

APPENDIX G

Phase I Cultural Resources Study

Phase I Cultural Resource Assessment of a 71-ha (175-Acre) Cultural Resource Study within Vista Santa Rosa, Riverside County, California

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2021 Indio, CA, U.S. Geological Survey 7.5-Minute Quadrangle
Township 6 South, Range 7 East, Section 11
Assessor's Parcel Nos. 780010012, 780010013, 780010014, 780020001, 780020002, 780020003
General Plan Amendment No. (GPA) 250005, SP00408, TTM39179

Survey conducted: December 2–5, 2024
Report completed: May 15, 2025

Keywords: 175 acres, survey, positive findings



Technical Report 25-41
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LIST OF ACRONYMS AND ABBREVIATIONS

ACBCI	Agua Caliente Band of Cahuilla Indians
AMSL	above mean sea level
APN	Assessor's Parcel No.
BLM	Bureau of Land Management
B.P.	years before present
BMSL	below mean sea level
CEQA	California Environmental Quality Act
CHL	California Historical Landmark
CHRIS	California Historical Resources Information System
County	County of Riverside
CRHR	California Register of Historical Resources
CRMP	Cultural Resource Monitoring Program
GLO	U.S. General Land Office
GNSS	Global Navigation Satellite System
I-10	Interstate 10
NAFTA	North American Free Trade Agreement
NAHC	Native American Heritage Commission
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PRC	<i>Public Resources Code</i>
RPA	Register of Professional Archaeologists
SCIC	South Coastal Information Center
SR	State Route
SRI	Statistical Research, Inc.
SSURGO	Soil Survey Geographic Database
TLMA	Transportation and Land Management Agency
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USGS	U.S. Geological Survey

MANAGEMENT SUMMARY

Statistical Research, Inc. (SRI), conducted a cultural resource survey in support of the development of custom home lots, a nine-hole golf course, and related amenities within the unincorporated community of Vista Santa Rosa, Riverside County, California. The project area is in Section 11 of Township 6 South, Range 7 East, on the 2021 Indio, California, 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle (San Bernardino Base and Meridian) and consists of a 71-ha (175-acre) property within six parcels (Assessor's Parcel Nos. [APNs] 780010012, 780010013, 780010014, 780020001, 780020002, and 780020003) south of 52nd Avenue and east of Monroe Street.

The proposed development is considered a "project" under the California Environmental Quality Act, as amended (CEQA; *Public Resources Code* [PRC] 21000 et seq). The County of Riverside (County) will act as the CEQA lead agency for the project. This cultural resource study was performed pursuant to CEQA, which mandates that the lead agency consider the potential impacts of a project on historical and archaeological resources.

As part of the project, SRI conducted a records search with the California Historical Resources Information System (CHRIS) South Coastal Information Center (SCIC) at San Diego State University. The goals of the records search were to review any previous archaeological projects that may have been conducted within the project area and to identify any previously recorded archaeological resources located on the property. The records search found that the project area had not been previously surveyed but was included within the footprint of an environmental review for the La Quinta General Plan. Additionally, 21 previously recorded resources were identified within the 1.6-km (1-mile) records-search buffer surrounding the project area. Of the 21 resources, 4 sites and 5 isolated resources have been recorded within 0.8 km (0.5 mile) of the project area, and 1 isolated resource had been recorded within 0.4 km (0.25 mile) of the project area. No previously recorded resources were found within the project area.

SRI also submitted a request for a Sacred Lands File search to the Native American Heritage Commission (NAHC), and the search produced negative results. The NAHC provided a list of 23 contacts from 11 tribes who could provide additional information regarding cultural resources within the project area. SRI reached out to each of the 23 contacts for further information.

In addition to the records search, SRI surveyed the approximately 71-ha (175-acre) project area, which was observed to be largely undeveloped; most of the property has been previously graded and tilled as agricultural land. SRI personnel identified the remains of a pair of historical-period foundations and associated refuse. The foundations appear to date to 1968 and 1972, as determined from dates inscribed in the concrete. This resource is recommended not eligible for listing in the California Register of Historical Resources (CRHR), as it does not meet any of the CRHR-eligibility criteria.

Although this resource is recommended not eligible for listing in the CRHR and no other resources were previously recorded within the project area, a geoarchaeological study of the project area suggests that the area has high sensitivity for the presence of cultural resources just under the ground surface. Therefore, SRI recommends that an archaeological monitoring plan be prepared and implemented before the start of ground-disturbing activities, in order to properly treat any unanticipated discoveries made during project construction.

Introduction and Project Setting

Statistical Research, Inc. (SRI), conducted a cultural resource survey in support of the development of custom home lots, a nine-hole golf course, and related amenities within the unincorporated community of Vista Santa Rosa, Riverside County, California. The project area is in Section 11 of Township 6 South, Range 7 East, on the 2021 Indio, California, 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle (San Bernardino Base and Meridian) and consists of a 71-ha (175-acre) property within six parcels (Assessor's Parcel Nos. [APNs] 780010012, 780010013, 780010014, 780020001, 780020002, and 780020003) south of 52nd Avenue and east of Monroe Street (Figures 1 and 2).

The project area is located in Vista Santa Rosa, a rural, unincorporated community in Riverside County, California, south of Indio; La Quinta is situated to the west and Coachella and Thermal to the northeast and southeast, respectively. This community lies within the Sphere of Influence of the City of La Quinta. The project area is in a relatively undeveloped area and consists of a combination of fallow fields and land being actively used as farmland. Modern refuse is scattered throughout the area. Other than a mobile home on APN 780010013, no homes or structures are present within the project area.

This development is considered a "project" under the California Environmental Quality Act, as amended (CEQA; *Public Resources Code* [PRC] 21000 et seq), which mandates that the lead agency consider the effects of the project on historical and archaeological resources. The County of Riverside (County) is the CEQA lead agency for the project.

Project Personnel

Both SRI personnel involved with the implementation of this project have extensive experience in the region, meet the Secretary of the Interior's Professional Qualifications Standards in their respective disciplines, and have worked on numerous cultural resource surveys across southern California. SRI's project personnel consisted of Mr. Patrick B. Stanton, M.A., who is listed in the Register of Professional Archaeologists (RPA) and who served as principal investigator and was responsible for managing the project and overseeing the fieldwork component. Ms. Alyssa Canoff, M.A., RPA, served as project director and conducted the survey, was responsible for managing the geospatial data, and coauthored the survey report. Their qualifications are provided in Appendix A.

Environmental Setting

The project area is along the far-northwestern end of the Coachella Valley, a low valley sandwiched between the Santa Rosa Mountains to the south and southeast and the Little San Bernardino Mountains to the north. The valley is part of the Colorado Desert geomorphic province, an area that includes both sides of the lower Colorado River and the Coachella and Imperial Valleys of California (Jenkins 1980).

High temperatures during the summer months average between 39°C and 41°C (102°F and 107°F). During the winter, the mean temperature falls to approximately 21°C (70°F) during the day, and lows reach near 12°C (54°F) at night (WorldClimate.com 2024a, 2024b). The average annual precipitation in the area is 77.5 cm (3.1 inches), most of which falls between December and March (WorldClimate.com 2024c), although occasional summer thunderstorms in August and September provide additional rainfall.

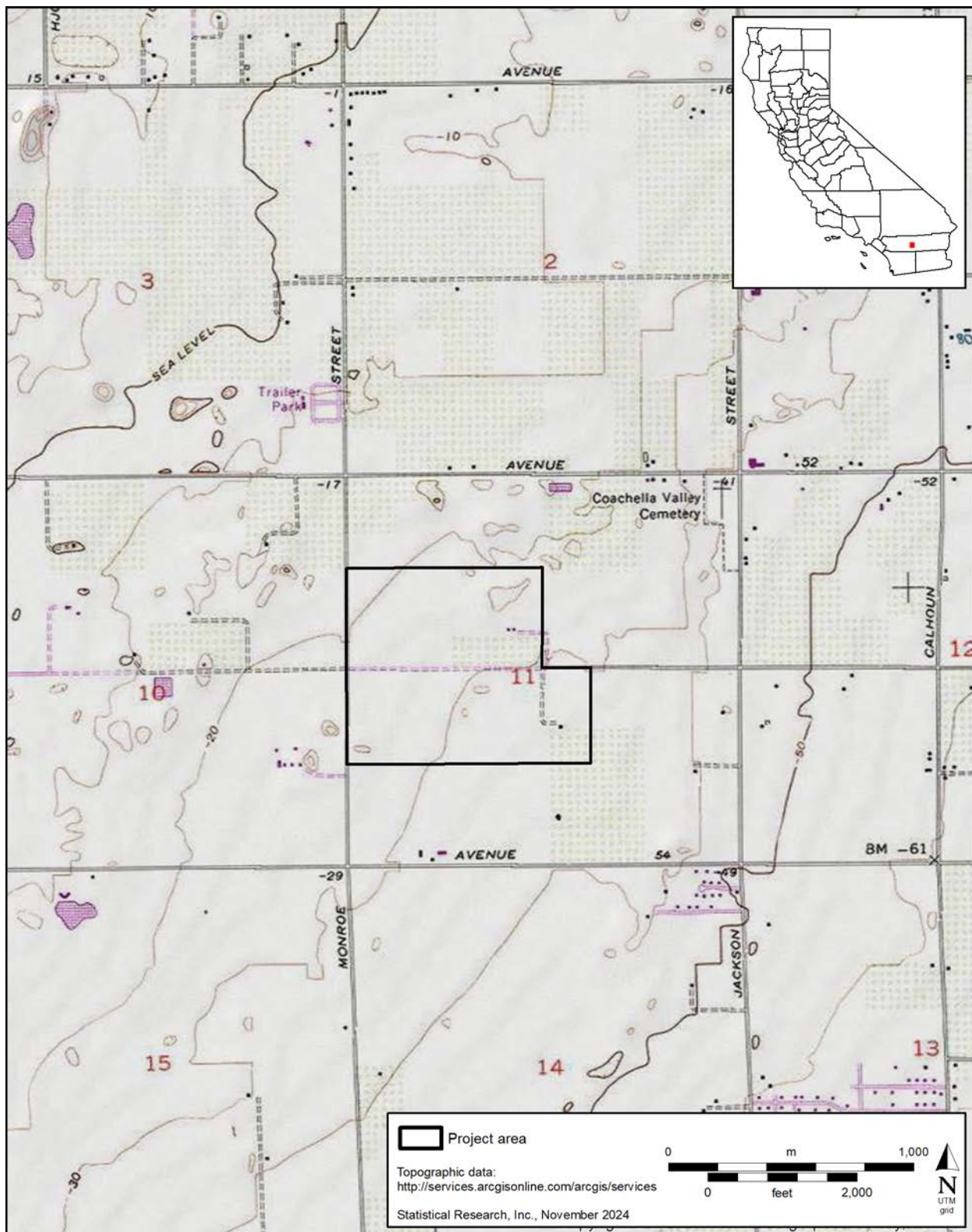


Figure 1. Project-area vicinity map.

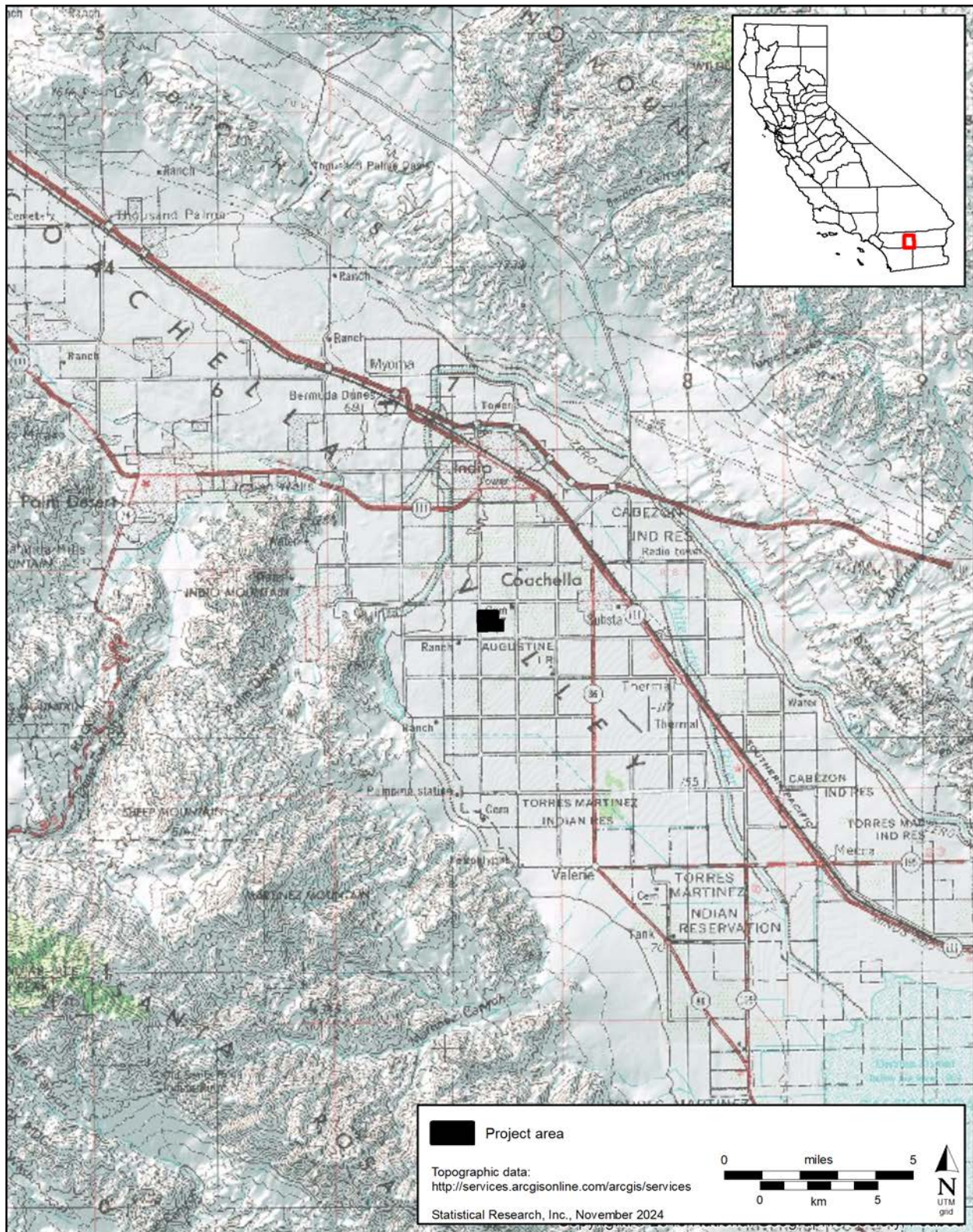


Figure 2. Project-area location map.

Geology

The Coachella Valley forms the northern extent of the Salton Trough, a northwest–southeast-trending depression that reaches from the San Gorgonio Pass to the Gulf of California, 280 km (174 miles) to the south. The valley has been heavily shaped by tectonic forces involving interaction of the Pacific and North American Plates along the San Andreas Fault system (Harden 2004). The valley is a fault-bound depression; the San Andreas Fault runs along the northern margin of the valley, and the Banning Fault, a subordinate fault to the San Andreas Fault, runs east–west through the valley, between the San Andreas Fault and the San Jacinto Fault to the west. Folding in the earth’s crust has blocked the flow of underground aquifers and has resulted in numerous springs and pools. These water sources were crucial resources for prehistoric groups (Wilke 1978).

The mountain ranges surrounding the Coachella Valley are uplifted blocks of continental crust. The Santa Rosa Mountains are at the northern end of the Peninsular Ranges, a series of mountain ranges running from the Los Angeles Basin southeastward to the tip of the Baja California Peninsula (Jahns 1954:3). The Santa Rosa Mountains form a natural border between the coastal areas to the west and the deserts to the east and are composed of plutonic intrusions that have been uplifted through tectonic activity. The highest point is San Jacinto Mountain, which towers above the present-day city of Palm Springs at 3,307 m (10,849 feet) above mean sea level (AMSL). The Little San Bernardino Mountains are part of the Transverse Ranges, a series of east–west-trending mountains that are similar in composition to the Peninsular Ranges and include large masses of Mesozoic-era plutonic rocks. The summits of the Transverse Ranges exceed 3,500 m (11,483 feet) AMSL at San Gorgonio Peak (Bailey and Jahns 1954).

Much of the valley bottom is at or below mean sea level (BMSL); the deepest areas dip to 80 m (263 feet) BMSL. The project area is at an elevation of approximately 117 m (384 feet) BMSL. Both alluvial and aeolian sediments are present within the valley. Geologic mapping of Quaternary sediments in the area by Lundstrom et al. (2001) indicated that the alluvial-fan surfaces are of probable late Holocene age, are extensive, and show very weak, unoxidized soils. Recent aeolian sand is also common in the area and is mapped as dunes and sand ramps forming mantles on slopes in the valley (Lundstrom et al. 2001). The project area is composed entirely of alluvial-fan deposits including the Indio and Gilman soil series, both of which are very fine sandy loams with coarse silt and have mixed calcareous compositions (University of California, Davis, Agriculture and Natural Resources, and U.S. Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS] 2024).

The hot and dry climate of the Coachella Valley would normally place significant restrictions on human activities. However, the valley has been repeatedly inundated in the past as a result of flooding brought on by changes in the course of the Colorado River. Over many episodes, the river left its banks and flooded the Salton Trough, creating ancient Lake Cahuilla, also referred to as Blake’s Sea or Lake LeConte (Wilke 1978). At its maximum, the lake reached 184 km (114.3 miles) long, 54 km (33.6 miles) wide, and 96 m (314 feet) in depth, and it inundated a considerable portion of the valley. When the Colorado River resumed its normal course, the lake began to dry. Recent studies have suggested that it would have taken approximately 56 years for the lake to be completely dry after having reached the high-water mark (Laylander 1997).

Between 800 and 300 years before present (B.P.), there were at least three documented cycles of flooding and desiccation, but it is not clear whether the lake during that time was primarily full with only minor drying episodes, mostly empty and only occasionally inundated, or somewhere in between (Laylander 1997; Waters 1983; Wilke 1978; see also Schaefer and Laylander 2007). The most recent stand of Lake Cahuilla may have been brief, occurring between 700 and 500 B.P.

Much of the prehistoric occupation of the Coachella Valley appears to have been correlated to the presence of Lake Cahuilla. The earliest known sites in the valley date to the Late Archaic period, roughly 4000–1500 B.P. (Love and Dahdul 2002). Most of these sites are at or near the ancient lakeshore, as are several sites dating to the Late Prehistoric period (Sutton and Wilke 1988; Wilke 1978). The project area is along the maximum shoreline of Lake Cahuilla.

Plant Communities

The Coachella Valley is part of the Sonoran Life Zone and is characterized by the Creosote Bush Scrub plant community (Hall and Grinnell 1919; Munz 1974; Schoenherr 1992), which characteristically includes creosote bush (*Larrea tridentata*), honey mesquite (*Prosopis glandulosa*), white brittlebush (*Encelia farinosa*), cholla (*Cylindropuntia*) and pricklypear (*Opuntia* spp.) cacti, chuparosa (*Beloperone californica*), desert lavender (*Hyptis emoryi*), sage (*Salvia* spp.), and various grasses. California fan palm (*Washingtonia filifera*), the only species of palm native to California, is present in oases surrounding the valley. Desert oases also provide habitat for a number of other species, including screwbean mesquite (*Prosopis pubescens*) and Fremont cottonwood (*Populus fremontii*). Many of the plants known to the historical-period Cahuilla, the cultural group that occupied the Coachella Valley at the time of European contact, were medicinal or therapeutic (for a detailed discussion, see Bean and Saubel [1972]).

Animal Communities

A number of desert animals inhabit the greater Coachella Valley, including mammals such as bighorn sheep (*Ovis canadensis*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), various mouse species (*Peromyscus* and *Perognathus* spp.), squirrels (*Spermophilus* [Citellus] spp.), and lagomorphs (black-tailed jackrabbit [*Lepus californicus*] and desert cottontail [*Sylvilagus audubonii*]); reptiles, including rattlesnakes (*Crotalus* spp.) and a variety of lizards (collared lizards [*Crotaphytus*], desert iguanas [*Dipsosaurus*], spiny lizards [*Sceloporus*], rock lizards [*Petrosaurus*], and brush lizards [*Urosaurus* spp.]); and birds, such as turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), mourning dove (*Zenaida macroura*), and common raven (*Corvus corax*). During prehistoric times and up to the early twentieth century, pronghorn (*Antilocapra americana*) was common in the Coachella Valley, but it has since been pushed out by modern development (Jaeger 1965). Besides being sources of food, many of the animals were important components of Cahuilla rituals, and their bones have been found in ritual contexts at sites in Tahquitz Canyon (see Bean et al. 1995).

Cultural Setting

This section describes the general chronological sequence of cultural development in the Colorado Desert as it is currently understood.

Prehistoric Background

The prehistory of the Colorado Desert, including the northern Coachella Valley, is poorly understood, although a number of recent studies have greatly improved our knowledge. Treatments of the region include the classic work of Rogers (1945, 1966) and the more recent works of Schaefer (1994), Love and Dahdul (2002), and Schaefer and Laylander (2007). Schaefer (1994) defined three principal prehistoric periods: the Paleoindian, Archaic, and Late Prehistoric periods (see also Love and Dahdul 2002); that sequence is generally followed below.

In the Colorado Desert, fluctuation in the flow of the Colorado River resulted in periodic inundation and recession of ancient Lake Cahuilla, which had a significant impact on resource availability. Resource availability influenced population movement and settlement and subsistence patterns in the region surrounding Palm Springs, the Coachella Valley, and the Salton Sea. The shifting course of the Colorado River influenced regional prehistory throughout the Holocene as it periodically inundated the Salton Trough and created Lake Cahuilla (Schaefer and Laylander 2007; Weide 1976). The most-recent research indicates that

no fewer than three cycles of inundation and desiccation occurred between A.D. 1200 and 1600, and very little is known about the activity of the lake before that time (Schaefer and Laylander 2007). The filling of Lake Cahuilla created a more fertile environment with a variety of resources that could sustain larger populations, and the Native populations clearly adapted to the cyclical fluctuations of the lake by subsisting on a variety of resources found throughout the region over time (Goodman and Mouriquand 2005).

The Paleoindian Period (12,000–8000 B.P.)

Paleoindian period groups, probably with Clovis complex technology, occupied much of California beginning ca. 12,000 B.P. However, there is very little evidence of Paleoindian period occupation of the northern Coachella Valley. The reasons for this are unclear but may be related to a lack of habitat for the large game hunted by Clovis people.

Across much of western North America, the Clovis complex developed into the Western Stemmed tradition (or Western Pluvial Lakes tradition) after 10,000 B.P. (Bedwell 1973), probably in response to the warming and drying climate of the early Holocene. This tradition is characterized by crescents and large stemmed, shouldered, and lanceolate points (Willig and Aikens 1988:3). The cultural assemblage is commonly referred to as San Dieguito in southern California and had an economy presumably based on the exploitation of marsh plants, fish, freshwater shellfish, and large and small game (Rogers 1966). Rogers (1966) originally defined three distinct phases associated with San Dieguito cultures, but further excavations at the sites where he worked have failed to find evidence of those distinctions (Vaughan 1982; Warren 1967:171).

In 2012, an isolated fluted point was discovered at the McCoy Springs site, at the base of the McCoy Mountains, approximately 111 km (69 miles) east of the project area. The point had a combination of attributes that placed it within the Paleoindian period (Kline 2014). Only one other fluted point has been found in Riverside County: in the Pinto Wash, in Joshua Tree National Park (Campbell and Campbell 1935).

There is little evidence of a San Dieguito presence in the northern Coachella Valley, probably just a few “small, mobile bands exploiting small and large game and collecting seasonally available wild plants” (Schaefer 1994:63; see also Schaefer and Laylander 2007). The reasons for this are unclear, but the lack of early occupation may indicate that Lake Cahuilla was not inundated during that time.

The Archaic Period (8000–1500 B.P.)

As of ca. 8000 B.P., the climate became hotter and drier, and it appears that the northern Coachella Valley was basically abandoned during that time (Schaefer 1994:64). At best, the record suggests only minor occupation by relatively few people. Apparently, when the climate began to cool, after ca. 4000 B.P., during the Late Archaic period, the Colorado Desert was reoccupied (Love and Dahdul 2002; Schaefer 1994:64), and several archaeological sites in the northern Coachella Valley are dated to this time. As is true for later occupations, much of the occupation apparently centered on the shores of Lake Cahuilla. However, very little is known about Late Archaic period adaptations or social structure in general.

One of the best-documented Late Archaic period sites in the Colorado Desert is the Indian Hill Rockshelter near Anza-Borrego State Park (McDonald 1992; Wilke et al. 1986), approximately 46 km (28.6 miles) southwest of the project area. Excavators found a number of rock-lined storage pits at the site, as well as hearths and Elko Eared projectile points; radiocarbon dates from these levels indicated that they had been occupied ca. 4000 B.P. McDonald (1992) postulated that the site was a base camp for hunter-gatherers who probably roamed over a large area in search of food. A rockshelter from Tahquitz Canyon, 34.5 km (21.4 miles) northwest of the project area, also contained rock-lined pits and similar artifacts, but no radiocarbon dating was conducted for the site; therefore, its true age is unclear (Schaefer 2002). Taken together, these sites suggest that people lived in highly mobile bands and took advantage of a variety of resources in the area.

Excavations at two sites (CA-RIV-1827 and CA-RIV-2642) near Desert Hot Springs, 42.9 km (26.7 miles) northwest of the project area, encountered deposits dating to the transition from the Late Archaic period to the Late Prehistoric period, ca. 1200–1000 B.P. (Dahdul et al. 2008; Drover 1982, 1988; Hogan et al. 2010). These sites contained evidence of habitation, including hearth features; activity surfaces and a variety of artifact types, such as flaked stone debitage; faunal remains; and possible human remains. The sites are adjacent to the ethnohistorically known Seven Palms Rancheria (CA-RIV-154), and it is likely that they represent an early occupation of the village.

The Late Prehistoric Period (1500–200 B.P.)

As of ca. 1500 B.P., Yuman (or Patayan) agricultural groups along the Colorado River area began to influence Colorado Desert groups, particularly in the Coachella Valley. This Patayan pattern included a preceramic phase (Rogers 1945:170; Warren 1984; Waters 1982a, 1982b) and three ceramic phases: Patayan I (ca. 1500–1000 B.P.), Patayan II (ca. 1000–500 B.P.), and Patayan III (after ca. 500 B.P.). After ca. 1000 B.P. (Patayan II), a number of cultural traits, including new ceramic types, small triangular points, and cremations, moved westward from the Colorado River, either through diffusion or, perhaps, carried by some migrating Yuman people. In either case, long-distance trade networks were established between the Coachella Valley and the Colorado River.

Agricultural crops were probably introduced into the area during this time. Along the Colorado River, domesticated crops constituted up to half of the diet of Yumans (Castetter and Bell 1951). Ethnographically (see below), the Cahuilla were known to have large, walk-in wells that could have been used in pot irrigation (Bean and Mason 1962), although small check dams and other simple irrigation technologies probably also were used (Wilke and Lawton 1975:28).

The Late Prehistoric period groups that occupied the Coachella Valley were the direct ancestors of the ethnographic Cahuilla. This period witnessed a significant increase in human occupation of the valley, and several large archaeological sites from the period have been identified (see Bean et al. 1995; Schaefer 1994; Sutton and Wilke 1988; Wilke 1978).

Ethnographic Background

The Indigenous group that occupied the northern Coachella Valley during the historical period was the Desert Cahuilla, who, along with the Mountain and Pass Cahuilla, constituted the ethnographic Cahuilla. The Cahuilla spoke a language of the Takic branch of Northern Uto-Aztecan (see Goddard 1996:Table 3), and the Desert Cahuilla spoke a distinct dialect of Cahuilla. Descriptions of Cahuilla culture have been presented by Barrows (1900), Hooper (1920), Curtis (1926), Strong (1929), and Bean (1972, 1978). There have been few archaeological studies of the historical-period Cahuilla, but testing at the former Mission Creek Indian Reservation, approximately 53.7 km (33.4 miles) northwest of the project area, identified occupations stretching from the Late Prehistoric period into the early twentieth century (Altschul 1986). Similarly, excavations at Tahquitz Canyon (Bean et al. 1995), 34.5 km (21.4 miles) northwest of the project area, found a large village complex dating to A.D. 1600–1870.

Cahuilla villages were located in areas with access to a number of resources, either at springs or where wells could be easily dug. As a result, most villages relied on hand-excavated walk-in wells for water. These wells were dug to depths of approximately 6 m (20 feet), to reach the water table. Each village consisted of a loose cluster of houses spread over an area up to 1 km (0.6 mile) across. Some of the houses were large (e.g., 6 m [20 feet] in length), and others were smaller, and at least one large ceremonial structure was present in each village (Bean 1972:72). Once established, villages were considered permanent (Bean 1972:74) and were occupied by lineages. Villages were connected to each other by a complex system of trails.

The Cahuilla were organized into moieties, tribelets (i.e., clans), and then lineages. The two moieties were the *túktem* (Wildcats) and *'istam* (Coyotes) (Bean 1978; Garcia et al. 2011). The lineages were land-

holding groups, and each occupied its own village. The adjacent lineage, with its own village, generally belonged to the other moiety. This arrangement served to ensure access to different habitats. Each village was economically independent.

The Desert Cahuilla exploited a large number of plant species (Barrows 1900; Bean and Saubel 1972); mesquite (*Prosopis* spp.) on the valley floor was the primary staple. Other important resources, such as agave (*Agave deserti*), pinyon (*Pinus* spp.), and acorns (*Quercus* spp.), were obtained from the mountains to the west. More than 150 species of plants were used for food, fibers, medicines, manufactures, and dyes. The California fan palm is an excellent example of the diversity of plant use. The fruit of the palm was harvested with notched willow poles and eaten sun-dried, fresh, cooked, or ground into flour. The fronds were used for roof thatch, and the leaves were stripped and used for weaving (Anderson 2005). The Cahuilla exploited a variety of animals from mountain habitats, including deer (*Odocoileus* sp.), bighorn sheep, and pronghorn, and smaller animals, such as rabbits and rodents, from desert habitats.

Early ethnographic accounts document that the Cahuilla were aware of the ancient tradition of lake fishing and the cyclical fluctuations of ancient Lake Cahuilla. These accounts also discuss fish traps and settlement patterns based on the patterns of the lake (Love and Dahdul 2002; Schaefer and Laylander 2007; White and Roth 2009).

The Desert Cahuilla also grew a few agricultural crops (corn, beans, and squash), which were probably obtained from Native peoples along the Colorado River to the east. Crops were irrigated from springs (Wilke and Lawton 1975); with the arrival of Europeans, wheat, melons, barley, and fruit trees were added (Bean and Mason 1962; Lawton and Bean 1968). By the late eighteenth century, the Cahuilla had adopted ranching as an important industry and worked as wage laborers on the railroads and at farms and ranches.

After the smallpox and measles epidemics of 1863, the Cahuilla population, originally perhaps as many as 3,000 people, declined rapidly. In addition, the emigration of young people seeking work in the metropolitan areas of Southern California resulted in the moving away of many Cahuilla from their traditional areas (Harvey 1967). In 1974, approximately 900 people claimed Cahuilla descent, most of whom lived on one of the many Cahuilla reservations in inland Southern California (Garcia et al. 2011:21).

The long history of the Cahuilla people's adaptation and resilience continued into the reservation era of the late nineteenth and twentieth centuries. The Augustine Band of Cahuilla Indians, a federally recognized tribe culturally affiliated with the Desert Cahuilla, is among the smaller bands that reestablished their tribal identity after significant demographic and political challenges. The Augustine Reservation was created in 1891 under the Mission Indian Relief Act, which aimed to address land claims of Southern California tribes after decades of dispossession under the Homestead Act of 1862 and the General Allotment Act of 1887 (Canby 2004:22). Located near Coachella, California, the reservation encompasses just 259 ha (640 acres); it is the smallest in the state. The reservation is situated less than 2.4 km (1.5 miles) southeast of the project area. The Indian Reorganization Act of 1934 restored "surplus" lands lost under the Allotment Act, and by 1930, the Cahuilla were reduced to "checkerboard patterning of reservation land in which Indian-owned sections were interspersed with non-Indian owned land" (Lewis 2013).

By the mid-twentieth century, the Augustine Band had only a single surviving tribal member, Roberta Augustine. In the 1990s, her descendants initiated a revival of tribal governance and community development. Under the leadership of Chairwoman Mary Ann Martin, the tribe reestablished its political presence and economic base, including the opening of the Augustine Casino in 2002 (Augustine Band of Cahuilla Indians 2005). The tribe also operates Temalpakh Farm and Cahuilla Ranch on their reservation. These agricultural ventures contribute to the tribe's economic sustainability while reinforcing the cultural and historical significance of farming in the Cahuilla way of life. Today, the tribe is actively involved in efforts toward cultural revitalization, economic self-determination, and environmental stewardship, constituting a significant chapter in the ongoing story of Cahuilla adaptation and continuity.

Historical-Period Background

The extreme aridity of the Colorado Desert acted as a deterrent to many early explorers. The earliest recorded European visit to the Coachella Valley was in the winter of 1823–1824 by José Romero, the leader

of an expedition attempting to reach the Colorado River by a new route (Bean and Mason 1962). Until the mid-nineteenth century, however, most non-Native forays into the area were confined to the established prehistoric trail systems. A number of those trails passed through the western Coachella Valley, including the important Cocomaricopa Trail, which connected peoples of Arizona with cultures along the southern California coast (Bean and Vane 1995).

In 1853, William P. Blake described the Coachella Valley during the Pacific Railroad Survey expedition (Blake 1857). Blake recorded the general environment, noted the locations of Indian villages, described Native agriculture in the valley, and recorded some oral traditions of the Indians concerning life around ancient Lake Cahuilla. In 1855 and 1856, the U.S. Land Office Survey surveyed the valley and divided it into townships and sections (Wilke and Lawton 1975).

The European settlement of the valley intensified after the completion of the Southern Pacific Railroad in 1877 (Heath 1945). Entire business areas were built along newly constructed railroad lines. In the 1880s, the Homestead and Desert Land Acts opened much of the public land in the area to private development. Farming was the primary economic activity in the valley, supported by a variety of wells that accessed sizable underground water resources. Before the installation of a canal system, the lack of runoff and an increase in land development made well pumping a necessity (Stene 2009:16–17). Therefore, in 1938, construction began for the 123-mile Coachella Canal, which would supply additional water from the Colorado River to the valley for crop irrigation and to aid in flood control. The canal, completed in 1949, extends northwestward from the All-American Canal and through the southeastern corner of the project area, at the corner of Madison Street and 40th Avenue. A lateral system was constructed from 1949 to 1954.

By the 1960s, the Coachella Valley County Water District had realized the limitations of the Coachella Canal. Rehabilitation of the canal resulted in the installation of a supervisory remote-control and telemetering system to operate the canal and distribution system, construction of a regulating reservoir (Lake Cahuilla), construction of two flood-control dikes, installation of traveling demossing screens and a new check gate, and rehabilitation of an existing check gate (Stene 2009:27–28). Construction of the Coachella Canal and its distribution system has allowed the Coachella Valley to remain a productive agricultural location since the canal's completion.

The development of the federal and state highway systems in the early twentieth century opened the valley to further development. State Route (SR) 111 was completed through the area in 1934. The stretch of SR 111 east of the project area generally followed the alignment of the Bradshaw Stage Road, which was established in the 1860s and connected the region with Arizona, to the east (Faigin 2024a). The section of U.S. Highway 86 from Indio southward to the Imperial Valley is part of the North American Free Trade Agreement (NAFTA) Farm-To-Market Highway and facilitated agricultural activity in the area. The modern interstate-highway system, initiated in 1956 with the authorization of the Federal-Aid Highway Act (also known as the National Interstate and Defense Highways Act), unified the nation's transportation system while reducing the number of two-lane transcontinental highways. Interstate 10 (I-10), the fourth-longest interstate route in the United States, extends from Los Angeles, California, to Jacksonville, Florida (Faigin 2024b). I-10 in California was completed in 1964 and runs north of the project area (Faigin 2024c; Hupp 1997).

The Salton Sea was created between 1905 and 1907, when the Colorado River burst out of diversion canals and flooded a salt mine and nearby agricultural fields. By the late 1920s, the Coachella Valley and the Salton Sea had become popular vacation spots for the well-to-do in the Los Angeles Basin. Because of its proximity to the entertainment industry in Los Angeles, nearby Palm Springs became a convenient retreat for motion-picture celebrities and the moneyed elite from the East Coast and the Midwest. Additionally, several recreational resorts were developed around the Salton Sea well into the 1950s, and it became a popular destination for water-sports enthusiasts in Southern California (Harriman 2022a, 2022b).

During the late twentieth century, development in the Coachella Valley expanded rapidly; scores of country clubs and housing developments appeared along SR 111 and I-10. The advent of Native American gaming initiatives has also driven economic development in the valley. At least three casino resorts are present in the valley, and several others are nearby.

Previous Archaeological Research in the Coachella Valley

Much archaeological research has been carried out within the Coachella Valley and the Colorado Desert since the early twentieth century. The earliest work was that of Malcolm Rogers (1929, 1939, 1945, 1966), who investigated the earliest occupations in Southern California, the San Dieguito cultural assemblages, and later Yuman occupations along the lower Colorado River. Although more-recent research has refined his original conclusions, Rogers's work has formed the basis of much of the culture history of the region. Also, extensive surveys were carried out in the Coachella Valley by the Archaeological Survey Association of Southern California in the 1950s (McCown et al. 2001). Though not well reported, many sites recorded by the Archaeological Survey Association have since been destroyed by modern development.

Much of the research over the last 35 years has focused on the ancient shorelines of Lake Cahuilla, which has formed on numerous occasions during the last 15,000 years (and before [Weide 1974]). Some of that research has focused on the lake itself, and a number of studies have helped to refine the timing of the cycles of inundation and desiccation, particularly over the last 2,000 years (Waters 1983; Weide 1974; Wilke 1978). Whereas earlier models had suggested a single stable lake level spanning several centuries, the lake is now understood to have fluctuated considerably, and at least three or four cycles of inundation and desiccation over the last two millennia have been documented (Laylander 1997).

Human adaptation to these cycles of lake infilling and desiccation is of great interest, and a model of changing settlement and subsistence was proposed by Wilke (1978:103–107), based primarily on ethnographic analogy and paleofecal data from several sites. When the lake was present, people would have had a stable economic base capable of supporting a substantial population, permanent lakeshore villages, and seasonal camps to exploit terrestrial resources. After the lake disappeared, Wilke (1978) argued, desert conditions dominated, but the settlement/subsistence pattern remained basically the same, aside from being centered on permanent springs rather than the lake. The economic focus would have shifted from aquatic resources to terrestrial ones, in a manner similar to the terrestrial subsistence patterns documented during the ethnohistoric period. That would have resulted in increased use of the surrounding mountains to the west (see O'Connell et al. 1974; Wilke 1978:113); perhaps people moved to the lower Colorado River area to the southeast, a region densely occupied during the early historical period.

Excavations at the La Quinta site (CA-RIV-1179; Sutton 1993; Sutton and Wilke 1988), along the northwestern shoreline of Lake Cahuilla, revealed a seasonal pattern of resource use that did not support Wilke's (1978) model. Reanalysis of the paleofecal data from La Quinta and other sites (Sutton 1998) suggested that La Quinta was not occupied throughout the year. A study of faunal bones, macrobotanical remains, and other sensitive seasonal indicators suggested that the sites either were not occupied during the winter months or were only sporadically occupied. Sutton (1998) proposed that the lakeshore would have been intensively occupied only during the spring and summer months. During the winter, groups would have moved to other areas that, to date, have not been identified archaeologically.

Questions about the impact of Lake Cahuilla on settlement and subsistence and on the occupation of the Coachella Valley remain important research topics. The last major stand of Lake Cahuilla could have served as a major attractant to populations in and near the Peninsular Ranges of southern California and, as first suggested by Cochran (1965:87; see also Laylander 2007), may have been related to the eastward movement of the Takic: specifically, the ethnogenesis of the Desert Cahuilla as they moved eastward from the southern California coastal areas and western basins into the northern Coachella Valley.

There has been a relative paucity of archaeological studies focused on desert sites located away from the shoreline of Lake Cahuilla. The most studied areas of the northern part of the Coachella Valley are in Tahquitz Canyon (Bean et al. 1995; Schaefer 2002; Wilke et al. 1975:45–73) and Andreas and Murray Canyons (Cultural Systems Research 1983), near present-day Palm Springs. Excavations at the sites in those areas resulted in the recording of immense cultural deposits containing a variety of feature and artifact types. The feature types included house pits, hearths, storage areas, human cremations, and ritual caches and offerings. Most of the occupations at these sites date to the Late Prehistoric and ethnohistoric periods.

Analysis of artifacts from these sites has suggested that the inhabitants exploited a variety of resource areas, such as springs and oases, alpine and mountain environments, and the desert. Numerous bedrock

mortars and other milling features indicate an increasing use of seeds and nuts (including acorns), in contrast to earlier periods. Likewise, the presence of remains of animals that live at higher elevations, such as deer and bighorn sheep, indicates the importance of montane and other resources.

Research Design

Historical-Period Research Themes

Historical-period research themes and questions that apply to broad areas of the project area are discussed in this section.

Settlement

The permanent settlement of the region by homesteaders was an important aspect of the development of the region. Under the Homestead Act of 1862, the U.S. Congress opened millions of acres of public domain to anyone who could pay the \$10.00 registration fee and live on the land for 5 years (the required residence was shortened to 3 years in 1912). Natural springs and other scarce water sources were the early focal points of homesteading in the Coachella Valley. The European settlement of the valley intensified after the completion of the Southern Pacific Railroad in 1877 (Heath 1945). In the 1880s, the Desert Land Act opened much of the public land in the area to private development.

Research Questions

Research questions related to historical-period settlement systems within the project area include the following:

1. What was the nature of land occupation or ownership in the project area, and what period of homesteading or other settlement is represented by the sites?
2. Can the relative success of a homestead be inferred from material remains?
3. Did site occupants subsist on the products of local ranching/farming, or did wage labor supplement their income? Where did site occupants obtain goods and supplies? What local, regional, national, and international spheres were included in the economic arrangement of that operation?
4. What was the demographic makeup of the site occupants? Did site demography change over time?

Data Requirements

These questions can be addressed with both documentary and archaeological data. Land applications and patents made to the U.S. General Land Office (GLO; now the U.S. Department of the Interior [USDI] Bureau of Land Management [BLM]) as well as census documents can provide information on the identities and origins of homesteaders. Tax-assessors' records provide data on land values, transactions, and improvements. Together, these sources can reveal the chronology of residential and agricultural land use and can provide important parcel-specific associations between resources and individuals.

Data to address questions of regional interaction can be drawn from a wide variety of materials. Residential trash deposits can provide information about the range of sources from which food and household materials (such as pottery) were acquired. Historical records, such as tax records, can also provide important information about the extent and sources of external funding.

Other settlement-related questions can be answered only through information obtained from the layout of properties, analysis of the architectural remains, and the contents of refuse scatters and trash dumps. For instance, architectural remains can reveal whether buildings were constructed by hand, whether they were

built with purchased or scavenged materials, and whether they were made according to plan or reflect ongoing construction over time. Architectural remains—particularly, residences in relation to industrial structures, other outbuildings, and land dividers (such as fences)—can indicate the organization of agricultural or stock-raising activities. The size and distribution of trash deposits, as well as the diagnostic items within them, can indicate periods of change, such as abandonment or refurbishment.

To answer these and other questions, we must find undisturbed historical-period deposits in their original contexts at sites containing functionally and temporally diagnostic artifacts. Analysis of the material culture can then supplement and clarify the written record.

Methods

Records Search and Literature Review

On November 27, 2024, SRI submitted a request for a records search to the California Historical Resources Information System (CHRIS) South Coastal Information Center (SCIC) at San Diego State University. The goals of the records search were to review any previous archaeological projects that may have been conducted within the project area and to identify any previously recorded archaeological resources located on the property. The records search looked at all reports of archaeological work executed within 1.6 km (1 mile) of the project area. The records search was conducted by examining USGS topographic maps held by the SCIC that show the locations of previous cultural resource surveys and known archaeological sites. Survey reports and site records for previously recorded sites were gathered. The records search also included consultation of the catalogs of sites listed in the National Register of Historic Places (NRHP) and/or designated California Historical Landmarks (CHLs).

Additional archival research included reviewing primary and secondary sources for information pertinent to historical-period activities in the project area; this research was conducted by SRI staff. As part of the archival research, SRI staff consulted the online USGS collection of Historical Topographic Maps, online USDI BLM/GLO records, and historical aerial imagery for information regarding specific historical-period land use in and around the project area.

Survey Methods

A pedestrian survey of the project area was conducted from December 2 to December 5, 2024, by a single SRI field archaeologist, Alyssa R. Canoff, M.A., RPA. The survey was completed by walking north–south-oriented transects spaced at 15-m (49-foot) intervals across the project site. The progress of the survey was monitored with a Global Navigation Satellite System (GNSS) unit and high-resolution aerial photographs. During the survey, transect starting and stopping points were guided by GNSS technology. The field archaeologist also used the GNSS unit to record and map all identified cultural resources encountered within each transect and photographed each artifact. Photographs documented the artifacts within their geological and locational contexts, as well as the surrounding areas. Field observations were made at each site and included data such as measurements and a detailed description of each artifact encountered. No artifacts were collected during SRI’s project efforts.

Results

Records-Search Results

The results of the records search indicated that 40 previous projects had been conducted within the records-search area; nearly all the projects were archaeological surveys (Table 1; see Confidential Appendix B: Figure B.1). The project area, however, has not been previously surveyed by any investigations. Instead, 2 of the 40 projects (RI-9768 and RI-10342) consisted of overview reports in support of the La Quinta General Plan.

Additionally, 21 previously recorded resources had been identified within the 1.6 km (1 mile) records-search area (Table 2; see Confidential Appendix B: Figure B.2); no previously recorded resources had been identified within the project area. Site records for these resources are included in Confidential Appendix C. The 21 resources consisted of 13 archaeological sites (4 historical-period, 8 prehistoric, and 1 multicomponent sites) and 8 isolated resources (8 prehistoric resources). The previously recorded historical-period sites consisted of 2 single-family residences, an agricultural farm with single-family residences, and a farmland irrigation system. The previously recorded prehistoric sites consisted of 1 habitation site with cremations and 7 ceramic scatters (1 with habitation debris). The previously recorded multicomponent site contained prehistoric artifact scatters with habitation debris and historical-period refuse. There were no historical-period isolated resources within the records-search area. The previously recorded prehistoric isolated resources consisted of lithic debitage and ceramic sherds. Only 1 of these resources, CA-RIV-6823, has been recommended eligible for listing in the NRHP/California Register of Historical Resources (CRHR). Six of the resources previously identified in the records-search area (CA-RIV-7841, CA-RIV-7842, CA-RIV-8095, P-33-009563, P-33-009564, and P-33-009591) are located within the footprint of the nearby Madison Club; the status of those resources is unknown.

Of the 21 resources previously recorded within 1.6 km (1 mile) of the project area, 4 sites (1 prehistoric and 3 historical-period sites) and 5 isolated resources (lithic and ceramic artifacts) were located within 0.8 km (0.5 mile) of the project area (see Table 2). The prehistoric site is a ceramic scatter (CA-RIV-6689). The 3 historical-period sites consist of 1 agricultural farm with a single-family residence (P-33-014903), a single-family residence (P-33-015014), and a farmland irrigation system (P-33-022298). One isolated prehistoric ceramic sherd (P-33-009592) was located within 0.4 km (0.25 mile) of the project area.

Previous Archaeological Research within the Project Area

None of the project area has been previously surveyed, but the project area did fall within the footprint of an environmental overview for the La Quinta General Plan (Love and Tang 2000; Tang and Hogan 2010).

Native American Heritage Commission Sacred Lands File Search

Part of the records search and literature review involved contacting the Native American Heritage Commission (NAHC) for a list of traditional-use areas or sacred sites within the project area and a list of specific Native American groups or individuals who could provide additional information regarding cultural resources within the project area. The NAHC Sacred Lands File search did not indicate the presence of Native American traditional cultural places within the project area. However, the NAHC provided a list of 23 contacts from 11 tribes who could provide additional information on cultural resources within the project area (see Confidential Appendix D). SRI sent a letter to all 23 contacts on November 13, 2024, describing the proposed project and requesting any information that they could provide (see Confidential Appendix D).

Table 1. Previously Conducted Cultural Resource Studies within 1.6 km (1 Mile) of the Project Area

Report No.	Author(s)	Year	Title	Report Type	Project Location
RI-3276	Drover, Christopher	1991	An Archaeological Assessment of Parcel Map 54735, Riverside County, California	survey	records-search area
RI-3277	Drover, Christopher	1991	An Archaeological Assessment of Parcel Map 55475	survey	records-search area
RI-3366	Love, Bruce, and Karl Lorenzen	1991	Cultural Resources Assessment: Tentative Parcel 26826, City of Indio, Riverside County, California	survey	records-search area
RI-3384	Brewer, Christina	1991	An Archaeological Assessment of Tentative Parcel Map 26064, County of Riverside, California	survey	records-search area
RI-3667	Love, Bruce	1993	Cultural Resources Evaluation, Parcel Map 27779 near Thermal, Riverside County	survey	records-search area
RI-4175	Tetra Tech, Inc.	1999	A Phase I Archaeological Survey South of Avenue 54 near La Quinta, Riverside County, California	survey	records-search area
RI-4283	McKenna, Jeanette A.	1999	A Phase I Cultural Resource Investigation of the Country Club of the Desert Project Area Located within the City of La Quinta and the County of Riverside, California	survey	records-search area
RI-4401	Robinson, Mark C.	2000	Cultural Resources Survey and Assessment of Approximately 45 Acres: A-G Sod Farm Project 54th Avenue and Calhoun Street Thermal, Riverside County, California	survey	records-search area
RI-4491	Brock, James	2001	Phase I Cultural Resources Assessment for Tentative Tract Map No. 30095, Unincorporated Riverside County, near Coachella, California (APN 767-220-007; EA 38267)	survey	records-search area
RI-4684	O'Neil, Stephen	2002	Cultural Resources Reconnaissance of the Indio Ranchos Polo Estates, City of Indio, Riverside County, California	survey	records-search area
RI-4754	Brock, James	2004	Phase I Cultural Resources Assessment for Tentative Parcel Map No. 32212, Thermal Area of Unincorporated Riverside County, California	survey	records-search area
RI-5440	Jackson, Adrianna L.	2001	Letter Report: Records Search Results for Spring Pcs Facility Rv54Xc489B (Imperial Site), Thermal, Riverside County, California	records-search results	records-search area
RI-5644	White, Robert S., and Laura S. White	2004	A Cultural Resources Assessment of a 9.3-Acre Parcel Located Adjacent to Calhoun Street South of Avenue 52, Coachella, Unincorporated Riverside County, California	survey	records-search area
RI-5668	Billat, Lorna	2005	Letter Report: Historic Consultation for Nextel of California (Nextel) Wireless Telecommunications Project Avenue 52/Ca-7272C, near Thermal, in Unincorporated Riverside County, California	consultation	records-search area

Report No.	Author(s)	Year	Title	Report Type	Project Location
RI-5909	Love, Bruce, Bai Tang, Daniel Ballester, and Mariam Dahdul	2002	Historical/Archaeological Resources Survey Report, Tentative Tract Map No. 30399, near the City of La Quinta, Riverside County, California	survey	records-search area
RI-5987	Dahdul, Mariam, and Daniel Ballester	2003	Historical/Archaeological Resources Survey Report, Tentative Tract No. 31202, in the City of La Quinta, Riverside County, California	survey	records-search area
RI-6202	Hogan, Michael, Bai “Tom” Tang, Harry M. Quinn, Mariam Dahdul, and Sherri M. Gust	2004	Archaeological Testing and Evaluation Report, Site CA-RIV-6823, Tentative Tract No. 30399, near the City of La Quinta, Riverside County, California	testing	records-search area
RI-6281	Hogan, Michael, Bai “Tom” Tang, and Mariam Dahdul	2004	Archaeological Testing at Winchester Valley 85, Tract No. 30806, APNS 461-190-041, -048 to -050, near the Community of Winchester, Riverside County, California	testing	records-search area
RI-6300	Tang, Bai, Michael Hogan, Casey Tibbet, and Daniel Ballester	2004	Historical/Archaeological Resources Survey Report: Assessor Parcel Numbers 767-200-002 and -003, in the City of La Quinta, Riverside County, California	survey	records-search area
RI-6307	Hogan, Michael, Bai Tang, Josh Smallwood, Daniel Ballester, Mariam Dahdul, and Casey Tibbet	2004	Historical/Archaeological Resources Survey and Evaluation Report: Tentative Tract Map No. 32861, near the City of La Quinta, Riverside County, California	survey	records-search area
RI-6309	Hogan, Michael, Bai Tang, Mariam Dahdul, and Daniel Ballester	2004	Historical/Archaeological Resources Survey Report, Griffen Ranch Project, City of La Quinta, Riverside County, California	survey	records-search area
RI-6529	Tang, Bai, Michael Hogan, Josh Smallwood, and Daniel Ballester	2005	Historical/Archaeological Resources Report, the Chuchian Property, City of Coachella, Riverside County, California	survey	records-search area
RI-6535	Tang, Bai, and Michael Hogan	2006	Historical/Archaeological Resources Survey Report: Assessor’s Parcel Number 767-320-009, City of La Quinta, Riverside County, California	survey	records-search area
RI-6536	Jacquemain, Terri, Daniel Ballester, and Laura Hensley Shaker	2006	Historical/Archaeological Resources Survey Report: Assessor’s Parcel Numbers 767-320-007 and -14, City of La Quinta, Riverside County	survey	records-search area
RI-6615	Tang, Bai “Tom,” Michael Hogan, Deirdre Encarnacion, and Daniel Ballester	2006	Historical/Archaeological Resources Survey Report: Thermal Street, Water, and Sewer Improvements, near the Community of Thermal, Riverside County, California	survey	records-search area
RI-6862	W&S Consultants	2004	Phase I Archaeological Survey of the TTM 32417 Study Area, Coachella, Riverside County, California	survey	records-search area
RI-6864	W&S Consultants	2004	Phase I Archaeological Survey of the TTM 32454 Study Area, Coachella, Riverside County, California	survey	records-search area
RI-6870	Brown, Joan C., Stephen O’Neil, and James W. Steely	2006	Cultural Resources Reconnaissance of an 85-Acre Parcel for the Chucian Project, Riverside County, California.	survey	records-search area

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Report No.	Author(s)	Year	Title	Report Type	Project Location
RI-7659	McGinnis, Patrick, and Michael Baksh	2005	Cultural Resource Survey Report for the Proposed Palms Mission Ranch Development, Thermal, Riverside County, California	survey	records-search area
RI-7975	Tang, Bai “Tom,” Deirdre Encarnacion, Daniel Ballester, Marium Dahdul, Clarence Bodmer, and Harry M. Quinn	2009	Archaeological Monitoring Report: Griffin Ranch Project, City of La Quinta, Riverside County, California	monitoring	records-search area
RI-8000	Clowery-Moreno, Sara, and Brian F. Smith	2008	A Phase I Archaeological Assessment for the Coachella Commercial Center Project, Coachella, Riverside County, California	survey	records-search area
RI-8105	Tang, Bai “Tom,” and Michael Hogan	2006	Summary of Findings, Citywide Historic Resources Survey Update, City of La Quinta, Riverside County, California	survey	records-search area
RI-8205	Tang, Bai “Tom”	2009	Letter Report: Archaeological and Paleontological Monitoring of Earth-Moving Activities, The Saddle Club Project; Assessor’s Parcel Numbers 767-320-007 and -14, City of La Quinta, Riverside County, California	monitoring	records-search area
RI-8496	Mirro, Michael	2010	Letter Report: Cultural Resources Records Search for Shot Points Located on Private Lands for the U.S. Geological Survey (USGS) Salton Seismic Imaging Project—Addendum	records-search results	records-search area
RI-8540	Tang, Bai “Tom,” and Michael Hogan	2010	Identification and Evaluation of Historic Properties, Indio Water Authority Wastewater Treatment Project, Cities of Indio and La Quinta, Riverside County, California	survey	records-search area
RI-8708	Bonner, Wayne H., and Sarah A. Williams	2010	Cultural Resources Record Search and Site Visit Results for T-Mobile Usa Candidate Ie25743-A	records-search results, survey	records-search area
RI-9768	Love, Bruce, and Bai “Tom” Tang	2000	Cultural Resource Element City of La Quinta General Plan	overview	project area
RI-10140	Brunzell, David	2015	Letter Report: Cultural Resources Assessment of the Quince Project, City of Riverside, Riverside, California (Bcr Consulting Project No. Trf1532)	survey	records-search area
RI-10342	Tang, Bai “Tom,” and Michael Hogan	2010	Cultural Resources Technical Report, City of La Quinta General Plan (2010 Update)	environmental overview	project area
RI-10468	Blumel, Wendy (Jones), and Hannah Hicok	2018	Phase 1 Cultural Resources Assessment for the 40-Acre Meridian-Monroe La Quinta Project near La Quinta, Riverside County, California	survey	records-search area

Table 2. Previously Recorded Cultural Resources within 1.6 km (1 Mile) of the Project Area

Primary No.	Trinomial	Type	Age	Description	Previous Eligibility	Location
P-33-009563		isolate	prehistoric	ceramic scatter	not evaluated	records-search area (within 1/2 mile of the project area)
P-33-009564		isolate	prehistoric	ceramic scatter with two flakes	not evaluated	records-search area (within 1/2 mile of the project area)
P-33-009591		isolate	prehistoric	two ceramic sherds	not evaluated	records-search area (within 1/2 mile of the project area)
P-33-009592		isolate	prehistoric	one ceramic sherd	not evaluated	records-search area (within 1/4 mile of the project area)
P-33-011125		isolate	prehistoric	one flake	not evaluated	records-search area (within 1/2 mile of the project area)
P-33-011269		isolate	prehistoric	one ceramic sherd	not evaluated	records-search area
P-33-022300		isolate	prehistoric	two ceramic sherds	not evaluated	records-search area (within 1/2 mile of the project area)
P-33-026407		isolate	prehistoric	one ceramic sherd	not evaluated	records-search area
P-33-013975		site	historical period	single-family residence	recommended not eligible	records-search area
P-33-014903		site	historical period	agricultural farm, single-family residences	recommended not eligible	records-search area (within 1/2 mile of the project area)
P-33-015014		site	historical period	single-family residence	not evaluated	records-search area (within 1/2 mile of the project area)
P-33-022298		site	historical period	farmland irrigation system	not evaluated	records-search area (within 1/2 mile of the project area)
P-33-011438	CA-RIV-6823	site	multicomponent	habitation site with human cremations, refuse scatter	recommended eligible	records-search area
P-33-009581	CA-RIV-7521	site	prehistoric	ceramic scatter	not evaluated	records-search area
P-33-011124	CA-RIV-6689	site	prehistoric	ceramic scatter	not evaluated	records-search area (within 1/2 mile of the project area)
P-33-013753	CA-RIV-7523	site	prehistoric	ceramic scatter	not evaluated	records-search area
P-33-014734	CA-RIV-7841	site	prehistoric	habitation site with human cremations	not evaluated	records-search area

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Primary No.	Trinomial	Type	Age	Description	Previous Eligibility	Location
P-33-014735	CA-RIV-7842	site	prehistoric	ceramic scatter	not evaluated	records-search area
P-33-015328	CA-RIV-8095	site	prehistoric	ceramic scatter, habitation debris	not evaluated	records-search area
P-33-026406	CA-RIV-12422	site	prehistoric	ceramic scatter	not evaluated	records-search area
P-33-026408	CA-RIV-12423	site	prehistoric	ceramic scatter	not evaluated	records-search area

Agua Caliente Band of Cahuilla Indians

On November 19, 2024, SRI was contacted by the Agua Caliente Band of Cahuilla Indians (ACBCI) Tribal Historic Preservation Office. They indicated that although the project is not within the confines of the ACBCI Reservation, the project area is within the boundaries of the tribe's traditional-use area. Therefore, they requested (1) a cultural resource inventory of the project area by a qualified archaeologist before any development activities in the area, (2) copies of any cultural resource documentation (report and site records) generated in connection with this project, (3) the presence of an approved cultural resource monitor during ground-disturbing activities, and (4) the presence of an archaeologist who meets the secretary of interior's standards during any ground-disturbing activities.

Augustine Band of Cahuilla Indians

On November 18, 2024, SRI received an email from the Augustine Band of Cahuilla Indians, thanking us for the opportunity to offer input and indicating that they were unaware of any specific cultural resources that may be affected by the proposed project. They further indicated that should any cultural resources be discovered, the NAHC should be contacted immediately for further evaluation.

Cabazon Band of Mission Indians

SRI attempted to reach the Cabazon Band of Mission Indians but received no response.

Cahuilla Band of Indians

SRI attempted to reach the Cahuilla Band of Indians but received no response.

Los Coyotes Band of Cahuilla and Cupeño Indians

SRI attempted to reach the Los Coyotes Band of Cahuilla and Cupeño Indians but received no response.

Morongo Band of Mission Indians

SRI attempted to reach the Morongo Band of Mission Indians but received no response.

Fort Yuma Quechan Indian Tribe

On November 25, 2024, SRI received an email from the Fort Yuma Quechan Indian Tribe, which indicated that their historic preservation office does not wish to comment on this project and that they defer to local tribes.

Ramona Band of Cahuilla

SRI attempted to reach the Ramond Band of Cahuilla but received no response.

Santa Rosa Band of Cahuilla Indians

SRI attempted to reach the Santa Rosa Band of Cahuilla Indians but received no response.

Soboba Band of Luiseño Indians

SRI attempted to reach the Soboba Band of Luiseño Indians but received no response.

Torres Martinez Desert Cahuilla Indians

SRI attempted to reach the Torres Martinez Desert Cahuilla Indians but received no response.

Archival Research

The earliest available aerial imagery dates to 1953. As determined from this image and subsequent images, the project area appears to have been developed solely for agricultural use. Although a modern mobile home is located within APN 780010013, no other structures are currently extant within the project area. However, in the mid-1950s, a structure appears to have been constructed in the west central portion of APN 780020003. This structure appears in a 1959 photograph and on the 1957 Indio, California, 7.5-minute

USGS topographic quadrangle. This structure appears to have been absent by the early 1970s. A review of GLO land-patent records found no land patents associated with the project area.

Geoarchaeological Review

Soil-developmental and geomorphic processes are often so closely interconnected in desert environments that the evolution of many desert landforms can be directly linked to soil-formation processes (Dixon 2009). The most significant of these processes include the development of surface crusts and pavements, the formation of vesicular A horizons, and the accumulation of clay and/or salts in the soil subsurface (Buol et al. 1997). In modern U.S. soil taxonomy, desert soils most commonly fall into two soil orders: Aridisols and Entisols. The Aridisols order, by definition, includes soils in aridic soil-moisture regimes that have cambic, calcic, gypsic, petrocalcic, petrogypsic, salic, or duripan subsurface horizons (B horizons; Buol et al. 1997; Soil Survey Staff 2022). Put more simply, an Aridisols is a desert soil with a diagnostic subsurface horizon (B horizon). Because the development of a subsurface horizon requires a considerable amount of time, Aridisols are commonly associated with desert landforms that have been stable for thousands to hundreds of thousands of years (Gile et al. 1981). Many of these soils developed under more-mesic conditions than today's and could be considered relicts of the last full glacial climate.

Soils in an aridic soil-moisture regime that do not have a subsurface horizon are classified as Entisols (Soil Survey Staff 2022). These soils have A horizons over pedogenically unaltered parent materials (C horizons): most commonly, stratified alluvium or aeolian sand. Entisols are generally considered "young" soils and are typically associated with deposits that aggraded during the latter half of the Holocene. All soils within the study area are classified as Entisols.

Recent soil-survey data from the USDA NRCS Soil Survey Geographic Database (SSURGO; <https://www.nrcs.usda.gov/resources/data-and-reports/soil-survey-geographic-database-ssurgo>, accessed May 6, 2025) were used to identify soil units within the project area, in order to help in assessing the probability of buried archaeological sites within the project area. Soils maps show that the dominant soil series within the project area are the Gilman, Indio, and Myoma series. Each of these soil series generally is assigned high sensitivity for buried archaeological resources. These soils have relatively simple A-C soil profiles and lack distinct B horizons (USDA 2005a, 2005b, 2005c; see Appendix E). Broadly, greater differentiation of soil horizons is indicative of extended surficial exposure. Because the probability of accumulating and preserving archaeological resources is inextricably linked to the duration for which a surface is exposed, less differentiated soil units are less likely to preserve cultural resources at the surface but have greater potential to be underlain by buried soils of relevant age to contain buried cultural resources. As determined from the soil-series descriptions, these soils are approximately 1.5 m (5 feet) in thickness and have potential to contain buried archaeological resources to their bases. However, it cannot be ruled out that early prehistoric sites could be present at greater depths in unknown buried soils (USDA 2005a, 2005b, 2005c; see Appendix E).

Information gathered from historical aerial imagery suggests that the surface of the project area has been mechanically stripped or flattened. However, no information is available to indicate that the depth of disturbance was anything more than surficial. Therefore, intact buried resources are likely to be present within the project area.

Records-Search Summary

None of the project area has been previously surveyed. Twenty-one previously recorded resources had been identified within the 1.6-km (1-mile) records-search buffer surrounding the project area. Of the 21 resources, 4 sites and 5 isolated resources have been recorded within 0.8 km (0.5 mile) of the project area, and 1 isolated resource had been recorded within 0.4 km (0.25 mile) of the project area.

The geoarchaeological study of the project area showed that the sediments within the project area are relatively young and their geomorphic surfaces are unstable, indicating that there is moderate to moderately high potential for buried cultural resources.

On the basis of the records-search results, one might expect to find small, seasonal prehistoric camps as well as historical-period sites associated with residential use and clandestine refuse deposition in the project area.

Survey Results

SRI surveyed the entirety of the 71-ha (175-acre) project area from December 2 to December 5, 2024 (see Confidential Appendix B:Figure B.3). During the survey, the project area was observed to be largely undeveloped; most of the property has been previously graded and tilled as agricultural land.

Approximately 0.8 ha (2 acres) of the northwestern corner of APN 780010012 is currently leased to a plant nursery. In addition to the nursery, this 0.8-ha (2-acre) area contains a small (approximately 175 by 175 feet) reservoir/basin. The nursery is secured with a fence, and the surface is covered with imported gravel and mulch. Outside the fence, immediately to the east of the nursery, the ground surface has been disturbed by heavy machinery driving over the surface and stockpiling vegetal debris. The remainder of this 16.2-ha (40-acre) parcel exhibited good surface visibility and had been tilled for agricultural use before the current project, albeit not recently (Figure 3).

APN 780010013 was previously used as a date farm. Although the trees are still present, the farm is inactive. The surface visibility of this portion of the project area varies greatly (0–75 percent); patches of tall grasses fully obscure the ground surface in the southern portion of the parcel. Some areas within the property appear to have been trampled by cattle and lightly graded for agricultural activities, such as placement of a water tank. Throughout this parcel, there are rows of date trees with piles of date tree trimmings left beneath them, further limiting surface visibility. Additionally, there are abandoned vehicles and camper trailers in the northern and east-central portion of the date farm. A mobile home is in the east-central portion of this parcel; modern trash and farming equipment are scattered throughout the area. Active chicken coops were also noted on the property.

APN 780010014 is an open field that was previously used for agriculture. A large group of mesquite trees were observed growing from a sand pile in the central portion of this parcel. Although they limited visibility, SRI did observe the remains of a historical-period concrete foundation and associated refuse (SRI 1002, described below). Along the eastern edge of this parcel in a tamarisk (*Tamarix*) grove, SRI observed evidence of vegetation removal (Figure 4). The surface visibility in most of this parcel was excellent.

APNs 780020001, 780020002, and 780020003 are actively being used as a carrot farm and contain numerous neatly tilled rows of crops and irrigation lines (Figure 5). At the time of the survey, the surface visibility was limited by crop growth. The western portion of this area contained more-mature crops, and the ground surface was much damper than that of the eastern portion of this half of the project area; these variables limited ground visibility to approximately 50 percent. The eastern portion of these parcels contained less developed crops, which allowed for better surface visibility (approximately 90 percent). In the northwestern corner of APN 780020003 is a small (approximately 225 by 225 feet) reservoir/basin. Immediately northwest of this reservoir, along Avenue 53, was a series of irrigation-related concrete pipes and boxes. In the southeastern corner of APN 780020001 are the remains of a modern structure represented by three concrete foundations and a semicircular line of palm trees surrounding the western portion of the foundations. Modern refuse was observed within this area, Aerial imagery indicates that this structure was extant in the late 1970s. An inactive reservoir measuring approximately 150 by 150 feet was observed opposite these foundations in the southwestern corner of APN 780020002. As determined from aerial imagery, this reservoir was likewise in use in the late 1970s.



Figure 3. Overview of APN 780010012 showing surface visibility; view to the northwest.



Figure 4. Overview of eastern side of APN 780010014 showing vegetation removal; view to the east.



Figure 5. Overview of carrot farm in APNs 780020001, 780020002, and 780020003; view to the south.

SRI 1002

SRI 1002 is a historical-period site that consists of two concrete foundations (Features 1004 and 1006), a scatter of various construction materials that include fragments of a third concrete foundation, and miscellaneous household refuse. The refuse is primarily modern; nondiagnostic historical-period refuse is interspersed. The overall site measures 74 m (244 feet) north–south by 76 m (250 feet) east–west and is situated atop a mesquite dune; the southern portion of the site slopes down to an agricultural field below.

Feature 1004 is a concrete foundation that measures 8 feet square and has a maximum height of 3 inches above surface. Miscellaneous hardware, plates, and bolts are embedded in the center of the foundation. A date of 1972 was marked in the northeastern corner of the foundation when the concrete was still setting.

Feature 1006 is a concrete foundation that measures 12 feet long and 8 feet wide and has a maximum height of 3 inches above surface. This foundation is slightly older than Feature 1004 and bears a date of 1968, likewise inscribed when the concrete was setting, in the southwest corner of the feature. This feature is situated on top of a mesquite mound, east of the scatter of construction materials, and overlooks Feature 1004.

Isolated Resources

No isolated cultural materials were identified.

Evaluation of the Resources for Eligibility for Listing in the CRHR

The development is considered a “project” subject to CEQA (PRC 21000 et seq), which mandates that the lead agency consider the effects of the project on historical and archaeological resources. The County is the CEQA lead agency for the project and, as such, requires that the sites within the project area be evaluated to assess their eligibility for listing in the CRHR. These evaluations will also help determine how the sites evaluated by SRI will be affected by the proposed development, as required by PRC 21084.1.

The three main goals of testing were

1. To collect additional field data relevant to making CRHR-eligibility recommendations;
2. To determine the boundaries of sites and to assess the possibility that buried site deposits are present, to assist in impact analysis; and
3. To collect data for planning data recovery efforts at CRHR-eligible sites that will be adversely affected by the project.

CRHR-Evaluation Criteria

The CRHR is the authoritative guide to California’s significant archaeological and historical resources, and it serves to identify, evaluate, register, and protect those resources. For the purposes of CEQA, a historical resource is any building, site, structure, object, or historic district listed in or eligible for listing in the CRHR (PRC 21084.1). A resource is considered eligible for listing in the CRHR if it meets any of the following criteria:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage
- (2) Is associated with the lives of persons important in our past
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
- (4) Has yielded, or may be likely to yield, information important in prehistory or history [PRC 5024.1(c)]

Historical resources meeting one or more of the criteria listed above are eligible for listing in the CRHR (PRC 5024.1). Furthermore, properties formally determined eligible for, or listed in, the NRHP are also listed in the CRHR. Important archaeological resources must be at least 50 years old to be considered. In addition to significance, a resource must have integrity for its period of significance—the date or span of time within which significant events transpired or significant individuals made important contributions. According to CEQA,

integrity is the authenticity of an historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. Historical resources eligible for listing in the [CRHR] must meet one of the criteria of significance . . . and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance [14 *California Code of Regulations* 4852(c)].

CEQA also requires the lead agency to consider whether there will be significant effects on unique archaeological resources that are not eligible for listing in the CRHR (PRC 21083.2[g]). As defined under CEQA, a unique archaeological resource is

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
- (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person [PRC 21083.2(g)]

If an archaeological resource is deemed eligible for listing in the CRHR, then it is considered, under CEQA, a historical resource that must be protected. That may also apply to unique archaeological resources. If a historical resource may be impacted by an activity, avoidance and preservation in place is the preferred alternative under CEQA. If these measures are not possible, then a data recovery plan must be created and enacted to reduce impacts to the resource to a less than significant level. If the archaeological resource is not eligible for listing in the CRHR and is not a “unique archaeological resource” (PRC 21083.2[g]), then no further action is required to protect or mitigate impacts to it.

Applying the CRHR-Eligibility Criteria

The historical-period resource (SRI 1002) recorded during the survey does not meet any of the CRHR-eligibility criteria. The resource lacks association with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage (Criterion 1); cannot be shown to be associated with the lives of persons important in our past (Criterion 2); does not embody distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values (Criterion 3); and is unlikely to yield information important in prehistory or history (Criterion 4). Therefore, this historical-period site is recommended not eligible for listing in the CRHR.

Management Recommendations

The archaeological survey of the project area identified a single historical-period resource consisting of two foundations dating to 1968 and 1972 and associated refuse. This resource is recommended not eligible for listing in the CRHR. No prehistoric sites or isolated resources were identified within the project area during SRI’s survey. Also, the NAHC Sacred Lands File search was negative for known tribal resources.

In terms of potential for buried resources, the geoarchaeological study of the project area suggested a high sensitivity for such resources. Furthermore, several prehistoric sites and isolated resources, including cremations and habitation areas, have been identified within the records-search area. Additionally, the presence of this historical-period structure suggests that buried features related to the structure that were not evident during the survey may still be present. Therefore, the project area has a moderate to moderately high sensitivity for buried cultural resources, suggesting that cultural resources may be present just under the ground surface.

Conditions of Approval

The following County standard Conditions of Approval shall be applied to this project.

Unanticipated Resources

The developer/permit holder or any successor in interest shall comply with the following for the life of this permit.

If, during ground-disturbance activities, unanticipated cultural resources (see third bullet in list below) are discovered, the following procedures shall be followed:

- All ground-disturbance activities within 30 m (100 feet) of the discovered cultural resource shall be halted and the Project Archaeologist (see below) shall call the County Archaeologist immediately upon discovery of the cultural resource. A meeting shall be convened between the developer, the Project Archaeologist (see fourth bullet in list below), the Native American tribal representative, and the County Archaeologist to discuss the significance of the find. At the meeting of the aforementioned parties, a decision is to be made, with the concurrence of the County Archaeologist, as to the appropriate treatment (e.g., documentation, recovery, avoidance) for the cultural resource. Resource evaluations shall be limited to nondestructive analysis.
- Further ground disturbance shall not resume within the area of the discovery until the appropriate treatment has been accomplished.
- A cultural resource site is defined, for this condition, as being a feature and/or three or more artifacts in close association with each other. Tribal Cultural Resources are also considered cultural resources.
- If not already employed by the project developer, a County-approved archaeologist and a Native American Monitor (see below) from the consulting tribe(s) shall be employed by the project developer to assess the significance of the cultural resource, attend the meeting described above, and continue monitoring of all future site grading activities as necessary.

Human Remains

If human remains are found on this site, the developer/permit holder or any successor in interest shall comply with State Health and Safety Code Section 7050.5. Pursuant to State Health and Safety Code Section 7050.5, if human remains are encountered, no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to PRC Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and their disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the NAHC shall be contacted by the County Coroner within the period specified by law (24 hours). Subsequently, the NAHC shall identify the Most Likely Descendant. The Most Likely Descendant shall then make recommendations and engage in consultation with the property owner concerning the treatment of the remains as provided in PRC Section 5097.98. There will be no photography of human remains or associated resources.

Before Grading Permit

Project Archaeologist/Archaeological Monitors

Before issuance of grading permits, the applicant/developer shall provide evidence to the County Planning Department that a County-certified professional archaeologist (Project Archaeologist) has been contracted

to implement a Cultural Resource Monitoring Program (CRMP). A cultural resource monitoring plan shall be developed that addresses the details of all activities and provides procedures that must be followed in order to reduce the impacts to cultural, tribal cultural, and historic resources to a level that is less than significant as well as to address potential impacts to undiscovered buried archaeological resources associated with this project. A fully executed copy of the contract and a digitally signed copy of the monitoring plan shall be provided to the County Archaeologist to ensure compliance with this condition of approval.

Working directly under the Project Archaeologist, an adequate number of qualified Archaeological Monitors shall be present to ensure that all earthmoving activities are observed. These Archaeological Monitors shall be on site during all grading activities for areas to be monitored, including off-site improvements. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features.

The Project Archaeologist may submit a detailed letter to the County during grading requesting a modification to the CRMP if circumstances are encountered that reduce the need for monitoring.

Native American Monitor

Before the issuance of grading permits, the developer/permit applicant shall enter into Native American Monitor agreement(s) with the consulting tribe(s) for the appropriate number of Native American Monitor(s). In conjunction with the Archaeological Monitor(s), the Native American Monitor(s) shall attend the pregrading meeting with the contractors to provide cultural sensitivity training for all construction personnel. In addition, an adequate number of Native American Monitor(s) shall be on site during all initial ground-disturbing activities and excavation of soils in each portion of the project site, including clearing, grubbing, tree removals, grading, and trenching. In conjunction with the Archaeological Monitor(s), the Native American Monitor(s) have the authority to temporarily divert, redirect, or halt the ground-disturbance activities to allow identification, evaluation, and potential recovery of cultural resources. Activities will be documented in Tribal Monitoring Notes, which will be required to be submitted to the County Archaeologist before Grading Permit Final Inspection. The developer/permit applicant shall submit a fully executed copy of the agreement(s) to the County Archaeologist to ensure compliance with this condition of approval. Upon verification, the County Archaeologist shall clear this condition. This agreement shall not modify any condition of approval or mitigation measure.

Before Grading Permit Final Inspection

Phase IV Cultural Resources Monitoring Report

Before Grading Permit Final Inspection, a Phase IV Cultural Resources Monitoring Report shall be submitted that complies with the Riverside County Planning Department's requirements for such reports for all ground-disturbing activities associated with this grading permit. The report shall follow the County of Riverside Planning Department Cultural Resources (Archaeological) Investigations Standard Scopes of Work posted on the Transportation and Land Management Agency (TLMA) website. The report shall include results of any feature relocation or residue analysis required, as well as evidence of the required cultural sensitivity training for the construction staff held during the required pregrading meeting and evidence that any artifacts have been treated in accordance to procedures stipulated in the cultural resource monitoring plan. The report will also include the Tribal Monitoring notes as a confidential appendix. Once approved by the County Archaeologist, the Project Archaeologist shall provide a copy to the consulting tribes and the SCIC.

Tribal Monitoring Notes

Before Grading Permit Final Inspection, a complete set of Tribal Monitoring Notes shall be submitted to the County Archaeologist. Upon receipt and approval of the notes, the condition will be cleared.

Artifact Disposition

In the event that cultural resources are identified during ground-disturbing activities, the landowner(s) shall relinquish ownership of all cultural resources (including sacred items, burial goods, and human remains) and provide evidence to the satisfaction of the County Archaeologist that all archaeological materials recovered during the archaeological investigations (including collections made during an earlier project, such as testing of archaeological sites that took place years ago) have been handled through one of the following methods.

1. **Historic Resources:** All historic archaeological materials recovered during the archaeological investigations (this includes collections made during an earlier project, such as testing of archaeological sites that took place years ago), shall be curated at the Western Science Center, a Riverside County curation facility that meets State Resources Department Office of Historic Preservation Guidelines for the Curation of Archaeological Resources ensuring access and use pursuant to the Guidelines.
2. **Precontact Resources:** A fully executed reburial agreement with the appropriate culturally affiliated Native American tribe(s) or band(s). This shall include measures and provisions to protect the reburial area from any future impacts. Reburial shall not occur until all cataloging, analysis, and special studies have been completed on the cultural resources. Details of contents and location of the reburial shall be included in the Phase IV Cultural Resources Monitoring Report. The details of any disposition of artifacts shall be documented in the Phase IV Cultural Resources Monitoring Report.

Deed Restrictions

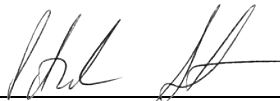
At the conclusion of all construction activities, the project proponent and the landowner shall record a deed restriction on the reburial location, if used, with the County to restrict development of these areas in the future. Deed restrictions shall not disclose the nature of the avoidance areas. A copy of the deed restriction(s) shall be submitted to the County planning staff as proof of compliance before the issuance of certificates of occupancy for the project.

Certification

CERTIFICATION: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this archaeological report and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: May 27, 2025

Signed: _____



Printed Name: Patrick B. Stanton

County Registration No.: _____

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Personnel Qualifications



Alyssa R. Canoff

Education

- M.A., Applied Archaeology, California State University, San Bernardino, 2023
B.A. Anthropology, San Diego State University, San Diego, 2014

Qualifications

- Ms. Canoff has been involved in archaeological research since 2013. She has conducted a variety field, laboratory, and writing tasks including archaeological survey, excavation, and construction monitoring. Ms Canoff is familiar with federal procedures for conducting fieldwork under Sections 106 and 110 of the National Historic Preservation Act and under the California Environmental Quality Act. She has extensive experience identifying and recording prehistoric and historical-period archaeological sites and is proficient in Global Positioning System (GPS) mapping and GIS analysis.

Areas of Interest and Expertise

- Has extensive experience using GPS technology for mapping archaeological resources; is proficient in data management; is familiar with updating and maintaining metadata for geodatabases and digitizing project information into geodatabases

Professional Experience

- 2023–present, Project Director, Statistical Research, Inc. (SRI), Redlands, California
- 2022–Present, Assistant Project Director, Statistical Research, Inc.
- 2018–2022, Crew Chief, Statistical Research, Inc.
- 2018, GIS (contractor), AJP Consulting, San Diego
- 2017–2018, Archaeological Technician, ASM Affiliates, Carlsbad, California
- 2017, GIS/Archaeological Technician, Black Hills National Forest, Bearlodge Ranger District, Sundance, Wyoming
- 2014–2017, GIS/Archaeological Technician, Bureau of Land Management, Barstow Field Office, Barstow, California

Selected Projects

- Project Director, Rush Creek Hydroelectric Dam Survey (archaeological survey of 693 acres for Federal Energy Regulatory Commission relicensing), for Stantec and Southern California Edison (SCE), 2023–present
- Project Director, Manzanar Alternative Survey (archaeological survey of 727 acres for a transmission line), for SWCA Environmental Consultants (SWCA) and SCE, 2023–present
- Project Director, SCE Deteriorated Pole Surveys (multiple task orders for surveys of approximately 60 poles) for Environmental Intelligence and SCE, 2023
- Assistant Project Director, Apple Valley Industrial Master Plan Survey (archaeological survey of approximately 360 acres), for Uncommon Developers, 2023
- Assistant Project Director, China Lake Wild Burro and Horse Trap Survey (archaeological survey of nine survey locations designated

for horse trap placement of Naval Air Weapons Station [NAWS] China Lake), California, 2022–2023

- Assistant Project Director, China Lake Darwin Wash Explosive Ordnance Disposal Range Survey (archaeological survey of 2,124 acres of land in the Darwin Wash area of NAWS China Lake), 2022–2023
- Assistant Project Director, Indian Wells Tennis Gardens Parking Lot Project (archaeological monitoring at CA-RIV-1530 and CA-RIV-5876), for Desert Champions, 2021–2022
- Assistant Project Director, Marine Corps Air Ground Combat Center CASMET Site Assessments (site condition assessment for approximately 520 archaeological sites), for Naval Facilities Engineering Command Southwest (NAVFAC SW), 2019–2022
- Assistant Project Director/Crew Chief, Coachella Valley Arena Monitoring (archaeological monitoring for proposed sports/event arena), for SoCal Arena, LLC, 2021–2022
- Crew Chief, Data Recovery Excavations in the Chinatown and the Santa Fe Depot Historic District (data recovery excavations at historical-period archaeological site CA-SBR-5341H to mitigate adverse effects of a proposed commercial development on this National Register of Historic Places–[NRHP–] eligible and California Register of Historical Resources–eligible property, Redlands, San Bernardino County, California, for City of Redlands, 2019–present
- Crew Chief, Data Recovery at CA-RIV-162 (data recovery at CA-RIV-162, a prehistoric and ethnohistoric site on the Agua Caliente Indian Reservation, at the *Sec he* mineral hot spring), Palm Springs, California, for Agua Caliente Band of Cahuilla Indians, 2018–present

Selected Publications

- 2019 *Archaeological Survey Support, October to December 2018, Marine Corps Air Ground Combat Center, Twentynine Palms, California* (with A. H. Keller). Technical Report 19-21. Statistical Research, Redlands.



Patrick B. Stanton

Education

- M.A., Anthropology, Wichita State University, 2003
- B.A., Anthropology, University of Tennessee-Knoxville, 2000

Qualifications

- Patrick B. Stanton is Registered Professional Archaeologist with over a decade of experience working in southern and central California as well as Arizona, Iowa, Kansas, Texas, and Sonora, Mexico. As a Project Director, Mr. Stanton has directed survey, monitoring, testing, and data recovery excavations at multiple archaeological field projects involving prehistoric and historical-period resources for a variety of private firms and public agencies including the Bureau of Land Management and the National Forest Service. Mr. Stanton has conducted numerous Heritage Record Searches at the San Bernardino National Forest Headquarters as well as records-searches at the BLM Ridgecrest Field Office and at CHRIS Information Centers in San Bernardino, Riverside, and Los Angeles Counties. Mr. Stanton is a trained human osteologist and has analyzed and supervised the analysis of hundreds of human burials from historical-period, prehistoric, and modern/forensic settings. Mr. Stanton meets the U.S. Secretary of the Interior's Professional Qualification Standards for archaeology and is familiar with evaluation criteria of CEQA, NEPA, and Sections 106 and 110 of NHPA. Major California publications include research reports for projects in San Bernardino, Riverside, and Los Angeles Counties, San Bernardino Mountains, Ballona Wetlands, and the Mojave and, Colorado Deserts.

Professional Experience

- 2019–Present, Principal Investigator and Assistant Office Director, Statistical Research, Inc., Redlands, California
- 2017–2019, Senior Project Director, Statistical Research, Inc., Redlands, California
- 2010–2017, Project Director, Statistical Research, Inc, Redlands, California
- 2010, Archaeologist, University of Iowa, Office of State Archaeologist, Dubuque, Iowa
- 2003–Present, Osteologist, Statistical Research, Inc, Redlands, California
- 2003–2009, Crew Chief, Statistical Research, Inc, Redlands, California
- 2003, Archaeological Field Technician, Statistical Research, Inc., Redlands, California

Selected Projects

- Principal Investigator, University Park Planning Area 3 Monitoring, Palms Springs, California, for University Park Investor, LLC, 2022–Present
- Principal Investigator, Desert Retreat Specific Plan Cultural Resource and Paleontological Study Project, Indio, California, 2021–Present

- Principal Investigator, Coachella Valley Arena East Parking Project, Thousand Palms, California, for McCarthy Building Companies, Inc., 2021–2022
- Principal Investigator, 1,600 Foot Imperial Irrigation District Distribution Line Extension Project, near Thousand Palms, California, for CAA ICON, 2021
- Principal Investigator, Marine Corps Air Ground Combat Center CASMET Site Assessments, for Naval Facilities Engineering Command Southwest (NAVFAC SW), 2019–Present
- Principal Investigator, Marine Corps Air Ground Combat Center 27,000-acre Survey, for Naval Facilities Engineering Command Southwest (NAVFAC SW), 2019–Present

Registration and Permits

- Register of Professional Archaeologists (989159)

Selected Publications

- 2022 Draft *Desert Retreat Specific Plan Cultural Resource and Paleontological Study, Indio, Riverside County, California* (with Felicia De Peña and Joseph El-Adli). Technical Report 22-104. Draft report submitted to Meridian Consultants. Statistical Research, Redlands, California.
- 2022 *Cultural Resources Monitoring report for the Coachella Valley Arena East Parking Project, Palm Desert, California*. Patrick B. Stanton and Jeanine M. Hoy. Prepared for McCarthy Building Companies, Inc. and County of Riverside, Planning Department. Technical report 22-100. Statistical Research, Inc. Redlands, California.
- 2021 *Phase 1 Cultural resources Assessment of a 1,600-Foot Extension of the Imperial Irrigation District Distribution Line in Support of the Coachella Valley Arena Project, near Thousand Palms, Riverside County, California*. Prepared for County of Riverside Planning Department. Technical Report 21-24. Statistical Research, Redlands, California.

Soil Pedon Descriptions for the Project Area (Township 6 South, Range 7 East, Section 11)

Gilman Series

The Gilman series consists of very deep, well drained soils that formed in stratified stream alluvium. Gilman soils are on flood plains and alluvial fans and have slopes of 0 to 3 percent. The mean annual precipitation is about 7 inches and the mean annual air temperature is about 71 degrees F.

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, hyperthermic Typic Torrifluvents

Typical pedon: Gilman loam - cultivated. (Colors are for dry soil unless otherwise noted.)

Ap: 0 to 13 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few fine and medium roots; few fine tubular and common fine irregular pores; common fine and very fine mica flakes; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (6 to 18 inches thick)

C1: 13 to 28 inches; pale brown (10YR 6/3) stratified very fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and slightly plastic; common fine and few medium roots; few fine tubular and common fine irregular pores; common to many fine and very fine mica flakes; few fine gravel; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary. (8 to 40 inches)

C2: 28 to 60 inches; brown (10YR 5/3) stratified very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and slightly plastic; few fine roots; few fine tubular and common fine and very fine irregular pores; common fine and very fine mica flakes; few fine gravel; strongly effervescent; moderately alkaline (pH 8.2).

Type location: Maricopa County, Arizona; 2,500 feet south and 1,270 feet east of the northwest corner of section 10, T. 2 S., R. 7 E. Latitude of 33 degrees, 16 minutes, 14 seconds N., Longitude of 111 degrees, 37 minutes, 50 seconds W., NAD 83.

Range in characteristics: Soil moisture - Intermittently moist in some part of the soil moisture control section during July-September and December-February. Driest during May and June. Typic aridic soil moisture regime.

Rock fragments - Less than 35 percent gravel

Reaction - Neutral to very strongly alkaline

Salinity: Nonsaline to strongly saline

SAR: Usually is less than 4, but ranges up to 15 in some pedons

A horizon

Hue: 10YR, 7.5YR

Value: 4 through 7 dry, 3, 4, 5 or 6 moist

Chroma: 2, 3, 4 or 6 dry, 2, 3, 4 or 5 moist

Texture: loamy sand to clay

Organic matter: less than 1 percent; decreases irregularly with depth

Calcium Carbonate: noneffervescent to strongly effervescent

C horizon

Hue: 10YR, 7.5YR

Value: 3, 4, 5, 6 or 7 dry, 3, 4, 5 or 6 moist

Chroma: 2, 3, 4 or 6 dry, 2 through 6 moist

Texture: loam, very fine sandy loam, silt loam; some have minor strata of finer or coarser textures.

Calcium Carbonate: slightly to violently effervescent; disseminated or mycelia-like filaments.

Buried horizons: buried argillic horizons occur below 40 inches in some pedons

Competing Series: These are the Antho (AZ) and Maripo (AZ) series. Antho soils have moderately coarse textured (sandy loam and fine sandy loam) C horizons. Maripo soils are underlain by sand at 20 to 40 inches.

Geographic Setting: The Gilman soils are on flood plains and alluvial fans and have slopes of 0 to 3 percent. Elevations are 75 to 2500 feet. The soil formed in stratified stream alluvium from mixed sources. The mean annual precipitation is 2 to 10 inches. Mean annual air temperature is 70 to 76 degrees F. Frost-free period is about 240 to 350 days.

Geographically Associated Soils: These are the competing Antho soils and the similar Carrizo, Glenbar, Mohall, Pimer and Vint soils. Carrizo soils are skeletal. Glenbar soils are fine-silty. Mohall soils have argillic horizons. Pimer soils are fine-silty and have more than 1 percent organic matter. Vint soils are sandy.

Drainage and Permeability: Well drained; slow runoff; moderate permeability.

Use and Vegetation: Used for livestock grazing and irrigated cropland. Under cultivation, Gilman soils are used for growing alfalfa, cotton, grains, sugar beets and truck crops such as melons, lettuce, onion, carrots, broccoli and potatoes. Native vegetation is mesquite, catclaw, creosotebush, arrowweed and saltbush. Cottonwoods, willows and salt cedar grow in open areas.

Distribution and Extent: Southern Arizona. Gilman soils are extensive. Total extent is about 409,000 acres. MLRA is 40.

Myoma Series

Typically, Myoma soils are light olive gray, moderately alkaline fine and very fine sands to a depth of about 31 inches. Below 31 inches they are strongly alkaline very fine sands.

Taxonomic class: Mixed, hyperthermic Typic Torripsamments

Typical pedon: Myoma fine sand - uncultivated. (Colors are for dry soil unless otherwise noted.)

C1: 0 to 18 inches; light olive gray (5Y 6/2) fine sand, olive gray (5Y 5/2) moist; single grain; loose dry and moist; common very fine and few fine roots; some conch shells; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (9 to 20 inches thick)

C2: 18 to 24 inches; light olive gray (5Y 6/2) very fine sand, olive gray (5Y 5/2) moist; single grain, loose; few common very fine roots; highly micaceous; cross bedding; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary. (3 to 10 inches thick)

C3: 24 to 31 inches; light olive gray (5Y 6/2) fine sand, olive gray (5Y 5/2) moist; single grain; loose; few very fine and fine roots; few conch and clam shells; moderately alkaline (pH 8.4); clear wavy boundary. (6 to 14 inches thick)

C4: 31 to 60 inches; light olive gray (5Y 6/2) very fine sand, olive gray (5Y 4/2) moist; single grain; loose; few very fine roots; few conch and clam shell; strongly effervescent; strongly alkaline (pH 8.6)

Type location: Riverside County, California; 3 miles south of Indio; 440 feet east and 100 feet south of N1/4 corner section 11, T. 6 S., R. 7 E. SBBM.

Range in characteristics: The texture of the C1 horizon is very fine sand to sand. Hue is 2.5Y and yellower, value is 5 through 7 dry and 3 through 6 moist with chroma of 1 through 3 moist and dry. The control section has less than 15 percent coarse fragments and less than 15 percent of coarse and very coarse sand. The profile throughout is moderately to strongly alkaline with slight to violent effervescence.

Competing Series: These are the Carrizo, Carsitas, Coachella, Delhi, and Rositas series. Carrizo soils have more than 35 percent coarse fragments. Carsitas soils have 15 to 35 percent coarse fragments. Coachella soils have an irregular decrease in organic matter in the control section. Delhi soils have a thermic temperature regime. Rositas soils have hue of 10YR or redder throughout.

Geographic Setting: Myoma soils are nearly level to rolling, have hummocky micro relief where unprotected and are at elevations of 200 feet below sea level to 1,800 feet above sea level. The soil formed in sand blown from recent alluvium. The climate is arid with an annual precipitation of 2 to 4 inches that occurs as gentle winter rain or erratic high intensity summer storms. The average January temperature is about 53 degrees F., average July temperature is 92 degrees F. and the average annual temperature is about 72 to 75 degrees F. The frost-free season (32 degrees F.+) is about 290 days.

Geographically Associated Soils: These are the competing Carsitas and Coachella series and the Gilman, Niland, and Salton soils. Gilman soils have a coarse-loamy control section. Niland soils have contrasting textures in the control section, sandy over clayey. Salton soils have a fine-silty control section.

Drainage and Permeability: Somewhat excessively drained; very slow runoff; rapid permeability.

Use and Vegetation: Myoma soils are used principally for growing citrus fruits, grapes, alfalfa, dates and truck crops under irrigation. Native vegetation is ephemeral grasses and forbs, and a sparse cover of creosotebush, bush sunflower and mesquite.

Distribution and Extent: Southern California. Myoma soils are extensive.

Indio Series

The Indio series consists of very deep, well or moderately well drained soils formed in alluvium derived from mixed rock sources. Indio soils are on alluvial fans, lacustrine basins and flood plains and have slopes of 0 to 3 percent. The mean annual precipitation is about 4 inches and the mean annual air temperature is about 72 degrees F.

Taxonomic Class: Coarse-silty, mixed, superactive, calcareous, hyperthermic Typic Torrifluvents

Typical Pedon: Indio very fine sandy loam - cultivated; on a less than 1 percent slope at an elevation of about 110 feet. (Colors are for dry soil unless otherwise noted).

Ap: 0 to 10 inches; light brownish gray (2.5Y 6/2) very fine sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common fine roots; few small fresh water shells and fragments of shells; micaceous; strongly effervescent, disseminated calcium carbonate; moderately alkaline (pH 8.2); clear smooth boundary. (6 to 12 inches thick)

C: 10 to 60 inches; light brownish gray (2.5Y 6/2) stratified very fine sandy loam and silt loam; massive and weak thick plates; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; few small fresh water shells and fragments of shells; micaceous; strongly effervescent, disseminated calcium carbonate; moderately alkaline (pH 8.2). (More than 30 inches thick)

Type Location: Riverside County, California; about 100 feet east and 50 feet south of the north 1/4 corner of section 30, T.6 S., R.8 E.

Range in Characteristics: Soil moisture - Intermittently moist in some part of the soil moisture control section during December - February and July - September. Driest during May and June. Typic aridic soil moisture regime.

Soil temperature - 72 to 76 degrees F.

Organic matter - less than 1 percent in the upper 10 inches and decreases irregularly with depth

A, AC, Ap horizons

Hue: 7.5YR, 10YR, 2.5Y

Value: 5 through 7 dry, 3 through 5 moist

Chroma: 2 through 6, dry or moist

Texture: very fine sandy loam, silt loam, loam, fine sandy loam, sandy loam, silty clay loam, clay loam

C horizon

Hue: 7.5YR, 10YR, 2.5YR

Value: 5 through 7 dry, 3 through 5 moist

Chroma: 2 through 6, dry or moist

Texture: stratified very fine sandy loam, loam, silt loam, silt (less than 18 percent clay and less than 15 percent fine and coarser sand)

Stratification: strata of loamy fine sand, sandy loam, silt loam, silt, silty clay loam, clay, silty clay

Rock fragments: less than 3 percent gravel and/or few small shell fragments

Reaction: moderately to very strongly alkaline

Calcium carbonate: disseminated throughout

Salinity: 0 to 51 dS/m

Sodium Adsorption Ratio: 0 to 523

Competing Series: There are no competing series.

Geographic Setting: Indio soils are on lacustrine basins, alluvial fans and floodplains at elevations ranging from about 1400 feet above sea level to 230 feet below sea level. Slopes are 0 to 3 percent except for a few low banks next to stream channels. The soils formed in young calcareous, silty mixed alluvium. The mean annual precipitation is 3 to 10 inches. Summer storms are infrequent, erratic, and may be violent, and winter rains are infrequent and gentle. The average January temperature is about 50 degrees F., the average July temperature is about 90 degrees F., the mean annual air temperature is about 70 to 74 degrees F. The frost-free period is about 240 to 365 days.

Geographically Associated Soils: These are the Coachella, Holtville, Imperial, and Rositas soils. Holtville soils have silty clay or clay texture in the upper part of the control section. Imperial soils are dominantly silty clay. Rositas and Coachella soils are sandy.

Drainage and Permeability: Indio soils are well or moderately well drained. Some irrigated areas with a water table have tile drains to maintain water below depths of 3 to 5 feet and to remove soluble salts. Runoff is slow. Permeability is moderate.

Use and Vegetation: Used for irrigated cropland and livestock grazing. Common crops are cotton, barley, grapes, citrus, dates, and other crops. In other areas, the present vegetation is shadscale, bursage, arrowweed, and other plants. Such areas provide ephemeral grazing in unusually wet years.

Distribution and Extent: Southeastern California and southern Arizona. Indio soils are moderately extensive. MLRA is 30 or 31 and 40 in hyperthermic areas used for irrigated cropland.