



Submitted to:

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**CULTURAL AND PALEONTOLOGICAL
RESOURCES ASSESSMENT
MESA LINDA HESPERIA
PROJECT
CITY OF HESPERIA,
SAN BERNARDINO COUNTY, CALIFORNIA**



**PHASE I CULTURAL AND PALEONTOLOGICAL RESOURCES
ASSESSMENT:
MESA LINDA STREET HESPERIA PROJECT
CITY OF HESPERIA, SAN BERNARDINO COUNTY, CALIFORNIA**

Prepared for:

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May 2022

Type of Study: Cultural and paleontological resources assessment

Cultural Resources within APE: P-36-004179 and P-36-010288

Paleontological Resources within APE: None

Geologic Units: Holocene-age young alluvial fan deposits, Unit 3 (Qyf3), Pleistocene-age very old axial-channel deposits (Qvoa)

USGS 7.5-minute Quadrangle(s): Section 22 of Township 4 North, Range 5 West, Baldy Mesa

Survey Area: 18.27-acres

APN(s): 3064581020000 and 3064581030000

Date of Fieldwork: February 17, 2022

Key Words: Archaeology, Paleontology, CEQA, Phase I Survey, positive report, Holocene-Age Deposits, Pleistocene-Age Deposits, Low to Moderate Paleontological Potential, San Bernardino County, City of Hesperia

MANAGEMENT SUMMARY

The Mesa Linda Street Hesperia Project (hereafter referred to as Project or Area of Potential Effects [APE]) proposes 408,997 square feet (sf) of industrial development on 18.16-acres of land (Assessor's Parcel Numbers [APNs] 3064-581-02 and 3064-581-03). The APE is bounded by Mesa Linda Street to the east, Poplar Street to the south, and dirt roads to the north and west, in the City of Hesperia, San Bernardino County, California. Material Culture Consulting, Inc. (MCC) was retained by EPD Solutions, Inc. (EPD) to conduct Phase I cultural and paleontological resources investigations of the APE. The cultural resources assessment was conducted in accordance with Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA). The paleontological assessment was conducted in accordance with CEQA. Both assessments were subject to all applicable local regulations and guidelines. The assessments included a California Historical Resources Information System (CHRIS) records search at the South Central Coastal Information Center (SCCIC), background and literature research, a search of the Sacred Lands File (SLF) by the Native American Heritage Commission (NAHC), outreach efforts with 10 Native American tribal representatives, an examination of geological maps and paleontological literature, a locality search at the Natural History Museum of Los Angeles County (LACM), and an intensive-level pedestrian survey of the APE.

A search of the CHRIS was conducted by staff members at SCCIC, located at California State University, Fullerton, Orange County, California. The cultural resources records search identified 42 previously conducted cultural resources investigations within 1-mile of the APE, five of which intersect the APE (SB-01025, SB-01026, SB-01027, SB-02476, SB-08205). Two previously recorded cultural resources were identified within the APE, P-36-004179 and P-36-010288. P-36-004179 consists of a portion of Lane's Crossing Toll Road, a 5-foot-wide unpaved road trending southwest from Bear Valley Road. This resource has been mapped using historic maps and aerial photographs. P-36-010288 consists of a campsite/homestead with three possible periods of occupation. The site contains structure debris, refuse scatters, and an unpaved road. An additional 38 previously recorded cultural resources were identified within 1-mile of the APE.

The SLF search did not identify previously known sacred lands within the APE or vicinity. The NAHC identified and provided contact information for 10 Native American tribal groups and representatives who may have additional information regarding potentially sacred areas. MCC conducted outreach to all 10 tribal groups and representatives identified by the NAHC. As a result of this outreach effort, MCC received two responses, from the San Manuel Band of Mission Indians (SMBMI) and the Quechan Tribe of the Fort Yuma Reservation, stating that the tribes had no additional comments. This outreach was conducted for identification purposes only; no formal consultation with the Native American representatives occurred as part of this investigation.

The APE is mapped as middle Holocene-age young alluvial fan deposits, Unit 3 (Qyf3). These sediments have a low potential to produce significant fossils in the uppermost layers, but they may overlie moderate potential middle to early Pleistocene-age very old axial-channel deposits (Qvoa) at various depths. No previously recorded fossil localities are located within a 1-mile radius of the APE.

During the fieldwork, survey conditions were excellent, with high ground surface visibility. The APE is relatively flat with the exception of a narrow wash drainage located in the center. Vegetation was sparse, and it included dry desert scrub, weeds, and sparse distribution of Joshua trees. Soil observed throughout the APE consisted of coarse-grained, light brown sand with decomposing granitic pebbles. Disturbances to the APE include bioturbation, modern refuse, construction activity, vehicular activity, and development activity. No evidence of P-36-004179 was observed during the pedestrian survey. Artifacts associated with P-36-010288 were identified, including two

crushed church-key opened bi-metal, two crushed tobacco tin cans, deteriorated metals, and glass fragments. However, deposits as described in the 2015 site record, were not observed. No additional cultural or paleontological resources were identified.

Two previously recorded cultural resources were identified within the APE, P-36-004179 and P-36-010288. No evidence of P-36-004179 was observed in the APE during pedestrian survey. Deposits associated with P-36-010288 were identified during the pedestrian survey but the resource appears to be heavily impacted by environmental forces and vehicular activity. Additionally, the portions of P-36-010288 located within the APE were determined to be ineligible for listing to the CRHR and the NRHP, and no further study is needed.

The potential for encountering significant paleontological resources within the APE is considered low during shallow ground disturbance in the surficial middle Holocene-age young alluvial fan deposits, Unit 3 (Qyf3), and moderate at depth if middle to early Pleistocene-age very old axial-channel deposits (Qvoa) are encountered. Therefore, MCC recommends that a paleontological resources management plan (PRMP) be prepared that includes procedures for paleontological spot checks during ground-disturbing activities greater than 6 feet below the current ground surface, implementation of full-time paleontological monitoring if older Pleistocene-age sediments are observed, and an inadvertent fossil discovery plan.

A copy of this report will be permanently filed with the SCCIC at California State University, Fullerton. All notes, photographs, correspondence, and other materials related to this Project are located at MCC, in Pomona, California.

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INTRODUCTION

The Mesa Linda Street Hesperia Project (hereafter referred to as Project or Area of Potential Effects [APE]) proposes 408,997 square feet (sf) of industrial development on 18.16-acres of land (Assessor's Parcel Numbers (APNs) 3064-581-02 and 3064-581-03). Material Culture Consulting, Inc. (MCC) was retained by EPD Solutions, Inc. (EPD) to conduct Phase I cultural and paleontological resource investigations of the APE. The assessments were conducted in accordance with the California Environmental Quality Act (CEQA) as well as all local regulations and guidelines. Additionally, due to the project need for a US Army Corps of Engineers (USACE) Section 404 permit, the cultural resources assessment also addresses Section 106 of the National Historic Preservation Act (NHPA). The assessments document the potential for encountering cultural and paleontological resources during project development and implementation, and provide recommendations on how to mitigate impacts to those resources.

AREA OF POTENTIAL EFFECTS

The proposed APE is at the southwest intersection of an unnamed dirt road and Mesa Linda Street, in the City of Hesperia, San Bernardino County, California (Figures 1 and 2). The APE is bounded by Mesa Linda Street to the east, Poplar Street to the south, and dirt roads to the north and west (Figure 3). The APE is located on the Baldy Mesa, California, U.S. Geological Survey (USGS) 7.5' Quadrangle in Section 22 of Township 04 North, Range 05 West, San Bernardino Base and Meridian (Figure 2).

PROJECT PERSONNEL

Tria Belcourt, M.A., Registered Professional Archaeologist (RPA), served as the Project Manager and Principal Archaeologist for the study. Ms. Belcourt oversaw the project and performed an editorial review of this report. Ms. Belcourt has an M.A. in Anthropology from the University of Florida, a B.A. in Anthropology from the University of California at Los Angeles, over 17 years of experience in California archaeology, and 12 years of experience overseeing paleontological assessments in California (see Appendix A). Courtney Richards, M.S., served as the Principal Investigator for Paleontology for the study and performed a technical review of the paleontological sections of the report. Ms. Richards has an M.S. in Biological Sciences (paleontology emphasis) from Marshall University and has over 16 years of paleontological experience (see Appendix A). MCC Cultural Resource Assistant Project Manager and GIS Specialist Erika McMullin, B.A., Senior Paleontologist Betsy Kruk, M.S., and Archaeologist Escee Lopez, B.A., provided co-authorship and GIS support for this study. MCC Archaeologist and cross-trained Paleontologist, Brian Waldo, M.A., conducted the field survey. MCC Cultural Resource Project Manager Lily Arias, M.A., provided an editorial review of the report.



Figure 1. Mesa Linda Street Hesperia Project APE Location (1:750,000)



Figure 2. Mesa Linda Street Hesperia Project APE (1:24,000, as depicted on Baldy Mesa USGS 7.5-Minute Quadrangle)



Figure 3. Mesa Linda Street Hesperia Project APE (1:3,000, as depicted on aerial photograph)

REGULATORY ENVIRONMENT

The Project is subject to federal, state, and local laws and regulations regarding cultural and paleontological resources. These regulations require the identification of cultural and paleontological resources within the APE, which should be considered during the planning stage of new projects; include application review for projects that would potentially involve land disturbance; provide project-level standard conditions of approval that address unanticipated discoveries; and provide requirements to develop specific mitigation measures if resources are encountered during any development activity. Specific governing legislation and regulations are described in the following sections.

CULTURAL RESOURCES

NATIONAL HISTORIC PRESERVATION ACT OF 1966

Section 106 of the NHPA of 1966, as amended, requires all federal undertakings to consider effects to historic properties (36 Code of Federal Regulations [CFR] 800). The purpose of Section 106 is to balance the need of the federal government with concerns regarding historic preservation and to resolve any conflicts that may arise. To resolve such conflicts, Section 106 also requires federal agencies to provide the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on undertakings.

An undertaking is defined as a project, activity, or program subject to federal direct or indirect jurisdiction of a federal agency or that requires a federal approval, license, or approval (36 CFR 800.16(y)). Historic properties are defined as any prehistoric or historic site, district, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Historic properties also include artifacts, records, and remains as well as properties that are considered culturally important to Native American tribes and that meet the NHRP eligibility criteria (36 CFR 800.16(l)(1)).

For a property to be considered a historic property it must have achieved significance at least 50 years prior to evaluation, possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the following criteria:

- a) The property must be associated with events that have made a significant contribution to the broad patterns of our history.
- b) The property must be associated with the lives of persons significant in our past.
- c) The property must embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction.
- d) The property must show, or may be likely to yield, information important to history or prehistory.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

CEQA declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental impacts of a proposed project. If a project is determined to have a potential significant environmental impact, CEQA requires that alternative plans and mitigation measures be considered. CEQA includes historic and archaeological resources as integral features of the environment.

CEQA requires a designated lead agency to determine whether a project may have a significant impact on historical resources. A historical resource is defined as a resource listed in, or determined to be eligible for listing

in, the California Register of Historical Resources (CRHR) (Section 21084.1); a resource included in a local register of historical resources (Section 15064.5(a)(2)); or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (Section 15064.5 (a)(3)). Public Resources Code (PRC) Section 5024.1, Section 15064.5 of the Guidelines, and Sections 21083.2 and 21084.1 of the Statutes of CEQA were used as one of the basic guidelines for the current cultural resources study. PRC Section 5024.1 directs evaluation of historical resources to determine their eligibility for listing on the CRHR.

The purpose of the register is to maintain listings of the state's historical resources. The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing on the NRHP, enumerated above, and require similar protection to what NHPA Section 106 mandates for historic properties. According to PRC Section 5024.1(c)(1-4), a resource is considered historically significant if it meets at least one of the following criteria:

1. 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. Associated with the lives of persons important to local, California or national history;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to having significance, resources must retain integrity. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance. Alterations to a resource or changes in its use over time may have historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data. Note that California Historical Landmarks with numbers 770 or higher are automatically included in the CRHR.

Under CEQA, if an archeological site is not a significant "historical resource" but meets the definition of a "unique archeological resource" as defined in PRC Section 21083.2, then it should be treated in accordance with the provisions of that section. A unique archaeological resource is defined in PRC Section 21083.2(g) as follows:

An archaeological 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 any of the following criteria:

1. Contains information needed to answer important scientific 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 of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Resources that neither meet any of these criteria for listing on the NRHP or CRHR nor qualify as a "unique archaeological resource" under CEQA PRC Section 21083.2 are viewed as not significant. Under CEQA, "A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects" (PRC Section 21083.2(h)).

Impacts to historical resources that alter the characteristics that qualify the historical resource for listing on the CRHR are considered a significant impact. Impacts to a historical resource are considered significant if the project activities physically destroy or damage all or part of a resource; change the character of the use of the resource or physical feature within the setting of the resource which contribute to its significance; or introduce visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource. If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2 (a), (b), and (c)).

ASSEMBLY BILL 52

Assembly Bill (AB) 52 (Gatto; Stats. 2014, ch. 532), enacted in September 2014, sets forth both procedural and substantive requirements for analysis of tribal cultural resources as defined in PRC Section 21074, and consultation with California Native American tribes. Tribal cultural resources include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a tribe. A tribal cultural resource is one that is either: (1) listed on, or eligible for listing on the CRHR or local register of historical resources (see section below) or (2) a resource that the CEQA lead agency, at its discretion and supported by substantial evidence, determines is significant pursuant to the criteria in PRC Section 5024.1, subdivision (c) (see PRC Section 21074). Further, because tribes traditionally and culturally affiliated with a geographic area may have specific expertise concerning their tribal cultural resources, AB 52 sets forth requirements for notification and invitation to government-to-government consultation between the CEQA lead agency and geographically affiliated tribes (PRC Section 21080.3.19(a)). Under AB 52, lead agencies must avoid damaging effects to tribal cultural resources, when feasible, regardless of whether consultation occurred or is required.

Tribal cultural resources per PRC 21074 (A)–(B) are defined as either of the following:

- 1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - a) Included or determined to be eligible for inclusion in the CRHR; or
 - b) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
- 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
 - a) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

CALIFORNIA HISTORICAL LANDMARKS AND POINTS OF HISTORICAL INTEREST

Historical Landmarks are sites, buildings, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific, or technical, religious, experimental, or other value. In order to be considered a California Historical Landmark, the landmark must meet at least one of the following criteria:

- 1) 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) Associated with the lives of persons important to local, California, or national history;

- 3) Embodies the distinctive characteristics of a type, period, region, or method of construction;
- 4) Represents the work of a master; or possesses high artistic values; or
- 5) Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

If a site is primarily of local or countywide interest, it may meet the criteria for the California Point of Historical Interest Program. Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific, technical, religious, experimental, or other value. To be eligible for designation as a Point of Historical Interest, a resource must meet at least one of the following criteria:

1. The first, last, only, or most significant of its type in the local geographic region (city or county);
2. Associated with an individual or group having a profound influence on the history of the local area;
3. A prototype of, or an outstanding example of, a period, style, architectural movement, or construction; or
4. One of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. No historical resource may be designated as both a Landmark and a Point of Interest. If a Point of Interest is subsequently granted status as a Landmark, the Point of Interest designation will be retired.

CITY OF HESPERIA GENERAL PLAN 2010

The City of Hesperia General Plan outlines its goals and policies to protect and preserve Hesperia's historical, paleontological, and cultural resources.

Goal: CN-5 The City shall establish policies and procedures in compliance with state and federal laws and regulations to identify and properly protect found historical, cultural, and paleontological artifacts and resources.

Implementation Policies:

- CN-5.1** Encourage the preservation of historical, paleontological, and cultural resources.
- CN-5.2** In those areas where surveys and records indicate historical, cultural, or paleontological resources may be found, appropriate surveys and record searches shall be undertaken to determine the presence of such resources, if any.
- CN-5.3** All historical, paleontological, and cultural resources discovered shall be inventoried and evaluated according to CEQA regulations and the California Office of Historic Preservation. All historical, paleontological, and cultural resources discovered shall be inventoried and evaluated according to CEQA regulations and the California Office of Historic Preservation.
- CN-5.4** The City shall coordinate with the Archeological Information Center at the San Bernardino County Museum in reviewing potential records and in preserving such artifacts as may be found.
- CN-5.5** Through its CEQA and other environmental procedures, the City shall notify appropriate Native American representatives of possible development and shall comply with all state and federal requirements concerning the monitoring and preservation of Native American artifacts and places.

(City of Hesperia 2010)

To determine cultural resource sensitivity, the City of Hesperia developed a map to indicate areas of low, medium, and high sensitivity. The following information has been summarized from the General Plan EIR report and its appendices:

Low: Areas generally exhibit zero to one recorded site per 160-acres exhibited by modern development.

Medium: Areas generally exhibit two to nine sites per 160-acres, and are focused along important historic road alignments

High: Areas generally exhibit 10 or more sites per 160-acres and are located near permanent water sources.

(Michael Brandman Associates 2010)

In addition, sensitivity zones were also developed by utilizing knowledge regarding landforms and water resources. Thus, areas near the Mojave River and Silverwood Lake have been assigned a high sensitivity zone and areas with exposed quartz or quartzite veins have also been deemed high sensitivity due to the presence of raw materials used to create stone tools. Areas with medium sensitivity are generally placed along historic road alignments due to the possibility of observing historic sites or isolates in the vicinity. Although the city has been mapped for cultural sensitivity, sensitivity is based on known sites and there is a possibility for unknown sites to be identified.

PALEONTOLOGICAL RESOURCES

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The CEQA Environmental Checklist includes one question regarding paleontological resources: “Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?” (CEQA Guidelines Appendix G, Section VII, Part F). If paleontological resources are identified as being within a proposed project area, the sponsoring agency must take those resources into consideration when evaluating project impacts. The level of consideration may vary with the importance of the resource.

CEQA does not provide a definition for unique paleontological resource. Therefore, many paleontologists and agencies utilize the Society of Vertebrate Paleontology (SVP) criteria, which define significant (i.e., unique) paleontological resources as:

“Fossils and fossiliferous deposits...consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information” (SVP 2010).

CALIFORNIA PUBLIC RESOURCES CODE

PRC Division 5, Chapter 1.7, Section 5097.5 and Division 20, Chapter 3, Article 5, Section 30244 include additional state-level requirements for the assessment and management of paleontological resources. Section 5097.5 states that a person shall not knowingly and willfully excavate upon, or remove, destroy, injure or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands. As defined in PRC Section 5097.5, public lands include any lands owned by, or under the jurisdiction of the state, county, district, authority, or public corporation, or any agency thereof. Section 30244 requires reasonable mitigation measures where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer.

CITY OF HESPERIA GENERAL PLAN 2010

Goal CN-5 and Implementation Policies CN-5.1, CN-5.2, and CN-5.3 of the City of Hesperia General Plan (see Cultural Resources regulations above) require the identification, protection, and evaluation of paleontological resources (City of Hesperia 2010).

BACKGROUND

ENVIRONMENTAL SETTING

The APE is located in the City of Hesperia on an alluvial fan in the southwestern portion of San Bernardino County, California. The City of Hesperia is located within the Mojave Desert and the Mojave River runs east through the northern portion of the city. The Oro Grande Wash is located approximately 1.7-miles west of the APE (Michael Brandman Associates 2010). Vegetation within the APE is categorized as Mojave mixed woody scrub, a complex scrub consisting of Joshua tree, Eastern Mojave buckwheat, and bladderpod (Michael Brandman Associates 2010). The APE is mostly flat with a slope of less than 5 degrees and elevations averaging approximately 1,097 meters (m) (3,600 feet) above mean sea level (AMSL). An ephemeral wash runs north-south through the center of the APE. The APE has been disturbed by off-roading vehicle traffic.

PALEONTOLOGICAL SETTING

The APE is located within the Mojave Desert Geomorphic Province. A geomorphic province is a geographical area of distinct landscape character, with related geological features, including relief, landforms, orientations of valleys and mountains, type of vegetation, and other geomorphic attributes (Harden 2004). The Mojave Desert Geomorphic Province's attributes consist of vast, arid expanses of barren mountain ranges, broad alluvial-filled flatlands, desiccated riverbeds and washes, extensive mesas, sand dunes, playas, volcanic cinder cones, and basaltic lava flows (Norris and Webb 1990; Sylvester and O'Black Gans 2016). This geomorphic province occupies approximately 25,000 square miles of southeastern California and is bounded to the west by the Western Transverse Ranges, the San Gabriel Mountains, the Tehachapi Mountains, and the San Andreas Fault; to the north and northeast by the Garlock Fault and the Basin and Range Geomorphic Province; to the east by the Nevada State Line and the Colorado River; and to the south by the Eastern Transverse Ranges, the San Andreas Fault, the Salton Trough, and the Colorado Desert, which generally coincides with the San Bernardino and Riverside County boundary (Norris and Webb 1990; Harden 2004; Hall 2007). Topographically, the Mojave Desert has a more subdued landform than the Basin and Range Geomorphic Province despite their associated geologic histories, with the Mojave Desert containing relatively shorter and lower ranges and broader valleys than the Basin and Range (Harden 2004). Additionally, the southeastern Mojave Desert lacks the north-south-trending mountain ranges and basins typical of the Basin and Range (Sylvester and O'Black Gans 2016). Despite its subdued topography, the Mojave Desert Geomorphic Province has elevations typically above 2,000 feet above sea level, unlike the southern and adjacent Colorado Desert, which has some areas with elevations below sea level.

The APE is underlain by middle Holocene-age young alluvial fan deposits, Unit 3 (Qyf3). Mapped within a ½-mile of the APE are early Holocene- and late Pleistocene-age young wash deposits (Qyw, Qyw1, Qyw2), Holocene- and late Pleistocene-age young alluvial fan deposits (Qyf), and middle to early Pleistocene-age very old axial-channel deposits (Qvoa) (Morton and Miller 2006; Figure 4). None of the additional units within the ½-mile radius of the APE are expected to be impacted by Project construction with the exception of middle to early Pleistocene-age very old axial-channel deposits (Qvoa), which may be encountered in the subsurface of the APE.

Middle Holocene-age young alluvial fan deposits, Unit 3 (Qyf3) consists of slightly to moderately consolidated silt, sand, and coarse-grained sand to boulder alluvial fan deposits with slightly to moderately dissected surfaces. West of the Mojave River, these deposits are typically finer grained, consisting primarily of medium brown silt and sand with sparse granule and pebble lenses and scattered pebble-sized clasts. In many places, these deposits have low amplitude, rolling surfaces with swales and ridges parallel to the axes of fans (Morton and Miller 2006). These deposits are unlikely to produce significant paleontological resources due to their young age and are considered to have a low paleontological potential using the federal Potential Fossil Yield Classification (PFYC) system (Bureau of Land Management [BLM] 2016). However, in the Mojave Desert these younger deposits often overlie older sedimentary deposits at various depths.

Middle to early Pleistocene-age very old axial-channel deposits (Qvoa) consist of well consolidated to well indurated, reddish-brown sand with scattered layers of gravel, pebbles, silt, and clay-bearing alluvium deposited on canyon floors. Similar Pleistocene-age sediments within San Bernardino County have produced specimens of fossil toothcarp (*Fundulus davidae*), tui chub (*Gila bicolor*), three-spined stickleback (*Gasterosteus aculeatus*), guillemot (*Uria* sp.), minnow (Cyprinidae undet.), amphibian (Amphibia undet.), frog (Anura sp.), toad (*Bufo* sp.), flamingo (*Phoenicopterus copei*, *P. minutus*), western grebe (*Aechmophorus occidentalis*), black-necked grebe (*Podiceps nigricollis*), Canada goose (*Branta canadensis*), canvasback duck (*Aythya valisineria*), ruddy duck (*Oxyura jamaicensis*), Eurasian teal duck (*Anas crecca*), mallard duck (*Anas platyrhynchos*), diving duck (*Aythya* sp.), seaduck (*Mergus merganser*), golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), pelican (*Pelecanus erythrorhynchos*, *P. macropus*), black-throat loon (*Gavia arctica*), asphalt stork (*Ciconia maltha*), tundra swan (*Cygnus columbianus*), American coot (*Fulica americana*), crane (cf. *Grus* sp.), sandpiper (Phalaropodinae undet., cf. *Actitis* sp.), gull (*Larus* sp., *L. oregonus*), great horned owl (*Bubo virginianus*), rail bird (*Rallus* sp.), reptile (Reptilia undet.), tortoise (*Gopherus* sp., *G. agassizii*, *Hesperotestudo* sp.), western pond turtle (*Emys marmorata*), horned lizard (*Phrynosoma* sp.), colubrid snake (Colubridae undet.), lagomorph (*Hypolagus furlong*), hare (*Lepus* sp.), cottontail rabbit (*Sylvilagus* sp.), rodent (Rodentia undet.), pocket gopher (*Thomomys* sp.), kangaroo rat (*Dipodomys* sp., *D. merriami*, *D. deserti*, *D. ordii*), deer mouse (*Peromyscus* sp.), meadow vole (*Microtus* sp.), cotton rat (*Sigmodon minor*), packrat (*Neotoma* sp.), American badger (*Taxidea taxus*), porcupine (*Erethizon* sp.), ringtail (*Bassariscus* sp.), horse (*Equus* sp.), Mexican horse (*Equus conversidens*), ground sloth (*Megalonyx* sp., *Nothrotheriops* sp., *Nothrotherium shastense*, Mylodontidae undet., *Paramylodon harlani*), mammoth (*Mammuthus* sp.), llama (Lamini undet.), camel (Camelidae undet., *Camelops* sp., *C. minidokae*, *Camelops hesternus*), lamine camelid (*Hemiauchenia* sp.), even-toed ungulate (Artiodactyla undet.), deer (Cervidae undet.), white-tailed deer (*Odocoileus virginianus*), pronghorn (*Antilocapra* sp.), dwarf pronghorn (*Capromeryx* sp.), bighorn sheep (*Ovis canadensis*), bison (*Bison antiquus*), peccary (Tayassuidae undet.), canid (*Canis* sp.), dire wolf (*Canis dirus*), coyote (*Canis latrans*), cat (Felidae undet.), saber-tooth cat (*Smilodon fatalis*), cougar (*Puma concolor*), puma (*Puma* sp.), scimitar-toothed cat (*Homotherium serum*), and jaguar (*Panthera orca*) (Brattstrom 1961; Howard 1955; Jefferson 1987, 1991; Miller 1945; Reynolds 1991a, b; Wagner and Prothero 2001).

The middle to early Pleistocene-age very old axial-channel deposits (Qvoa) in the vicinity of the APE have a moderate paleontological potential using the PFYC system (BLM 2016) since similar units have produced scattered, significant fossils throughout San Bernardino County.

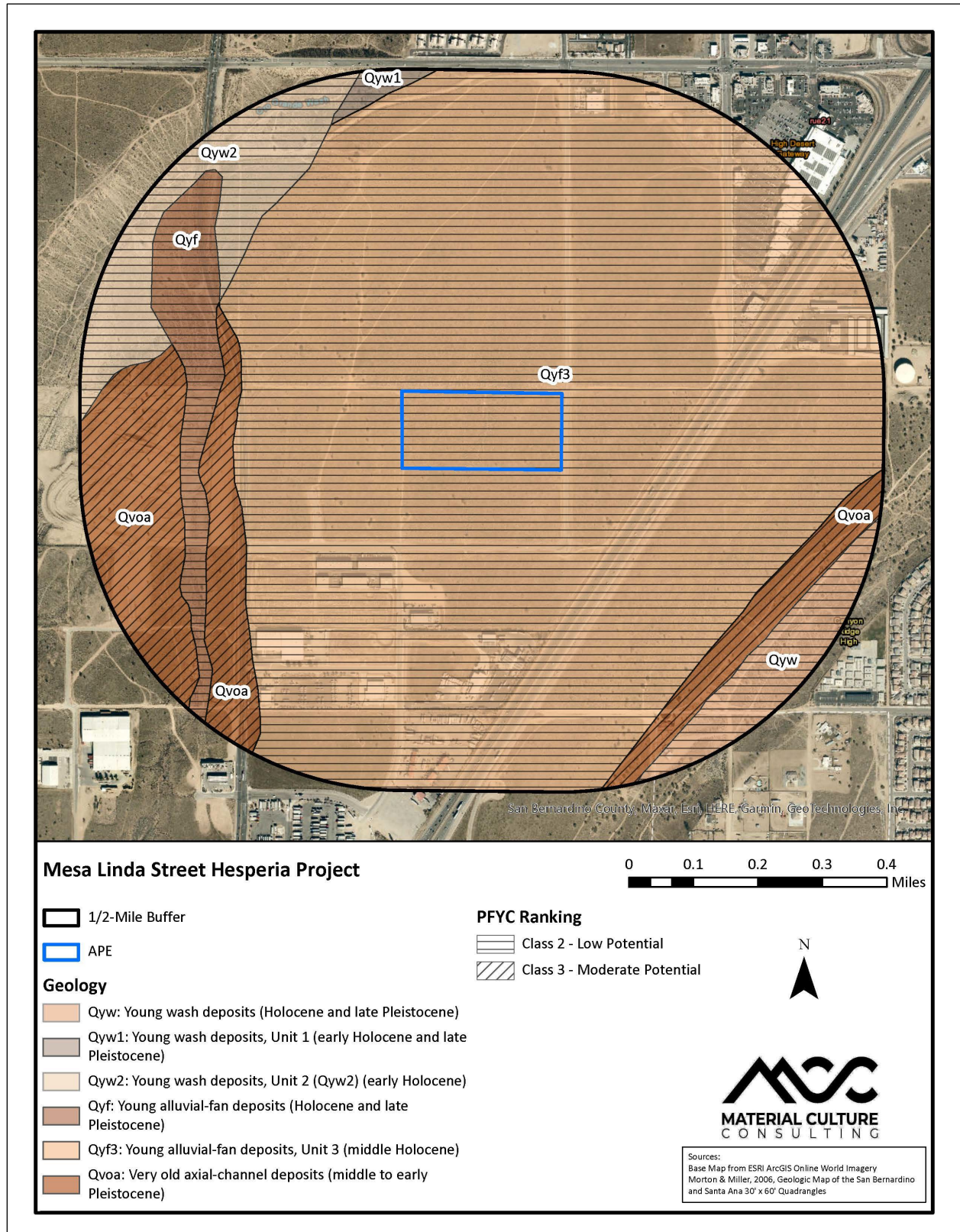


Figure 4. Geological Map of the APE

PREHISTORIC CONTEXT

Most researchers agree that the earliest occupation for the San Bernardino area dates to the early Holocene (11,000 to 8,000 years ago) (City of San Bernardino 2005). The following discussion of the cultural history of San Bernardino County references the San Dieguito Complex, the Milling Stone Horizon, the Encinitas Tradition, the La Jolla Complex, the Pauma Complex, and the San Luis Rey Complex, since these culture sequences have been used to describe archaeological manifestations in the region. Absolute chronological information, where possible, will be incorporated into this discussion to examine the effectiveness of continuing to use these terms interchangeably.

The Paleo Indian Period

The Paleo Indian Period is associated with the terminus of the late Pleistocene, 12,000 to 10,000 Before Present (BP). The environment during the late Pleistocene was cool and moist, which allowed for glaciation in the mountains and the formation of deep, pluvial lakes in the deserts and basin lands (Moratto 1984). However, by the terminus of the late Pleistocene, the climate became warmer, which caused glaciers to melt, sea levels to rise, greater coastal erosion, large lakes to recede and evaporate, extinction of Pleistocene megafauna, and major vegetation changes (Moratto 1984; Martin 1967, 1973; Fagan 1991). Paleo Indians were likely attracted to multiple habitat types, including mountains, marshlands, estuaries, and lakeshores. These people likely subsisted using a more generalized hunting, gathering, and collecting adaptation, utilizing a variety of resources including birds, mollusks, and both large and small mammals (Erlandson and Colten 1991; Moratto 1984; Moss and Erlandson 1995). The earliest sites known in the area are attributed to the San Dieguito culture, which consists of a hunting culture with flaked stone tool industry (Warren 1967). The material culture related to this time included scrapers, hammer stones, large flaked cores, drills, and choppers, which were used to process food and raw material.

Millingstone Period

Around 8,000 years ago, subsistence patterns changed, resulting in a material complex consisting of an abundance of milling stones (for grinding food items) with a decrease in the number of chipped stone tools. The material culture from this time period includes large, bifacially worked dart points and grinding stones, handstones, and metates. Archaeologists initially designated this period as the "Millingstone Horizon" (Wallace 1955). Later, the Millingstone Horizon was redefined as a cultural tradition named the Encinitas Tradition (Warren 1967) with various regional expressions including Topanga and La Jolla. Use by archaeologists varied as some adopted a generalized Encinitas Tradition without regional variations, while others continued to use Millingstone Horizon, and still others used middle Holocene (the geologic time period) to indicate this observed pattern (Sutton and Gardner 2010:1-2). Recently, this generalized terminology was criticized by Sutton and Gardner (2010) as suppressing the identification of cultural, spatial, and temporal variation, as well as the movement of peoples throughout space and time. It is these factors that are believed to be critical to an understanding of prehistoric cultural adaptation and change in this portion of Southern California (Sutton and Gardner 2010:1-2).

The Encinitas Tradition characteristics include abundant metates and manos, crudely-made core and flake tools, bone tools, shell ornaments, and very few projectile points, indicating a subsistence pattern focused on hunting and gathering a variety of floral resources. Faunal remains vary by location but include marine mammals, fish, and shellfish, as well as terrestrial animals, reptiles, and birds (Sutton and Gardner 2010:7). The Encinitas Tradition has been redefined to have four patterns (Sutton and Gardner 2010: 8-25). These include the Topanga Pattern in coastal Los Angeles and Orange counties, the La Jolla Pattern in coastal San Diego County, and the Sayles or Pauma cultures in inland San Diego County extending into western San Bernardino County, where the Project is located. At approximately 3,500 years ago, Pauma groups in the general Project vicinity adopted new cultural traits that transformed the archaeological site characteristics - including mortar and pestle technology. This indicated the development of food storage, largely acorns, which could be processed and saved for the leaner, cooler months of the year.

Late Prehistoric Period

At approximately 1,500 years BP, bow and arrow technology started to emerge in the archaeological record, which also indicates new settlement patterns and subsistence systems. The local population retained the subsistence methods of the past but incorporated new materials into their day-to-day existence, as evidenced by the archaeological record. The Palomar Tradition is attributed to this time and is comprised of larger two patterns: The Peninsular Pattern in the inland areas of the northern Peninsular Ranges (e.g., San Jacinto and Santa Rosa mountains) and the northern Coachella Valley (Sutton 2010), and the San Luis Rey pattern of the APE. Archaeological sites from this time period are characterized by soapstone bowls, arrowhead projectile points, pottery vessels, rock paintings, and evidence of cremation sites. The shift in material culture assemblages is largely attributed to the emergence of Shoshonean (Takic-speaking) people who entered California from the east.

ETHNOGRAPHY

The APE is located within territory considered the Traditional Tribal Land of the Serrano people (Native Land Digital 2021).

Serrano

The Serrano have been defined as a Northern Uto-Aztecan language sub-family which resided in the mountains and deserts of interior southern California, known as the Mountain Serrano and the Desert Serrano (Sutton and Earle 2017). The Serrano's traditional use area is believed to be located from the Cajon Pass of the San Gabriel/San Bernardino Mountains, as far east as Twentynine Palms, as far south as Yucaipa, and as far north as Barstow (Bean and Smith 1978). Gifford (1918) categorizes the Serrano as a clan and moiety-oriented, or local lineage-oriented, group tied to traditional territories or use areas. Typically, a "village" consisted of a collection of families centered about a ceremonial house, with individual families inhabiting willow-framed huts with tule thatching. Considered hunter-gatherers, the Serrano exhibited sophisticated technologies devoted to hunting small animals and gathering roots, tubers, and seeds of various kinds. Principal game animals included deer, mountain sheep, antelope, rabbits, small rodents, and various birds (Bean and Smith 1978). The Serrano spoke a language that belongs to the Takic subfamily of the Uto-Aztecan language family, with some evidence of similarity with the Gabrielino (of the Los Angeles Basin) (Miller 1984).

European influence on the Serrano was limited until 1819, with the establishment of an *asistencia* near present-day Redlands (Bean and Smith 1978). By 1834, most of the western Serrano population had been displaced, with those located northeast of San Geronimo Pass continuing to thrive. Today, Serrano descendants are found mostly on the Morongo and San Manuel reservations, which are a modern-day culmination of Serrano, Cahuilla, and Cupeno lineages.



Figure 5. Traditional Tribal Areas in Southern California with APE demarcated
(Los Angeles Almanac 2019)

HISTORICAL SETTING

The process of exploration and colonization of Alta California began in 1769, led by Spaniard Gaspar de Portolà and Franciscan Fray (or Father) Junipero Serra. Once the first European exploration of California occurred, the region underwent immense change. As early as 1827, Anglo-Americans were migrating into Southern California. In the decades to come, California would be taken by the United States with the close of the Mexican-American War and subsequent events such as the Civil War and California Gold Rush would continue to shape the history of California.

Spanish Period (1769 to 1821) to Mexican Period (1821 to 1848)

The Spanish period began in 1769 with Captain Gaspar de Portolà's land expedition and ended in 1821 with Mexican Independence. During the Spanish Period, the establishment of the Mission San Gabriel Arcángel (1771) was influential throughout the surrounding regions, using the area for cattle grazing (Mission San Gabriel Arcángel 2021). Father Francisco Dumetz of San Gabriel Mission set up an altar in 1810 to help facilitate the Catholic conversion of the native population. By 1819, Father Dumetz established Rancho San Bernardino, a branch of Mission San Gabriel (Figure 6). The satellite property for the San Gabriel Mission brought agriculture to the area. After control of the area shifted to Mexico, secularization began throughout the area and the San Bernardino Mission was closed. Nevertheless, the abandoned mission had a rebirth and became an important post for the trading route known as the Spanish Trail. San Bernardino was a bustling town through the Mexican Period (Belden 1960).



Figure 6. Old San Bernardino Mission, Branch of San Gabriel 1820 (Belden 1960)

American Period (1848 to present)

Near the end of the Mexican colonization, 500 Mormons arrived in the valley in 1852. The abundance of water inclined the religious group to settle. The religious pioneers purchased 40,000 acres of Rancho San Bernardino and constructed a stockade around the property (City of San Bernardino 2005). The rancho was re-named Fort San Bernardino where they cultivated wheat and other crops. The City of San Bernardino was incorporated in 1854 after Colonel Henry Washington erected a monument on top of Mount San Bernardino to declare the city as the southern part of the state (City of San Bernardino 2005). During this time, the city was a peaceful town with Mormons dominating the population. The religious pioneers-built roads, schools, and markets to support a thriving city (City of San Bernardino 2005).

In the 1860s, gold was discovered in the Holcomb Valley. Miners flooded into the San Bernardino Mountains to try their hand at panning (Belden 1960). With the increase in population, the City of Belleville became the largest city in the county with 10,000 residents. It lost the vote for county seat to San Bernardino County, by one vote (Belden 1960). By 1910, the San Bernardino Chamber of Commerce was formed. Today, the City of San Bernardino is home to more than 200,000 residents from different ethnicities, races, and creeds. The city continues to grow as a sprawling community with industrial, urban, and suburban developments (Belden 1960).

Transportation in San Bernardino County

In 1869, the transcontinental railroad was completed in California and expanded agricultural settlement. The Southern Pacific Route connected Los Angeles and northern California and monopolized the rail system until the arrival of Atchison, Topeka, and Santa Fe (AT&SF) railroad. The AT&SF line connected the larger Southern California region to the City of Los Angeles (Lech 2004). At the end of the 1800s, the social dynamics changed in the temperance City of San Bernardino as railroads brought thousands of settlers from Europe and the eastern states. The railway system and influx of population accelerated the economic trades in the City of San Bernardino.

U.S. Highway 66 (Route 66) was the main means of access between the City of Los Angeles and San Bernardino County. The road was created to give better access for transporting goods produced in San Bernardino to the Los Angeles market. Members of the Los Angeles and San Bernardino highway commissions marketed the road to be used for recreational travel to see the countryside. The commissions promoted the idea that improvements to the road would create an “attractive foothill boulevard linking Redlands to the Pacific Ocean” (George et al. 2009). In 1909, the State Legislature authorized bonds for road building and improvement programs, which included the new Foothill Boulevard (George et al. 2009). By 1913, the road was integrated into the National Old Trails Road, linking the roads from Los Angeles to Washington, D.C. In 1926, the road was designated U.S. 60, later changed to U.S. 66, after a uniform system of interstate highways was adopted (George et al. 2009).

METHODS

CALIFORNIA HISTORIC RESOURCES INVENTORY SYSTEM AND CULTURAL BACKGROUND RESEARCH

In March 2022, CHRIS staff at the SCCIC, located at the California State University, Fullerton, Orange County, conducted a records search of the APE and 1-mile radius. The search covered any previously recorded cultural resources and investigations within a 1-mile radius of the APE. MCC conducted a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Inventory of Historic Resources. Additional background research included reviews of historical aerial photos and a search of the BLM General Land Office (GLO) Records.

NATIVE AMERICAN OUTREACH AND BACKGROUND RESEARCH

MCC requested a Sacred Lands File (SLF) search from the NAHC on December 09, 2021. The NAHC responded on February 1, 2022, stating the SLF search did not identify sacred lands within the APE or within 1-mile of the APE. The NAHC provided MCC with contact information for 10 tribal groups and individuals to reach out to for additional information. MCC sent letters on February 1, 2022, to all 10 Native American contacts, requesting any information related to cultural resources or heritage sites within or adjacent to the APE. Additional attempts at contact by letter, email, or phone call were made on March 2, 2022, and March 15, 2022. MCC did not conduct formal consultation with any of the Native American representatives.

PALEONTOLOGICAL RECORDS SEARCH

The literature review included an examination of geological maps of the APE and a review of relevant published and unpublished geological and paleontological literature to determine which geologic units are present within the APE and whether fossils have been recovered from those geologic units elsewhere in the region. As geologic units may extend over large geographic areas and contain similar lithologies and fossils, the literature review includes areas well beyond the APE.

The purpose of a locality search is to establish the status and extent of previously recorded paleontological resources within and adjacent to the study area for a given project. On December 24, 2021, a locality search was conducted through the Natural History Museum of Los Angeles County (LACM). This search identified any fossil localities in the LACM records that exist near the APE in the same or similar deposits.

PALEONTOLOGICAL POTENTIAL ASSESSMENT

The federal PFYC system (BLM 2016) was used to assess the paleontological potential within the APE. The PFYC system provides baseline guidance for assigning the paleontological potential of geologic units, on a scale of 1 (very low potential) to 5 (very high potential), based on the abundance of significant paleontological resources and their sensitivity to impacts:

1 = Very Low Potential Geologic units are not likely to contain recognizable paleontological resources; units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units; units are Precambrian in age; the management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.

2 = Low Potential Geologic units are not likely to contain paleontological resources; field surveys have verified that significant paleontological resources are not present or very rare; units are generally younger than 10,000 years old; recent eolian deposits; sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely; management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.

3 = Moderate Potential Sedimentary geologic units where fossil content varies in significance, and abundance, and predictable occurrence; marine in origin with sporadic known occurrences of paleontological resources; paleontological resources may occur intermittently, but these occurrences are widely scattered; the potential for authorized land use to impact a significant paleontological resource is known to be low to moderate; management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.

4 = High Potential Geologic units that are known to contain a high occurrence of paleontological resources; significant paleontological resources have been documented but may vary in occurrence and predictability; surface-disturbing activities may adversely affect paleontological resources; rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present; illegal collecting activities may impact some areas; management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot-checking may be necessary during land disturbing activities. Avoidance of known paleontological resources may be necessary.

5 = Very High Potential Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources; significant paleontological resources have been documented and occur consistently; paleontological resources are highly susceptible to adverse impacts from surface disturbing activities; unit is frequently the focus of illegal collecting activities; management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.

U = Unknown Potential Geologic units that cannot receive an informed PFYC assignment; geologic units may exhibit features or preservation conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is known; geologic units represented on a map are based on lithologic character or basis of origin, but have not been studied in detail; scientific literature does not exist or does not reveal the nature of paleontological resources; reports of paleontological resources are anecdotal or have not been verified; area or geologic unit is poorly or under-studied; BLM staff has not yet been able to assess the nature of the geologic unit; until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

CULTURAL AND PALEONTOLOGICAL PEDESTRIAN SURVEY

Cultural and paleontological resources pedestrian survey is conducted to identify and verify locations of known and as-yet-unknown resources within a given APE. In addition, the pedestrian survey provides invaluable information on the types of sediment present within the APE, which informs the assessment of paleontological sensitivity. MCC Archaeologist and cross-trained Paleontologist Brian Waldo, M.A., conducted a pedestrian survey of the proposed APE on February 17, 2022. The survey consisted of walking in parallel transects spaced at

approximately 10-meter intervals over the Project parcels that were accessible, while closely inspecting the ground surface. All undeveloped ground surface areas within the ground-disturbance portion of the APE were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, or fire-affected rock) and fossils, soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), or historic-era debris (e.g., metal, glass, ceramics). Existing ground disturbances (e.g., cutbanks, ditches, animal burrows) were visually inspected for any potential presence of the above-mentioned indicators of cultural or paleontological resources. Representative photographs were taken of the entire APE and are included in the Results section below.

RESULTS

CALIFORNIA HISTORIC RESOURCES INVENTORY SYSTEM AND CULTURAL BACKGROUND RESEARCH

PREVIOUS CULTURAL RESOURCE INVESTIGATIONS

A total of 42 previously conducted cultural resources studies were identified during the course of the CHRIS records search, 37 of which are located outside of the Project but within 1-mile. These studies are included in Table 1. Five previously conducted cultural resources studies were identified within or adjacent to the APE. These studies are detailed below.

SB-01025- This study titled, *Archaeological, Historical and Paleontological Site Survey for County Service Area No. 70 Improvement Zone "J", Assessment of Impact and Recommendations* was completed by the San Bernardino County Museum Association in 1973. The study took place along the water lines and water tanks in San Bernardino County (Harris 1973).

SB-01026- This study titled, *Archaeological, Historical and Paleontological Site Survey for County Service Area No. 70 Improvement Zone "J", Assessment of Impact and Recommendations* was completed by the San Bernardino County Museum Association in 1973. No cultural resources were identified during the survey. The study took place from south of Summit Street to the Cajon Pass (Harris 1973).

SB-01027- This study titled, *Cultural Resources Assessment: Baldy Mesa Water Lines, County Service Area 70, Improvement Zone J, San Bernardino County, California* was completed by the San Bernardino County Museum Association in 1974. No cultural resources were identified during the survey. The study encompassed 35 square miles of land on Baldy Mesa, north of Cajon Summit, Summit Valley, and Antelope Valley (Reynolds 1980).

SB-02476- This study titled, *A Phase I Linear Survey: Cultural Resources Investigations for the Hesperia Improvement District Hesperia, San Bernardino County, California* was completed by McKenna et. al. No cultural resources were identified during the survey. The study took place west of Interstate 15 to just west of Highway 395 (McKenna 1991).

SB-08205- This study titled, *A Phase I Cultural Resources Investigation of the Proposed Summit Leadership Academy, High Desert Campus, City of Hesperia, San Bernardino, Co., California*, was conducted in 2015 by McKenna et. al. The study is located on the southeastern corner of Sultana Avenue and Three Flags Road in the City of Hesperia. Five historic-era sites and nine historic-era isolates were found during the survey, including P-36-010288, which is located within the APE. At the time of the study McKenna et al. determined that the portion of P-36-010288 within the current APE was not a significant historical resource pursuant to CEQA and that no further study was warranted (McKenna et al. 2015).

Forty-two cultural resources studies were identified within 1-mile of the APE. These studies were conducted between 1973 and 2016 and include six cultural resources surveys, nine residential/commercial development projects, eight roadwork projects, four telecommunication projects, one transportation project, six water infrastructure projects, one district improvement project, one casino development project, two hotel projects, two educational building projects, and one industrial project.

Table 1. Previously Conducted Resources Investigations within 1-mile Radius of APE

CHRIS Report Number	Year	Author	Title of Study	Affiliation	Distance from APE
SB-00191	1973	Smith, Gerald A.	<i>Archaeological, Historical and Paleontological Site Survey for County Service Area No. 70 Improvement Zone "J", Assessment of Impact and Recommendations</i>	San Bernardino County Museum Association	Within 1 mile
SB-03650	1999	White, R. and L. White	<i>An Archaeological Assessment of TT 15977, A 39 Acre Parcel Located Adjacent to Kendall Drive in the Verdmont area of San Bernardino, 15PP</i>	Archaeological Associates	Within 1 mile
SB-02238	1991	Knell, Edward J.	<i>Cultural Resources Reconnaissance of Twenty One Acres Near Hesperia, San Bernardino County, California</i>	RMW Paleo	Within 1 mile
SB-02395	1991	White, Robert S.	<i>An Archaeological Assessment of Tentative Tract 14596, A 235. 33-Acre Parcel Located in Hesperia, San Bernardino County</i>	Archaeological Associates	Within 1 mile
SB-02507	1992	Sundberg, F.A. and N. Whitney-Desautels	<i>Archaeological and Paleontological Survey for a Three Mile Segment of Phalen Road, San Bernardino County, California</i>	Scientific Resource Survey	Within 1 mile
SB-02730	1993	Mckenna, Jeannette A.	<i>Cultural Resources Investigations of the Tracy Smith Property, APN-404-092-53</i>	McKenna et. al.	Within 1 mile
SB-02732	1992	Parr, Robert E.	<i>An Archaeological Assessment of Tentative Parcel map #14242 Baldy Mesa, San Bernardino County, CA</i>	CSUB	Within 1 mile
SB-02803	1993	Love, Bruce	<i>Main St./I-15 Interchange, Hesperia</i>	CRM Tech	Within 1 mile
SB-03110	1996	Brock, J. and C.L. D'Iorio	<i>Historic Property Survey and Historic Architectural Evaluation Report for the Widening of Phelan Road from Baldy Mesa Road to State HWY 395, San Bernardino County, CA. 68PP</i>	Archaeological Advisory Group	Within 1 mile
SB-03366	1998	Brechbiel, Bryant	<i>Cultural Resource Records Search and Survey Report for A PBMS Services Telecommunications Facility: CM 239-01 in the City of Hesperia, CA. 5PP</i>	Chambers Group, Inc.	Within 1 mile

CHRIS Report Number	Year	Author	Title of Study	Affiliation	Distance from APE
SB-03448	2000	Alexandrowicz, John Stephen	<i>A Historical Resources Identification Investigation for the Little Sisters Truck Wash, City of Hesperia, CA. 63PP</i>	ACS	Within 1 mile
SB-04036	2004	Cerreto, Richard, and Malan, C.	<i>Cultural Resource Assessment for Parcel 3, APN: 3064-591-17, City of Hesperia, 18PP</i>	Analytic Archaeology	Within 1 mile
SB-04191	2004	McKenna, Jeannette A.	<i>An Intensive Archaeological Survey of the Frontier Homes Property, Tract No. 16744 in the City of Hesperia, San Bernardino County, CA. 18PP</i>	McKenna et. al.	Within 1 mile
SB-04281	204	Cerreto, R, Malan, C., and Ward K.	<i>Cultural Resources Assessment for APN:3064-481-12, City of Hesperia, San Bernardino County, CA. 16PP</i>	Analytic Archaeology	Within 1 mile
SB-04282	2004	Fulton, Phil	<i>Cultural Resources Assessment: Cingular Wireless Facility No. SB-333-01, Hesperia, San Bernardino County, CA. 17PP</i>	LSA	Within 1 mile
SB-04283	2002	Budinger, Fred E.	<i>A Cultural Resources Phase I Archaeological Survey of the 138 Acre Hesperia master Plan Parcel, City of Hesperia, San Bernardino County, CA. 39PP</i>	Tetra Tech	Within 1 mile
SB-04284	2001	Alexandrowicz, John Stephen	<i>Historic Archaeology at John E. Dufton's Homestead. 134PP</i>	ACS	Within 1 mile
SB-04285	2004	Green, Julia K.	<i>Cultural Resources Inventory & Evaluation: Timbisha Shoshone Hotel & Casino, San Bernardino County, CA. 22PP</i>	ECORP	Within 1 mile
SB-04286	1999	Love, Bruce	<i>08-SBD Hesperia Park & Ride Facility at the Intersection of US 395 & Joshua St Near the City of Hesperia, 10PP</i>	CRM Tech	Within 1 mile
SB-04289	2003	White, R.S. and L.S. White	<i>A Cultural Resources Assessment of the San Bernardino County Special Districts CSA 70 Zone J Casita Avenue Water Pipeline Project Near Hesperia, San Bernardino, Co. 18PP</i>	Archaeological Associates	Within 1 mile
SB-04290	2000	Hammond, S. and D. Bricker	<i>The Realignment of USA Highway 395 & Main St. in the City of Hesperia, San Bernardino County, CA 26PP</i>	CALTRANS	Within 1 mile
SB-04309	2005	McKenna, Jeannette A.	<i>Results of a Phase I Cultural Resources Investigation of the Nick Adams Property, (APN:3039-321-03), San Bernardino County, CA. 12PP</i>	McKenna et. al.	Within 1 mile

CHRIS Report Number	Year	Author	Title of Study	Affiliation	Distance from APE
SB-04580	2005	Hatheway, Roger	<i>A Phase I Historical and Archaeological Survey of the Caliente Industrial Park Property, Assessor Parcel # 3039-321-08-0000, City of Hesperia, California.</i>	Duff, G. and M.R. Palacios-Fest	Within 1 mile
SB-05107	2002	Chandler, E.N., Cotterman, C.D., and Mason, R.D.	<i>Cultural Resources Survey of the Proposed California Charter Academy Hesperia, San Bernardino, California</i>	Unknown	Within 1 mile
SB-05452	2007	Unknown	<i>Results of a Phase I Cultural Resources Investigation for Approximately 20 Acres of Land (APN 3039-321-10) In the City of Hesperia, San Bernardino County, California</i>	McKenna et. al.	Within 1 mile
SB-05698	2007	Hogan, Michael	<i>Historical/Archaeological Resources Survey Report: US Highway 395 Realignment EIR, Victorville Area, San Bernardino County, California.</i>	CRM Tech	Within 1 mile
SB-05818	2007	Budinger, Fred E.	<i>An Archaeological Survey of 10-Acres (APN 3064-601-01) for the Proposed Holiday Inn Hesperia Project located Southeast of the Intersection of Main Street and Mesa Linda Street in the City of Hesperia, San Bernardino County, California 92392.</i>	Tetra Tech, Inc.	Within 1 mile
SB-06162	2008	Bonner, W. and M. Aislin-Kay	<i>Cultural Resource Records Search and Site Visit Results for Royal Street Communications California, LLC Candidate LA3329A (Outpost Road), 8391 Outpost Road, Oak Hills, San Bernardino County, California</i>	MBA	Within 1 mile
SB-06164	2007	Sander, Jay	<i>Cultural Resources Inventory of APN 3064-561-12 Hesperia, San Bernardino County, California</i>	Chambers Group	Within 1 mile
SB-06333	2005	Horne, Melinda C.	<i>Cultural Resources Survey for the Mojave Water Agency Water Banking Project</i>	Unknown	Within 1 mile
SB-06600	2008	Tang, B. J. Smallwood, J.J. Eddy, H.M. Quinn, T. Jacquemain, D. Ballester, and L.H. Shaker	<i>Extended Phase I Historical/Archaeological Resources Study: Northeast Recycled Water Expansion Projects, In and Near the Cities of Rancho Cucamonga and Fontana, San Bernardino County, California</i>	Unknown	Within 1 mile

CHRIS Report Number	Year	Author	Title of Study	Affiliation	Distance from APE
SB-06602	2009	Wlodarski, Robert J.	<i>Cultural Resources Record Search and Archaeological Survey Results for the Proposed Royal Street Communications, California, LLC, Site LAee28A (Vacant Lot TMO-Pine Colo) located at 9980 Lassen Street, Hesperia, San Bernardino County, California 92345.</i>	HEART	Within 1 mile
SB-06652	2010	Unknown	<i>Preliminary Archaeological Survey Report for 98 Linear Miles of the East Branch Extension of the California Aqueduct for the DWR East Branch Enlargement Project Los Angeles and San Bernardino Counties (CA)</i>	ESA	Within 1 mile
SB-07493	2013	Dahdul, M., D. Ballester, J.D. Goodman II, and N. Gallardo	<i>Historical/Archaeological Resources Survey Report: Westside Terraces Project, Assessor's Parcel No's 3064-441-01 to -03, City of Hesperia, San Bernardino County, California.</i>	Unknown	Within 1 mile
SB-08019	2016	Hogan, Michael	<i>Archaeological Survey Report Park and Ride Facility Expansion Project City of Hesperia, San Bernardino County, California.</i>	CRM Tech	Within 1 mile
SB-08179	2015	Hogan, Michael	<i>Archaeological/Paleontological Monitoring Program, Tractor Supply Company Retail Facility Project, 12543 Main Street, City of Hesperia, San Bernardino County, CRM TECH Contract No. 2956</i>	CRM Tech	Within 1 mile
SB-08232	2016	Tang, B., J. Yorck, D. Ballester, and N. Gallardo	<i>Historical/Archaeological Resources Survey Report Country Inn and Suites Project</i>	CRM Tech	Within 1 mile

PREVIOUSLY RECORDED ARCHAEOLOGICAL RESOURCES

The records search identified two historic-era cultural resources within the APE. These resources are detailed below.

P-36-004179- This resource consists of a segment of Lane's Crossing Toll Roads, a 5-foot wide, unpaved road running southwest from the Bear Valley Road. The location of this resource has been mapped using historic maps and aerial photographs. Additionally, there were no associated artifacts identified (Anderson 2009). This resource is recorded as crossing through the northwest corner of the APE and has not been formally evaluated for listing to either the CRHR or the NRHP.

P-36-010288- This resource consists of the 160-acre Dufton homestead. Two separate archaeological investigations occurred within the boundaries of this resource, which currently encompasses the entirety of the parcel granted to John E. Dufton in 1892. This resource was originally recorded by Alexandrowicz in 2000 and 2001

as a smaller homestead/campsite located south of the current APE and comprised of various structural debris, refuse scatter, and an unpaved road. Structural debris included milled lumber and nails and refuse scatter contained ceramics, cans, glass, car parts, and other miscellaneous household items. Based on archival and aerial research, the property was previously homesteaded by John E. Dufton from 1861 and 1864. McKenna et al. surveyed the area north of the original features, in the northwest quadrant of the current APE, and identified various refuse deposits dating to various periods of property ownership: the Dufton ownership of pre-1913; the Goatman ownership (1913-1918); and the Pratt ownership (ca. 1919-1930s). These deposits included cans, miscellaneous glass, and glass bottle fragments. McKenna et al. expanded the boundaries of the originally recorded resource to include the extent of the 160-acre Dufton homestead (McKenna et al 2015). This resource has been subject to formal evaluation and is considered ineligible for listing to the CRHR. As a result of this project the resource was also subject to formal evaluation for eligibility for listing to the NRHP. This evaluation found the resource was not eligible under Criterion A-D. A DPR 523 Update form was prepared, and can be found in Confidential Appendix B.

Thirty-eight previously recorded resources were identified within 1-mile of the APE. These resources include 33 historic-era resources and five prehistoric sites and isolates (see Table 2).

Table 2. Previously Recorded Cultural Resources within 1-mile Radius of APE

Primary Number	Trinomial	Age	Type	Attributes	NRHP/CRHR	Distance from APE
P-36-004251	CA-SBR-004251H	Historic	Structure	AH04; AH07; HP11; HP37	Not evaluated	Within 1 mile
P-36-004266	CA-SBR-004266	Prehistoric	Site	AP02; AP11	Not evaluated	Within 1 mile
P-36-004267	CA-SBR-004267H	Historic	Site	AH07	Not evaluated	Within 1 mile
P-36-004268	CA-SBR-004268H	Historic	Site	AH07	Not evaluated	Within 1 mile
P-36-004275	CA-SBR-004275H	Historic	Site, Other	AH07; HP37	Not eligible	Within 1 mile
P-36-007545	CA-SBR-007545H	Historic	Structure	AH07; AH16; HP37	Not eligible	Within 1 mile
P-36-007680	CA-SBR-007680H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-007755	CA-SBR-007755H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-007756	CA-SBR-007756H	Historic	Structure	AH04; AH07	Not evaluated	Within 1 mile
P-36-007757	CA-SBR-007757H	Historic	Site	AH04; AH07	Not evaluated	Within 1 mile
P-36-007758	CA-SBR-007758H	Historic	Site	AH07	Not evaluated	Within 1 mile
P-36-008077	P-36-008077	Historic	Site	AH04; AH16	Not evaluated	Within 1 mile
P-36-008082	CA-SBR-008082H	Historic	Other	AH04; AH07	Not evaluated	Within 1 mile
P-36-010287	CA-SBR-010287H	Historic	Site	AH04; AH07; HP32	Not evaluated	Within 1 mile
P-36-010920	CA-SBR-010920H	Historic	Site	AH04	Not eligible	Within 1 mile

P-36-010921	CA-SBR-010921H	Historic	Site	AH04	Not eligible	Within 1 mile
P-36-012056	CA-SBR-012056H	Historic	Site	AH02; AH04	Not evaluated	Within 1 mile
P-36-012339	CA-SBR-012217H	Prehistoric	Site	AH04	Not evaluated	Within 1 mile
P-36-012340	CA-SBR-012218H	Prehistoric	Site	AH04	Not evaluated	Within 1 mile
P-36-012341	CA-SBR-012219H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-012342	CA-SBR-012220H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-012343	CA-SBR-012221H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-012344	CA-SBR-012222H	Historic	Site	AH07; HP37	Not evaluated	Within 1 mile
P-36-012345	CA-SBR-012223H	Historic	Site	AH07; HP37	Not evaluated	Within 1 mile
P-36-012346	CA-SBR-012224H	Historic	Site	AH07; HP37	Not evaluated	Within 1 mile
P-36-012347	n/a	Prehistoric	Other	AP02	Not evaluated	Within 1 mile
P-36-020263	n/a	Prehistoric	Site	AP02	Not evaluated	Within 1 mile
P-36-020473	n/a	Historic	Other	AH16	Not evaluated	Within 1 mile
P-36-020557	n/a	Historic	Other	AH04	Not evaluated	Within 1 mile
P-36-020558	n/a	Historic	Other	AH04	Not evaluated	Within 1 mile
P-36-026211	CA-SBR-016620H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-026212	CA-SBR-016621H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-026213	CA-SBR-016622H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-033084	CA-SBR-033084H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-033085	CA-SBR-033085H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-033086	CA-SBR-033086H	Historic	Site	AH04	Not evaluated	Within 1 mile
P-36-033090	n/a	Historic	Other	AH16	Not evaluated	Within 1 mile
P-36-033091	n/a	Historic	Other	AH16	Not evaluated	Within 1 mile

The complete results of the CHRIS resources records searches are included as Confidential Appendix C of this report.

ADDITIONAL HISTORICAL RECORDS

MCC reviewed supplemental sources for historical records to understand the general sensitivity of the APE, and its vicinity, for cultural resources, whether extant or buried (Table 3). A review of the BLM GLO Records resulted in two land grants encompassing the APE. Serial Patent CACAAA 073385 was administered to Samuel Dufton under the Land Act of 1820 for 160-acres of land on March 26, 1892. The Land Act of 1820 (3 Stat. 566) was enacted April

24, 1820, and enabled the sale of U.S. public domain lands. A search of the California Digital Newspaper Collection (CDNC) resulted in a small blurb pertaining to Samuel Dufton. The Weekly Courier names Mr. Dufton as a witness for William N. Schmees to prove Schmees' continuous residence upon and cultivation of Homestead No. 2737 (Figure 7; Weekly Courier 1891). Additional sources did not yield any additional information regarding the historic or prehistoric use of the APE, nor identify significant potential for historic-era or prehistoric cultural resources directly within the APE.

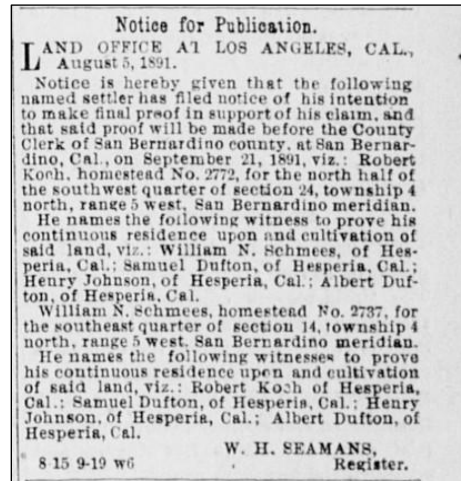


Figure 7. Weekly Courier Clipping naming Mr. Samuel Dufton as a Homestead Act Witness (Seamans 1891)

Table 3. Additional Sources Consulted for the Project

Source	Results
National Register of Historic Places (1979-2002 & supplements)	Negative
Historical United States Geological Survey topographic maps (USGS 2012)	Negative; No development is visible within the APE
Historical United States Department of Agriculture aerial photos	Negative; No development is visible within the APE
California Register of Historical Resources (1992-2010)	Negative
California Inventory of Historic Resources (1976-2010)	Negative
California Historical Landmarks (1995 & supplements to 2010)	Negative
California Points of Historical Interest (1992 to 2010)	Negative
Local Historical Register Listings	Negative
Bureau of Land Management General Land Office Records (BLM GLO 2008)	Positive; CACAAA 073385 was administered to Samuel Dufton under the Land Act of 1820 for 160-acres of land on March 26, 1892

Available historic topographic maps and aerial photographs were reviewed to understand the progression of any development within or in the vicinity of the APE. This review revealed that the APE has remained unoccupied from as early as 1902 through the late 1960s (Figure 8 through Figure 11). The APE remains unoccupied today.

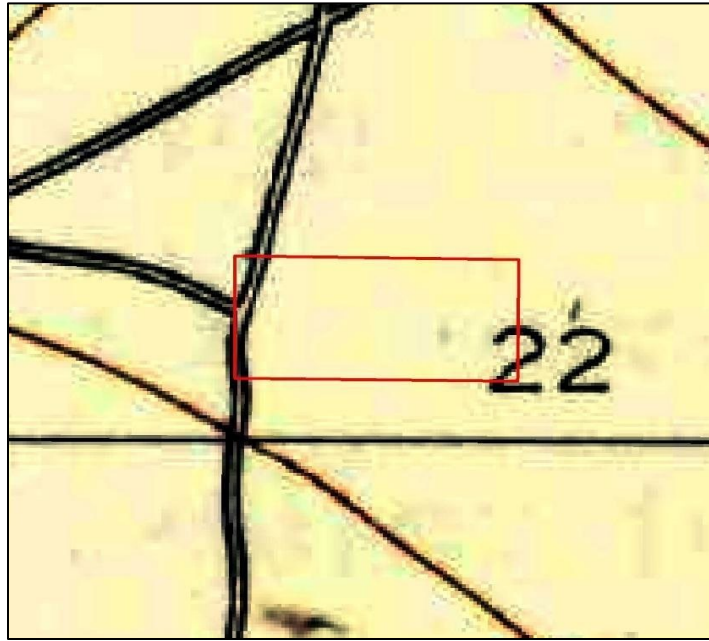


Figure 8. APE depicted as unoccupied in 1902 (as depicted on historic topographic map)



Figure 9. APE depicted as unoccupied in 1938 (as depicted on historic aerial photograph)

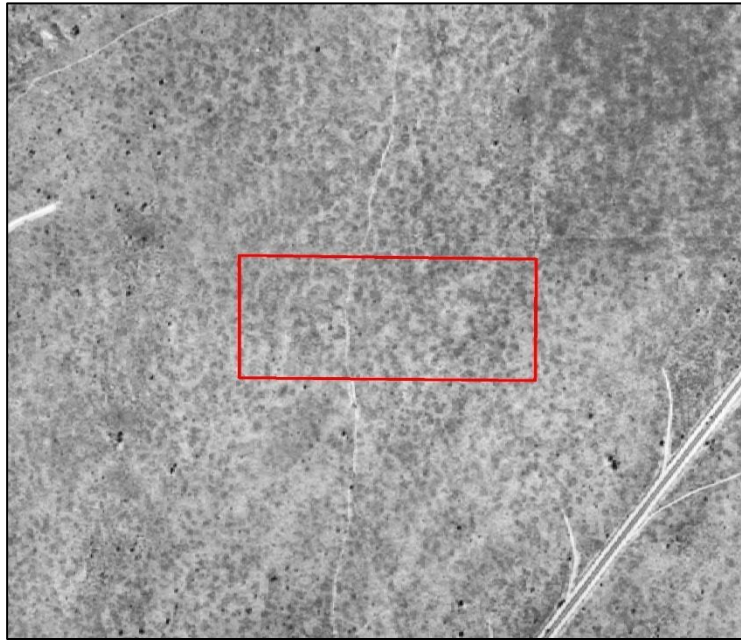


Figure 10. APE depicted as unoccupied in 1952 (as depicted on historic aerial photograph)

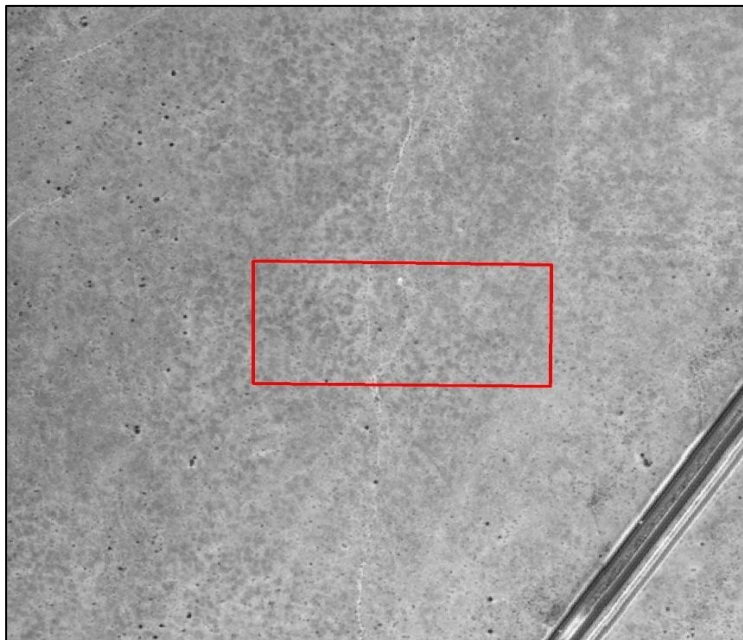


Figure 11. APE depicted as unoccupied in 1968 (as depicted on historic aerial photograph)

NATIVE AMERICAN OUTREACH AND BACKGROUND RESEARCH

As a result of the outreach to the 10 Native American tribes or individuals identified by the NAHC, MCC received two responses. These responses were received via email and are summarized below.

On February 15, 2022, MCC received an email from Ryan Nordness, Cultural Resources Analyst for the San Manuel Band of Mission Indians (SMBMI). Mr. Nordness stated that the APE is not located in any known archaeological resources.

On March 15, 2022, MCC received an email from Jill McCormick, Preservation Officer for the Quechan Tribe of the Fort Yuma Reservation. Ms. McCormick stated the tribe does not wish to comment.

As of March 29, 2022, MCC has not received any additional responses from the remaining NAHC-listed groups or contacted for information. Should MCC receive additional responses once the final report is submitted, the information will be passed on to EPD to be added to the report as an addendum. The outreach was conducted as an informational purpose only and formal consultation will be conducted by the Lead Agency. All written NAHC and Native American correspondence materials and our communication log are provided as Appendix D.

PALEONTOLOGICAL RECORDS SEARCH

The locality search at LACM did not yield any fossil localities within the APE (Bell 2021; Appendix E). However, the record search identified eight fossil localities from sedimentary deposits similar to those that occur within the APE (Table 4). The closest vertebrate fossil locality from similar sediments, LACM VP 1224, is located approximately 4-miles north of the APE in Victorville from the Pleistocene-age Shoemaker Gravel Formation. The locality produced one vertebrate fossil belonging to the camel family (Camelidae) (Bell 2021). Additional literature was consulted, including published reports in journals and media reports, resulting in no recorded fossil localities within the APE. See Table 4 below for a complete list of the closest known localities from the LACM record search results.

Table 4. LACM Paleontological Record Search Results

Locality Number	Location	Geologic Unit	Taxa	Depth
LACM 1224	North of Hesperia, near Dean Avenue and Dean Place	Shoemaker Gravel Formation (Pleistocene)	camel family (Camelidae)	Unknown
LACM VP 3352, 3353	West bank of the Mojave River, north end of Victorville	Shoemaker Gravel Formation (Pleistocene)	horse (<i>Equus</i>)	Unknown
LACM VP 3498	West of Portland Cement Co. plant in bluffs on west side of Mojave River, midway between Interstate 15 and Air Expressway Road	Shoemaker Gravel Formation (Pleistocene)	horse (<i>Equus</i>); deer (Cervidae); antelope (Antilocapridae)	Unknown
LACM VP 7786	Southern California Logistics Airport	Alluvium (Pleistocene, moderately indurated fine to medium-grained silty sandstone)	vole (<i>Microtus mexicanus</i>)	10-11 feet bgs
LACM VP 5948-5950	Northeast of the intersection of East Avenue S and 25th Street East; west of Adelanto	Unknown formation (Holocene)	rabbit (Lagomorpha); rodent (Rodentia); snake (<i>Pituophis</i>)	0-9 feet bgs

VP: Vertebrate Paleontology; bgs: below ground surface

CULTURAL AND PALEONTOLOGICAL PEDESTRIAN SURVEY RESULTS

Conditions during the cultural and paleontological pedestrian survey were excellent (Figures 12 to 20). The APE is relatively flat with the exception of a narrow wash drainage located in the center of the APE. Ground visibility was excellent (90%-100%) with overgrown vegetation near the wash reducing ground visibility to 50%. Vegetation was sparse, and it included dry desert scrub, weeds, and sparse distribution of Joshua trees. Soil observed throughout the APE consisted of coarse-grained, light brown sand with decomposing granitic pebbles attributed to the middle Holocene-age young alluvial fan deposits, Unit 3 (Qyf3). Disturbances to the APE include bioturbation, modern refuse, construction activity, vehicular activity, and development activity. No evidence of P-36-004179, portions of Lane's Crossing Toll Road, a 5-foot-wide unpaved road, were observed during the pedestrian survey. Artifacts associated with P-36-010288 (a historic campsite/homestead) were identified, including two crushed church-key opened bi-metal, two crushed tobacco tin cans, deteriorated metals, and glass fragments. However, deposits described in the 2015 site record were not observed. The APE shows evidence of vehicular activity disturbance, which may have impacted the resource. Additionally, high winds were observed, which may have blown lighter-weight artifacts across the ground surface. No other cultural or paleontological resources were observed during the pedestrian survey.



Figure 12. Overview of northern boundary access from Mesa Linda Street, view west



Figure 13. Overview of survey area from northeast corner, view south



Figure 14. Overview of survey area from northeast corner, view west



Figure 15. Overview of desert scrub and modern refuse, view west



Figure 16. Overview of boundary stake from the southeast corner, view northwest



Figure 17. Overview of APE with Joshua tree, view north



Figure 18. Overview of vehicular activity disturbance, view north



Figure 19. Overview of modern refuse, view west



Figure 20. Representative photograph of soil, plan view

CONCLUSIONS AND RECOMMENDATIONS

CULTURAL RESOURCES CONCLUSIONS

The Phase I cultural resource assessment of the APE included background research, CHRIS records search, NAHC outreach, and a pedestrian survey. The cultural resource records search identified five previously conducted cultural resources studies within or adjacent to the APE and 42 studies within 1-mile of the APE. Thirty-eight previously recorded cultural resources were identified within 1-mile of the APE. Two previously recorded cultural resources were identified within the APE, P-36-004179 and P-36-010288. No evidence of P-36-004179 was observed in the APE during the pedestrian survey. Deposits associated with P-36-010288 were identified during the pedestrian survey but the resource appears to be heavily impacted by environmental forces and vehicular activity. This resource has been subject to formal evaluation and is considered ineligible for listing to the CRHR. As a result of this project the resource was also subject to formal evaluation for eligibility for listing to the NRHP and was found ineligible. A DPR 523 Update form was prepared, and can be found in Confidential Appendix B. The SLF search did not identify sacred lands within the APE. Outreach to the 10 tribal groups and representatives identified by the NAHC resulted in two responses from the San Manuel Band of Mission Indians (SMBMI) and the Quechan Tribe of the Fort Yuma Reservation, stating that the tribes had no additional comments.

CULTURAL RESOURCES RECOMMENDATIONS

INADVERTENT DISCOVERY OF CULTURAL RESOURCES

It is recommended that prior to construction a qualified archaeologist is retained to expediently address any inadvertent discoveries. In the event cultural resources are identified during the course of project construction the following procedures should be applied:

- In the event that these resources are inadvertently discovered during ground-disturbing activities, work must be halted within 50 feet of the find until it can be evaluated by a qualified archaeologist. Construction activities could continue in other areas. If the discovery proves to be significant, additional work, such as data recovery excavation, may be warranted and would be discussed in consultation with the appropriate regulatory agency(ies).

INADVERTENT DISCOVERY OF HUMAN REMAINS

Procedures of conduct following the discovery of human remains on non-federal lands have been mandated by California Health and Safety Code §7050.5, PRC §5097.98 and the California Code of Regulations (CCR) §15064.5(e). According to the provisions in CEQA, should human remains be encountered, all work in the immediate vicinity of the burial must cease, and any necessary steps to ensure the integrity of the immediate area must be taken. The San Bernardino County Coroner shall be immediately notified and must then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner has 24 hours to notify the NAHC, who will in turn, notify the person they identify as the Most-Likely-Descendent (MLD) of any human remains. Further actions will be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.

PALEONTOLOGICAL RESOURCES CONCLUSIONS

The Phase I paleontological resource assessment of the APE included a locality records search, geological map and literature reviews, and a field pedestrian survey. No paleontological resources were identified within the APE

during the locality search or the field survey. Based on the results of the study, the middle Holocene-age young alluvial fan deposits, Unit 3 (Qyf3) at the surface of the APE are considered to have low paleontological potential; however, construction activities for the proposed Project may impact underlying moderate potential middle to early Pleistocene-age very old axial-channel deposits (Qvoa) at various depths with the APE.

PALEONTOLOGICAL RESOURCES RECOMMENDATIONS

The potential for encountering significant paleontological resources within the APE is considered moderate due to the presence of sensitive middle to early Pleistocene-age very old axial-channel deposits (Qvoa) within the vicinity of the APE, and the potential for these sediments to be encountered at depth within the APE during Project construction. Prior to the start of construction, a paleontological resources management plan (PRMP) should be prepared. It is recommended the Project's PRMP include the following procedures:

- Paleontological spot checks during ground-disturbing activities greater than 6 feet below the current ground surface, in order to identify if moderate sensitivity middle to early Pleistocene-age very old axial-channel deposits (Qvoa) are being impacted. If sensitive sediments are observed, then paleontological monitoring will continue on a full-time basis in those areas.
- Development of an inadvertent discovery plan to expediently address treatment of paleontological resources should any be encountered during development associated with the Project. If these resources are inadvertently discovered during ground-disturbing activities, work must be halted within 50 feet of the find until it can be evaluated by a qualified paleontologist. Construction activities could continue in other areas. If the discovery proves to be significant, additional work, such as fossil collection and curation, may be warranted and would be discussed in consultation with the appropriate regulatory agency(ies).

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Appendix A:
Qualifications

Tria Belcourt, M.A., RPA
President and Principal Environmental Specialist



Tria Belcourt oversees and is responsible for the entire work process at Material Culture Consulting. She is responsible for planning, supervising, and overseeing field projects, including responsibility for the professional quality of evaluations and recommendations. Tria has primary accountability for the technical completeness and competence of work conducted by her staff. She is responsible for development of work plans and/or research designs, for performance of crew chiefs, for selection standards and limitations on work assignments of crew members, for analysis and interpretation of field data, for integration of fieldwork results into comparative regional perspectives, and for preparation of reports. Tria's advanced academic training and more than sixteen years of professional archaeological experience has included rigorous training and application of anthropological and archaeological theory and methods, and in recording, collecting, handling, analyzing, evaluating, and reporting cultural property data, relative to the type and scope of work proposed.

Tria has been an archaeological project manager and principal investigator for over nine years, leading and managing several complex compliance projects throughout the State of California and in Southern Nevada, which have involved each step of cultural resource compliance and management. Prior to this, she spent six years as a field technician and crew chief on projects throughout California and the Southeastern United States. Her experience includes conducting background research, field survey, resource testing and formal NRHP/CRHR evaluation, data recovery plan development and implementation. She has prepared hundreds of technical reports for all of the above to state and federal standards, including following BLM standards for GIS spatial data management and technical reporting – ranging from simple clearance forms, to letter reports, to extensive data recovery reports. She was the lead preparer of the Fort Irwin Integrated Cultural Resource Management Plan (2009-2013) and has also prepared several cultural resource management plans for state regulated projects. She has overseen and conducted archaeological monitoring and management of unanticipated discovery of resources, including Native American human remains on federal lands (and repatriation of the remains), and reported the results and outcomes of cultural resource monitoring efforts in lengthy technical reports. Finally, Tria regularly provides third party and QA/QC review of cultural resource technical documents, due to her keen understanding of state and federal regulations and laws governing the management of cultural resources throughout the state of California.

EDUCATION

2014	Graduate Certificate in Environmental Management of Military Lands, Colorado State University
2010	Professional Certification in CEQA/NEPA, ICF International Corporation
2009	M.A. in Anthropology, University of Florida Gainesville, Florida Professional Certification in GIS
2006	B.A. in Anthropology, Magna Cum Laude, University of California, Los Angeles, California

AFFILIATIONS/CERTIFICATIONS/TRAINING

- Society for Historical Archaeology (SHA)
- Society for California Archaeology (SCA)

UTILITY SECTOR EXPERIENCE

SCE Transmission Line Rating and Remediation Project (TLRR) – Control Silver Peak 66kV Subtransmission, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (October 2016- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-2018) and Environmental Intelligence (2018-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

SCE Transmission Line Rating and Remediation Project (TLRR) - Kern River 66kV, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (October 2016- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

SCE Transmission Line Rating and Remediation Project (TLRR) – Eldorado Pisgah Lugo 220kV Subtransmission, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (October 2016- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

SCE Transmission Line Rating and Remediation Project (TLRR) – Control Haiwee 115kV Subtransmission, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (April 2017- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-2018) and to SWCA (2018-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

SCE Transmission Line Rating and Remediation Project (TLRR) – Ivanpah Coolwater Kramer Inyokern 115kV Subtransmission, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (April 2017- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-2018) and to SWCA (2018-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

Pacific Gas and Electric Company (PG&E), NERC Alert Program – Archaeological Principal Investigator; throughout California; 2015 – Present. Belcourt provides oversight of all task orders and project management of on-call task orders involving cultural resource desktop reviews, records searches and field reviews for the PG&E NERC Alert program: tracking and reporting efforts, maintaining project schedule, and timely submittal of data to prime contractor (Arcadis).

Southern California Edison (SCE), On-Call and Emergency Projects – Archaeological Principal Investigator and Project Manager; throughout California, 2013 – Present. Belcourt has provided oversight of over 200 task orders for on-call and emergency projects to date, involving cultural resource desktop reviews, records searches and field reviews for deteriorated poles, system upgrades, initial studies to support capital projects, and monitoring support to replace facilities due to natural disasters. This high-volume program includes preparing and submitting budgets, managing support staff and overseeing work, tracking and reporting efforts, maintaining project schedules, and preparing technical reports and GIS datasets for submittal to prime contractor (SWCA).

Southern California Edison (SCE), Large Capital Projects – Archaeological Principal Investigator and Project Manager; throughout California, 2014 – Present. Belcourt has provided oversight of over 20 task orders for major projects to date, involving cultural resources for this contract with SWCA, Environmental Intelligence and ICF. This includes preparing and submitting budgets, managing support staff and overseeing work, tracking and reporting efforts, maintaining project schedule, and preparing technical reports and GIS datasets for submittal to prime contractors.

Southern California Edison (SCE), Small Capital Projects – Archaeological Principal Investigator and Project Manager; throughout California, 2014 – Present. Belcourt provides oversight of all task orders and project management of task orders involving cultural resources for this contract with Environmental Intelligence and ICF. This includes preparing and submitting budgets, managing support staff and overseeing work, tracking and reporting efforts, maintaining project schedule, and preparing technical reports and GIS datasets for submittal to prime contractors.

Southern California Edison (SCE), Coolwater Lugo Transmission Project — Environmental Project Manager; San Bernardino County, California; 2014 – 2015. Belcourt provided oversight of all project management on CWLTP: tracking and reporting efforts of subconsultants (Pacific Legacy, Paleo Solutions and Urbana Preservation and Planning), maintaining project schedule and timely submittal of project deliverables to agency reviewers. Served as communication facilitator between SCE and BLM/CPUC agency reviewers. Provided final review of the Cultural Resources Technical Report (which included over 1,000 cultural resources) and the Historic Built Environment Report - prior to draft submittal to BLM.

SCE, Eldorado Ivanpah Transmission Project – In-house Consultant for Archaeology; San Bernardino County, California and Clark County, Nevada; 2010-2012. Belcourt provided complex regulatory oversight and project management regarding cultural and paleontological resource management. She developed compliance training to inform and guide construction activities and major capital project teams. She also developed and implemented internal cultural resource management programs based on project mitigation measures. Tria coordinated with BLM archaeologists on discovery and management of previously unknown cultural resources identified during construction. She provided environmental analyses, technical reports, and clearance documentation for over 20 project modifications during construction without delay to project. Developed the cultural resources geodatabase for EITP and coordinated regularly with the project GIS team.

Silver State South Substation, In-house Consultant for Archaeology; Southern California Edison, Clark County, NV; 2010-2012.

Provided regulatory oversight and project management regarding cultural and paleontological resource management during project licensing and scoping. Identified potential impacts to cultural and paleontological resources, developing appropriate mitigation measures in preparation for and projecting alternative conclusions.

Tehachapi Renewable Transmission Project, Multiple Roles; Southern California Edison, Segments 1-3 and Segments 6-11, Kern, Los Angeles and Orange County, CA; 2009 - Present. Tria provided service to this project over seven years in multiple roles – archaeological field monitor, project coordinator, in-house consultant at SCE, and principal investigator. She provided regulatory oversight and project management regarding cultural and paleontological resource management for all segments of TRTP. Developed and implemented internal cultural resource management programs based on the mitigation measures in the Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS) for TRTP, and for the existing Special Use Permits and Record of Decision for TRTP, issued by the Angeles National Forest (ANF). Oversaw preparation of the Historic Properties Treatment Plans, fieldwork and technical report preparation for two large-scale Phase III Data Recovery excavations on Angeles National Forest. Coordinated with ANF archaeologists on discovery and management of previously unknown cultural resources identified during construction. Provided cultural resources analyses and clearance documentation, including technical reports, for over 100 project modifications during construction without delay to project. Finally, Tria was responsible for maintaining the geospatial data for the project within the SCE cultural resources geodatabase TRTP and coordinated with the project GIS team.

Desert Tortoise Habitat Conservation Plan Area, Principal Investigator; Cadiz Inc., San Bernardino County, CA; 2013. Oversaw records search to identify the extent of previous cultural resources surveys and all previously recorded prehistoric and historic resources within the 7,500-acre Desert Tortoise Habitat Conservation Plan (HCP) area (Project Area) located on lands administered by the BLM Needles Field Office in unincorporated San Bernardino County, California.

SOLAR SECTOR EXPERIENCE

Ecoplexus California Correctional Institution Solar Project, Tehachapi, Kern County, California. Cultural and Paleontological Assessments (April 2018 – present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, coordinated AB52 consultation between the State of California and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus Ironwood State Prison and Chuckawalla Valley State Prison Solar Project, City of Blythe, Riverside County. Cultural and Paleontological Assessments (June 2018 – present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, coordinated AB52 consultation between the State of California and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus California State Prison Centinela Solar Project, City of Imperial, Imperial County, California. Cultural and Paleontological Assessments (August 2017 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, coordinated AB52 consultation between the State of California and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus Calipatria State Prison Solar Project, City of Calipatria, Imperial County, California. Cultural and Paleontological Assessments (August 2017 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, coordinated AB52 consultation between the State of California and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus RJ Donovan State Prison Solar Project, San Diego, San Diego County, California. Cultural and Paleontological Assessments (March 2018 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus Salinas Valley State Prison Solar Project, City of Soledad, Monterey County, California. Cultural and Paleontological Assessments (March 2018 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus Correctional Training Facility Soledad Project, City of Soledad, Monterey County, California. Cultural and Paleontological Assessments (March 2018 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

SDG&E Cameron Substation Photovoltaic Project, San Diego, San Diego County, California. Cultural and Paleontological Assessments (September 2017 – present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, facilitated Native American consultation between County of San Diego and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Beard Solar Project, Dustin Acres, Kern County, California. Cultural and Paleontological Assessments (March 2018- April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Broadman Solar Project, Livermore, Alameda County, California. Cultural and Paleontological Assessments (February 2018- March 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Nachtigall Solar Project, Wasco, Kern County, California. Cultural and Paleontological Assessments (March 2018-April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Rocha Solar Project, Fuller Acres, Kern County, California. Cultural and Paleontological Assessments (March 2018-April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Shafter Solar Project, City of Shafter, Kern County, California. Cultural and Paleontological Assessments (March 2018-present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Anderson Twisselman Solar Project, Lost Hills, Kern County, California. Cultural and Paleontological Assessments (March 2018-April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Weedpatch Solar Project, Kern County, California. Cultural and Paleontological Assessments (March 2018-present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Courtney Richards, M.S.
Paleontological Principal Investigator and
Paleontological Program Manager



Courtney Richards has over 16 years of professional experience in all aspects of paleontology throughout California and across the western United States. She has extensive experience with monitoring, salvage recover, project management, research, laboratory and report writing. Courtney maintains a comprehensive understanding of CEQA and NEPA regulations as they relate to paleontology, including Caltrans Standard Environmental Reference – Chapter 8, Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Bureau of Land Management (BLM), Society of Vertebrate Paleontology, Riverside County, San Diego County, Los Angeles County, California High Speed Rail Authority (CHSRA), and other various laws (federal, state, and local) and regulations governing paleontological resources.

Courtney has conducted paleontological fieldwork in Mesozoic, Eocene, and Oligocene rock units in Montana, Utah, and Wyoming; and Pliocene, Miocene, and Pleistocene surficial deposits throughout California; and Paleocene and Eocene Coalmont Formation, the Eocene and Oligocene White River Formation, and the Miocene North Park Formation in Colorado. She is an expert at Caltrans and local project sponsors reporting, including Paleontological Identification Reports, Paleontological Evaluation Reports, Paleontological Mitigation Plans, and Paleontological Mitigation Reports. Her previous professional experiences include appointments as the vertebrate paleontology collection assistant at the Burke Museum of Natural History and Culture and Paleontology Field Director at a cultural resources firm in southern California.

EDUCATION

2011 M.S. in Biological Sciences, Marshall University, Huntington, West Virginia
2006 B.S., Earth and Space Science, University of Washington, Seattle, Washington

CERTIFICATIONS AND TRAINING

- Mine Safety & Health Administration: 24-hr New/Inexperienced Metal/Non-Metal Surface Miners Certification
- Riverside County Certified Paleontologist
- The Principal Academy 2.0, Zweigwhite, 2015
- First Aid/CPR Certified
- Advanced CEQA Workshop, Association of Environmental Professionals, Los Angeles, 2018
- Defensive Driver Training, California Department of General Services, 2017
- Society of Vertebrate Paleontology Affiliation

SELECTED PROFESSIONAL EXPERIENCE

FEDERAL SECTOR EXPERIENCE

Paleontologist, Paleontological Resource Overview of the Royal Gorge Field Office Planning Area, Bureau of Land Management, Central and Eastern Colorado. Ms. Richards conducted research and assisted in the preparation of a paleontological resources overview report and compiled an

accompanying fossil locality geodatabase in support of the Eastern Colorado Resource Management Plan for the BLM's Royal Gorge Field Office, which encompasses more than 35 million acres of central and eastern Colorado. The information about the areas paleontological resources will aide the agency in its consideration in resource management planning and decision making associated with revision of the Eastern Colorado Management Plan. More than 94 named and unnamed geologic units within the RGFO Planning Area, and then re-arranged, combined, and/or further subdivided them according to the USGS stratigraphic lexicon into 16 igneous and metamorphic rock units, 72 bedrock sedimentary rock units, and 14 surficial sedimentary deposits for more through paleontological analysis and PFYC assignment evaluation.

Paleontologist, Crooked Canyon Basin Heritage Values Protection and Hill Climb Area Recreation Project, Bureau of Land Management, Uinta County, Wyoming. Ms. Richards participated in a paleontological inventory, evaluation, and collection of scientifically significant paleontological resources from the 1,230-acre inventory area located in the middle Eocene Blacks Fork Member of the Bridger Formation in southwestern Wyoming. The paleontological resource inventory and evaluation was completed in order to formulate resource management decisions and analysis under requirements of the National Environmental Policy Act and the National Historic Preservation Act.

Paleontological Principal Investigator, Desert Sunlight Solar Farm, First Solar, Bureau of Land Management, Riverside County, California. Ms. Richards assisted with overseeing paleontological monitoring and co-authored the Final Paleontological Monitoring Report for this 550 MW photovoltaic power station in the Mojave Desert spanning over 6-square miles of creosote bush-dominated desert habitat next to Joshua Tree National Park.

Paleontological Principal Investigator, Stateline Solar Farm Project, First Solar, Bureau of Land Management, San Bernardino County, California and Primm, Nevada. Ms. Richards is overseeing paleontological monitoring, conducts site visits, and drafts paleontological discovery letters for a 300 MW solar photovoltaic energy generation project and its ancillary facilities on 1,999 acres of public land.

UTILITY SECTOR EXPERIENCE

Paleontologist, Basin to Lovell 115kV Transmission Line Rebuild Project, Western Area Power Administration, Bureau of Land Management, Big Horn County, Wyoming. Ms. Richards performed portions of the paleontological field survey and construction monitoring in the Eocene Willwood Formation for WAPA's project to update the existing Lovell to Yellowtail phase I and II and the Basin to Lovell 115 kV transmission lines within WAPA's existing Right-of-Way (ROW). The paleontological work was a Bureau of Land Management requirement and took place entirely on BLM managed lands.

Principal Paleontologist, Grid Communication System-Basilone, Las Pulgas, and Stuart Substations, Camp Pendleton, San Diego Gas & Electric (SDG&E), Unincorporated San Diego County, California. Ms. Richards oversaw paleontological monitoring and co-authored the final monitoring compliance report for this project that consisted of the installation of new structures, foundations, microwave electronics equipment, and under cable and conduit routes to support substation communications. The paleontological mitigation program was completed in compliance with NEPA, CEQA, and County of San Diego guidelines.

Principal Paleontologist, SDG&E Salt Creek Substation, San Diego Gas & Electric, San Diego County, California. Ms. Richards performed preconstruction coordination prior to the start of monitoring for SDG&E's construction of the Salt Creek Substation on an approximately 12- acre sites within the community of Otay Ranch in the City of Chula Vista. During monitoring, Ms. Richards will assist with oversight of approved CPUC paleontological monitors while in highly paleontological resource sensitive formations such as the Mission Valley and Otay Formations.

Principal Paleontologist, San Luis Rey Substation Modification Synchronous Condenser Project, San Diego Gas & Electric, Oceanside, San Diego County, California. Ms. Richards attended the pre-construction meeting and is overseeing paleontological monitoring during grading activity for construction of a new wall that will support the weight of a synchronous condenser for SDG&E's construction of a new synchronous condenser facility along with 230 kV Gas Insulated Switchgear that will be used to connect the condensers to SDG&E's 230 kV transmission system.

Principal Paleontologist, San Mateo Substation Landslide Evaluation Project, San Diego Gas & Electric, San Clemente, San Diego County, California. Ms. Richards provided quality control for paleontological monitoring and performed a technical review of the final paleontological monitoring report for SDG&E's geotechnical study of past landslide debris and slope stability of soils at the San Mateo Substation, Calle Bahia, San Clemente, CA. Paleontological monitoring was performed during drilling at three bore holes, which an initial geological review indicated that boring would impact paleontologically sensitive sediments of the Pliocene to Miocene aged San Mateo Formation. This project extended onto the Marine Corps Camp Pendleton Base and required Department of Defense security badges, in addition to California State Park permits.

Paleontologist, Aliso Canyon Turbine Replacement, Southern California Gas (SCG), California Public Utilities Commission, Los Angeles County, California. Ms. Richards assists with oversight of paleontological monitoring, authors fossil discovery letters, and revised the Paleontological Monitoring and Treatment Plan for SoCalGas's project to construct and operate major project components at the Aliso Canyon Storage Field, including a central compression station, a 12 kV plant power line, new access roads, rough grading of SCE's Natural Substation, a new main office and crew-shift buildings, and a new guardhouse.

Paleontologist, Alpine Interconnection, Southern California Edison (SCE), California Public Utilities Commission, Los Angeles County, California. Ms. Richards prepared the Workers' Environmental Awareness Program (WEAP) for paleontological resources to present to construction crew for earth-moving activities associated with the replacement of power poles.

Paleontological Principal Investigator and Project Manager, Contra Costa-Moraga 230 kV Reconductoring Project, Pacific Gas & Electric (PG&E), Contra Costa County, California. Ms. Richards authored a Paleontological Reconnaissance Survey Report for Crossing Structure 81F, Pull Site 57, Work Area 81, and Pull Site 96 for PG&E's Contra Costa-Moraga 230 kV Reconductoring Project in Contra Costa County. A pedestrian examination of newly added work areas was conducted in order to locate any fossil localities within the work areas and to search for paleontological resources and determine the paleontological sensitivity of the geological deposits underlying the new sites.

Paleontologist, Eldorado-Ivanpah Transmission Line, SCE, California Public Utilities Commission, Eldorado, Nevada to Ivanpah, California. Ms. Richards Attended the Workers' Environmental Awareness Program and Safety Training In preparation to respond in the event of a fossil find during monitoring of a 71-mile transmission line and telecommunication installation project.

Paleontologist, Fogarty Substation, SCE, Riverside County, California. Ms. Richards prepared representative invertebrate fossils that were collected during monitoring and sent them to experts for identification.

Paleontological Principal Investigator, Humboldt #1 60 kV Reconductoring Project, PG&E, Humboldt County, California. Ms. Richards will assisted with a paleontological resource study in support of the Proponent's Environmental Assessment (PEA) for PG&E's Humboldt #1 60 kv Reconducting Project located in the Eureka area of Humboldt County. The previous PEA did not include a paleontological resource study. Ms. Richards will conduct a paleontological background research, including mapping the project area onto the highest resolution geologic maps available, conducting a paleontological record search to determine if previous fossil localities are known within or near the proposed project area, and a review of available online databases, literature, and geologic maps to determine the paleontological and geological context of the project area.

Paleontological Principal Investigator, Mesa 500 kV Substation Project, SCE, California Public Utilities Commission, Los Angeles County, California. Ms. Richards co-authored the Final Paleontological Resource Survey Report that addressed the results of the paleontological investigation to evaluate the expansion, upgrade, and loop-in of existing substation and associated facilities with respect to the paleontological resource potential of the project.

Paleontological Principal Investigator and Project Manager, Natural Substation, SCE, California Public Utilities Commission, Los Angeles County, California. Ms. Richards is responsible for identifying fossils, managing field crews, and composing monthly letters that address archaeological and paleontological activities occurring on-site for this project that includes construction of a new 56-megavolt-ampere, 66/12kV, Natural Substation at the Aliso Canyon Gas Storage Facility, modification of the existing 66kV electrical line, and the installation of new equipment and replacement of three existing towers with three new tubular steel poles within SCE's existing San Fernando Substation.

Paleontologist, North Sky Wind River, SCE, California Public Utilities Commission, Kern County, California. Ms. Richards prepared key project information, including project background, for monitors to utilize during paleontological monitoring for the construction of transmission tower foundations, road construction and augering for the placement of transmission towers located on a 35-acre parcel.

Paleontological Principal Investigator, Parkway and Commerce Center Drive & Saugus-Elizabeth Lake Fillmore 66 kV, SCE, California Public Utilities Commission, Los Angeles County, California. Ms. Richards co-authored the Paleontological Survey Report that addressed the results of the paleontological inventory for the planned relocation of a section of the Saugus-Elizabeth Lake-Fillmore 66 kV, which present traverses private property within the town of Castaic. A paleontological assessment was required to support the G0131D assessment.

Paleontologist, Programmatic Spans, PG&E, Tulare County, California. Ms. Richards oversaw and took part in a pedestrian survey to check for the presence of significant paleontological resources and to confirm the project geology as mapped on Bureau of Land Management land. She was the co-author of the Final Paleontological Resources Report.

Paleontologist, Rio Hondo-Saugus 220 kV Idle Line Removal, SCE, Los Angeles County, California. Ms. Richards conducted a paleontological assessment that included a records search and recommendation for mitigation monitoring during removal of ~2.5-miles of idle transmission line and 13 towers alone with associated foundations and hardware.

Paleontological Principal Investigator, San Joaquin Cross Valley Loop Project, SCE, California Public Utilities Commission, Tulare County, California. Ms. Richards co-authored the final Paleontological Monitoring Report for this 23-mile double-circuit 220 kV transmission line in Tulare County. The project included the drilling of 37 construction tower locations as part of the east-west trending portion of the Project. The route included excavations within orange and almond groves, and cattle grazing fields adjacent to the foothills of the Sierra Nevada Mountains.

Paleontologist, Sentinel Power Plant, SCE, Palm Springs, California. Ms. Richards oversaw paleontological and archaeological monitoring during construction of a 37-acre power plant site, 14-acre construction laydown area, 3,250 feet of transmission lines, and 2.5 miles of natural gas pipeline located north of Palm Springs.

Paleontological Principal Investigator, South of Palermo 115 kV Reinforcement Project, PG&E, Butte, Yuba, and Sutter Counties, California. Ms. Richards authored a stand-alone Proponent's Environmental Assessment (PEA) for Paleontological Resources for this proposed project by PG&E consisting of upgrading approximately 60-miles of existing 115 kV double-circuit (21 miles) and single-circuit (39 miles) power lines.

Paleontological Principal Investigator, Stockton-Weber 60 kV Project, PG&E, San Joaquin County, California. Ms. Richards co-authored the Paleontological Resource Inventory Letter Report for PG&E's proposed project to reconductor approximately 4.5 miles of the existing Santa Fe Junction to Weber and the Santa Fe Junction to Stockton "A" sections of the Weber 60 kV Line 1, and sections of the Santa Fe Junction to Weber section of the Weber 60 kV Line 2 in order to provide additional electric capacity and improve service reliability in the project area. Up to 150 existing wood poles will be replaced as part of the project.

Assistant Project Manager, Tehachapi Renewable Transmission Project, SCE, California Public Utilities Commission, Kern, San Bernardino, Los Angeles Counties, California. Ms. Richards has conducted paleontological monitoring, field supervision, and is the co-author for the Final Paleontological Monitoring Compliance Report for one of the largest green-energy projects in North America, involving the reconstruction of existing transmission facilities and new construction of 500 kV transmission lines to carry electricity from wind generation sites in the Tehachapi Mountains to the greater Los Angeles area, Kern County, and San Bernardino County covering more than 250 miles.

Paleontological Principal Investigator, Tehachapi Renewable Transmission Project – Antelope Transmission Project Segment 3B, SCE, California Public Utilities Commission, Kern and Los Angeles Counties, California. Ms. Richards co-authored the Paleontological Compliance Report for this project that involved construction of a new 9.6-mile 220 kV transmission line (Segment 3B) and construction of a new substation (Highwind Substation).

Principal Paleontologist, Transmission Line 13831 Pole Replacement, SDG&E, San Clemente, San Diego County, California. Ms. Richards oversaw a paleontological records search, paleontological monitoring, and co-authored the final memo report for SDG&E's improvement project to replace pole Z101553 with a steel weatherized pole and install new distribution pole P23423.

Paleontologist, Valley South 115 kV Subtransmission Project, SCE, Riverside County, California. Ms. Richards assisted with a supplemental paleontological resources survey report for the proposed project to construction the Valley South 115 kV Subtransmission in portions of the cities of Murrieta, Menifee, Temecula, and the unincorporated communities of Winchester and Romoland.

Paleontological Principal Investigator, Westside Power Connect Project, PG&E, Merced County, California. Ms. Richards conducted paleontological background research as part of a paleontology study required to support the Routing and Constraints Analysis and the Proponent's Environmental Assessment (PEA) for PG&E's proposed project located in Merced County, CA. The project will involve the construction of a new 230/70 kV substation and interconnections to PG&E's existing 230 and 70 kV transmission system.

TRANSPORTATION SECTOR EXPERIENCE

Paleontologist, Elvira to Morena Double Track, San Diego Association of Governments SANDAG, San Diego, San Diego County, California. Ms. Richards was crucial in completing a paleontological resources sensitivity assessment and completed chapters of the final Paleontological Resources Report addressing potential impacts and mitigation measures as required by SANDAG and North County Transit District to meet their responsibilities as lead agencies under CEQA and NEPA. The project study areas covers 3.1 linear miles along the LOSSAN corridor adjacent to Interstate 5 and an additional 0.3-miles along the LOSSAN corridor to Rose Creek near Universal City.

Paleontologist, San Diego River Bridge Double Track, San Diego Association of Governments SANDAG, San Diego, San Diego County, California. Ms. Richards conducted a pedestrian survey of project alignment along a 1.1-mile-long segment of the LOSSAN corridor and authored sections of the subsequent Paleontological Identification Report in accordance with CEQA and NEPA.

Paleontologist, California High Speed Rail Project: Bakersfield to Palmdale Segment EIR/EIS, California High-Speed Rail Authority, Los Angeles County and Kern County, California. Ms. Richards conducted a five-day paleontological survey of the project study area that was determined to be sensitive for fossils. The survey aided the preparation of the paleontology section of the Bakersfield to Palmdale Segment EIR/EIS. This assessed the potential environmental effects associated with the construction, operation, and maintenance of the High-Speed Track system, including track and ancillary facilities along the State Route 58/14 corridor from Bakersfield to Palmdale.

Paleontological Principal Investigator, California High Speed Rail Project: Palmdale to Burbank Segment EIR/EIS, California High-Speed Rail Authority, Los Angeles County, California. Ms. Richards is overseeing all paleontological resources related services in conjunction with the Palmdale to Burbank Section. As the Paleontology Lead, she is managing the completion of a CEQA/NEPA level paleontology study to support development of the EIR/EIS. To date, she has co-authored a Paleontological Memo Report, which assessed the current work and recommendations for additional paleontological tasks.

Paleontologist, Caltrans Fossil Sensitivity Mapping for Central California, Caltrans Districts 6, 9, & 10, Central California, California. Ms. Richards evaluated geological rock units for paleontological resources with a 0.5-mile buffer on either side of the major highways and conducted comprehensive research on geological maps available, fossil localities and types of fossils known for over 3,000 miles of proposed construction activities. A comprehensive GIS based paleontology database application using ESRI's ArcGIS software was created. A sensitivity ranking, using a federally defined system, for each rock unit was then linked to the GIS map layer for the buffer.

Paleontological Principal Investigator, Crenshaw/LAX Mass-Transit Light Rail Line, Los Angeles County Metropolitan Transportation Authority, Los Angeles, California. Ms. Richards coordinates with field technicians while overseeing paleontological monitoring and laboratory preparation, completing weekly and monthly reports, and corresponds with agencies regarding fossil discoveries for Metro's 8.5-mile light rail line through southwest Los Angeles. The line will run generally north-south and will connect the

Crenshaw District and Leimert Park to Inglewood and Los Angeles International Airport (LAX). The line will be a part of the Los Angeles County Metro Rail System. She is also overseeing laboratory preparation of matrix samples for collection and screening to test for the presence of microvertebrate fossils.

Paleontologist, East San Fernando Valley Transit Corridor, Los Angeles County Metropolitan Transportation Authority, Los Angeles, California. Ms. Richards conducted a paleontological survey and co-authored the paleontological assessment and existing conditions reports for this Metro and the Federal Transit Administration project, in coordination with the Cities of Los Angeles and San Fernando, for improving north-south transit service in the East San Fernando Valley along Van Nuys Blvd. and San Fernando Rd.

Paleontologist, Exposition Light Rail Transit Phase II, Exposition Rail Construction Authority, Los Angeles County, California. Ms. Richards prepared fossil shell material that was collected during paleontological and archaeological monitoring during construction for an 8-mile extension of the Expo Light Rail System from Culver City to Santa Monica.

Paleontologist, Gene Autry Way/Interstate 5 Interchange Improvement, City of Anaheim, Orange County, California. Ms. Richards monitored excavations at depths exceeding 8 feet and processed soil samples recovered during monitoring for this improvement project to create an important east-west link within the City of Anaheim's Resort Area and provided direct access to the I-5 freeway for motorists entering and leaving the area during special events.

Paleontologist, Gilman Road Curve Realignment, Riverside County Transportation Commission, Riverside County, California. Ms. Richards contributed to a combined Paleontological Identification Report (PIR) and Paleontological Evaluation Report (PER) to assess the potential for impacting significant paleontological resources within the proposed alignment that included flattening the curvature and relocating utilities on Gilman Springs Road in the Moreno Valley.

Paleontologist, Interstate 205 & Chrisman New Interchange, City of Tracy, San Joaquin County, California. Ms. Richards conducted a record search, background search, and prepared a Paleontological Identification Report (PIR) to identify any sensitive resources that may be impacted by construction activities in support of the project-related Project Approval-Environmental Document (PA-ED) for the I-205/Chrisman Road New Interchange Project between MacArthur Drive and I-5 based on the direction of an approved Project Study Report/Project Development Support document. The PA&ED required close consultation with the City, as well as the City's engineering department, Caltrans District 10, FHWA, City of Lathrop, and the San Joaquin Council of Governments.

Paleontologist, Interstate 605 & Katella Avenue Interchange Constraints Analysis, Orange County Transportation Authority/Caltrans D12, Los Angeles County, California. Ms. Richards conducted an initial assessment of paleontological resources constraints for the proposed project in support of the Preliminary Environmental Analysis Report (PEAR) that included recommendations for the Standard Environmental Reference-compliant document. The project area consists of the PEAR project area and the Future City project area.

Paleontologist, Kettleman City Rehabilitation Improvement Project, Caltrans District 6, Kings County, California. Ms. Richards prepared and identified fossils recovered from construction monitoring of this project funded by the State Highway Operation and Protection Program, including grinding, cold planning, and shoulder widening of the existing asphalt concrete of approximately nine miles of existing roadway from Kettleman City at Quail Avenue to south of Interstate 5 at Utica Avenue.

Paleontologist, Kings River Overflow Bridge Replacement, Caltrans District 6, Kings County, California.

Ms. Richards prepared sections of the Paleontological Mitigation Plan to Caltrans District 6 requirements and conducted paleontological resources sensitivity training for construction personnel.

RENEWABLE ENERGY SECTOR EXPERIENCE

Paleontologist, Longboat Solar Photovoltaic Project, EDF Renewable Energy, San Bernardino County, California. Ms. Richards wrote the paleontology sections of the Phase I and Extended Phase I cultural resources report to support the Mitigated Negative Declaration (MND) for this 235-acre site.

Paleontological Principal Investigator, Springbok 1 Solar Farm Project, 8minutenergy Renewables, LLC, Kern County, California. Ms. Richards is overseeing paleontological monitoring and co-author the final Paleontological Technical Report for this 951-acre solar farm facility in the western Mojave Desert in the vicinity of California City. She completed a paleontological Workers' Environmental Awareness Training that was presented to construction workers prior to breaking ground on construction.

Paleontological Principal Investigator, Springbok 2 Solar Farm Project, 8minutenergy Renewables, LLC, Kern County, California. Ms. Richards is overseeing paleontological monitoring and co-author the final Paleontological Technical Report for this 1,350-acre 350 MW solar photovoltaic electrical generating facility in Kern County.

PRIVATE DEVELOPMENT SECTOR EXPERIENCE

Paleontological Principal Investigator, Vue on 5th: Banker's Hill Residential Development, ColRich Communities, San Diego, San Diego County, California. Ms. Richards co-authored the Final Paleontological Monitoring Compliance Report in accordance with the City of San Diego regulations for ColRich Communities seven-story, luxury residence building on .46-acres one block from Balboa Park.

PUBLICATIONS

Murphey, P.C., Zubin-Stathopoulos, K.D., Richards, C.D., and Fontana, M.A., 2015, *Paleontological resource overview of the Royal Gorge Field Office Planning Area*, Colorado: U.S. Department of Interior Bureau of Land Management Report, 178 p., and standalone confidential fossil locality geodatabase.

Richards, C. D., 2011. *Plesiosaur Body Shape and its Impact on Hydrodynamic Properties*: Master's thesis, Marshall University, 68 pp.

O'Keefe, F. R., H. Street, B. Wilhelm, C. Richards, and H. Zhu, 2011. *A new skeleton of the cryptoclidid plesiosaur Tatenectes laramiensis reveals a novel body shape among plesiosaurs*. Journal of Vertebrate Paleontology 31(2):330-339.

Appendix B (Confidential):
P-36-010288 UPDATE

Appendix C (Confidential):
CHRIS Record Search Results and Maps

Appendix D: NAHC Results
and Native American
Correspondence

Appendix E: Paleontological Resources
Records Search Results



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Research & Collections

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December 24, 2021

Material Culture Consulting, Inc
Attn: Lily Arias

re: Paleontological resources for the Hesperia Project

Dear Lily:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Hesperia project area as outlined on the portion of the Baldy Mesa USGS topographic quadrangle map that you sent to me via e-mail on December 22, 2021. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County.

Locality Number	Location	Formation	Taxa	Depth
LACM VP 1224	North of Hesperia, near Dean Ave. & Dean Place	Shoemaker Gravel Formation	Camel family (Camelidae)	Unknown
LACM VP 3352, 3353	West bank of the Mojave River, north end of Victorville (more precise locality not available)	Shoemaker Gravel Formation	Horse (<i>Equus</i>)	Unknown
LACM VP 3498	West of Portland Cement Co. plant in bluffs on west side of Mojave River, midway between I-15 and Air Expressway Rd.	Shoemaker Gravel Formation	Horse (<i>Equus</i>); deer (Cervidae); antelope (Antilocapridae)	Unknown
LACM VP 7786	Southern California Logistics Airport	Alluvium (Pleistocene, moderately)	Vole (<i>Microtus mexicanus</i>)	10-11 ft bgs

		indurated fine to medium grained silty sandstone)		
LACM VP 5948-5950	NE of the intersection of E Avenue S and 250th St E; west of Adelanto	Unknown Formation (Holocene)	Rabbit (Lagomorpha); Rodent (Rodentia); Snake (<i>Pituophis</i>)	0-9 ft bgs

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

This records search covers only the records of the Natural History Museum of Los Angeles County (“NHMLA”). It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice