipyard, Long Beach; Point Loma Complex, San Diego; Naval Station, San Diego; and the Naval Radio Receiving Facility, Imperial Beach.

**Cultural Resources Technical Studies, MCAS Yuma, Yuma Training Range Complex, AZ and CA****Project Archaeologist****CLIENT:** U.S. Navy, Southwest Division

Directed cultural resource sample survey in the Chocolate Mountains Gunnery Range.

**Mission Trails Regional Park Explosive Ordnance Demolition Environmental Assessment, San Diego County, CA****Project Manager****CLIENT:** U.S. Army Corps of Engineers

Directed cultural resource survey in support of an environmental assessment addressing the removal of ordnance from the former location of Camp Elliott.

**Archeological Survey of Sierra I Impact Area, MCB Camp Pendleton, San Diego County, CA****Resource Manager****CLIENT:** U.S. Marine Corps

Performed cultural resource survey of approximately 2,500 acres on the northern portion of MCB Camp Pendleton.

**WATER PROJECTS****Emergency Storage Project, San Diego County, CA****Resource Manager****CLIENT:** San Diego County Water Authority

Responsible for the cultural Resources Evaluation Program and Treatment Program. Assisted SDCWA with Native American consultation, implementation of a programmatic agreement, and coordination with ACOE. Project involved evaluation of over 20 cultural resources including San Vicente Dam. Under a Historic Properties Treatment Plan prepared by EDAW, research designs were prepared and carried out for prehistoric and historic period resources. Treatment measures included data recovery, site stabilization, and preparation of Historic American Engineering Record documentation for San Vicente Dam. Prepared Public Interpretive Plan.

**North City Water Treatment Plant, San Diego, CA****Resource Manager****CLIENT:** City of San Diego Water Department

Managed cultural resource component of the North City Water Treatment Plant EIR. Project included survey and limited testing.

**Balboa Park Wastewater Treatment, San Diego County, CA****Archaeologist****CLIENT:** City of San Diego

Participated in cultural resource documentation for a facility siting study.

**Mission Valley Water Reclamation Plant, San Diego County, CA****Resource Manager****CLIENT:** City of San Diego

Responsible for archaeological testing and monitoring program in an area of potential archaeological sensitivity.



**REBECCA MCCORKLE APPLE****North Metro Interceptor Sewer, San Diego County, CA  
Resource Manager****CLIENT:** City of San Diego

Responsible for cultural resource investigations for constraints analysis of proposed sewer alignments.

**Freeman Junction, Kern County, CA  
Resource Manager****CLIENT:** Los Angeles Department of Water and PowerResponsible for the survey of portions of 1<sup>st</sup> Los Angeles Aqueduct for cap strengthening project.**Eastern Sierra Hydroelectric Relicensing, Mono and Inyo Counties, CA  
Field Director****CLIENT:** Southern California Edison

Participated in assessment of 22 sites within three hydroelectric project areas.

**Pit 3, 4, and 5 Hydroelectric Relicensing Project, Shasta County, CA  
Project Archaeologist****CLIENT:** Pacific Gas and Electric Company

Directed limited data recovery efforts at six archaeological sites threatened by shoreline erosion prior to stabilization.

**Rose Canyon Trunk Sewer EIR, San Diego County, CA  
Archaeologist****CLIENT:** City of San Diego

Conducted windshield reconnaissance and records search and prepared overview for proposed sewer.

**Pamo Dam and Reservoir, San Diego County, CA  
Archaeologist****CLIENT:** San Diego County Water Authority

Assisted in preparation of research design and conducted archaeological monitoring of geotechnical investigations.

**Reservoir 657-2, San Diego County, CA  
Archaeologist****CLIENT:** Otay Water District

Supervised survey and report preparation of proposed covered reservoir site in Spring Valley.

**Mokelumne River Hydroelectric Relicensing, Alpine, Amador, and Calaveras Counties, CA****Crew Chief****CLIENT:** Pacific Gas and Electric Company

Participated in archaeological test excavations and NRHP evaluations.

**TRANSPORTATION PROJECTS****Southern Nevada Supplemental Airport EIS, Clark County, NV  
Co-Principal Investigator****CLIENT:** ENSR, VHB, and Clark County Department of Aviation

Responsible for cultural resource inventory of over 17,000 acres for a BLM and transfer. Class III survey also included Radar and Navaid facilities and retention basins. Class I studies for multiple alternatives. Project involved consultation with BLM, USFS, FAA, SHPO, Native American groups, and 106 other interested parties.

**REBECCA MCCORKLE APPLE****SR-76 East, San Diego County, CA****Principal Investigator****CLIENT:** Caltrans and SANDAG

Responsible for the cultural resource inventory and evaluation program for the SR-76 East widening project. Oversaw the survey of three alternative routes for archaeological and architectural resources, along with Extend Phase I excavations, ASR, HRER, and HPSR.

**SR-56, San Diego County, CA****Resource Manager****CLIENT:** City of San Diego

Responsible for the cultural resource evaluation program for the SR-56 EIR. Evaluated 16 sites along two alternative freeway alignments.

**La Costa Avenue/I-5 Interchange, San Diego County, CA****Project Archaeologist****CLIENT:** Caltrans

Directed an archaeological survey of proposed interchange improvements in the City of Carlsbad. The project requires close coordination with City and Caltrans staff.

**SA 680/SF 728 Roadway Project Environmental Studies/EIR, San Diego County, CA****Project Archaeologist****CLIENT:** County of San Diego

Directed the test excavation and NRHP evaluation of four sites on the proposed project alignment. These investigations addressed the potential association of the sites with the Harris Site Complex.

**SR-79, Riverside County, CA****Resource Manager****CLIENT:** Riverside County Transportation Commission

Responsible for cultural resource investigations for widening and realigning two highway segments. Prepared cultural resource sections for ISs and coordinated archaeological survey reports, historic architectural survey reports, and historic study report.

**Victorville La Mesa/Nisqually Road Overpass, San Bernardino County, CA****Project Archaeologist****CLIENT:** City of Victorville

Supervised survey and prepared positive archaeological survey report and historic property survey report.

**LANDFILL AND WASTE-RELATED PROJECTS****Elsmere Canyon Landfill, Los Angeles County, CA****Project Archaeologist****CLIENT:** Elsmere Corporation

Directed cultural resource assessment for the EIR/EIS.

**Southwest San Diego Landfill Siting Study, San Diego County, CA****Resource Manager****CLIENT:** County of San Diego

Responsible for cultural resource assessments of potential landfill sites throughout the southwestern quadrant of San Diego County. Ranked the relative sensitivity of each potential site.

**REBECCA MCCORKLE APPLE****LAND DEVELOPMENT PROJECTS****Heber Dunes Off-Highway Vehicle Park, Imperial County, CA  
Cultural Resources Project Manager**

**CLIENT:** State of California Department of Parks and Recreation Off-Highway Motor Vehicle Recreation Division

State Parks recently acquired Heber Dunes and is in the process of preparing a General Plan and EIR for the Park. As part of these efforts approximately 350 acres were inventoried for cultural resources.

**Laborde Canyon Off-Highway Vehicle Park, Riverside County, CA  
Cultural Resources Project Manager**

**CLIENT:** State of California Department of Parks and Recreation Off-Highway Motor Vehicle Recreation Division and Riverside County Economic Development Authority

The areas of the SVRA that would be open to some level of OHV use would cover approximately 1,480 acres within the 2,640-acre Laborde Canyon site. EDAW was contracted to conduct environmental studies for the Laborde Canyon site, including a cultural resource records search and an intensive cultural resources pedestrian survey of the proposed OHV park. Two prehistoric sites and the Lockheed Facility (Beaumont Site No. 2) were recorded within the study area during the survey. A preliminary assessment of the complex at Beaumont Site No. 2 was made to determine eligibility for the California Register of Historical Resources.

**Data Recovery for Goat Canyon Retention Basin Border Field State Park, San Diego County, CA  
Cultural Resources Project Manager**

**CLIENT:** State of California Department of Parks and Recreation  
Conducted data recovery under stringent time constraints based on wildlife issues and construction schedule. Excavation of 50 units at CA-SDI-16,047 Locus B indicated that the site was a buried temporary camp whose occupants exploited littoral, near-shore, and terrestrial subsistence resources. Data recovery investigations successfully collected data important in local and regional prehistory. The identification of a single component locus dating to the Archaic-Late transition is an important contribution.

**Fairbanks Country Villas, San Diego, CA  
Project Manager**

**CLIENT:** Del Mar Land Management Company  
Prepared testing plan and implemented testing program for proposed residential development.

**Inmate Reception Center, San Diego County, CA  
Project Manager**

**CLIENT:** County of San Diego  
Responsible for testing and data recovery of half a city block in downtown San Diego.

**343 Sansome Street, San Francisco County, CA  
Project Archaeologist**

**CLIENT:** Gerald D. Hines Interests  
Participated in archaeological data recovery excavations at a Gold Rush-period site in downtown San Francisco.

**North Las Vegas Land Transfer, Clark County, NV  
Project Archaeologist**

**CLIENT:** City of North Las Vegas  
Directed cultural resource survey of 4,000-acre land transfer from the BLM to the City of North Las Vegas.

**REBECCA MCCORKLE APPLE****Apex Industrial Park, Clark County, NV****Project Archaeologist****CLIENT:** Kerr-McGee

Conducted archaeological survey and NRHP evaluations for BLM land transfer.

**Walnut Hills Subdivision, San Diego County, CA****Archaeological Monitor****CLIENT:** Fargo Industries

Conducted archaeological monitoring of site preparation and grading in San Marcos.

**Alcoholism Service Center, San Diego County, CA****Project Archaeologist****CLIENT:** Fellowship Center, Inc.

Conducted archaeological survey of proposed rehabilitation center adjacent to Mission San Luis Rey in Oceanside.

**OTHER PROJECTS****Peñasquitos Park, San Diego County, CA****Archaeologist****CLIENT:** County of San Diego

Participated in survey, including documentation of three adobes.

**Old Town State Historic Park, San Diego County, CA****Archaeologist****CLIENT:** California Department of Parks and Recreation/FIR

Participated in excavation before placement of underground utilities in San Diego.

**Rancho Guajome Adobe, San Diego County, CA****Archaeologist****CLIENT:** County of San Diego

Participated in excavation, cataloging, and analysis for work conducted before building stabilization efforts.

**Anza Borrego Desert State Park, Riverside County, CA****Archaeologist****CLIENT:** California Department of Parks and Recreation

Participated in resource inventory survey.

**Glamis Imperial Project, Imperial County, CA****Archaeologist****CLIENT:** Glamis Imperial Corporation

Conducted cultural resource survey for proposed gold mine.

**Fort Cady Boric Acid Mining and Processing Facility,  
San Bernardino County, CA****Project Archaeologist****CLIENT:** Fort Cady Minerals Corporation

Directed survey, testing, and evaluation of 24 sites in Newberry Springs.

**Rialto-to-El Paso Fiber Optics Cable, San Bernardino and  
Riverside Counties, CA****Archaeologist****CLIENT:** U.S. Sprint

Conducted cultural resource survey along western extent of project.

**REBECCA MCCORKLE APPLE****SELECTED REPORTS**

*A View Across the Cultural Landscape of the Lower Colorado Desert: Cultural Resource Investigations for the North Baja Pipeline Project* (with Jamie Cleland). Prepared for TetraTech and North Baja, LLC. EDAW, Inc., San Diego (2003).

*Cultural Resources Evaluation for the North Baja Gas Pipeline* (with C. Dolan, J. Underwood, and J.H. Cleland). Prepared for Foster Wheeler Environmental, Inc. EDAW, Inc., San Diego (2001).

*Historical and Archeological Resources Protection Plan (HARP) for the Chocolate Mountain Aerial Gunnery Range, Imperial County, California* (with J.H. Cleland). Prepared for U.S. Navy Southwest Division, Naval Facilities Engineering Command. EDAW, Inc., San Diego (2001).

*Archaeological Resources Evaluation Report State Route 56 Between Coast and Foothill, City of San Diego, California* (with J.H. Cleland, A. York, T. Wahoff, and D. James). Prepared for the City of San Diego. KEA Environmental, Inc., San Diego (1997).

*Archeological Survey and Evaluation Program for the Salton Sea Test Base, Imperial County, California* (with A. York, A. Pignolo, J.H. Cleland, and S. Van Wormer). Prepared for U.S. Navy, Southwest Division, Naval Facilities Engineering Command. KEA Environmental, Inc., San Diego (1997).

*Two Sides of the River: Cultural Resources Technical Studies Undertaken as Part of Environmental Documentation for Military Use of the MCAS Yuma Training Range Complex in Arizona and California* (with G. Woodall, L. Peterson, and J.S. Bruder). Prepared for the Southwest Division Naval Facilities Engineering Command and MCAS Yuma. Dames & Moore Intermountain Cultural Resource Services Research Paper No. 5, San Diego (1993).

*Bank Stabilization at Lake Britton: Limited Data Recovery* (with A. MacDougall). Prepared for Pacific Gas and Electric. Dames & Moore, San Diego (1990).

*Kern River Pipeline Cultural Resource Survey Report* (with J.H. Cleland, A.L. York, and P. Friedman). Submitted to the Federal Energy Regulatory Commission. Dames & Moore, San Diego (1990).

*Sugarloaf Mountain in Prehistory: Archaeological Testing and Data Recovery for the Exploratory Drilling Program II and the Unit No. 1 Project* (with J.H. Cleland and E. Nilsson). Prepared for the Los Angeles Department of Water and Power. Dames & Moore, San Diego (1990).

*An Archaeological Research Design for the Evaluation of Cultural Resources in Pamo Valley, San Diego, California* (with J.H. Cleland, J.R. Cook, and J. Schaefer). Wirth Environmental Services, a Division of Dames & Moore, San Diego (1985).



## **JAMES CLELAND, PhD**

### **Principal**

#### **SUMMARY**

Principal for archaeological and historical studies  
 Thirty years of experience directing cultural resource programs  
 Section 106 compliance specialist  
 Expert testimony  
 Award winning projects  
 Extensive experience with gas transmission and other linear projects

#### **EDUCATION**

PhD, Anthropology, University of Virginia, 1977  
 MA, Anthropology, University of Virginia, 1974  
 BA, Anthropology, University of Michigan, 1969

#### **AFFILIATIONS**

Society for California Archaeology  
 American Anthropological Association  
 Society for American Archaeology

#### **CERTIFICATIONS**

Register of Professional Archaeologists  
 National Preservation Institute. Identification and management of traditional cultural places  
 National Preservation Institute – Section 106.  
 Working with the revised regulations

Principal archaeologist for EDAW, Dr. James Cleland has more than 30 years of experience conducting archaeological, historical, and ethnographic studies. He is thoroughly familiar with regulations and guidelines implementing the NHPA, NEPA, and CEQA. He has authored the cultural resources sections of many EAs, EISs, and EIRs and has provided expert testimony before federal and state administrative agencies regarding the consideration of cultural resources in environmental review.

Dr. Cleland has directed cultural resources investigations throughout the United States and abroad. He manages the full spectrum of technical studies, including archaeological overviews and surveys, test excavations, historical research, historic structures surveys, Native American contact programs, cultural landscape investigations, evaluations of significance for NRHP eligibility, data recovery excavations, construction monitoring, long-term resource planning, and pure research. Spanning a broad spectrum of development and resource management projects, his work has included military activities, power plants, transmission lines, pipelines, oil and gas processing plants, water resource facilities, highways, timber sales, landfills, and commercial and residential developments. His project work has been recognized for excellence by the American Cultural Resources Association, the California Preservation Foundation, the Earth Sciences Research Institute, and the Association of Environmental Professionals.

Dr. Cleland has presented numerous professional papers on cultural resources management and archaeological research. Topics have included the siting and evaluation of large linear projects, approaches to the evaluation of archaeological significance, obsidian hydration and chronology building, hunter-gatherer cultural adaptation, cultural landscapes, and urban historical archaeology. He is a past-president of the Society for California Archaeology and served on the governor's Heritage Resource Task Force in California, helping to guide the formulation of archaeological and historic preservation policy at the state level.

## **LAND DEVELOPMENT PROJECTS**

### **Hellman Ranch Specific Plan, Orange County, CA**

#### **Principal Investigator**

**CLIENT:** City of Seal Beach

Responsible for archaeological evaluation and data recovery of 10 Native American sites in the coastal zone. Work included Native American consultation, burial repatriation and in situ preservation, and on-site cultural interpretation.

### **Ballpark Infrastructure and Remediation, San Diego, CA**

#### **Principal-in-Charge**

**CLIENT:** Centre City Development Corporation

Responsible for the archaeological monitoring and data recovery in the downtown East Village area for the proposed ballpark. Required hazardous materials certification. Project received Award of Excellence for Archaeology from the City of San Diego Historical Resources Board.

### **West Bench Master Plan, Salt Lake County, UT**

#### **Cultural Resource Specialist**

**CLIENT:** Kennecott Land Company

Conducted cultural resources assessment of a 93,000-acre master plan development. Senior review of the cultural resources element of the specific plan.

**JAMES CLELAND, PhD****Bixby Ranch Old Town Center, Orange County, CA****Principal Investigator****CLIENT:** City of Seal Beach

Responsible for cultural resources survey, monitoring, and data recovery of proposed commercial development.

**101 California Project, San Diego County, CA****Principal Investigator****CLIENT:** Catellus, Inc.

Responsible for archaeological testing and data recovery at the San Diego Barracks site (1850 through 1920) for this mid- to high-rise development project in downtown San Diego.

**Inmate Reception Center, San Diego County, CA****Principal Investigator****CLIENT:** County of San Diego, Department of Public Works

Responsible for major data recovery project at Victorian-Period urban site.

**Leopalace Resort, Yona, Guam****Archaeologist and Peer Reviewer****CLIENT:** Mayama Development, Inc.

Assisted in the Section 106 consultation with the territorial historic preservation officer, provided peer review of the archaeological data recovery fieldwork, and provided field support to help expedite completion of the archaeological mitigation. Work was performed prior to joining EDAW.

**North Las Vegas Land Transfer, Clark County, NV****Principal Investigator****CLIENT:** City of North Las Vegas

Responsible for cultural resource survey of 4,000-acre land transfer from the Bureau of Land Management to the City of North Las Vegas. Directed cultural resource component of the EIS, assisted Bureau of Land Management in Section 106 consultation, and conducted geoarchaeological testing of an early Holocene spring deposit. Work was performed prior to joining EDAW.

**Apex Industrial Park, Clark County, NV****Principal Investigator****CLIENT:** Kerr-McGee

Responsible for archaeological survey and NRHP evaluations for BLM land transfer. Work was performed prior to joining EDAW.

**343 Sansome Street, San Francisco County, CA****Principal Investigator****CLIENT:** Gerald D. Hines Interests

Directed archaeological test and data recovery excavations at a Gold Rush-Period site in downtown San Francisco. Work was performed prior to joining EDAW.

**Sierra Vista Development, Cochise County, AZ****Archaeologist****CLIENT:** Tenneco

Performed historical and archaeological assessment of a major housing and urban development-assisted project in Fort Huachuca. Work was performed prior to joining EDAW.

**San Diego River Project, San Diego County, CA****Project Director****CLIENT:** County of San Diego

Directed cultural resource investigations for a flood control, reclamation, and recreational development master plan. Work was performed prior to joining EDAW.



**JAMES CLELAND, PhD**

**Marina/Columbia Redevelopment Project, San Diego County, CA**

**Principal Investigator**

**CLIENT:** Centre City Development Corporation

Directed historical research, archaeological site identification, and archaeological test excavations for the 75-block redevelopment area in San Diego. Consulted in the development of a management plan for subsurface cultural resources. Work was performed prior to joining EDAW.

**ENERGY AND TRANSMISSION PROJECTS**

**North Baja Pipeline, Ehrenberg, AZ, and Riverside and Imperial Counties, CA**

**Principal Investigator**

**CLIENT:** Foster Wheeler Environmental

Cultural resources survey, evaluation, and mitigation for an 80-mile natural gas pipeline, under FERC and BLM guidelines.

**Line 1903 All American Pipeline Conversion, Kern, San Bernardino, and Riverside Counties, CA**

**Principal Investigator**

**CLIENT:** ENSR International and El Paso Natural Gas

Directed the cultural resources survey and NRHP evaluation of a 250-mile pipeline project, converting from petroleum to natural gas.

**Palomar Energy Project, Escondido, CA**

**Principal Investigator**

**CLIENT:** ENSR International and Sempra Energy

Directed cultural resources investigation for MW cogeneration plant with associated linear facilities in support of California Energy Commission Application for Certification.

**Desert Crossing Pipeline, Clark County, NV, and Mohave County, AZ**

**Principal Investigator**

**CLIENT:** Natural Resources Group

Directed the cultural resources research design for a natural gas pipeline project. Archaeology survey near Red Lake, Arizona, for gas storage facility.

**Valley-Rainbow Transmission Project, Riverside and San Diego, Counties, CA**

**Principal Investigator**

**CLIENT:** San Diego Gas and Electric Company

Directed cultural resources surveys for the evaluation of alternative transmission line corridors. Included Class I, Class II, and Class III surveys.

**Lucerne-to-Big Bear Transmission Line, San Bernardino County, CA**

**Principal Investigator**

**CLIENT:** USDA Forest Service and Southern California Edison Company  
Responsible for cultural resources survey and NRHP evaluation of a 20-mile transmission line through San Bernardino National Forest, and EIR/EIS analysis. Traditional cultural property evaluation of the Gold Mountain-Baldwin Lake district.

**Mead-Adelanto Transmission Line, Clark County, NV, and San Bernardino County, CA**

**Principal Investigator**

**CLIENT:** Los Angeles Department of Water and Power

Responsible for cultural resource survey of a 180-mile interstate transmission line. Work was performed prior to joining EDAW.

**JAMES CLELAND, PhD****Questar Southern Trails Pipeline, NM, UT, AZ, and CA****Discipline Manager****CLIENT:** ENSR International and FERC

Responsible for cultural resource investigations for FERC third-party EIS addressing the conversion of an existing crude-oil pipeline to natural gas. The project runs from northeastern New Mexico to Long Beach, California.

**Vector Pipeline EIS, IL, IN, and MI****Discipline Manager****CLIENT:** RMI and FERC

Responsible for cultural resource investigations for FERC third-party EIS for a 325-mile corridor of a natural gas pipeline.

**Viking Voyageur Pipeline Project, MN, WI, and IL****Discipline Manager****CLIENT:** Entrix and FERC

Responsible for cultural resource investigations for FERC third-party EIS for a 770-mile corridor of Viking Voyageur gas transmission pipeline.

**Tuscarora Pipeline Project, Klamath County, OR, to****Washoe County, NV****Cultural Resource Coordinator****CLIENT:** Tuscarora Gas Transmission Company

Responsible for a 229-mile natural gas pipeline from Malin, Oregon, to Reno, Nevada. Coordinated and managed survey, evaluation, and data recovery. Prepared nontechnical public report.

**Los Padres National Forest Oil and Gas Leasing, Santa Barbara, Ventura, and Monterey Counties, CA****Principal Investigator****CLIENT:** Los Padres National Forest

Responsible for cultural resource overview of potential lease areas (743,000 acres).

**Boulder Line Historical Assessment, San Bernardino County, CA****Principal Investigator****CLIENT:** Los Angeles Department of Water and Power

Responsible for NRHP evaluation of Boulder Lines 1 and 2.

**Kern River Gas Transmission Project, WY, UT, NV, and CA****Principal Investigator****CLIENT:** Kern River Gas Transmission Company

Responsible for cultural resources. Prepared the cultural resources component of the environmental report submitted to FERC, presented expert testimony at FERC licensing hearings, directed the intensive archaeological survey of the 680-mile route, managed the eligibility evaluation of over 250 sites for NRHP, developed and implemented a data recovery research design for 150 NRHP-eligible resources, directed monitoring of construction in sensitive areas, and coauthored survey and data recovery reports. Work was performed prior to joining EDAW.

**Santa Ynez Unit Development, Santa Barbara County, CA****Principal Investigator****CLIENT:** Exxon Corporation

Directed test excavations and significance evaluations of historic and prehistoric sites in oil and gas project area. Prepared historic properties treatment plan, approved by the ACOE, California Office of Historic Preservation, and Advisory Council on Historic Preservation. Work was performed prior to joining EDAW.

**JAMES CLELAND, PhD****California-to-Oregon Transmission Project, OR and CA****Principal Investigator****CLIENT:** Transmission Authority of Northern California

Directed archaeological, historic, and ethnographic survey of the 340-mile route; archaeological test excavations; and archaeological data recovery. Work was performed prior to joining EDAW.

**Coso Known Geothermal Resource Area, Inyo County, CA****Principal Investigator****CLIENT:** Los Angeles Department of Water and Power

Directed archaeological survey, evaluation, and data recovery at 12 geothermal well-pads located in the Sugarloaf Mountain Obsidian Source National Register District. Coauthored historic properties treatment plan, and evaluation and data recovery reports. Work was performed prior to joining EDAW.

**Devers-Serrano-Villa Park Proposed 230-kV Transmission Line, Orange, Riverside, and San Bernardino Counties, CA****Principal Investigator****CLIENT:** California Public Utilities Commission

Directed cultural resource investigations for the EIR/EIS for Southern California Edison's proposed 230-kV transmission line, including comparative assessment of the impact of alternative routes. Presented expert testimony at CPUC licensing hearings. Work was performed prior to joining EDAW.

**BiCEP Transmission Line, South-Central CA****Discipline Manager****CLIENT:** Southern California Edison

Directed cultural resource impact assessment of alternative routes for a proposed transmission line from the Big Creek Hydroelectric Project in the Sierra Mountains to the Los Angeles Basin. Work was performed prior to joining EDAW.

**Argus Cogeneration Expansion, San Bernardino and Inyo Counties, CA****Discipline Manager****CLIENT:** Kerr-McGee

Directed cultural resource survey of proposed cogeneration plant site, transmission line, water pipeline, and well-field. Prepared cultural resources sections of AFC for California Energy Commission. Work was performed prior to joining EDAW.

**Geothermal Public Power Line Project, North-Central CA****Discipline Manager****CLIENT:** Sacramento Municipal Utility District

Directed cultural resources investigations, including archaeology, history, and ethnography, for siting and licensing of a proposed transmission line from the Geysers Geothermal Area to Sacramento. Included preparation of cultural resource sections of the notice of intent and application for certification, and presentation of testimony for adjudicatory hearings held by the California Energy Commission. Work was performed prior to joining EDAW.

**Potrero Unit No. 7, San Francisco County, CA****Principal Investigator****CLIENT:** Pacific Gas & Electric Company

Conducted cultural resource inventory and evaluation for proposed combined cycle generating plant, underground 230-kV transmission line, and fuel-oil pipeline. Involved intensive historical documentation for an 8-mile-long study area along San Francisco's urban waterfront. Participated in California Energy Commission public workshop. Work was performed prior to joining EDAW.

JAMES CLELAND, PhD

**MILITARY PROJECTS****Naval Air Weapons Station, China Lake, CA****Principal Investigator****CLIENT:** U.S. Navy, Southwest Division

Directed archaeological survey of over 8,000 acres and NRHP evaluation of eight archaeological sites.

**Naval Postgraduate School, Monterey, CA****Principal Investigator****CLIENT:** U.S. Navy, Southwest Division

Directed archaeological survey and subsurface exploration of the 100-acre laboratory and recreation area.

**Chocolate Mountains Aerial Gunnery Range, Imperial and Riverside Counties, California.****Principal Investigator****CLIENT:** Naval Facilities Engineering Command, Southwest and Marine Corps Air Station, Yuma

Developed regional archaeological research design, including programmatic approaches to the evaluation of key resource types. Managed the preparation of a cultural affiliation study.

**Naval Space Surveillance Field Stations, San Diego, CA, and Gila River, AZ****Principal Investigator****CLIENT:** U.S. Navy, Southwest Division

Directed NRHP evaluation of three archaeological sites in San Diego County. Prepared integrated cultural resources management plan for NSSFS Gila River.

**Archaeological Test Excavation, Naval Weapons Station, Seal Beach, CA****Principal Investigator****CLIENT:** U.S. Navy, Southwest Division

Responsible for test excavations of three subsurface prehistoric shell middens. National register evaluations.

**Air Combat Command Cold War-Era Facilities, Langley Air Force Base, Hampton City Region, VA****Senior Reviewer****CLIENT:** U.S. Army Corps of Engineer, Ft. Worth District

Senior reviewer for nationwide historical context development for ACC bomber and fighter facilities.

**Perimeter Vehicle Entry Phased Array Warning System National Register Nomination, Beale Air Force Base, Yuba County, CA****Senior Reviewer****CLIENT:** Beale Air Force Base and Parsons Engineering Science

Senior reviewer to NRHP evaluation and nomination of a highly technical, Cold War-era radar facility.

**Cultural Resource Inventory Survey at Salton Sea Test Base, Imperial County, CA****Principal Investigator****CLIENT:** U.S. Navy, Southwest Division

Responsible for intensive cultural resource surveys of approximately 6,000 acres. Provided oversight for compliance with NHPA and the NAGPRA.

**JAMES CLELAND, PhD**

**Evaluation of Six Sites Near the Missile Impact Range, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA**

**Principal-in-Charge**

**CLIENT:** U.S. Navy, North Island, Natural Resources Office  
Responsible for the NRHP evaluation of six archaeological sites on the Central Plateau of San Clemente Island.

**Long Beach Naval Shipyard/Naval Station Base Closure, Los Angeles County, CA**

**Discipline Manager**

**CLIENT:** U.S. Navy, Southwest Division  
Responsible for cultural resource analysis of alternative reuse plans, including development of adaptive reuse alternatives for the Roosevelt Historic District. Adaptive reuse plan won Cultural Resources Award from California Preservation Foundation.

**MCAS Yuma Ordnance Storage Expansion, Yuma County, AZ**

**Principal Archaeologist**

**CLIENT:** U.S. Navy, Southwest Division  
Performed cultural resource analysis, including records search, oral history, and draft programmatic agreement.

**MCAS El Toro Base Closure, Orange County, CA**

**Principal Investigator**

**CLIENT:** U.S. Navy, Southwest Division  
Responsible for cultural resource surveys and evaluation.

**P-527 Effluent Treatment Project, Camp Pendleton, San Diego County, CA**

**Principal Investigator**

**CLIENT:** U.S. Navy, Southwest Division  
Responsible for archaeological survey, evaluation, and data recovery.

**Pumped-Hydro Storage Wind/Energy System, Naval Auxiliary Air Field, San Clemente Island, Los Angeles County, CA**

**Principal-in-Charge**

**CLIENT:** U.S. Navy, Southwest Division  
Responsible for relocating and recording 76 archaeological sites in a proposed water storage and wind/energy development area. Prepared existing conditions report.

**Historic and Archeological Resources Protection Plans for Various Locations in Southern CA**

**Principal Investigator**

**CLIENT:** U.S. Navy, Southwest Division  
Responsible for HARP Plans for six Naval installations: Morris Dam Test Facility, Azusa; Naval Air Facility, El Centro; Naval Shipyard, Long Beach; Point Loma Complex, San Diego; Naval Station, San Diego; and the Naval Radio Receiving Facility, Imperial Beach.

**Space Launch Complex 2W, Vandenberg Air Force Base, San Luis Obispo County, CA**

**Principal Investigator**

**CLIENT:** McDonnell-Douglas  
Directed archaeological survey and historical assessment of the proposed upgrading of the complex to support the launching of Delta II vehicles. Historical assessment included NRHP evaluation of space launch facilities dating to the 1950s and 1960s. Work was performed prior to joining EDAW.

**JAMES CLELAND, PhD**

**MCAS Yuma EIS, Imperial County, CA**

**Project Director for Cultural Resources**

**CLIENT:** U.S. Navy, Southwest Division

Directed cultural resource inventories of areas in California potentially affected by operations at MCAS Yuma, Arizona. Work included archaeological sample survey of the Chocolate Mountains Gunnery Range, identification of traditional cultural properties in low-fly zones, and preparation of the EIS.

**Sugarloaf Mountain Archaeological District Cultural Resource Management Plan, Inyo County, CA**

**Principal Author**

**CLIENT:** U.S. Navy, Southwest Division

Authored management plan for the Sugarloaf Mountain Obsidian Source National Register District. Developed a framework for the survey, evaluation, and treatment of resources that may be affected by geothermal development of the Coso Known Geothermal Resource Area. Work was performed prior to joining EDAW.

**National Training Center, Fort Irwin, San Bernardino County, CA**  
**Project Manager**

**CLIENT:** National Park Service, Interagency Archeological Services Branch  
Managed large-scale archaeological survey, evaluation, and data recovery project in support of the development of the National Training Center. Performed intensive survey of 100,000 acres, NRHP evaluation of over 100 sites, and data recovery at 25 sites. Work was performed prior to joining EDAW.

**Beale Air Force Base Cultural Resource Project, Yuba County, CA**  
**Principal Investigator**

**CLIENT:** National Park Service, Interagency Archeological Services Branch  
Prepared cultural resource management plan for the entire base and directed archaeological survey of a 2,000-acre tract proposed for excessing. Work was performed prior to joining EDAW.

**Defense Material Readiness Command (DARCOM) Archaeological Overviews, Lassen, San Joaquin, Sacramento, Stanislaus, and Napa Counties, CA, Umatilla County, OR, and Mineral County, NV**

**Principal Investigator**

**CLIENT:** National Park Service, Interagency Archeological Services Branch  
Prepared archaeological overviews and management plans for seven installations of DARCOM in the western region. Installations included Sierra Army Depot, Hawthorne Army Depot, Umatilla Activity, Sharpe Army Depot, Sacramento Army Depot, Riverbank Army Ammunition Plant, and Benecia Army Cemetery. Work was performed prior to joining EDAW.

**WATER PROJECTS**

**Emergency Storage Project, San Diego County, CA**

**Principal Investigator**

**CLIENT:** San Diego County Water Authority

Responsible for cultural resources evaluation, archaeological data recovery, and construction monitoring of major water projects involving construction of dams and associated pipelines.

**Pit 3, 4, and 5 Hydroelectric Relicensing Project, Shasta County, CA**  
**Principal Investigator**

**CLIENT:** Pacific Gas & Electric Company

Responsible for the evaluation of 22 sites in the Lake Britton National Register District and for data recovery at seven sites affected by shoreline erosion and recreational facilities. Assisted in the development of the cultural resource

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management plan and directed the data recovery plan, both of which were approved under FERC relicensing stipulations. Work was performed prior to joining EDAW.

**P5EII Pipeline, San Diego County, CA****Principal Investigator**

**CLIENT:** San Diego County Water Authority

Responsible for archaeological testing, data recovery, and construction monitoring.

**Lake Hodges Environmental Impact Study, San Diego County, CA****Principal Archaeologist**

**CLIENT:** City of San Diego

Performed cultural resource survey of existing shoreline to assess impacts of changed operations.

**Pit 1 Hydroelectric Relicensing, Shasta County, CA****Principal Investigator**

**CLIENT:** Pacific Gas & Electric Company

Directed archaeological and historical evaluation of the project area to support preparation of Exhibit E of the relicensing application. Performed archaeological survey, and limited test excavation and historical evaluation of the operating system. Work was performed prior to joining EDAW.

**Mokelumne River Hydroelectric Relicensing, Alpine, Amador, and Calaveras Counties, CA****Principal Investigator**

**CLIENT:** Pacific Gas & Electric Company

Conducted multiple phases of cultural resource investigations to support relicensing application to FERC. Prepared cultural resource survey, NRHP evaluations, Native American resources survey, data recovery research design, and cultural resource management plan. Performed archaeological test excavations. Work was performed prior to joining EDAW.

**Elk Creek Dam, Douglas County, OR****Principal Investigator**

**CLIENT:** U.S. Army Corps of Engineers

Responsible for the NRHP evaluation of 27 sites in the area of potential effect. Work was performed prior to joining EDAW.

**Eastern Sierra Hydroelectric Relicensing, Mono and Inyo Counties, CA****Principal Investigator**

**CLIENT:** Southern California Edison

Directed NRHP assessment of 22 sites within three hydroelectric project areas. Work was performed prior to joining EDAW.

**Clark County Flood Control Master Plan, NV****Principal Investigator**

**CLIENT:** Clark County Regional Flood Control District

Directed cultural resource investigations for the EIS. Master plan covered the entire county and had a 20-year team horizon. Work was performed prior to joining EDAW.

**Gibraltar Dam Upgrade, Santa Barbara County, CA****Principal Investigator**

**CLIENT:** City of Santa Barbara

Directed cultural resource survey and historical assessment of the existing facilities for proposed strengthening and raising of Gibraltar Dam. Work was performed prior to joining EDAW.

**JAMES CLELAND, PhD****Pamo Dam and Reservoir, San Diego County, CA****Principal Investigator****CLIENT:** San Diego County Water Authority

Responsible for cultural resources. Prepared a research design for testing and evaluating 100 sites in the proposed project area, assisted in the Section 106 consultation with the ACOE and the state historic preservation officer, directed the drafting of a programmatic MOA under 36CFR800, and supervised archaeological monitoring of geotechnical investigations. Work was performed prior to joining EDAW.

**Douglasdale Road Wastewater Treatment Plant,  
Richmond City Region, VA****Archaeologist****CLIENT:** U.S. Army Corps of Engineers, Norfolk District

Conducted archaeological survey and historical assessment of proposed wastewater treatment plant on the James River and Kanawha Canal in Richmond. Work was performed prior to joining EDAW.

**TRANSPORTATION PROJECTS****Southern Nevada Supplemental Airport EIS, Clark County, NV****Co-Principal Investigator for Cultural Resources****CLIENT:** Federal Aviation Administration, Bureau of Land Management, and Clark County Division of Aviation

Developed cultural context report and research design. Oversaw Class III survey of 17,000 acres in eastern Mojave Desert.

**Guadalupe Corridor, State Route 87, Santa Clara County, CA****Senior Reviewer****CLIENT:** Caltrans District 4

Responsible for development and implementation of historical properties treatment plan for SR-87 freeway in San Jose. Investigated buried prehistoric and historic archaeological sites, including one of San Jose's China Towns.

**Sorrento Overhead, Del Mar, CA****Project Manager****CLIENT:** City of Del Mar

Managed Caltrans HPSR for seismic retrofit of a National Register-eligible railroad overpass. Provided City of Del Mar consultation regarding Section 4(f) evaluation of project alternatives.

**Palomar Street Widening, Chula Vista, CA****Principal Investigator****CLIENT:** City of Chula Vista

Responsible for cultural resources surveys of Caltrans local assistance project. Preparation of negative archaeological survey report, historical architectural survey report, and historic properties survey report.

**SR-56 Middle Segment EIR, San Diego County, CA****Principal Investigator****CLIENT:** City of San Diego

Responsible for cultural resource survey and evaluation conducted under Caltrans guidelines.



**JAMES CLELAND, PhD****La Costa Avenue Interchange, Carlsbad, CA****Principal Investigator****CLIENT:** City of Carlsbad

Responsible for I-5 interchange improvement project. Prepared archaeological survey report, extended phase I report, and historic properties survey report under Caltrans guidelines.

**Cole Grade Road, San Diego County, CA****Principal Investigator****CLIENT:** County of San Diego

Responsible for archaeological testing under CEQA.

**SA-680 Freeway, San Diego County, CA****Principal Investigator****CLIENT:** County of San Diego

Responsible for archaeological testing of four sites in the area of potential effect of proposed freeway.

**SR-41 South, Fresno County, CA****Principal Investigator****CLIENT:** Fresno County Transportation Authority and Caltrans District 6

Responsible for archaeological and historical assessment of the widening and possible realignment of Route 41 south of Fresno. Prepared reports to Caltrans' standards, including the archaeological survey report, the historical architectural survey report, and the historic properties survey report. Work was performed prior to joining EDAW.

**Interstate 77, Wythe County, VA****Field Director****CLIENT:** Virginia Historical Landmarks Commission

Directed data recovery fieldwork at Fort Chiswell historic site. Work was performed prior to joining EDAW.

**HAZARDOUS WASTE-RELATED AND PROJECTS****Topock Compressor Station Corrective Measures Study EIR****San Bernardino County, CA****Cultural Resource Team Leader****CLIENT:** California Department of Toxic Substances Control

Investigated potential impacts to cultural resources of groundwater and soils remediation alternatives, including potential to the Topock Maze traditional cultural property.

**Station A Remediation, San Diego, CA****Principal Investigator****CLIENT:** Sempra Energy

Responsible for the archaeological monitoring of the remediation of SDG&E's historic Station A. Required hazardous materials certification.

**Kettner and Cedar Remediation, San Diego County, CA****Principal Investigator****CLIENT:** County of San Diego

Performed cultural resource monitoring of hazardous waste remediation in San Diego.

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**Edwards Air Force Base Installation Restoration Program,  
Kern County, CA**

**Principal Investigator**

**CLIENT:** Jacobs Engineering

Directed cultural resource surveys and evaluations of well closures and PRLs. Assisted in the Section 106 consultation. Work was performed prior to joining EDAW.

**Elsmere Canyon Landfill, Los Angeles County, CA**

**Discipline Manager**

**CLIENT:** Elsmere Corporation

Directed cultural resource assessment for the EIR/EIS. Work was performed prior to joining EDAW.

**Weldon Canyon Landfill, Ventura County, CA**

**Senior Archaeologist**

**CLIENT:** Waste Management, Inc.

Conducted cultural resource surveys of proposed landfill site. Work was performed prior to joining EDAW.

**Eagle Mine Remediation, Lake County, CO**

**Discipline Manager**

**CLIENT:** Gulf+Western

Directed historical research of land use at the Eagle Mine Superfund Site in Leadville. Work was performed prior to joining EDAW.

**OTHER PROJECTS**

**Imperial Dunes Cultural Landscape Report, Imperial County, CA**

**Principal Investigator**

**CLIENT:** Bureau of Land Management

Responsible for ethnographic assessment to the Imperial Dunes as a Native American Cultural Landscape.

**San Diego Presidio, Conditions Assessment Report,**

**San Diego County, CA**

**Principal Investigator**

**CLIENT:** City of San Diego, Park and Recreation Department

Responsible for preparation of conditions assessment report, focusing on current condition and recommendations for preservation of adobe foundations and associated cultural materials.

**Glamis Imperial Project, Imperial County, CA**

**Principal Archaeologist**

**CLIENT:** Glamis Imperial Corporation

Performed cultural resource survey and NRHP evaluation for proposed open pit gold mine. Traditional cultural property evaluation of the Indian Pass-Running Man district.

**Zhongshan Mountain National Park, Nanjing China**

**Cultural Resource Specialist**

**CLIENT:** City of Nanjing Planning Department

Assisted in the development of a master plan for a nationally significant Ming Dynasty cultural landscape.

**JAMES CLELAND, PhD****Outer Continental Shelf Cultural Resource Sensitivity Assessment, CA, OR, and WA****Principal Investigator****CLIENT:** Minerals Management Service

Directed archaeological records search, literature review, and geological investigations to assess the potential for submerged prehistoric sites from Morro Bay to the Canadian border. Compiled data on over 2,700 sites in the onshore coastal zone and identification of offshore areas with archaeological potential. Work was performed prior to joining EDAW.

**Crump Memorial Park, Henrico County, VA****Principal Investigator****CLIENT:** Henrico County

Conducted test excavation of early Woodland-Period site in the County park. Work was performed prior to joining EDAW.

**Ellerson's Millrace, Richmond City Region, VA****Field Director****CLIENT:** National Park Service

Directed test excavation of historic millrace in Richmond National Battlefield Park in Richmond. Work was performed prior to joining EDAW.

**Pakistan Lithics Project, Indus Valley, Pakistan****Archaeologist****CLIENT:** American Institute of Pakistan Studies

Performed comparative analysis of pre-Harappan, early Harappan, and mature Harappan stone tool industries. Work was performed prior to joining EDAW.

**Cultural Resource Overview of Shenandoah National Park, Page County, VA****Archaeologist****CLIENT:** National Park Service

Conducted literature review and authored archaeological portion of the overview. Work was performed prior to joining EDAW.

**Allahdino Expedition, Karachi, Pakistan****Archaeologist****CLIENT:** American Museum of Natural History

Analyzed flaked stone tools from a Harappan-Period site. Work was performed prior to joining EDAW.

**PUBLICATIONS AND PROFESSIONAL PAPERS**

Large Scale Cultural Landscapes in Rights-of-Way Management. In *The Eighth International Symposium on Environmental Concerns in Rights-of-Way Management*, edited by J.W. Goodrich-Mahoney, L.P. Abrahamson, J.L. Ballard, and S.M. Tikalsky. Elsevier, Amsterdam (2008).

*Settlement Trends and Sociocultural Change on the Southern California Coast: Complementary Views from Seal Beach and Camp Pendleton*. Paper presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia (2008).

*Chronology and Distribution of Archaeological Components in Seal Beach, California*. Paper presented at the 40th Annual Meeting of the Society for California Archaeology, Ventura (2006).

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*The Confines of Space: Circular Surface Features in the Colorado Desert.* Paper presented at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City (2005).

*The Radiocarbon Chronology of the North Stallard Site, CA-IMP-7911/H on the Lower Colorado River, California.* Paper presented at the Three-Corners Conference, Las Vegas, Nevada (2005).

*Preservation of Quechan Cultural Sites.* Paper presented at the 38th Annual Meeting of the Society for California Archaeology, Riverside, California (2004).

*The Sacred and the Mundane: Cultural Landscape Concepts and Archaeological Interpretation in the Colorado Desert.* Paper presented at the 38th Annual Meeting of the Society for California Archaeology, Riverside, California (2004).

*Archaeological Investigations at CA-IMP-7911/H, the North Stallard Locality on the Lower Colorado River, California.* Paper presented at the 38th Annual Meeting of the Society for California Archaeology, Riverside, California (2004).

*Stratified Patayan Sites Near Palo Verde, Lower Colorado River.* Paper presented at the 37th Annual Meeting of the Society for California Archaeology, Sacramento, California (2003).

*On the Trail of Dreams: Archaeological and Ethnographic Recordation of the Palo Verde Point Petroglyphs and Geoglyphs* (with R. Apple). Paper presented at the 36th Annual Meeting of the Society for California Archaeology, San Diego, California (2002).

*Protohistoric Recessional Shorelines at Lake Cahuilla, California* (with R. Apple and A. York). Paper presented at the Millennium Conference: The Human Journey and Ancient Life in California's Deserts, Barstow, California (2001).

*The Tides of History: Modeling Native American Use of Recessional Shorelines* (with A. Johnson). Paper presented at the 20th Annual ESRI International Users Conference, San Diego, California (2000).

*Late Prehistoric and Protohistoric Use of Recessional Shorelines of Lake Cahuilla, California* (with A. York, S. Rose, and C. Bowden-Renna). Poster Session Paper presented at the 26th Great Basin Anthropological Conference, Bend, Oregon (1998).

*Very Low Elevation Early and Middle Holocene Occupation at the Salton Sea Test Base, California* (with R. McCorkle Apple and T. Wahoff). Poster Session Paper presented at the 26th Great Basin Anthropological Conference, Bend, Oregon (1998).

*Archaeological Investigations for the Lucerne to Big Bear Transmission Line* (with A. York). Paper presented at the 32nd Annual Meeting of the Society for California Archaeology, San Diego, California (1998).

*Paleo-Indian to Protohistoric: The Chronology of Human Occupation of the Salton Sea Test Base.* Paper presented at the 32nd Annual Meeting of the Society for California Archaeology, San Diego, California (1998).

*Resource Intensification, Environmental Stress and the Emergence of Complex Hunter-Gatherers on the Middle Pit River, California.* Paper presented at the 61st Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana (1996).

*A Summary of Archaeological and Paleoecological Investigations at Lake Britton.* Paper presented at the Sacramento River Ecosystem in Prehistory: An

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Archaeological Symposium, sponsored by the Central California Archaeological Foundation, Chico, California (1996).

*Environment, Settlement, and Subsistence Change, Middle Pit River, California* (with J.C. Chatters and W.G. Spaulding). Paper presented at the 29th Annual Meeting of the Society for California Archaeology, Eureka, California (1995).

*Environment, Settlement, and Subsistence Change on the Middle Pit River, California*. Paper presented at the 29th Annual Meeting of the Society for California Archaeology, Eureka, California (1994).

*Cultural Resource Management in the Eastern Mojave*. Paper presented at the East Mojave Desert Symposium/Workshop, University of California, Riverside (1992).

Recent Archaeological Investigations in the North Las Vegas Valley (with R. McCorkle Apple and M.S. Kelly). *Crossing the Borders: Quaternary Studies in Eastern California and Southwestern Nevada*. San Bernardino County Museum Association Special Publication, Redlands, California (1991).

*Obsidian Hydration Dating at Coso: Part III*. Paper presented at the 24th Annual Meeting of the Society for California Archaeology, Foster City, California (1990).

*Multi-Stage Research in the Siting and Assessment of Linear Projects*. Paper presented at the 54th Annual Meeting of the Society for American Archaeology, Atlanta, Georgia (1989).

*Induced Hydration Rates for Coso Obsidian: An Update*. Paper presented at the 23rd Annual Meeting of the Society for California Archaeology, Los Angeles, California (1989).

*Problems in the Hydration Dating of Coso Obsidian at the Source*. Paper presented at the 22nd Annual Meeting of the Society for California Archaeology, Redding, California (1988).

*A Tentative Culture-Historical Sequence for the Mokelumne River Canyon: Proceedings of the Society for California Archaeology 1*, edited by S.M. Hector, L.E. Christenson, G.T. Gross, and M.D. Rosen. Society for California Archaeology, San Diego, California (1988).

Achieving Cultural Resource Compliance along Multistate Rights-of-Way in the West (with A.E. Rogge and C.M. Woods). *Proceedings Fourth Symposium on Environmental Concerns in Rights-of-Way Management*, edited by W.R. Byrnes and H.A. Holt. Purdue University, West Lafayette, Indiana (1987).

*Direct-Historical and Optimal-Foraging Approaches to Subsistence at Lake Britton*. Paper presented at the 21st Annual Meeting of the Society for California Archaeology, Fresno, California (1987).

*A Tentative Culture-Historical Sequence for the Mokelumne River Canyon*. Paper presented at the 21st Annual Meeting of the Society for California Archaeology, Fresno, California (1987).

*Assessing Archaeological Sensitivity and Impacts of Transmission Lines*. Paper presented at the Third National Conference on Cultural Resource Management in the Electric Utility Industry, St. Louis, Missouri (1986).

*Current Approaches to the Evaluation of Archaeological Significance*. Paper presented at the 20th Annual Meeting of the Society for California Archaeology, Santa Rosa, California (1986).

**JAMES CLELAND, PhD**

A Systematic Approach to Lithic Analysis in the Indus Region: Archaeological Studies in India and Pakistan, edited by J. Jacobson. Oxford and IBH Press, Delhi, India (1986).

*The Use of Research Designs in the Evaluation of Archaeological Significance.* Paper presented at the 20th Annual Meeting of the Society for California Archaeology, Santa Rosa, California (1986).

*Fort Irwin: Research and Management in the Face of Massive Damage* (with M.M. Lyneis and C.N. Warren). Paper presented at the Annual Meeting of the Society for American Archaeology, Pittsburgh, Pennsylvania (1983).

*Lithic Resource Procurement and Exchange Systems.* Symposium Chair. 17th Annual Meeting of the Society for California Archaeology, San Diego, California (1983).

*Managing Cultural Resources in a Large Urban Redevelopment Project.* Paper presented at the Conference on Archaeology and Local Government, the California Office of Historic Preservation, Ventura, California (1981).

*Historical Archaeology in Environmental Planning.* Paper presented at the National Conference on Land Use and Resource Management, Edison Electric Institute, Portland, Oregon (1980).

*Urban Archaeology and Cultural Resource Management: An Example from Downtown San Diego.* Paper presented at the Annual Meeting of the Southwestern Anthropological Association, San Diego, California (1980).

*The Use of Geographic Models in Urban Historical Archaeology.* Paper presented at the Workshop on Historical Archaeology, Lowie Museum, Berkeley, California (1980).

*The Use of Backhoe Trenching in Identifying Buried Historical Sites.* Paper presented at the Workshop on Historical Archaeology, University of Nevada, Reno (1979).

The Lithic Industry at Allahdino: A Metric and Quantitative Analysis of a Harappan Activity System (with M.A. Hoffman). *Collected Papers of the Allahdino Expedition*, #2, New York, New York (1977).

*Preliminary Report on the Fort Chiswell Salvage Project* (with T.C. Funk). Quarterly Bulletin of the Archaeological Society of Virginia (1976).

**SELECTED REPORTS**

*Peak to Playa: Southern Nevada Supplemental Airport Environmental Impact Statement Cultural Resources Report.* EDAW, Inc., San Diego (2008).

*Piecing Together the Prehistory of Land Hill. A Place Remembered, Orange County, California.* EDAW Cultural Publications 3, San Diego (2007).

*Regional Archaeological Research Design for the Chocolate Mountain Aerial Gunnery Range, Imperial and Riverside Counties, California* (with J. Underwood and T. Wahoff). EDAW, Inc., San Diego (2005).

*A View across the Cultural Landscape of the Lower Colorado Desert: Cultural Resources Investigations for the North Baja Pipeline Project* (with R. Apple). EDAW, Inc., San Diego (2003).

*Imperial San Dunes as a Native American Cultural Landscape* (with J. Russell, C. Woods, and J. Underwood). Bureau of Land Management, Sacramento, and EDAW, Inc., San Diego (2002).

**JAMES CLELAND, PhD**

*Class II Archaeological Survey of Imperial San Dunes* (with J. Underwood). Bureau of Land Management, Sacramento, and EDAW, Inc., San Diego (2002).

*Historic Properties Treatment Plan for the Emergency Storage Project* (with R. Apple). San Diego County Water Authority and EDAW, Inc., San Diego (2001).

*San Diego Presidio Condition Assessment Report* (with A. Crosby, B. Smillie, S. Molentin, and C. Dolan). KEA Environmental Inc., San Diego (1999).

*Cultural Resources Investigations for the Lucerne Valley and Big Bear Valley Transmission Line and Substation Project, San Bernardino County, California* (with A.L. York and C. Dolan). KEA Environmental, Inc., San Diego, California (1998).

*Prehistory of the Middle Pit River, Northeastern California: Archaeological Investigations at Lake Britton, Pit 3, 4 & 5 Project* (editor). KEA Environmental, Inc., San Diego, California (1997).

A Research Design for the Evaluation of Archaeological Sites within the Hellman Ranch Specific Plan Area (with A. York and M.G. Baksh). KEA Environmental, Inc., San Diego, California (1997).

*Heritage Resources Report for the Oil and Gas Leasing EIS, Los Padres National Forest* (with R. Allen, S. Heipel, and R.F. Beck). KEA Environmental, Inc., San Diego, California (1996).

*African-American Community and Church* (with J. Newland). In *Archaeological Investigations in Downtown San Diego, Horton's Addition Block H*. KEA Environmental, Inc., San Diego, California (1995).

*Mokelumne River Project. Revised Cultural Resource Management Plan* (with R. McCorkle Apple). Keller Environmental Associates, Inc., San Diego, California (1993).

*Sugarloaf Archaeological District: Cultural Resources Management Plan*. Prepared for the Naval Weapons Center, China Lake, California. Dames & Moore, San Diego, California (1991).

*Kern River Pipeline Cultural Resource Report, California* (with R. McCorkle Apple, A.L. York, and P. Friedman). Submitted to the Federal Energy Regulatory Commission. Dames & Moore, San Diego, California (1990).

*Kern River Pipeline, Cultural Resource Report, Nevada* (with M.S. Kelly, K.L. Hull, A.J. Macdougall, and P. Friedman). Submitted to the Federal Energy Regulatory Commission. Dames & Moore, San Diego, California (1990).

*Mokelumne River Project: Research Design for Data Recovery*. Prepared for Pacific Gas & Electric Company. Dames & Moore, San Diego, California (1990).

*Sugarloaf Mountain in Prehistory: Archaeological Testing and Data Recovery for the Exploratory Drilling Program II and the Unit No. 1 Project* (with R. McCorkle Apple and E. Nilsson). Prepared for the Los Angeles Department of Water and Power. Dames & Moore, San Diego, California (1990).

*Cultural Resources Inventory of the California-Oregon Transmission Project* (with J.V. Jermann, A.L. York, M.S. Kelly, C.M. Woods, and J.E. Wooley). Prepared for the Transmission Agency of Northern California. Dames & Moore, San Diego, California (1988).

**JAMES CLELAND, PhD**

*Archaeological Investigations at Lake Britton: Pit 3, 4 and 5 Archaeological Testing Project* (with M.S. Kelly and E. Nilsson). Wirth Environmental Services, San Diego, California (1987).

*Archaeological Investigations at Sugarloaf Mountain* (with M.S. Kelly, E. Nilsson, and A.L. York). Dames & Moore, San Diego, California (1987).

*Santa Ynez Unit Development: Archaeological Evaluation Program* (with A.L. York, C.M. Woods, and J.G. Costello). Dames & Moore, San Diego, California (1986).

*An Archaeological Research Design for the Evaluation of Cultural Resources in Pamo Valley, San Diego, California* (with J.R. Cook, J. Schaefer, and R. McCorkle Apple). Wirth Environmental Services, San Diego, California (1985).

*Mokelumne River Project: Archaeological Evaluation Program* (with A. Pierce and J.C. Smith). Wirth Environmental Services, San Diego, California (1985).

*Developing the Bay: An Archaeological and Historical Overview of the Marina/Columbia Redevelopment Area* (with D.C. Burkenroad, C.L. Smith, and J.C. Smith). Prepared for the Redevelopment Agency, San Diego, California (1980).

*Mokelumne River Project: Cultural Resources Report* (with J. Woodward and J.C. Smith). Prepared for Pacific Gas and Electric Company, San Francisco, California (1980).

*The San Diego Barracks: An Archaeological Assessment* (with D.C. Burkenroad). Prepared for the Redevelopment Agency, San Diego, California (1980).

*Potrero 7: Phase I Archaeological Overview and Inventory* (with J.C. Smith and C.A. Smith). On file at Pacific Gas and Electric Company, San Francisco, California (1979).

*Archaeological Excavations at 44He91, Crump Memorial Park, Henrico County, Virginia* (with L.D. Mouer). On file at Virginia Commonwealth University and the Virginia Historical Landmarks Commission, Richmond, Virginia (1978).

*Archaeological Reconnaissance at the Douglasdale Road Water Treatment Plant, Richmond, Virginia*. On file with the U.S. Army Corps of Engineers, Norfolk, Virginia (1978).

*The Shenandoah National Park as a Cultural Resource: An Evaluation of Past Archaeological Surveys and Work in the Shenandoah National Park* (with M.A. Hoffman, T.C. Funk, and R.W. Vernon). Denver Service Center, National Park Service, Colorado (1975)



**ANGELA KELLER, PHD, RPA**  
**Senior Archaeologist**

**AECOM**

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Colton, California 92324  
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**EDUCATION**

PhD, Anthropology, University of Pennsylvania, 2006  
BA, Anthropology (Art History minor), University of California, Berkeley, 1989

**PROFESSIONAL LICENSES**

Registered Professional Archaeologist

**EXPERIENCE SUMMARY**

Dr. Keller is an archaeologist with more than 15 years of experience working in California, the US Southwest, Mesoamerica, and Europe. She has training and experience running large, archaeological projects involving significant fieldwork and laboratory analysis. She has also worked closely with various Native American groups in California, as well as Maya groups in Mexico and Belize. As a project director and principal investigator, Dr. Keller has supervised numerous archaeological projects in California and Belize. She has conducted surveys, testing projects, and full-scale data recovery programs involving both prehistoric and historical sites. Much of her recent work in the US has been along the California coast and in the inland mountain regions of the state. She has worked for state and federal government clients, as well as private clients. Dr. Keller has experience working on politically contentious projects with multiple stakeholders and complex archaeological issues. Dr. Keller also has a great deal of experience writing archaeological documents for regulatory compliance, public audiences, and the academic community.

**PROJECT EXPERIENCE**

**Solar Millennium and Chevron Energy Solutions, Blythe Solar Power Class-III Archaeological Survey, Blythe, California.** Co-project director overseeing the analysis and presentation of data collected during the field survey. Primary author and compiling editor of the archaeological survey report, prepared in support of an environmental impact statement and an application for certification from the California Energy Commission. [2009]

**US Forest Service, San Bernardino National Forest Archaeological Survey and Testing in the Balanced Rock Area, California.** Lead author and editor. Compiled and wrote extensive sections of the archaeological report on work completed during field seasons in 2001 and 2002. [2005-2007]

**California Department of Parks and Recreation, Santa Susana Pass State Historic Park Area Prehistoric Sites Archaeological Overview, California.** Lead author and editor. Wrote extensive sections of the overview, and edited all sections for the final report available through the University of Arizona Press. [2004-2006]

**US Army Corps of Engineers, Honey Lake Archaeological Survey, Lassen County, California.** Project director for the analysis and compilation of data collected during an intensive Class-III survey of the entire Honey Lake shoreline and vicinity. Completed a large-scale spatial analysis of all known archaeological sites in the greater Honey Lake Valley. Co-edited and contributed significant sections to the final report. [2004]

**California Department of Parks and Recreation, Leo Carrillo State Park Archaeological Survey and Testing, California.** Materials analyst for all worked shell artifacts and other ornamental artifacts collected during a testing program completed in anticipation of a proposed visitor's center. Identified a sequence of shell beads which, in combination with radiocarbon dates, created a chronological context for the site. [2003]

**US Forest Service, Willow Fire Burn Area Archaeological Survey and Testing, San Bernardino National Forest, California.** Lead author and editor, compiled field data and wrote significant portions of the final report. Co-edited the draft and final versions of the report. [2002]

**Playa Vista, CA-LAN-54 Data Recovery. Marina del Rey, California.** Project director and field work supervisor for a small habitation site with intact burials. Conducted 100% recovery of a portion of the site that would be removed due to road widening. Also primary author and compiling editor of the final data recovery report. [2002]

**Playa Vista, Archaeological Construction Monitoring, Marina del Rey, California.** Project director for a team of archaeological monitors working alongside demolition and construction crews. Wrote quarterly reports and maintained a CAD-based mapping and data-management system. Also coordinated with Native American monitors. [1998-2000]

**US Bureau of Reclamation, Native Fish Protected Habitat Development Class I Historic Context and Cultural Inventory Report, Yuma County, Arizona.** Native American contact coordinator for a habitat development project proposed by the Bureau of Reclamation. Initiated contact with potentially interested Native American tribes. Conducted all correspondence and conversations with Native American groups. Kept a detailed log of contact efforts and wrote a report section summarizing the contacts and addressing critical issues involved in Native American contact programs. [sub to CH2M Hill, 1999]

**Playa Vista, CA-LAN-60, CA-LAN-193, and CA-LAN-2768 Archaeological Testing and Treatment Plan, Marina del Rey, California.** Analyzed the invertebrate faunal remains (primarily unworked marine shell) from three prehistoric sites adjacent to the historic Ballona Lagoon. Contributed the invertebrate faunal remains technical chapter to the report. [1999]

**Playa Vista, Site SR-13 Archaeological Testing, Marina del Rey, California.** Project director for the testing of an extensive, buried prehistoric site. Coordinated all work and data analysis. Contributed to a joint final report for several small sites within the project. [1999]

**Playa Vista, CA-LAN-2676 Archaeological Testing and Treatment Plan, Marina del Rey, California.** Invertebrate faunal analyst for the invertebrate faunal remains (primarily unworked marine shell) from a prehistoric site along the historic Ballona Lagoon. Contributed the invertebrate faunal remains technical chapter to the report. [1998]

**Playa Vista, Site SR-23 Archaeological Testing, Marina del Rey, California.** Project director for intensive testing at a prehistoric site identified during surface survey. Recorded detailed geomorphological and artifactual data by which we determined the site to be redeposited. [1999]

**Playa Vista, Site SR-10 Archaeological Testing, Marina del Rey, California.** Project director for the testing of a deposit of shell and recent cultural material identified as an archaeological site from surface inspection. Determined the site to be a deposit of dredged shell material and recent dumping. Coordinated all work and analysis and wrote the final report. [1998]

**US Food and Drug Administration, CA-ORA-116 Remote Sensing and Data Recovery, Newport Bay, California.** Invertebrate faunal analyst and field crew in resistivity/conductivity and magnetometer remote sensing survey of the site. Also assisted in the excavation and documentation of house pits and other features. Completed a spatial analysis of the distribution of shell and other materials across the site in

relation to the house pit structures. Contributed the invertebrate faunal analysis section to the final report. [1997]

**US Army Corps of Engineers, Sites CA-SNI-39 and CA-SNI-162 Intensive Archaeological Testing, San Nicolas Island, California.** Lead author, invertebrate faunal analyst, and crew chief for the excavation of two dune sites with excellent preservation on the northwest tip of the island. Created all field maps and documented all features. Analyzed the invertebrate faunal materials and wrote the technical section for the final report. Also contributed several other sections and chapters to the report, and co-edited the draft and final versions. [1996]

**Site CA-SBR-6815/H Archaeological Data Recovery, Hunter's Ridge, Fontana, California.** Field crew in the excavation of an extensive hunter-gatherer site along several ridges in the foothills of the San Bernardino Mountains. [1996]

### **INTERNAL TRAINING**

01 - Safety Orientation 08/24/2009

03 - Defensive Driving Awareness Training 08/24/2009

### **OTHER TRAINING AND CERTIFICATIONS**

Native American Consultation Training

Section 106/NHPA Training

Trench Safety Training

40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training

### **PROFESSIONAL MEMBERSHIPS**

American Anthropological Association

Society for American Archaeology

Society for California Archaeology

Register of Professional Archaeologists

Phi Beta Kappa

### **CONFERENCE PRESENTATIONS**

Crafting Power: Preclassic Shell Working in the Eastern Maya Lowlands. Paper presented at the 74th Annual Meeting of the Society for American Archaeology, Atlanta, April 2009.

Virtual Data: Making Web-based Data Sharing Work for Archaeology. Co-author with Mark Woodson (IT professional). Poster presented at the 74th Annual Meeting of the Society for American Archaeology, Atlanta, April 2009.

Time, Space, and Power in Maya Roads. Paper presented at the 105th Annual Meeting of the American Anthropological Association, San Jose, California. In the session, "Issues of Power in the Past," November 2006.

Prehistoric Land Use, Obsidian Procurement and the Environmental Record at Honey Lake, Lassen County, California. Co-author with Robert Wegener and Marc W. Hintzman. Paper presented at the 29th Great Basin Anthropological Conference, Sparks, Nevada, October 2004.

Features at SNI-39 and their Implications for Island Archaeology. Co-author with Donn R. Grenda. Paper presented at the 35th Annual Meeting of the Society for California Archaeology, San Diego, April 2002.

Locating Ritual Activity at Ancient Maya Centers: A Test of an Ethnohistorically Based Approach at the Classic Maya Center of Xunantunich, Belize. Paper presented at the 66th Annual Meeting of the Society for American Archaeology, New Orleans, April 2001.

Getting Into Xunantunich: Investigations of the Access Points of Xunantunich, Belize. Paper presented at the First International Symposium of Maya Archaeology in Belize, San Ignacio, June 1995.

Community Integration at Terminal Classic Xunantunich, Belize. Co-Author with Jason Yaeger and Jennifer Braswell. Paper presented at the 93rd Annual Meeting of the American Anthropological Association, Nashville, December 1994.

The Immediate Settlement Context of Xunantunich, Belize. Junior Author. Paper presented by Wendy Ashmore at the Katun Aniversario Palenque Mesa Redonda, Palenque, Mexico, April 1993.

## **PUBLICATIONS**

"In Defense of the Database," SAA Archaeological Record, article accepted for publication, October 2008.

"A Road by Any Other Name: Paths, Trails, and Roads in Maya Language and Thought," in *Landscapes of Movement: Trails and Paths in Anthropological Perspective*, edited by James E. Snead and Clark L. Erickson. University Museum Press, University of Pennsylvania. In press (Fall 2009).

"The Social Construction of Roads at Xunantunich. In *Provincial Politics: The Classic Maya Center of Xunantunich and its Hinterland*," edited by Lisa J. LeCount and Jason R. Yaeger. University of Arizona Press, Tucson. In Press (Winter 2010).

"The Chan Shell Collection," in *Chan Project Report 2007*, edited by Cynthia Robin. Report on file, Institute of Archaeology, Belmopan, Belize, January 2008.

"An Overview of Prehistoric Sites in the Vicinity of the Santa Susana Pass State Historic Park," in *A Passage in Time: Three Archaeological Sites in the Santa Susana Pass State Historic Park*, edited by Richard Ciolek Torrello, Donn R. Grenda, Angela H. Keller, and Anne Q. Stoll. University of Arizona Press, Tucson, 2006.

"Prehistoric Use of a Great Basin Wetland," in *Distant Shores: Cultural Resources Survey at Honey Lake, Lassen County, California*, edited by Robert M. Wegener, Jeffrey H. Altschul, Angela H. Keller, and Anne Q. Stoll, pp. 461–500. Technical Report 04-10. Statistical Research, Redlands, California, November 2004.

"Beads, Ornaments, and Other Artifacts," in *Leo Carrillo State Park Archaeological Investigations: Phase II Investigation: Archaeological Survey and Testing Program within the Proposed Concession Store and Visitors Center Areas of Potential Effects*, edited by Richard Ciolek-Torrello and Benjamin R. Vargas, pp. 63–80. Technical Report 03-42. Statistical Research, Redlands, California, December 2003.

"Invertebrate Faunal Remains," in *Life on the Dunes: Fishing, Ritual, and Daily Life at Two Late Period Sites on Vizcaino Point*, edited by David Maxwell, Donn R. Grenda, and Angela H. Keller, pp. 9-1–9-20. Draft Technical Report 02-27. Statistical Research, Tucson, April 2002.

"Site Context, with Koral Ahmet and Jill A. Onken," in *Data Recovery Excavation Report for CA-AMA-514, State Route 49, Amador County, California*, edited by Christopher J. Doolittle, pp. 7–28. Technical Report 01-75. Statistical Research, Redlands, California, October 2002.

"Roads to Understanding: A Semantic Analysis of the Maya Word for "Road" and Ancient Maya Causeways," *The Codex* 9(3):8–31, June 2001.

"Native American Contact and Information-Gathering Program," in *A Class I Historic Context and Cultural Inventory Report for the Native Fish Protected Habitat Development Project, Yuma County, Arizona*, edited by Joseph A. Ezzo, pp. 21–33. Technical Report 99-34. Statistical Research, Tucson, February 2000.

"Invertebrate Remains," in *At the Head of the Marsh: Middle Period Settlement along Upper Centinela Creek, Archaeological Treatment Plan for CA-LAN-60, CA-LAN-193, and CA-LAN-2768, Marina del Rey, California*, edited by Jeffery H. Altschul, Su Benaron, and Christopher J. Doolittle, pp. 83–99. Playa Vista Monograph Series, Test Excavation Report 2. Statistical Research, Redlands, California, June 1999.

"Invertebrate Remains," in *Settlement on the Lagoon Edge: Archaeological Treatment Plan for CA-LAN-2676, Marina del Rey, California*, edited by Jeffrey H. Altschul, Christopher J. Doolittle, and Su Benaron, pp. 101–114. Playa Vista Monograph Series, Test Excavation Report 1. Statistical Research, Redlands, California, December 1998.

"Invertebrate Faunal Analysis," in *House Pits and Middens: A Methodological Study of Site Structure and Formation Processes at CA-ORA-116, Orange County, California*, edited by Donn R. Grenda, Christopher J. Doolittle, and Jeffrey H. Altschul, pp. 105–126. Technical Series 69. Statistical Research, Redlands, California, June 1998.

"Testing and Excavation Around Sacbe II and Group C.," in *Xunantunich Archaeological Project Report 1997*, edited by Richard M. Leventhal and Wendy Ashmore, pp. 96–115. Report on file, Institute of Archaeology, Belmopan, Belize, January 1998.

"The 1995 Investigations of the Access Points and Accessibility of Xunantunich," in *Xunantunich Archaeological Project Report 1995*, edited by Richard M. Leventhal and Wendy Ashmore, pp. 83–111. Report on file, Institute of Archaeology, Belmopan, Belize, January 1996. The Xunantunich Sacbe Project 1994. In the *Xunantunich Archaeological Project Report 1994*, edited by Richard M. Leventhal and Wendy Ashmore, pp. 75–92. Report on file, Institute of Archaeology, Belmopan, Belize, January 1995.

"Vision and Revision: The Remapping of Xunantunich, Belize, C.A.," *Xunantunich Archaeological Project Report 1993*, edited by Richard M. Leventhal pp. 85–102. Report on file, Institute of Archaeology, Belmopan, Belize, January 1994.

## **PROJECT AND PROFESSIONAL AWARDS**

Professional Development Award, University of California, Riverside, 2009  
Dissertation Improvement Grant, National Science Foundation (NSF), 1997–1998  
Conference Grant, University of Pennsylvania, 1997  
Dissertation Research Fellowship, Fulbright/IE, 1995  
Field Research Grant, Department of Anthropology, University of Pennsylvania, 1993  
William Penn Fellowship, University of Pennsylvania, 1989–1993  
Kroeber Award for most outstanding Honors Thesis in Anthropology, University of California, Berkeley, 1989  
Phi Beta Kappa, University of California, Berkeley, Junior-year recipient, 1988  
Frank Edward Kraft Award for top 100 ranked freshman in Arts & Sciences, University of California, Berkeley, 1986

## **EMPLOYMENT HISTORY**

2009 - present, AECOM, Senior Archaeologist  
2006 - 2009, Anthropology Department, University of California, Riverside, Lecturer

Spring 2008, Sociology and Anthropology Department, University of Redlands, Lecturer  
2007 - 2009, Anthropology Department, CSU San Bernardino, Lecturer  
2006, Statistical Research, Inc., Principal Investigator  
2006, CSU San Bernardino Archaeological Field School, Co-Instructor  
1996 - 2005, Statistical Research, Inc., Project Director  
1994 - 1997, Sacbe Project, Xunantunich Archaeological Project, Belize, Project Director  
1991 - 1992, Anthropology Department, University of Pennsylvania, Teaching Fellow

**CHRISTOPHER DOOLITTLE, RPA**  
**Archaeologist**

**AECOM**

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**EDUCATION**

MA, Anthropology, University of Arizona, Tucson, 1992  
BA, Anthropology, University of California, Berkeley, 1987

**PROFESSIONAL LICENSES**

Registered Professional Archaeologist, National

**EXPERIENCE SUMMARY**

Mr. Doolittle is an archaeologist and the cultural resources manager for the Colton office. He has worked throughout California and the desert southwest for 20 years. He has served as project director and/or project manager on hundreds of cultural resource projects from one-day archaeological surveys to multi-year data recovery projects. Mr. Doolittle is versed in federal, state, and local regulations pertaining to cultural resources having worked for numerous government and private clients. He has a breadth of experience that can be counted on to identify the particular needs of a project and how best to fulfill them.

**PROJECT EXPERIENCE**

**Sempra Energy, Aliso Canyon Turbine Replacement Proponent's Environmental Assessment, Newhall, California.** Project manager for cultural resources support for the Aliso Canyon PEA being completed for the site, alternatives, or transmission line routes. Archaeological field assessments will be used to prepare the cultural resources chapter (including existing setting, impacts, and mitigation) for the assessment. [03/2009 - 09/2009]

**Liberty Energy Resources, Cultural Resources Studies, Kern County, California.** Project manager for a cultural resources technical report for renewable energy projects in central California. [02/2009 - 12/2009]

**Solar Millennium, Archaeological Survey, Blythe, California.** Project manager for an archaeological survey and preparation of a report. [01/2009 - 12/2009]

**AFCEE, 4P A-E08 - Environmental Condition of Property Report on Real Property, McChord AFB, Washington.** Participating in preparation of environmental condition of property (ECP) documentation for McChord AFB real property and associated geographically separated units to assist the Joint Base Supporting Component (Fort Lewis) in meeting environmental obligations associated with all transferable property. [01/2009 - 10/2009]

**AFCEE, 4P A-E08 - Environmental Assessment and Environmental Baseline Survey, 3 Installations, Multiple States.** Providing support to the Air Force Real Property Agency Enhanced Use Leasing (EUL) mission related to developing and preparing appropriate NEPA, environmental baseline survey, and real estate appraisal documentation to facilitate real property EUL opportunities at three Air Force installations. [09/2008 - 09/2009]

**US Army Corps of Engineers - Sacramento District, Edwards AFB, California.** Responsible for managing several task orders for cultural resources work, including a Phase I survey, a Phase II evaluation project, and several synthetic volumes.

**Los Angeles Department of Water and Power, California.** Directed archival research that involved rights-of-way permits held on federal land dating back to 1906. [completed 09/2006]

**Multiple Clients, California.** Managed projects and ensured that resources were allocated to projects to bring them to completion on time and under budget. [Statistical Research, Inc.]

**Luke AFB, Arizona.** Project manager and senior project director for 34 delivery orders including survey, testing, and data recovery on the Barry M. Goldwater Range. Provided project management, fieldwork, and report writing.

**Playa Capital Corporation, Archaeological and Historical Project, Ballona Region, Southern California.** Project manager for the analysis, reporting, and eventual curation for multiple data recovery projects as part of a 15-year project that generated more than 6,000 boxes of archaeological material.

**Southern California Edison, On-Call Cultural Resource Services, Various Sites, California.** Project manager for cultural resource compliance record searches, field surveys, report production, archaeological testing and monitoring, mitigation measures, coordination with state and federal agencies, and permit acquisition services. [01/2007 - 11/2009]

**Southern California Edison, California.** Project manager for more than 30 survey or monitoring projects ranging in size from a single pole to complete circuits. Developed budgets, wrote work authorizations, prepared contracts, obtained permits, fielded crews, and wrote reports.

**Lewis Operating Corporation.** Project manager for multiple survey and testing projects. Developed budgets, obtained contracts, fielded crews, and wrote reports.

**Centex Homes, Dove Cemetery, Atascadero, California.** Developed testing and data recovery plans for this historical-period cemetery. Provided project management, fieldwork, and presentations at public meetings, and wrote reports. [10/2004 - present]

**Lewis Operating Corps., Villages of Lakeview, Riverside County, California.** Participated with survey and buried sites testing programs associated with this housing development. Coordinated field work and wrote reports. [01/2005 - present]

**Playa Capitol Corp, LAN-211 Data Recovery.** Co-directed the fieldwork and managing the analysis and report writing phases of this large-scale data recovery in the Ballona Lagoon. [08/2005 - present]

**US Army Corps of Engineers - Sacramento District, Big Pocket Monitoring, Sacramento, California.** Senior project director for monitoring activities associated with drilling activities along the Sacramento River levee. [07/2005 - present]

**Port Hueneme Testing, California.** Directed fieldwork at VEN-662, coordinated analyses, participated at public meetings, and wrote portions of the report. [10/2004 - 05/2005, John Laing Homes]

**Planning Consultants Research, LaQuinta Resort and Club Real Historical Archaeological, LaQuinta, California.** Senior project director for archaeological testing of four historical period sites. [08/1999-10/1999]

**Mojave Water Agency, Mojave Pipeline Archaeological Monitoring, California.** Senior project director for archaeological monitoring of Reach 1B, 2, and 3A and for archaeological testing of SBR-7864. [10/1999 - 09/2000]



**US Army Corps of Engineers - Los Angeles District, Cave of the Whales Mapping, San Nicolas Island, California.** Senior project director for mapping and assisted with the testing and evaluation of SNI-39 and SNI-162. [09/1995 - 1999]

**NAVFAC - Southwest Division, San Clemente Island, California.** Senior project director for archaeological testing and evaluation of nine sites. [09/1995 - 06/1997]

**Alper Development, Hunter's Ridge Development, Fontana, California.** Senior project director for data recovery. Archaeological investigation of one prehistoric site (SBR-6815) and four historic sites (SBR-6807H, -6808H, 6811H, and -6812H) for the development. [06/1995 - 06/1998]

**California Department of Transportation, Highway 49 Emergency Data Recovery, Amador County, California.** Senior project director for the emergency data recovery along Highway 49. Directed data recovery excavations and co-authored report. [05/2001 - 12/2002]

**Greystone Environmental Consultants, The Griffith Energy Project, Arizona.** Senior project director for the survey of 80 miles of 230 kV transmission lines in northern Arizona from the Peacock Mountains to the Colorado River. [09/1999 - 01/2000]

**Questar Corporation, Southern Trails Pipeline Project, Arizona and California.** Senior project director assisted in the write-up of the cultural resources survey of 75.5 discontinuous miles along the Southern Trails Pipeline through northern Arizona and southern California. [08/1999 - 09/1999, CH2M Hill]

**US Army Corps of Engineers - Los Angeles District, Data Recovery at ORA-116, California.** Senior project director. Assisted in the report writing, production, and editing phase of this data recovery project at a site located in Upper Newport Bay. [02/1998 - 2002, Food and Drug Administration and Health and Human Services, and US Army Corps of Engineers, Los Angeles District]

**Los Angeles Diocese, Cathedral Testingt, Los Angeles, California.** Directed testing at the site of the new downtown cathedral. Recorded historic features and collected historic artifacts dating to the late 19th and early 20th century. [03/1998 - 2000]

**Wellton-Mohawk Irrigation and Drainage District, Data Recovery at Antelope Hill.** Senior project director for a multidisciplinary research effort to mitigate previous damage to Antelope Hill. Research directed at the petroglyphs located on Antelope Hill and in the surrounding area. [09/1996 - 2002]

**US Army Corps of Engineers - Los Angeles District, 500-Acre Camp Pendleton Survey, California.** Senior project director for the survey and shovel testing of nearly 500 acres on the Marine Corps base at Camp Pendleton. [11/1997 - 1999]

**US Army Corps of Engineers - Los Angeles District, Otay Mesa Testing Project, California.** Senior project director for test level investigations and authored report on a prehistoric site on Otay Mesa along the US-Mexico border. [11/1997 - 02/1998]

**US Army Corps of Engineers - Los Angeles District, 10,000-acre Survey, Camp Pendleton, California.** Senior project director for the survey of nearly 10,000 acres and co-authored the final report. [09/1996 - 01/1998]

**San Gabriel Family YMCA, Camp Coulter Pines Survey, California.** Conducted survey and authored report for summer camp located in the San Gabriel Mountains. [08/1996 - 01/1997]

**San Bernardino County Museum, Essex Bridge Survey, San Bernardino County, California.**

Conducted survey and coordinated report production for a bridge replacement project along historic Route 66. [02/1996 - 09/1996]

**US Army Corps of Engineers - St. Louis District, Curation and Collection Management Services, Multiple Sites.** Conducting site visits at various federal and state agencies across the western United States to document archaeological collections as mandated by the Native American Graves Protection and Repatriation Act. [07/1995 - present]

**Bureau of Reclamation, Lower Colorado Region, Lower Colorado River Survey, Blythe, California, Nevada.** Directed fieldwork and co-authored report for 2800-acre survey on Bureau of Reclamation/Bureau of Land Management land. [05/1995 - 09/1995]

**Economic Development Agency, Superblock Project, San Bernardino, California.** Directing fieldwork, laboratory, and co-authoring project reports for a historic archaeological project in downtown San Bernardino. [05/1994 - present]

**Wellton-Mohawk Irrigation District, Antelope Hill Survey, Yuma County, Arizona.** Conducted fieldwork and co-authored report on the historic resources of Antelope Hill. [08/1994 - 11/1994]

**Tom Dodson and Associates, Yucaipa, California.** Data recovery at CA-SBR-1000. Assisted with excavations at a multi-component village site. [07/1994]

**California State University, Ethnohistoric, Archaeological, and Ethnographic Contexts of Puvunga, Los Angeles County, California.** Authored chapter on previous research in the Alamitos Bay region. [11/1993 - 03/1994]

**City of Lake Elsinore, Berm Project, California.** Directed fieldwork and co-authored letter report. This project included sample screening 40 percent of a berm created by the city when it graded a portion of CA-RIV-2798/H. [12/1993]

**US Army Corps of Engineers, Lake Elsinore Archaeological Project, California.** Eight week data recovery project at CA-RIV-2798/H, a multi-component site near the outlet channel. [09/1993 - 11/1993]

**Pima County Department of Transportation, Fickett Avenue Testing, Arizona,** Directed fieldwork and authored letter report for testing project at small Hohokam site in the Southern Tucson Basin. [07/1993]

**Pima County Department of Transportation, West Branch Data Recovery, Arizona.** Supervised 12-week data recovery project at AZ AA:16:3 (ASM), a Preclassic Hohokam site in the southern Tucson Basin. [04/1993 - 07/1993]

**Loyola Marymount University, Testing at CA-LAN-211a.** Directed testing project and authored letter report. [04/1993]

**Pima County Department of Transportation, Badger Hole Ranch Data Recovery, Arizona.** Directed fieldwork and authored report on excavations at AZ AA:12:40 (ASM) for Superstition Homes. [02/1993]

**Bureau of Reclamation, Lower Colorado River Surveys.** Cultural resources survey at Senator Wash, Pilot Knob, and Palo Verde Point along the Colorado River. [09/1992 - 10/1992]

**US Army Corps of Engineers, AZNG Survey, Arizona.** Directed fieldwork and authored report on a cultural resources survey of 2000 acres in the Barry M. Goldwater Range. [04/1992 - 05/1992]

**General Services Administration, Nogales Border Crossing, Nogales, Arizona.** Directed testing project at the port of entry station in Nogales, Arizona. [03/1992]

**Robson Communities, Lago del Oro Testing Project.** Construction monitoring and archaeological testing at two prehistoric Hohokam sites. [08/1991 - 09/1991]

**Pima County Department of Transportation, Lower Santa Cruz River Survey.** Participated in cultural resources survey in the Santa Cruz River floodplain. [10/1991]

**US Army Corps of Engineers, Buena Vista Testing.** Crew chief and supervised excavations at a multi-component site along the United States-Mexico border. [01/1993]

**Pima County Transportation and Flood Control District, 49ers Testing, Arizona.** Crew chief and supervised excavation of test units and monitored backhoe trenching along drainages of the Tanque Verde Wash. [10/1992 - 01/1993]

**Pima County Transportation, West Branch Testing, Arizona.** Monitored backhoe trenching and screened feature fill at a preclassic Hohokam site. Co-authored testing report and data recovery plan. [12/1992 - 01/1993]

**Bureau of Reclamation, Lower Verde Archaeological Study.** Set up the initial GIS and site database. Conducted preliminary analysis in site distributions in the Lower Verde Valley. [03/1992]

**US Army, Garden Canyon, Fort Huachuca.** Crew member during excavation of two rock shelter sites in the Huachuca Mountains. [08/1991]

**Laboratory of Advanced Subsurface Imaging.** Conducted numerous site surveys using ground penetrating radar and prepared letter reports. [05/1989 - 12/1991]

**Schuk Toak Archaeological Mitigation.** Archaeologist and crew member during excavation of two Hohokam sites in the Tohono O'odham Indian Reservation. [06/1990 - 07/1990]

**University of Arizona, Marana Platform Mound, Arizona.** Supervisory archaeologist for excavations and lab work by students and Earthwatch crews. [1990 - 1991]

**University of Arizona, Data Entry, Arizona State Museum Site File Office, Arizona.** Entered site data into the AZSITE database. [01/1990 - 05/1990]

**Archaeologist, Marana Platform Mound, Arizona.** Participated in excavations of a Classic period Hohokam compound in the northern Tucson Basin. Conducted lab work for the project during the school semester. [01/1990 - 05/1990]

**University of California, Flowerdew 100, Hopewell, Virginia.** Volunteer archaeologist for a summer field season of field and lab work at a 17th century site near Hopewell. [06/1987 - 07/1987]

**University of California, Flowerdew 100, Hopewell, Virginia.** Volunteer archaeologist for field and lab work at a 17th century site near Hopewell. [06/1986 - 07/1986]

**University of California, Pocket Road, Sacramento, California.** Crew member during excavations of a shell mound near Sacramento. [03/1986 - 04/1986]

**University of California, Sumersville, California.** Student archaeologist during survey and excavation at a historic coal mining town as part of the University of California field school . [01/1986 - 05/1986]

## **INTERNAL TRAINING**

01 - Safety Orientation 07/23/2008  
02 - Hazard Communication (US) /WHMIS (Canada) 06/28/2009  
03 - Defensive Driving Awareness Training 04/02/2008  
14 - Office Ergonomics Training 06/12/2008  
15 - First Aid 02/12/2009  
16 - CPR 02/12/2009  
20 - HAZWOPER 40-Hour 07/15/2006  
21 - HAZWOPER Refresher 8-Hour 06/18/2009  
22 - HAZWOPER Supervisor 8-Hour 03/13/2007  
34 - General Excavation Safety Training 06/18/2009  
35 - Trench/Excavation Safety Training 06/18/2009  
36 - Fire Extinguisher Training 06/18/2009  
Employee Substance Abuse Training 05/07/2009  
HAZWOPER Medical Exam 05/07/2009  
Project Management Training - Basic 02/23/2007  
Supervisor Substance Abuse Training 05/07/2008

## **OTHER TRAINING AND CERTIFICATIONS**

Section 106 in the New Regulatory Environment: A Workshop for Consultants and their clients  
Archaeological Damage Assessment

## **PROFESSIONAL MEMBERSHIPS**

Society for American Archaeology  
Archaeological Survey Foundation (Board Member)

## **PUBLICATIONS**

*Synthesis of Prehistoric Archaeology within Management Region 4 at Edwards Air Force Base, Kern and San Bernardino Counties, California.* Christopher J. Doolittle and Amy M. Holmes. Draft report submitted September 2006 to Edwards AFB and the USACE, Sacramento.

*Los Angeles Department of Water and Power Rights of Way in the Angeles National Forest.* Draft. Christopher J. Doolittle and Susan Hogan-Conrad. Prepared for LADWP. Submitted August 15, 2006.

*Gila Bend Air Force Auxiliary Field: Intensive Archaeological Survey of 2,322 Acres on the Barry M. Goldwater Range East, Arizona.* Koral Ahmet, Christopher J. Doolittle, and Stephanie M. Whittlesey. Prepared for the 56th Range Management Office, Luke AFB.

*Archaeological Damage Assessment of CA-PLA-272 (FS 05-17-57-02) in Martis Valley, Placer County, Tahoe National Forest, California.* Christopher J. Doolittle and Michael K. Lerch. Submitted to U.S. Army Corps of Engineers, Sacramento, CA.

*Manned Ranges 3 and 4: Intensive Archaeological Survey of 6,252 Acres on Manned Ranges 3 and 4, Barry M. Goldwater Range East, Arizona.* Gabrielle Duff, Marcy Rockman, Stephanie M. Whittlesey, and Christopher J. Doolittle. Prepared for the 56th Range Management Office, Luke AFB, Arizona.

*Cultural Resources Survey of Assessor's Parcel Number 075-320-01, -02, and -03, Ventura, California.* Kenneth M. Becker and Christopher J. Doolittle. Draft prepared for John Laing Homes, Ventura.

*ETAC 2000: Intensive Archaeological Survey of 5,502 Acres on the East Tactical Range, Barry M. Goldwater Range East, Arizona.* Christopher J. Doolittle, Gabrielle Duff, Stephanie M. Whittlesey, and Vincent M. LaMotta. Prepared for the 56th Range Management Office, Luke AFB, Arizona.

*STAC 2000: Intensive Archaeological Survey of 5,575 Acres on the South Tactical Range, Barry M. Goldwater Range East, Arizona.* Christopher J. Doolittle, Stephanie M. Whittlesey, Vincent M. LaMotta, Kenneth M. Becker, and Koral Ahmet. Prepared for 56th Range Management Office, Luke AFB, Arizona.

*Cultural Resources Survey of an 80-acre parcel (APN 3096-311-01), in the City of Victorville, San Bernardino County, California.* Christopher Doolittle. Prepared for Lewis Operating Corp., Upland, CA.

*Cultural Resources Survey of a John Laing Homes Property between Harbor Boulevard and the Southern Pacific Railroad Tracks, Ventura, California.* Christopher J. Doolittle. Prepared for John Laing Homes, Ventura, CA.

*An Extended Phase I Study of CA-VEN-662, Port Hueneme, California.* Christopher J. Doolittle and Lance Wollwage. Prepared for John Laing Homes, Van Nuys, CA.

*Susanville Road: Archival Research and Archaeological Survey, Lassen County, California.* Anne Q. Stoll and Christopher J. Doolittle. Submitted to the U.S. Army COE, Sacramento District.

*Dove Cemetery: Significance Evaluation and Treatment Plan for CA-SLO-1892H, Atascadero, San Luis Obispo County, California.* Edited by Michael K. Lerch and Christopher J. Doolittle. Prepared for Bermant Development Company, Santa Barbara.

*Field Summary Report for the NTAC 2004 Survey, Barry M. Goldwater Range, Arizona.* Christopher J. Doolittle. Prepared for the 56th RMO/ESM, Luke AFB

*Damage Assessment of Four Rockshelter Sites on the Barry M. Goldwater Range, East Arizona.* Christopher J. Doolittle. Prepared for the 56th RMO/ESM, Luke AFB. Contract F02604-99-0002, Delivery Order 5001.

*The Munitions Storage Area Survey: A Class III Archaeological Inventory and Evaluation of 274 Acres Adjacent to Luke Air Force Base, Arizona.* Christopher J. Doolittle, Scott Thompson, and Gabrielle Duff. Prepared for the 56th Civil Engineering Squadron, Luke AFB.

*End-of-Fieldwork Report for an Intensive Class III Archaeological Inventory of Parcels adjacent to the Munitions Storage Area, Luke Air Force Base, Arizona.* Christopher J. Doolittle and Scott Thompson. Prepared for the 56th Civil Engineering Squadron, Environmental Flight, Luke AFB. Contract No. F02604-99-0-0002, Task Order 5027.

*The Gila Bend Air Force Auxiliary Field Survey: A Class III Archaeological Inventory and Evaluation of 2,322 Acres on the Barry M. Goldwater Range, Arizona.* Koral Ahmet and Christopher J. Doolittle. Prepared for 56th RMO/ESMC, Luke AFB.

*A Class III Archaeological Inventory Survey of Two Unmanned Threat Emitters (UMTE) Locations, Barry M. Goldwater Range, Arizona.* Christopher J. Doolittle. Prepared for the 56th RMO/ESMC, Luke AFB.

*Survey of Two F16 Crash Sites: A Class III Archaeological Inventory and Evaluation of 174 Acres on the Barry M. Goldwater Range.* Arizona Amelia Natoli and Christopher J. Doolittle. Prepared for the 56th RMO/ESMC, Luke AFB.

*Tohono Hihim: A Class III Archaeological Inventory and Evaluation of 5,575 Acres in the South Tactical Range, Barry M. Goldwater Range, Arizona* (draft). Technical Report 03-05. Statistical Research, Inc., Tucson. Doolittle, Christopher J., Kenneth M. Becker, and Koral Ahmet.

*End of Fieldwork Report for ETAC 2003 Survey, Barry M. Goldwater Range, Arizona*. Christopher J. Doolittle. Prepared for the 56th RMO/ESMC, Luke AFB.

*End of Fieldwork Report for the Rockshelter Damage Assessment*. Benjamin Vargas and Christopher J. Doolittle. Prepared for the 56th RMO/ESM, Luke AFB.

*Mesquite Processing on the Sentinel Plain: A Class III Archaeological Inventory and Evaluation of 3,112 Acres on Manned Range 4, Barry M. Goldwater range, Arizona*. Technical Report 02-71. Statistical Research, Inc., Tucson. Duff, Gabrielle, Christopher J. Doolittle, and Koral Ahmet.

*Hodai Sonwuinakud: Making and Using Stone Tools in the Western Papagueria: A Class III Archaeological Inventory and Evaluation of 2,900 Acres in the East Tactical Range, Barry M. Goldwater Range, Arizona*. Technical Report 02-42. Statistical Research, Inc., Tucson. Doolittle, Christopher J., Jeffrey H. Altschul, and Kurt Heidelberg.

*Field Summary Report for the Gila Bend Air Force Auxiliary Field Survey, Barry M. Goldwater Range, Arizona*. Christopher J. Doolittle. Prepared for the 56th RMO/ESM, Luke AFB.

*Field Summary Report for the Manned Range 3 and 4 Surveys, Barry M. Goldwater Range, Arizona*. Christopher J. Doolittle. Prepared for the 56th RMO/ESM, Luke AFB.

*Field Summary Report for the ETAC 2002 Survey, Barry M. Goldwater Range, Arizona*. Christopher J. Doolittle. Prepared for the 56th RMO/ESMC, Luke AFB.

*A Class III Archaeological Inventory Survey of Proposed Sonoran Pronghorn Forage Plots on the Barry M. Goldwater Range, Arizona*. Christopher J. Doolittle. Prepared for the 56th Range Management Office/Environmental Science Management, Luke AFB.

*Field Summary Report for the NTAC 2002 Survey, Barry M. Goldwater Range, Arizona*. Benjamin R. Vargas and Christopher J. Doolittle. Prepared for the 56th RMO/ESM, Luke AFB.

*Field Summary Report for the STAC 2001 Survey, Barry M. Goldwater Range, Arizona*. William E. Hayden and Christopher J. Doolittle. Prepared for the 56th RMO/ESM, Luke AFB.

*Data Recovery Excavation Report for CA-AMA-514 (P-03-000701), State Route 49, Amador County, California*. Christopher J. Doolittle. Prepared for Caltrans District 10, Stockton, CA.

*Field Summary Report for a Class III Archaeological Inventory Survey on Manned Range 4, Barry M. Goldwater Range, Arizona*. Gabrielle Duff and Christopher J. Doolittle. Prepared for the 56th RMO/ESM, Luke AFB.

*Field Summary Report for a Class III Archaeological Inventory Survey in the San Cristobal Valley, Barry M. Goldwater Range, Arizona*. Gabrielle Duff and Christopher J. Doolittle. Prepared for the 56th RMO/ESMC, Luke AFB.

*Field Summary Report for the East Tac 2000 Survey, Barry M. Goldwater Range, Arizona*. Christopher J. Doolittle. Prepared for the 56th RMO/ESMC, Luke AFB.

*The Griffith Energy Project: A Cultural Resources Inventory of the Peacock Repeater Station and Access Roads East of Kingman, Arizona.* Christopher J. Doolittle and Edgar K. Huber. Prepared for Greystone Environmental Consultants and Western Area Power Administration.

*Field Summary Report for the Pronghorn Survey.* Christopher J. Doolittle. Prepared for the 56th RMO/ESMC, Luke AFB.

*Field Summary Report for Class III Archaeological Inventory and Site Monitoring on the South Tactical Range, Barry M. Goldwater Range, Arizona.* Christopher J. Doolittle. Prepared for the 56th RMO/ESMC, Luke AFB.

*Field Summary Report for East Tac Survey 99A.* Christopher J. Doolittle. Prepared for the 56th RMO/ESMC, Luke AFB

*Treatment Plan for Archaeological Data Recovery at the Fuel Tank Site, Gu Achi District of the Tohono O'odham Nation, Arizona.* Christopher J. Doolittle and Jeffrey H. Altschul. Prepared for the 56th RMO/ESMC, Luke AFB.

*The Griffith Energy Project: A Cultural Resources Inventory of 80 Miles of 230 kV Transmission Lines near Kingman, Arizona.* Statistical Research, Inc. Tucson, AZ. Technical Report 99-62. By Christopher J. Doolittle and Edgar K. Huber.

*Cultural Resources Survey of Portions of the Southern Trails Pipeline.* Statistical Research, Inc. Tucson, AZ. Technical Report 99-32. Edited by Edgar K. Huber and Teresita Majewski.

*Settlement on the Lagoon Edge: Archaeological Treatment Plan for CA-LAN-2676, Marina Del Rey, California.* Prepared for the U.S. Army Corps of Engineers, Los Angeles District. Statistical Research, Inc. Playa Vista Monograph Series, Test Excavation Report 1. By Altschul, Jeffrey H., Christopher J. Doolittle, and Su Benaron.

*Treatment Plan for Three Historic Sites (CA-RIV-1039H, CA-RIV-1044H, and CA-RIV-3698H) in the Prado Basin, Riverside County, California.* Matthew A. Sterner, Christopher J. Doolittle, and Teresita Majewski. Prepared for the U.S. Army COE, Los Angeles District. (Draft).

1998 *House Pits and Middens: A Methodological Study of Site Structure and Formation Processes at CA-ORA-116, Newport Bay, Orange County, California.* Edited by Donn R. Grenda, Christopher J. Doolittle, and Jeffrey H. Altschul. Statistical Research, Inc. Tucson, AZ. Technical Series 69.

*Early Hunter-Gatherers and Historic Settlers along San Sevaine Creek: Data Recovery Efforts at the Hunter's Ridge Community Development Project.* Compiled by Donn R. Grenda, Christopher J. Doolittle, and Matthew A. Sterner. Statistical Research, Inc. Tucson, AZ. Technical Report 98-7.

*Prehistoric Landscapes in Coastal Southern California: Archaeological Survey on Camp Pendleton, San Diego County, California.* Edited by Seetha N. Reddy. ASM Affiliates, Encinitas, CA. Contributions by Christopher J. Doolittle.

*The Brushfire Survey: A 500-Acre Cultural Resources Survey near Case Springs and Range 409, Camp Pendleton, San Diego County, California.* Christopher J. Doolittle, Jeffrey H. Altschul, and Koral Ahmet. Prepared for the U.S. Army COE, Los Angeles District.

*Archaeological Test Excavations and National Register Evaluation for CA-SDI-12,259 (IBWC-4), San Diego County, California.* Christopher J. Doolittle, David Ferraro, and Ayse Taskiran. Prepared for the U.S. Army COE, Los Angeles District.

*Archaeological Investigations at the Superblock Site (CA-SBR-7975H), San Bernardino, California.* Edited by Christopher J. Doolittle and Teresita Majewski. Statistical Research, Inc. Tucson, AZ. Technical Series 62.

*Archaeological Site Significance Evaluation Report for Nine Sites on San Clemente Island, California.* Statistical Research, Inc. Redlands, CA.

*The Antelope Hill Project. Part 1: A Class III Archaeological Survey and Treatment Plan of the Wellton-Mohawk Irrigation and Drainage District Quarry at Antelope Hill, Yuma County, Arizona.* Jeffrey H. Altschul, Joan S. Schneider, and Christopher J. Doolittle.

*Noncollection Cultural Resources Survey and Inventory of 2,250 Acres South of Ehrenberg, Yuma County, Arizona.* With Joseph A. Ezzo. Statistical Research, Inc. Tucson, AZ.

*Data Recovery at Badger Hole Ranch (AZ AA:12:40 [ASM]), a Late Rincon/Tanque Verde Phase Site in the Northern Tucson Basin.* Christopher J. Doolittle and Joseph A. Ezzo.

*A Class III Archaeological Survey and Treatment Plan of the Wellton-Mohawk Irrigation and Drainage District Quarry at Antelope Hill, Yuma County, Arizona.* With Jeffrey H. Altschul and Joan S. Schneider. Statistical Research Technical Report 94-8, Tucson, Arizona.

*Program Treatment Plan for the Evaluation and Treatment of Historical Archaeological Resources for the Superblock Project, Downtown San Bernardino, California.* With Jeffrey Altschul and William D. Green. Statistical Research, Inc., Redlands, California.

*Data Recovery at Badger Hole Ranch, (AZ AA:12:40 [ASM]), A Late Rincon/Tanque Verde Phase Site in the Northern Tucson Basin.* With Joseph A. Ezzo. Statistical Research Technical Report, Tucson, Arizona.

Previous Research on the CSULB Campus and the Alamitos Bay Region. In *Puvunga: a Review of the Ethnohistoric, Archaeological, and Ethnographic Issues Surrounding a Gabrielino Rancheria Near Alamitos Bay, Los Angeles County, California.* Compiled by J. H. Altschul. Draft report submitted to the California State University Long Beach Foundation. Report prepared by Statistical Research, Inc. Tucson, Arizona.

*Archaeological Testing Report and Data Recovery Plan, SRI Locus of the West Branch Site (AZ AA:16:3:ASM).* With Karen G. Harry and Stephanie M. Whittlesey. Statistical Research, Inc., Tucson, Arizona.

*A Cultural Resources Survey of the Sand Tank Mountains in the Barry M. Goldwater Range, Luke Air Force Base, Maricopa County, Arizona.* With Jeffrey H. Altschul. Statistical Research, Inc.

*Archaeological Testing Report for the proposed Nogales Port-of-Entry.* Report prepared for Brown and Caldwell, Nogales, Arizona.

*Site Distributions in the Lower Verde Project Area: The GIS Database.* With Stephanie Whittlesey. Statistical Research, Inc.

*Archaeological Testing Report and Data Recovery Plan for AZ BB:9:68 and AZ BB:9:260.* With Jeffrey Altschul and Kimberly Greene McClure. Statistical Research, Inc.

## **EMPLOYMENT HISTORY**

05/2006 - present, AECOM, Archaeologist



## **TRINA MEISER**

### **Architectural Historian**

#### **SUMMARY**

Historic preservation specialist and architectural historian

#### **EDUCATION**

MA, Historic Preservation Planning, Cornell University, 2003

BA, History, Kenyon College, 1998

#### **AFFILIATIONS**

National Trust for Historic Preservation

Society of Architectural Historians

California Preservation Foundation

Trina Meiser is a historic preservation specialist and an architectural historian with 6 years of experience in surveying, documenting, evaluating, and planning for historic structures, districts, sites, and cultural resources. Her background is based on a solid knowledge of architectural history, architectural styles and terminology, building materials conservation, and historic preservation theory. She has led seminars on architectural styles and the history of historic preservation, charrettes for the design treatments of historic districts, as well as workshops in materials conservation. She has completed cultural resource technical reports, National Register of Historic Places nominations, historic structures reports, and Federal Rehabilitation Tax Credit applications. She has consulted on a variety of historic structure rehabilitation plans with clients, architects, engineers, and agency representatives for regulatory review. Her experience in historic preservation planning provides a strong understanding of federal, state, and local historic preservation laws. She has a thorough knowledge of the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and their functions in historic preservation planning.

Ms. Meiser's areas of interest include urban and landscape preservation planning and design, building restoration, archaeology, international heritage sites, and historic district and neighborhood revitalization projects. She is a member of the Society of Architectural Historians, the California Preservation Foundation, the National Trust for Historic Preservation, and several regional historical societies and preservation organizations.

## **HISTORIC PRESERVATION PROJECTS**

### **National Register Eligibility Assessment for Naval Base Ventura County, Port Hueneme, California**

#### **Architectural Historian**

**CLIENT:** U.S. Navy, Southwest Division

Recorded and evaluated 18 buildings at the Naval Construction Training Center at Port Hueneme for eligibility to the National Register. Conducted research on the Disaster Recovery Training School for incorporation into the historical context. Completed DPR forms and incorporated findings in a Historic Resources Evaluation Report.

### **Ramona Air Center Environmental Impact Report, Ramona, California**

#### **Architectural Historian**

**CLIENT:** TCR Properties

Conducted a survey and historical research of structures more than 50 years old to evaluate and document historic resources. Results were recorded on DPR forms and summarized for inclusion in the project Environmental Impact Report.

### **Exposition Light Rail Transit Phase 2, Los Angeles County, California**

#### **Architectural Historian**

**CLIENT:** Exposition Light Rail Authority/AECOM Transportation

Conducted fieldwork to record and evaluate historic resources along the Exposition Corridor ROW. Completed a Historical Resources Evaluation Report for the evaluation of historical resources for eligibility to the National Register of Historic Places and the California Register of Historical Resources. Provided cultural resources portion of Environmental Impact Statement, including mitigation measures for the treatment of evaluated historical resources.

**TRINA MEISER****SR-76 Mission to I-15 Historical Resources Evaluation Report,  
San Diego, California****Architectural Historian****CLIENT:** San Diego Association of Governments/Caltrans

Conducted fieldwork to record and evaluate ranching buildings and residences. Completed a Historical Resources Evaluation Report per Caltrans standards for the evaluation of historical resources for eligibility to the National Register of Historic Places and the California Register of Historical Resources.

**Main Street Bridge Replacement Project, Temecula, California****Architectural Historian****CLIENT:** City of Temecula

Conducted a survey and historical research of historic resources in Old Town Temecula adjacent to the Main Street Bridge. Results were recorded on DPR forms and in a Historical Resources Survey Report per Caltrans guidelines.

**301 University Avenue Historical Evaluation and Technical Report,  
San Diego, California****Architectural Historian****CLIENT:** Allen, Matkins, Leck, Gamble, Mallory & Matsis, LLP

Evaluated the condition and integrity of the former supermarket building dating from 1942. Prepared Historic Resources Evaluation Report and survey forms. Summarized findings for inclusion in the 301 University Uptown Environmental Impact Report.

**SFVAMC Environmental Assessment of Seismic Upgrades,  
San Francisco, California****Architectural Historian****CLIENT:** Department of Veterans Affairs

Consulted with architects and designers for the rehabilitation and seismic retrofit of the 1930s-era Art Deco San Francisco Veterans Affairs Medical Center buildings. Reviewed plans and rehabilitation standards to evaluate design of new additions and alterations. Engaged in consultation with the State Historic Preservation Office.

**North Torrey Pines Bridge "Sorrento Overpass" Restoration,  
Del Mar, California****Historic Preservation Specialist****CLIENT:** City of Del Mar

Consulted with engineers for the restoration of the 1933 North Torrey Pines Bridge to resolve significant impacts to the National Register-eligible resource. Assessed the deterioration of the bridge and established the historic character-defining features to be preserved. Evaluated restoration plans to suggest mitigation measures for its treatment in compliance with the Secretary of Interior Standards for Restoration.

**Jefferson National Expansion Memorial, St. Louis, Missouri****Architectural Historian****CLIENT:** National Park Service

Contributed to the cultural resources section of the GMP/EIS. Provided historical context for the Native American occupation, the French colonial establishment, and the 19th century development of the built environment in St. Louis, Missouri.

**Fort Totten Conservation Work Weekend, New York, New York  
Historic Preservation Specialist****CLIENT:** New York City Department of Parks and Recreation

Organized a historic preservation event to perform restoration work on Officers' Quarters at retired military site along New York's East River. Oversaw the conservation of historic exterior woodwork elements. This conservation project was completed prior to joining EDAW.

**TRINA MEISER****Hurricane Katrina Recovery, Disaster 1604-DR-MS, Biloxi, Mississippi  
Architectural Historian**

**CLIENT:** Federal Emergency Management Agency, Region VI  
Recorded the condition and integrity of multiple properties affected by Hurricane Katrina and performed photo documentation. Determined if structures were eligible for National Register designation. Results were summarized in a report and through a series of maps generated in GIS. This conservation work was performed prior to joining EDAW.

**Hurricane Katrina Recovery, Disaster 1604-DR-MS, Biloxi, Mississippi  
Historic Preservation Specialist**

**CLIENT:** Federal Emergency Management Agency, Region VI  
Completed Section 106 review and coordinated with the State Historic Preservation Office to ensure that all projects funded by FEMA complied with federal regulations and the National Historic Preservation Act. Evaluated restoration projects for National Register eligibility in compliance with Secretary of Interior's Standards for Restoration and Rehabilitation under Programmatic Agreement. This historic preservation work was performed prior to joining EDAW.

**Ithaca Downtown Commercial Historic District National Register  
Eligibility Nomination, Ithaca, New York  
Historic Preservation Planner**

**CLIENT:** City of Ithaca  
Completed research and documentation of downtown commercial buildings dating from the 1830s to the 1930s. Document included architectural descriptions of each building. Successful nomination to the National Register. This historic preservation planning project was completed prior to joining EDAW.

**University Avenue Historic District National Register Eligibility  
Assessment, Ithaca, New York  
Historic Preservation Planner**

**CLIENT:** City of Ithaca  
Completed documentation included in the survey and nomination of this residential historic district with resources dating from the 1860s to the 1950s. This historic preservation planning project was completed prior to joining EDAW.

**Historic Ithaca's State Theatre Restoration Project, Ithaca, New York  
Historic Preservation Specialist**

**CLIENT:** Historic Ithaca, Inc.  
Evaluated restoration designs for compatibility with the historic character of the resource and for compatibility with the *Secretary of the Interior's Standards for Rehabilitation*. Performed conservation of textiles, decorative fixtures, plaster, and windows. Managed construction projects relating to aesthetic and ADA accessibility modifications. This restoration work was completed prior to joining EDAW.

**The Clinton House, Ithaca, New York  
Historic Preservation Planner/Specialist**

**CLIENT:** Historic Ithaca, Inc.  
Evaluated designs for compatibility with the historic character of the resource and for compatibility with the *Secretary of the Interior's Standards for Rehabilitation*. Compiled and prepared Part 1 of the Federal Rehabilitation Tax Credit Application. Oversaw construction management for aesthetic modifications to historic elements. This planning and conservation project was completed prior to joining EDAW.

**TRINA MEISER****The Delaware, Lackawanna and Western Train Station National  
Register Eligibility Nomination, Ithaca, New York  
Historic Preservation Specialist****CLIENT:** City of Ithaca

Composed historic context statement and architectural description for historic train station. Photodocumented building and submitted the application to the State Office of Historic Preservation. This historic preservation planning project was completed prior to joining EDAW.

**Athens Exchange Hotel Stagecoach Livery Historic Structures Report,  
Athens, Pennsylvania  
Preservation Planner****CLIENT:** Town of Athens, Pennsylvania

Conducted comprehensive assessment of exterior and interior spaces of 1860s livery structure. Identified character-defining features and compiled historic context statement. Photodocumented building and developed recommendations for treatment and maintenance of deteriorated historic features. This conservation project was completed prior to joining EDAW.

**SUMMARY**

Extensive survey, excavation, and monitoring experience

GPS mapping and post processing

**EDUCATION**

BA, Anthropology, San Diego State University, 2002

**AFFILIATION**

Society for California Archaeology

**CERTIFICATION**

40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Course

**PRESENTATIONS**

*The History and Archaeology of the Jolly Boy Saloon* - presented at the Society of California Archaeology 2008 Annual Meeting

*San Diego's Recent Past* - presented at the Society of California Archaeology 2007 Annual Meeting

**COLLIN TUTHILL****Staff Archaeologist**

Mr. Tuthill has 9 years of archaeological experience in southern California. His experience includes document research, document preparation, construction monitoring, surveying, excavation of both historic and prehistoric sites in San Diego and Imperial counties, laboratory analyses, and mapping, including the use of submeter Global Positioning System. One of his primary responsibilities has been the supervision of crew in the field and interns in the lab. His duties have also included authoring reports, contributing to the writing of sections of reports, accessioning materials into the lab, artifact analysis, data entry, and the preparation of artifacts for curation. He has worked on databases in Paradox, Excel, and Access.

**PROJECT EXPERIENCE****Citracado Pkwy Cultural Resources, Escondido, CA****Archaeologist**

**CLIENT:** AECOM Transportation

Conducted excavation of prehistoric archaeological sites.

**SWAT 1 SCI, San Clemente Island, CA****Archaeologist**

**CLIENT:** US Navy, Southwest Division NAVFACENGCOM

Conducted excavation of prehistoric archaeological sites.

**Black Rock Geothermal Power Plant, Niland, CA****Archaeologist**

**CLIENT:** AECOM Environment

Conducted pedestrian survey, and the mapping and recordation of canals.

**FPLE Beacon Solar, California City, CA****Archaeologist**

**CLIENT:** AECOM Environment

Conducted pedestrian survey, and the mapping and excavation of prehistoric archaeological sites.

**Project Beacon Geoarchaeological Trench Monitoring, California City, CA****Archaeologist**

**CLIENT:** AECOM Environment

Monitored for prehistoric cultural resources during geoarchaeological trenching.

**Topock CWA, Needles, CA****Archaeologist**

**CLIENT:** Pacific Gas & Electric Company

Conducted relocation and mapping of prehistoric archaeological sites.

**SNSA Ivanpah, Las Vegas, NV, to Primm, NV****Archaeologist**

**CLIENT:** ENSR Corporation

Managed the production of site records, including text, sketch maps, and location maps; coordinated with graphics department and GIS department; managed field data.

**COLLIN TUTHILL****Herschel and Pearl LLC, La Jolla, CA****Archaeologist****CLIENT:** Herschel and Pearl LLC

Conducted archaeological survey and authored survey report.

**Old Town – Jolly Boy, San Diego, CA****Archaeologist****CLIENT:** Delaware North Companies Parks and Resorts

Monitored for historic and prehistoric resources during construction, coordinated with construction crew and client, conducted archaeological excavations.

**State Route 905, San Diego, CA****Archaeologist****CLIENT:** Skanska UAS Civil West California District, Inc.

Monitored for historic and prehistoric resources during preconstruction and coordinated with construction crew and Caltrans.

**FPLE Critical Issues Analysis, San Diego, CA****Archaeologist****CLIENT:** ENSR Corporation

Compiled and submitted budget proposal.

**Waterman Junction, Barstow, CA****Archaeologist****CLIENT:** SunCal Companies

Conducted archaeological survey and historic and prehistoric archaeological site recordation.

**Manchester Wetland Mitigation****Archaeologist****CLIENT:** San Diego County Water Authority

Conducted archaeological survey and relocation of prehistoric archaeological sites.

**TTP, Oceanside, CA****Archaeologist****CLIENT:** NAVFAC

Assisted in the supervision and direction of field crew during the excavation of two archaeological sites, laid out trench locations, directed the backhoe operators in the mechanical excavation of about 20 trenches, assisted in the organization and management of water-screening operations, was the primary contact for all subcontractors, and monitored the drilling of core samples.

**North Baja Pipeline Looping and Laterals, Ehrenberg, Arizona, to Mexican Border****Archaeologist****CLIENT:** TransCanada NBP System

Conducted a records search, assisted in the direction of field crew while conducting an archaeological survey of a 46-mile pipeline route and alternatives in Imperial County, CA, and conducted the excavation and mapping of both prehistoric and historic archaeological sites.

**Miramar Housing Project, MCAS Miramar, San Diego County, CA****Archaeologist****CLIENT:** U.S. Navy, Southwest Division

Conducted archaeological survey of base property for new housing on Miramar Air Force Base.

**COLLIN TUTHILL****Agua Hedionda, Carlsbad, CA****Archaeologist****CLIENT:** City of Carlsbad

Conducted the Native American contact program.

**P-501, San Diego, CA****Archaeologist****CLIENT:** U.S. Navy, Southwest Division NAVFACENGCOM

Laid out trench locations, directed the backhoe operator in the mechanical excavation of multiple trenches, and contributed to the writing of the report.

**San Francisquito Canyon Road, San Francisquito, CA****Archaeologist****CLIENT:** City of Los Angeles Bureau of Engineers

Conducted archaeological survey.

**San Diego Airport Site Selection, San Diego, CA****Archaeologist****CLIENT:** Ricondo & Associates

Conducted archival research for 16 proposed airport locations and contributed to the writing of the report.

**Perdue Treatment Plant, San Diego, CA****Archaeologist****CLIENT:** Sweetwater Authority

Conducted archaeological survey and contributed to the writing of the report.

**State Route 76 Widening, San Diego, CA****Archaeologist****CLIENT:** San Diego Association of Governments

Conducted pedestrian survey, archaeological site relocation, and the rerecording of archaeological sites.

**Twining Archaeological and Paleontological Monitoring, San Diego, CA****Archaeologist****CLIENT:** Twining Laboratories

Construction monitoring.

**Fallbrook, Fallbrook, CA****Archaeologist****CLIENT:** U.S. Navy, NAVFAC Southwest

Pedestrian survey and archaeological site relocation.

**Los Angeles Unified School District High School Number 9,****Los Angeles, CA****Archaeologist****CLIENT:** Los Angeles Unified School District

Conducted the archaeological excavation of historic burials.

**Wire Mountain Housing, Oceanside, CA****Archaeologist****CLIENT:** Hunt Building Company

Construction monitoring.

**Caltrans District 11 New Headquarters, San Diego, CA****Archaeologist****CLIENT:** PSB Environmental Services Section

Monitoring for historic and prehistoric resources during preconstruction and construction, and conducted laboratory analyses.

**COLLIN TUTHILL****Old Town Plaza del Pasado, San Diego, CA****Archaeologist****CLIENT:** Heritage Architecture & Planning

Conducted an archaeological excavation in the field.

**State Route 125, San Diego, CA****Archaeologist****CLIENT:** San Diego Expressway, LP (SDELP)

Survey and site relocation during construction monitoring for the construction of State Route 125.

**Ballpark Infrastructure, San Diego, CA****Archaeologist****CLIENT:** Center City Development Corp

Conducted laboratory analyses and created historic artifact catalog.

**Coronado, San Diego, CA****Archaeologist****CLIENT:** Parsons Brinckerhoff

Conducted laboratory analyses and created historic artifact catalog.

**Hellman Ranch Housing Development, Seal Beach, CA****Archaeologist****CLIENT:** Private Developer

Monitored construction and gave material support to crew in the field.

**Border Fields State Park, San Diego, CA****Archaeologist****CLIENT:** California State Parks

Conducted laboratory analyses and created prehistoric artifact catalog.

**Emergency Storage Project, San Vicente Reservoir,  
San Diego County, CA****Archaeological Technician****CLIENT:** San Diego County Water Authority

Tested a historic site for the expansion of San Vicente Reservoir.

**Emergency Storage Project, Lake Hodges Reservoir, CA  
Archaeological Technician****CLIENT:** San Diego County Water Authority

Participated in the testing and data recovery of two prehistoric sites.

**LMXU, San Diego, CA****Archaeological Technician****CLIENT:** City of San Diego

Participated in excavation, conducted laboratory analyses, and created prehistoric artifact catalog.

**San Diego State University Sorority Row, San Diego, CA****Archaeological Technician****CLIENT:** San Diego State University Foundation

Conducted an archaeological survey.

**DO7, Oceanside, CA****Archaeological Technician****CLIENT:** SWDIV

Conducted laboratory analyses and created prehistoric artifact catalog.



**COLLIN TUTHILL****DO15, Oceanside, CA****Archaeological Technician****CLIENT:** SWDIV

Conducted laboratory analyses and created prehistoric artifact catalog.

**North Baja Gas Pipeline Project, Riverside and Imperial Counties, CA****Archaeological Technician****CLIENT:** Foster Wheeler Environmental Corporation

Conducted laboratory analyses and created both historic and prehistoric artifact catalogs.

**San Clemente Island EIR, Los Angeles County, CA****Archaeological Technician****CLIENT:** SRS

Conducted laboratory analyses and created prehistoric artifact catalog.

**Emergency Storage Project, San Diego County, CA****Archaeological Technician****CLIENT:** San Diego County Water Authority

Conducted laboratory analyses and created both historic and prehistoric artifact catalogs.



## **ATTACHMENT 2**

### **RECORDS SEARCH**

*This information is Confidential and  
has been provided under separate cover*



## **ATTACHMENT 3**

### **CONTACT PROGRAM**

*This information is Confidential and  
has been provided under separate cover*



## **ATTACHMENT 4**

### **PROJECT MAPS**

*This information is Confidential and  
has been provided under separate cover*





**ATTACHMENT 5**

**DPR SITE FORMS**

*This information is Confidential and  
has been provided under separate cover*



**ATTACHMENT 6**

**ARCHITECTURAL SURVEY REPORT**

*This information has been  
provided under separate cover*





BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA  
1516 NINTH STREET, SACRAMENTO, CA 95814  
1-800-822-6228 – [WWW.ENERGY.CA.GOV](http://WWW.ENERGY.CA.GOV)

**APPLICATION FOR CERTIFICATION  
FOR THE *BLYTHE SOLAR  
POWER PLANT PROJECT***

**Docket No. 09-AFC-6**

***PROOF OF SERVICE***  
(Revised 12/28/09)

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**INTERESTED AGENCIES**

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### DECLARATION OF SERVICE

I, Ashley Y. Garner, declare that on January 08, 2010, I served and filed copies of the attached **CULTURAL RESOURCES CLASS III SURVEY DRAFT REPORT FOR THE PROPOSED BLYTHE SOLAR POWER PROJECT** dated **September 2009**. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:

[\[http://www.energy.ca.gov/sitingcases/solar\\_millennium\\_blythe\]](http://www.energy.ca.gov/sitingcases/solar_millennium_blythe)

The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

**(Check all that Apply)**

#### FOR SERVICE TO ALL OTHER PARTIES:

☒ sent electronically to all email addresses on the Proof of Service list;

☐ by personal delivery or by depositing in the United States mail at with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

**AND**

#### FOR FILING WITH THE ENERGY COMMISSION:

☒ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

**OR**

☐ depositing in the mail an original and 12 paper copies, as follows:

#### **CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. **09-AFC-6**

1516 Ninth Street, MS-4

Sacramento, CA 95814-5512

[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

I declare under penalty of perjury that the foregoing is true and correct.

  
Ashley Y. Garner