APPENDIX K

Cultural Resources Inventory and Evaluation for the Avila Ranch Development, San Luis Obispo, California

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Cultural Resources Inventory and Evaluation for the Avila Ranch Development, San Luis Obispo, California

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MANAGEMENT SUMMARY

At the request of Mr. Stephen Peck, Applied EarthWorks, Inc. (*Æ*) conducted a cultural resources inventory and evaluation for the proposed Avila Ranch Development (Project) in the City of San Luis Obispo, California. The objectives of the study were to identify and record archaeological and historical resources on the subject property, gather information to determine whether the project will affect any significant resources within the Project site, and recommend procedures for avoidance or mitigation of impacts to resources eligible for inclusion in the California Register of Historical Resources (CRHR). A records search revealed that six previous investigations have occurred within the Project area and one prehistoric archaeological site (CA-SLO-1365) and two historic sites (CA-SLO-1002H and CA-SLO-2617H) are recorded adjacent to the Project area. As part of the current study, *Æ* contacted the California Native American Heritage Commission (NAHC) and local tribal representatives to solicit their input on potential tribal resources. All cultural resources work was performed in compliance with the California Environmental Quality Act (CEQA), Section 15064.5 of the CEQA Guidelines, and PRC Section 5024.1.

The current use of the Project area is agricultural, and due to growing crops which restricted visibility, the field survey was conducted in three separate stages when the land was cultivated. *Æ* conducted the field surveys in July and September 2015. One previously unidentified prehistoric and historic site (CA-SLO-2798/H) and one historic feature (P-40-038310) were recorded. *Æ* found that the historic feature does not meet the significance criteria of the CRHR.

In August 2015, *Æ* conducted test excavation at CA-SLO-2798/H to define the horizontal and vertical boundaries, contents, and integrity of the site and assess its eligibility for the CRHR. The historic component of the site is a surface deposit of structural and domestic debris from a barn that once stood on the property. The prehistoric deposit is consistent with a single component Early Holocene Millingstone site. *Æ* found the prehistoric portion of CA-SLO-2798/H significant and eligible for the CRHR under Criterion 4.

To mitigate significant impacts on CA-SLO-2798/H, *Æ* recommends controlled grading of the site prior to construction to seek buried features and additional diagnostic artifacts. Controlled grading should occur in 10-centimeter lifts to culturally sterile sediments or maximum construction depth (whichever is reached first) under the supervision of an archaeologist and Native American monitor. The archaeologist will collect any formed tools exposed during grading and add this information to the archaeological record. If features such as hearths, storage pits, or structural remains are exposed, the archaeologist will temporarily redirect grading to another area so the features can be exposed, recorded, and sampled according to standard archaeological procedures. A report, update, and/or appendix to the site record (as determined by the Project archaeologist dependent on findings) will follow grading. Additionally, an archaeologist and Native American representative should monitor grading or other ground disturbance throughout the Project area due to the general archaeological sensitivity of the area.

Field notes, maps, and photographs from the survey are on file at Applied EarthWorks' office in San Luis Obispo, California. A copy of the final version of this report will be submitted to the

Central Coast Information Center of the California Historical Resources Information System housed at the University of California, Santa Barbara.

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1
INTRODUCTION

At the request of Stephen Peck, Applied EarthWorks, Inc. (*Æ*) conducted a cultural resources inventory and evaluation for the proposed residential and commercial Avila Ranch Development (Project) in San Luis Obispo, California. This Project is located within unsectioned lands of the Bolsa de Chamisal Land Grant, Township 31S, Range 12E, Sections 10 and 11 as depicted on the U.S. Geological Survey 7.5-minute Pismo Beach, California, topographic quadrangle (Figures 1-1 and 1-2).

1.1 PROJECT DESCRIPTION

The 165-acre Project area is located on the east side of Highway 101 between Vachell Lane and Buckley Road, adjacent to South Higuera Street (Figure 1-3) in the southwestern part of the City of San Luis Obispo (City). Project plans call for development of a mixed-use residential, commercial, and green space complex. The complex includes areas of high (4.65 acres), medium-high (10.0 acres), medium (36.4 acres) and low (11.3 acres) density residential units and 3.77 acres of commercial property, with the remaining acreage devoted to green space.

This study was performed in compliance with the California Environmental Quality Act (CEQA), Section 15064.5 of the CEQA Guidelines, and PRC Section 5024.1, which establishes the California Register of Historical Resources (CRHR). These statutes and guidelines require local agencies to take into account the effects of projects on historical resources including archaeological sites. Under CEQA, historical resources are properties listed in or determined eligible for listing in the CRHR.

As part of this study, Applied EarthWorks, Inc. (*Æ*) completed a records search at the Central Coast Information Center (CCIC) and a Phase 1 surface inspection within the Project area. Additionally, *Æ* reached out to the local Native American community through contact with the Native American Heritage Commission (NAHC) and local groups and tribes. Field survey identified one previously unrecorded archaeological site, CA-SLO-2798/H, and one isolated historic feature, P-40-038310, within the Project area. *Æ* completed archaeological testing at CA-SLO-2798/H to define the surface and subsurface extent, content, and integrity of the site and evaluate its significance and eligibility for listing in the CRHR. This report provides recommendations for mitigation of impacts on significant historical resources.

1.2 PERSONNEL QUALIFICATIONS

All *Æ* staff members who participated in this cultural resource investigation meet the Secretary of Interior's Professional Qualification Standards for their respective roles. Barry Price (M.A.), a Registered Professional Archaeologist (RPA), served as principal investigator for the study. *Æ* Senior Archaeologist Erin Enright (M.A., RPA) served as project manager and project archaeologist. Staff Archaeologist Simone Schinsing (M.A., RPA) performed background research, Native American outreach, fieldwork, and report preparation. Staff Archaeologists

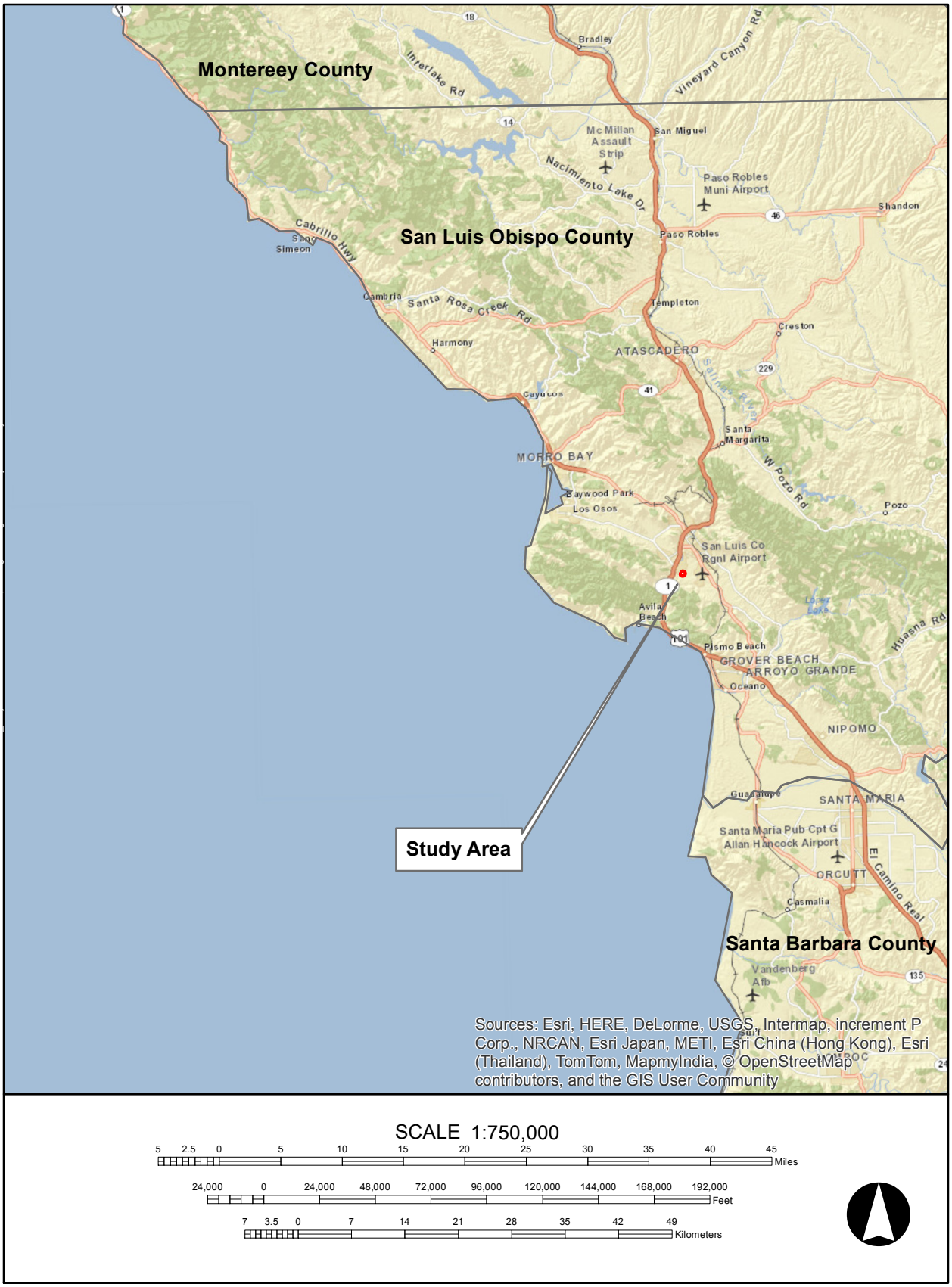


Figure 1-1 Project Vicinity, Avila Ranch, in San Luis Obispo California.

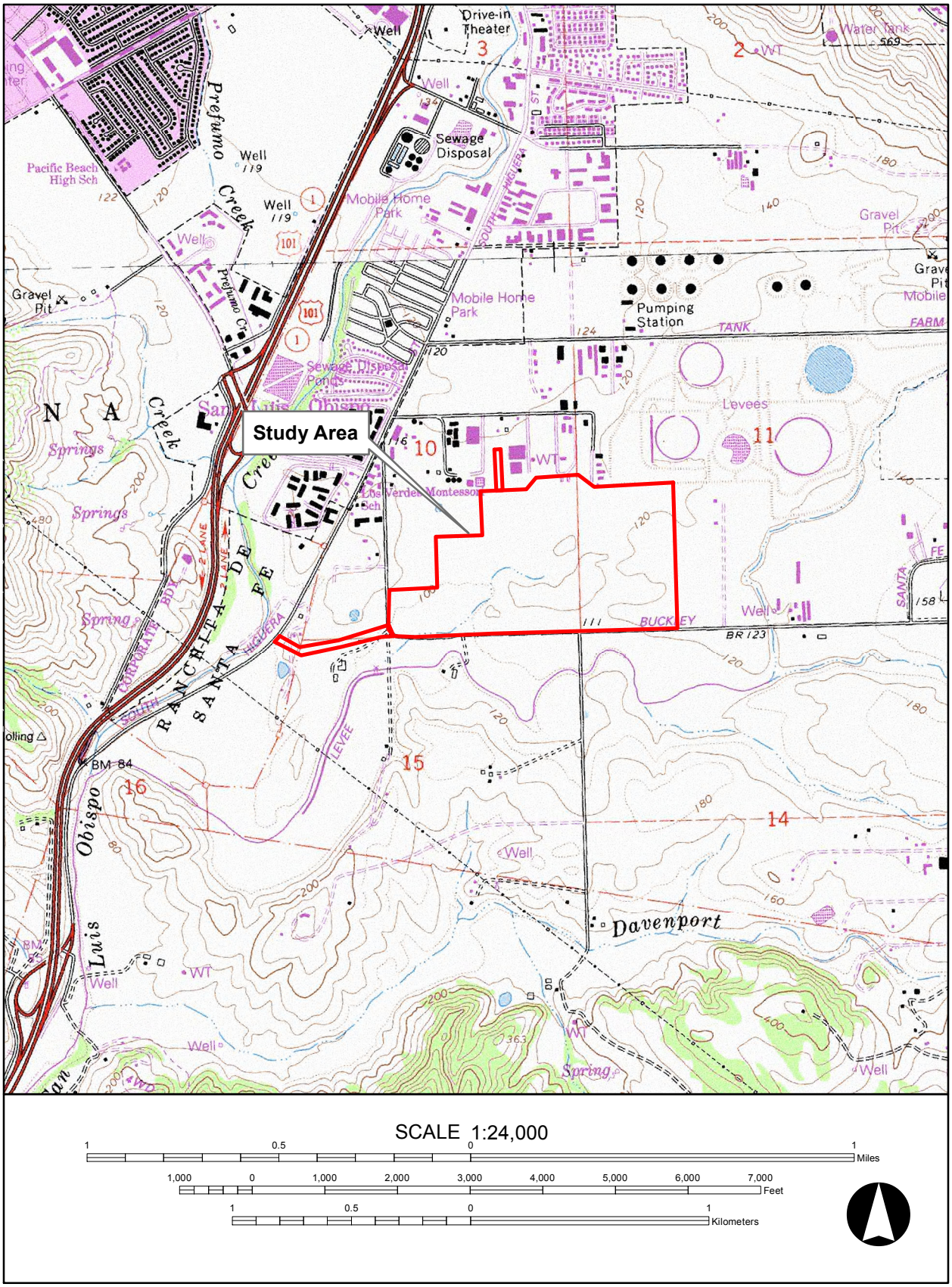


Figure 1-2 Avila Ranch Survey Area.

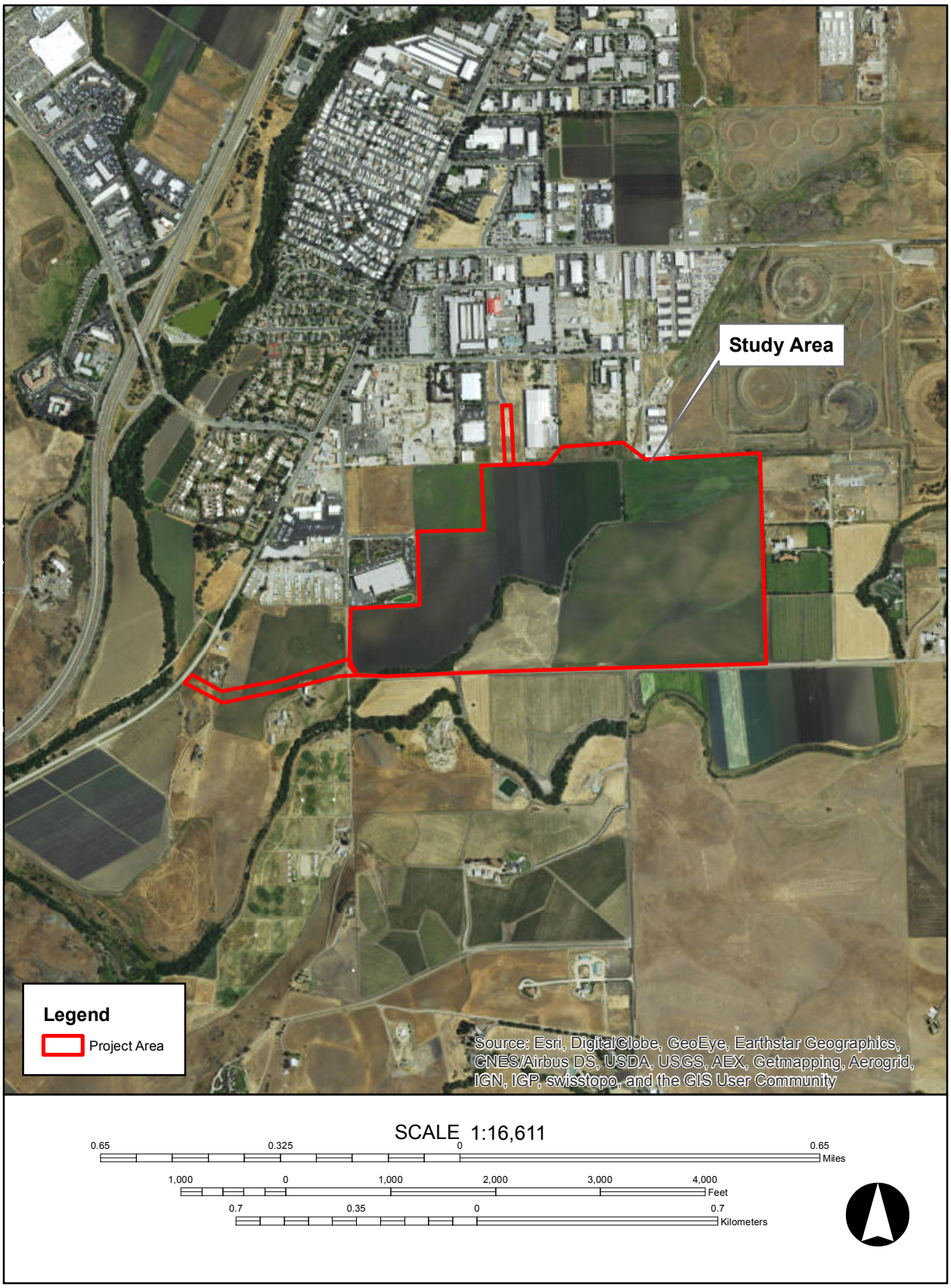


Figure 1-3 Aerial view, Avila Ranch Project area, San Luis Obispo, California.

Marc Linder, Simone Schinsing, and Ryan Wendel performed the field survey and site recording. Project Archaeologist Erin Enright and Staff Archaeologists Marc Linder, Simone Schinsing, Bryon Schroeder, and Ryan Wendel performed the Phase 2 field effort. Mona Olivas Tucker, Tribal representative for the *yak tityu tityu yak tilhini*—Northern Chumash Tribe served as the Native American Advisor during the Phase 2 effort.

1.3 REPORT ORGANIZATION

This report documenting the results of Æ's study of the Avila Ranch property, was prepared in accordance with *Archaeological Resource Management Reports: Recommended Contents and Format* prepared by the California Office of Historic Preservation (OHP 1990). The document consists of eight chapters. Following this introduction, Chapter 2 describes the natural and cultural setting of the Project area, and Chapter 3 presents the research context for the Project. Chapter 4 presents Æ's methods for the study, including background research, field investigations, and laboratory procedures. The findings of the Phase 1 study are presented in Chapter 5, and the findings of the Phase 2 study are presented in Chapter 6. Chapter 7 contains a summary and recommendations. A complete listing of references cited is provided in Chapter 8.

The results of the records search are provided in Appendix A. Letters of communication with the Native American community are found in Appendix B. The completed California Department of Parks and Recreation (DPR) 523 series forms for the cultural resources recorded during this investigation are provided in Appendix C. A provenience information log (PIL) listing provenience details, excavation method and volume, and other relevant data for each assigned lot, is found in Appendix D.

2
BACKGROUND

2.1 NATURAL SETTING

The Project area lies within San Luis Obispo County in the southern extent of the Coast Ranges geologic province. The Coast Ranges were formed by pressure between the North American and Pacific plates, which folded the North American Plate into a series of northwest-southeast trending ridges and valleys and raised the coastline (Pletka and Pletka 2004). The Project is in the southeastern extent of Los Osos Valley, north of Davenport Creek, and west of San Luis Obispo Creek. Several small ephemeral drainages cover the project vicinity and drain to San Luis Obispo Creek. One drainage flows from the northeast across the Project area to the southwestern corner of the property, uniting with San Luis Obispo Creek southwest of the parcel. Geology of the area includes Pleistocene-Holocene unconsolidated and semi-consolidated mostly non-marine alluvium, lake, and terrace deposits (California Geological Survey 2010).

The local Mediterranean climate is typically warm and dry in the summer and cool and wet in the winter. Most of the county's rivers, creeks, and streams remain dry during the summer months. Temperatures near the coast are generally moderated by the proximity of the Pacific Ocean. Average annual temperatures in San Luis Obispo range from 47 to 80 degrees Fahrenheit, with August being the warmest month and December and January being the coldest. Precipitation occurs primarily as winter rain between November and March, with the wettest month usually being January. Mean annual precipitation in San Luis Obispo is 22.6 inches (World Climate 2015).

Within the Project area, a small tributary of the San Luis Obispo Creek supports a riparian corridor consisting of willow, thistle, teasel, poison hemlock, and stinging nettle. However, the Project area has been regularly disturbed by agricultural planting, grading, and tilling. The ground surface vegetation differed across the Project area, which was covered with a layer of safflower duff from recent harvesting with a few areas clear of all vegetation.

2.2 PREHISTORY AND ARCHAEOLOGY

Most of the research into the prehistory of the Central Coast has concentrated on the Santa Barbara Channel region, where the Barbareño Chumash developed a highly complex social system during late prehistory, however; recent studies regarding the prehistory and archaeology of San Luis Obispo County have been conducted by Bertrando and Levulett (2004), Farquhar et al. (2011), Fitzgerald (2000), Jones et al. (1994), Jones and Waugh (1995), and Mikkelsen et al. (2000). While it is clear that there are many differences between the Chumash groups living north and south of Point Conception, there are some broad patterns of cultural change applicable to both regions.

Regional chronology has been a source of debate among scholars, and San Luis Obispo County still lacks a well-dated sequence. Early attempts at regional cultural chronology by Rogers (1929) and Olson (1930) divided prehistory into three periods. However, extensive

archaeological studies since then and development of more precise dating methods have allowed many refinements to the regional chronology. Currently, the most common chronological sequence—based on work by Erlandson and Colten (1991), Jones and Ferneau (2002), Jones et al. (2007), and King (1990)—divides Central Coast prehistory into six periods:

- Paleo-Indian (pre-8000 B.C. [11000–8500 B.P.])
- Early Holocene (8000–3500 B.C. [8500–5500 B.P.])
- Early (3500–600 B.C. [5500–3000 B.P.])
- Middle (600 B.C.–A.D. 1000 [3000–1000 B.P.])
- Middle/Late Transition (A.D. 1000–1250 [1000–700 B.P.])
- Late (A.D. 1250–1769 [700 B.P.–Historic])

The Paleo-Indian Period represents the earliest human occupations in the region, which began prior to 10,000 years ago. Paleo-Indian sites throughout North America are known by the representative fluted projectile points, crescents, large bifaces used as tools as well as flake cores, and a distinctive assemblage of small flake tools. In the Project area, however, this representative Paleo-Indian assemblage has not been discovered; only three fluted points have been reported from Santa Barbara and San Luis Obispo counties, and all are isolated occurrences unassociated with larger assemblages of tools or debris (Erlandson et al. 1987; Gibson 1996; Mills et al. 2005). Sites on San Miguel and Santa Rosa islands have yielded numerous radiocarbon dates of Paleo-Indian age but did not produce fluted points or other notable artifacts (Agenbroad et al. 2005; Erlandson et al. 1996). Nonetheless, these offshore sites provide clear evidence of watercraft use by California's earliest colonizers, and also offer tantalizing evidence of pre-Clovis occupations.

Another likely Late Paleo-Indian site with a more robust artifact assemblage is CA-SBA-1547, on Vandenberg AFB (Lebow et al. 2014). Overall, inhabitants of the Central Coast during the Paleo-Indian Period are thought to have lived in small groups with a relatively egalitarian social organization and a forager-type land-use strategy (Erlandson 1994; Glassow 1996; Greenwood 1972; Moratto 1984).

More conclusive evidence of human occupation has been found at sites dating to the early Holocene, between 8000 and 5000 B.C. A growing number of early Holocene components have been identified, most located in coastal or pericoastal settings. Two such components, at CA-SLO-2 (Diablo Canyon) and CA-SLO-1797 (the Cross Creek Site), are radiocarbon dated between 8300 and 6500 B.C., providing the earliest evidence for the widespread California Millingstone adaptive pattern (Greenwood 1972; Jones et al. 2008). The most common artifacts in these assemblages are the eponymous milling slabs and handstones used to grind hard seeds and process other foodstuffs. Choppers, core tools, and large bifaces also are common, while side-notched dart points, pitted stones, simple bone awls, bipointed bone gorges, and possible eccentric crescents occur in lesser frequencies. Population density likely remained low, although settlements may have been semi-permanent. Subsistence activities appeared to be aimed broadly at a diverse spectrum of terrestrial and marine resources.

Millingstone components from central California show substantial regional variability (Sutton and Gardner 2010). Differences in site location, artifact assemblages, and faunal remains suggest that populations were beginning to establish settlements tethered to the unique characteristics of the local environment and adopt subsistence practices responsive to local conditions. Obsidian from several of these components originated on the east side of the Sierra Nevada, suggesting that long-distance trade networks were also established during this era. Glassow (1990, 1996) infers that occupants of Vandenberg AFB sites during this time were sedentary and had begun using a collector-type (i.e., logistically mobile) land-use strategy. However, others have argued for a broader and less permanent subsistence base as over-exploitation of costal resources pushed human residents towards the interior (Jones and Richman 1995).

An important adaptive transition occurred along the Central Coast around 3500 B.C. (Jones et al. 2007; Price et al. 2012). Technological changes marking the transition into the Early Period (3500–600 B.C.) include an abundance of contracting-stemmed, Rossi square-stemmed, large side-notched, and other large projectile points (Jones et al. 2007:138). Mortars and pestles were introduced and gradually replaced manos and milling slabs as the primary plant processing tools, indicating expansion of the subsistence base to include acorns (Glassow and Wilcoxon 1988). Shell beads and obsidian materials indicate that trade between regions expanded (Jones et al. 1994). Site occupants appear more settled with more limited mobility, and they increasingly used sites for resource procurement activities such as hunting, fishing, and plant material processing (Jones et al. 1994:62; Jones and Waugh 1995:132). Farquhar et al. (2011:14) argue that cultural changes during this period are the result of population circumscription and economic intensification. Echoing Rogers (1929), Price et al. (2012:36–37) suggest such constraints might have been prompted by the arrival of new ancestral populations or adoption of new social norms in the region.

The Middle Period (600 B.C–A.D. 1000) is defined by the continued specialization in resource exploitation and increased technological complexity. Contracting-stemmed points still existed, while square-stemmed and large side-notched variants disappeared (Rogers 1929). The use of mortars and pestles also increased. Additionally, expansion of trade is evident in the increased quantity of obsidian, beads, and sea otter bones (Farquhar et al. 2011:15). Circular shell fishhooks, which facilitated an increase in exploitation of fishes, appeared for the first time (Glassow and Wilcoxon 1988). The appearance of small leaf-shaped projectile points toward the end of the period is evidence for the arrival of bow and arrow technology (Jones et al. 2007:139).

The Middle-Late Transitional Period (A.D. 1000–1250) represents a rapid change in artifact assemblage as well as social and settlement organization (Arnold 1992). Large numbers of arrow points appeared and most stemmed points disappeared (Jones et al. 2007:139). Hopper mortars also made their first entry in the archaeological record (Farquhar et al. 2011:16).

At the same time, some evidence points to population decline and interregional trade collapse. Obsidian is not found in sites dating to this period (Jones et al. 1994). Settlement shifted away from the coast and people relocated to more interior settings (Jones 1995:215). Marine resources appear to have been largely dropped from the diet and instead people relied more on terrestrial resources such as small mammals and acorns (Farquhar et al. 2011:16). These changes may have been caused by an environmental shift that increased sea and air temperatures, resulting in

decreased precipitation and overexploitation of resources (Arnold 1992; Graumlich 1993; Kennett et al. 1997; Pisias 1978; Stine 1990).

However, social complexity became more noticeable during the Middle to Late Period transition, when most archaeologists believe craft specialization and social ranking developed (Arnold 1992). The *tomol* (plank canoe), which was utilized by the Chumash south of Point Conception where ocean conditions were more favorable, allowed for a greater reliance on marine resources, particularly fish, for food. However, these changes are again more noticeable south of Point Conception and may have been due, in part, to environmental changes occurring at that time.

Populations on the Central Coast expanded in the Late Period (A.D. 1250–1769) (Farquhar et al. 2011:17). More sites were occupied during this period than ever before (Jones et al. 2007:143). It appears that the inhabitants of the Central Coast did not increase maritime subsistence activities but instead continued to demonstrate a terrestrial focus, although residents of the interior still made temporary forays to the coastal zone to procure marine products (Farquhar et al. 2011:17; Jones et al. 2007:140; Price 2005; Price et al. 1997:4.13–4.14).

Artifact assemblages from the Late Period within San Luis Obispo County contain an abundance of arrow points, small bead drills, bedrock mortars, hopper mortars, and a variety of bead types (Price 2005). More shell and stone beads appeared in the Late Period, and they became a more standardized and common form of exchange (Jones et al. 2007:140, 145). The use of handstones and milling slabs continued during this period, but pestles and mortars occurred in greater proportions (Jones and Waugh 1995:121). There are few records of Spanish encounters with the Chumash north of Point Conception (Glassow 1990). However, in San Luis Obispo County it appears that the absence of the *tomol* and a lower population density contributed to a different social and political organization than their neighbors to the south. Moreover, the absence of imported obsidian after A.D. 1000 suggests a change in trade relationships that is likely associated with the shift in settlement patterns (Jones et al. 1994).

Changes during the period are attributed to a number of factors, including demographics, increased use of the bow and arrow, European diseases, severe droughts, and/or the emergence of powerful leaders (Graumlich 1993; Jones et al. 1999; Jones and Ferneau 2002; Jones and Kennett 1999; Jones et al. 2007:144; Stine 1994).

2.3 ETHNOGRAPHY

San Luis Obispo is within the area historically occupied by the Northern (Obispeño) Chumash, the northernmost of the Chumash people of California (Gibson 1991; Greenwood 1978; Kroeber 1976). The Northern Chumash occupied land from the Pacific coast east to the Coast Ranges and from the Santa Maria River north to approximately Point Estero. Ethnographically, the Chumash people lived in large villages along the Santa Barbara Channel coast, with less dense populations in the interior regions, on the Channel Islands, and in coastal areas north of Point Conception. Subsistence was focused on fishing, hunting, and gathering native plants, particularly acorns, although many animals and dozens of plants were used for food. Chumash people engaged in craft and occupational specialization, and they maintained regional trade and religious systems that tied many villages together. Leadership was hereditary, and some chiefs had influence over several villages, indicating a simple chiefdom level of social organization (Arnold 1992; Johnson 1988).

The Chumash were hunter-gatherer-fishers who relied on a variety of resources for subsistence and raw materials. There was considerable seasonal and regional variability in land use, settlement, and subsistence practices across Chumash territory; people who lived near the coast focused animal procurement activities on the marine environment, while those north of Point Conception and in the interior regions were more terrestrially focused and are thought to have had lower population densities and greater seasonal mobility than coastal groups (Landberg 1965). Trade or acquisition of various resources through expeditions was a regular occurrence, and animal remains and lithic raw materials are often found in archaeological sites at some distance from their sources.

2.4 HISTORY

The first Europeans the Chumash encountered were Spanish explorers in the sixteenth century. In 1587, Pedro de Unamuno landed his ship in Morro Bay and penetrated inland to San Luis Obispo (Hoover et al. 1990:359). At first the native people they encountered were "extremely timid," but later the Spanish were attacked by the natives who killed two explorers and wounded several others (Hoover et al. 1990:359). The Gaspar de Portolá expedition likely passed through Oceano in 1769, and Juan Bautista de Anza followed practically the same route as Portolá in 1774 and 1776 (Hoover et al. 1990:359).

Mission San Luis Obispo de Tolosa was founded in 1772 by Padre Junipero Serra. In 1776, rebellious Northern Chumash damaged the mission buildings by shooting burning arrows into the roofs thatched with tule (Hoover et al. 1990:360). An adobe church replaced the original chapel in 1794. The native people at the mission suffered and the population declined rapidly. In 1803, there was a peak of 919 Native Americans residing at the mission, but by 1838 the population had declined to 170. According to the Roll of 1928 compiled by the Bureau of Indian Affairs, only four Native Americans living at the time claimed to be survivors of San Luis Obispo Mission Indians (Greenwood 1978:521).

After the mission was secularized in 1835, the mission lands were divided into land grants and influential families were given the largest grants (Morrison and Hayden 1917:35). The Bear Flag Rebellion, which occurred in 1846, resulted in California's independence from Mexico and control of the territory soon fell into the hands of the United States (Krieger 1988). Rancho owners soon discovered the need to defend their title in U.S. courts, a process that would last over a decade for some petitioners, pushing many into financial hardship.

When California achieved statehood in 1850, immigrants were mainly interested in the riches to be found in the gold fields of the Sierra Nevada. Newcomers were able to find some semblance of the culture they left behind in the northern part of the state and the San Francisco Bay area, but Southern California was seen as a wild, untamed country full of lawlessness. As a result, the population of newly formed San Luis Obispo County grew slowly. The 1850 census listed 336 residents, but ethnicity was not recorded. However, over 230 were born in California, suggesting Native American and/or Mexican heritage. Of the remainder, 55 were born in Mexico, 20 were born in America, and 26 were European immigrants. The population of San Luis Obispo County would remain relatively unchanged throughout the 1850s, with Henry Miller observing 150 houses in the area inhabited primarily by Native Americans and Mexicans (Miller 1856).

Drought struck the region between 1862–1864 causing the deaths of thousands of sheep and cattle, bankrupting the local Hispanic families and their large ranchos. This led to an influx of Euro-American settlers who purchased these bankrupt ranchos (Krieger 1988). Beginning in 1873, the county experienced a steady change in land use and recorded more acreage under cultivation each year due in part to the downfall of ranching during the drought years. In that year, the County Assessor recorded 35,500 acres in cultivation of wheat, barley, rye, and buckwheat. Orchards accounted for 4,500 acres in the production of apples, pears, plums, cherries, nectarines, apricots, figs, lemons, oranges, olives, prunes, mulberries, almonds, and grapevines. Additional county products included butter, cheese, and wool. Reported livestock totaled 358,733 head, with sheep accounting for 80 percent of the total. In 1876, several agricultural products including corn, peas, beans, potatoes, onions, sugar beets, peaches, quince, and walnuts were added to the production lists. Livestock decreased somewhat to 346,847 head, but 600 hives of bees were added, producing 2,000 pounds of honey. By 1883, the amount of land under cultivation had grown to 75,900 acres, more than doubling in 10 years (Angel 1979:224–225).

The California State Board of Agriculture reported that in 1910 the county had 1,566,660 acres of farmland (Robertson 1912:363). The report identified wheat, barley, beans, corn, and oats as the principal crops. Along with farming, new dairies developed in county districts such as Arroyo Grande (including the Corral de Piedra lands), Cambria, Cayucos, and San Simeon. Production of butter and cheese grew from 800,000 pounds in 1873 to 1,567,350 in 1882. Based on the 1882 figures, San Luis Obispo County was identified as the second highest producer of butter and the highest producer of cheese for the State of California (Angel 1979:227). In 1890, the total pounds of butter and cheese produced in the county more than doubled to over 3,740,000 pounds, but 10 years later that number reverted to below the 1882 figures. Although San Luis Obispo County would remain one of the state's top five dairy producing counties over the next decade, following the turn-of-the-century dairy production was on the decline (Robertson 1912:66, 68). While the amount of butter and cheese produced in the county began to rebound in 1910 and 1911 and grew to over 2,300,000 pounds, several other counties in the state had been producing twice that amount for several years. Over the following decades, the area continued to operate as agricultural and ranching property.

Along with agriculture, the oil industry became prominent in the region with significant infrastructure constructed near the Project area. Early in the twentieth century crude oil was the fastest growing commodity in California, a trend that would continue until after World War II. Initial discovery of oil in the Santa Maria Valley led to production of such a vast quantity that it created a storage and transportation crisis. Temporary storage facilities were hastily erected in the oil fields, but a larger facility was needed. In 1910, Union Oil of California (Unocal of today) constructed the tank farm in San Luis Obispo to store crude oil from the San Joaquin Valley and Santa Maria fields. The oil was then transferred to the Avila Tank Farm for transport to oil refineries (Hamilton et al. 2000). This tank farm was located northwest of the Avila Ranch Project area, and was considered well removed from the community of San Luis Obispo at the time of construction. Disaster struck the tank farm in 1926 when a lightning strike at the facility caused a massive fire resulting in the burning and release of an estimated six million barrels of oil (Chevron SLO 2015). The impacts of this disaster were far reaching and are still visible at the Avila Ranch site today in the form of tar balls, which were recovered during the Phase 2 testing.

2.5 AVILA RANCH DEVELOPMENT HISTORIC CONTEXT

The project site is located in San Luis Obispo County, northeast of the intersections of Vachell Lane and Buckley Road, just south of the City of San Luis Obispo. Parcels within the Project area are 053-259-004, 053-259-005, and 053-259-006.

2.5.1 Landholders

During the nineteenth century, many historic land grant ranchos remained somewhat intact. Avila Ranch is located between Rancho Laguna to the west; the city of San Luis Obispo to the north; Rancho Corral de Piedra to the east; and San Miguelito to the south. However, as a result of the drought of 1862–1864 these ranchos began to be sold off to the incoming Euro-American emigrants. One of the first large Euro-American ranches in the area was acquired by the Steele brothers in 1866. Isaac, George and Edgar Willis Steele, along with their cousin Rensselar Steele, purchased 45,000 acres from Rancho Bolsa de Chamisal, Arroyo Grande Rancho and the Rancho Corral de Piedra, establishing one of the first large dairy ranches in the region (Steele 1941:267).

There is no record of any significant structures on the parcels between 1874 and 1900 (Plat Book 1874 and USGS Map 1900). Archival research found that three principle names are associated with the Avila Ranch parcels at the start of the twentieth century. The largest portion of the subject property (053-259-006) was owned by David McKean; the smaller parcel to the west (053-259-005) was owned by Christjan Hansen Jespersen, a prominent farmer; and the piece of land at the southwest access corridor was owned by Joseph See.

Very little information is known about David McKean, who was around 34 years old in 1895 and was a farmer from Ireland (U.S. Census 1880). No additional information was found on McKean or his use of the property. The smaller parcel to the west (053-259-005) was owned by Christjan Hansen Jespersen, a prominent farmer. A road south of the Avila Ranch property was named after him in the early twentieth century. Jespersen was born in Kirkeby, Schlesswig, Denmark in 1836 (Angel 1979). An experienced farmer and apprenticed ship carpenter, Jespersen immigrated to Watsonville, California in 1867. There he engaged in farming and lumber (Morrison and Haydon 1917). He moved to San Luis Obispo in 1874 and settled on 180 acres in Los Osos Valley (Angel 1979). Figure 2-1 represents one of Jespersen's ranches during the late nineteenth century.

Jespersen also owned a piece of property further to the west, along the proposed southwestern access corridor to the property, just south of the historic Octagonal Barn along South Higuera Street. Records indicate he rented out his land (Morrison and Haydon 1917). Therefore, it is unclear whether he ever occupied the land, or if any of his five sons farmed it (Angel 1979).

A piece of land at the southwest access corridor was owned by Joseph See. See was originally from Kentucky and held 160 acres of land in the area (California Agricultural Commission 1870; U.S. Census 1870). It is possible that the Octagon Barn is located on land that also once belonged to either Jespersen or See, as ownership of that parcel appears unlisted in the SLO Assessor's Plat Book of 1874; however, the Octagon Barn was not built until 1906, and the two parcels may have been owned by separate individuals at the time of construction. The barn and adjoining land was originally leased to an Italian-Swiss immigrant, Antonio Stornetta, between

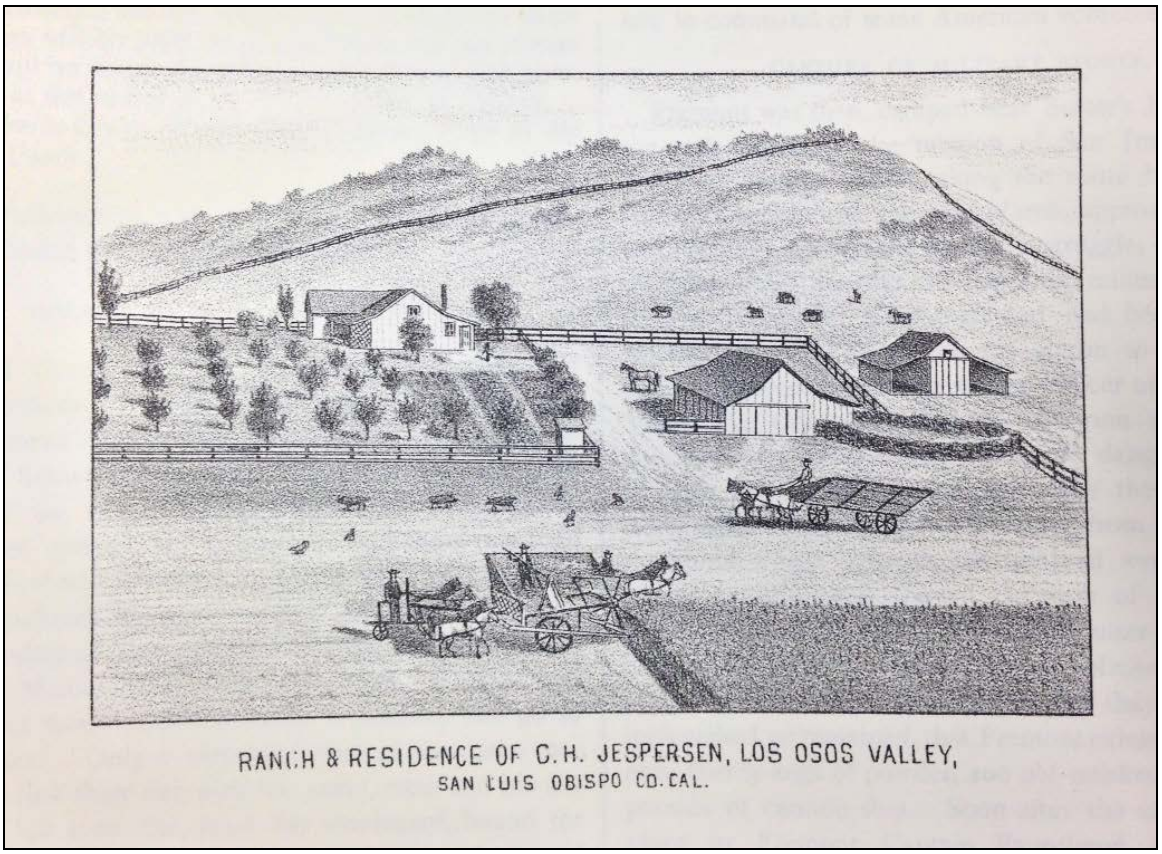


Figure 2-1 Jespersen Ranch, circa 1883.

1907 and 1917. The property was purchased in 1925 by the Pereira family for their dairy operations, which continued through the 1950s (Richard 2012). The Octagon Barn was listed on the National Register of Historic Places in 2014.

A large area to the north and east of all three of these parcels, listed as "J.D. Grant" in the 1874 County Plat book, was originally purchased by wealthy San Francisco entrepreneur Joseph Donohoe Grant in 1881 for $40,000. In January of 1906, Grant hired A. F. Parsons to survey the tract and to divide it into house lots. However, in 1910 the Union Oil Tank Farm was constructed on the land instead.

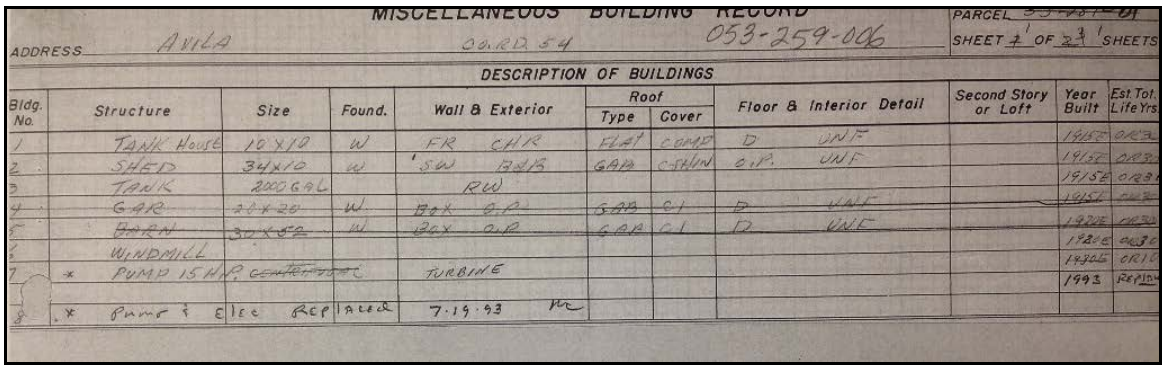
The parcels comprising the Project area were purchased in 1910 by Manual F. Avila. He originally purchased eight parcels totaling 240 acres from Stanford University. These parcels are collectively known as the Avila Santa Fe Ranch. The ranch has been farmed by three generations of the Avila family, and today is leased out for agricultural use (Frank Avila, personal communication 2015). Peas, safflower, and various other crops are cultivated on the property.

2.5.2 Structures

The 1874 SLO County Plat Map and a circa 1900 map by the U.S.G.S. suggested that there were no built resources on the subject parcels during those two periods, although a long, barn-like structure was shown just beyond the northern edge of the land. Numerous dairy farms existed in

the area, in addition to grain and cattle farmers (Angel 1979; California Production of Agriculture 1870; Morrison and Haydon 1917).

In the 1900s, several agricultural structures and three buildings were constructed on parcel 053-259-006. According to building records (San Luis Obispo County, Office of the Assessor 2015; Figure 2-2), by 1915 structures included a ten-foot-square Tank House; a 34-by-10-foot gable-roofed, board and batten "shed" (possibly a chicken shed); a garage (since demolished); and a 2,000-gallon tank.


MISCELLANEOUS BUILDING RECORD

ADDRESS AVILA RD. 54 053-259-006 PARCEL 053-259-01

SHEET 1 OF 2 SHEETS

DESCRIPTION OF BUILDINGS

Bldg. No.	Structure	Size	Found.	Wall & Exterior	Roof Type	Roof Cover	Floor & Interior Detail	Second Story or Loft	Year Built	Est. Tot. Life Yrs
1	TANK HOUSE	10 X 10	W	FR CHR	FLAT	COMP	D UNF		1915E	
2	SHED	34 X 10	W	SW BRD	GAB	C SHGL	D.P. UNF		1915E	
3	TANK	2000 GAL		RW					1915E	
4	GAR	20 X 20	W	BOX D.P.	GAB	C.I	D UNF		1925E	
5	BARN	30 X 52	W	BOX D.P.	GAB	C.I	D UNF		1920E	
6	WINDMILL								1920E	
7	* PUMP 15 H.P. CENTRIFUGAL			TURBINE					1925	
8	* Pump & Elec REPLACED			7-19-93 MC					1993	REPLACE

Figure 2-2 SLO County Assessor's Building Record for parcel 053-259-006.

Additional buildings and structures were erected by 1920 including a 30-foot by 52-foot gable-roofed barn (since demolished) and a windmill with no other physical description. A pump turbine was also observed by 1930, and in 1993. No house or dwelling was mentioned in any of the Assessor's files. However, the barn structure was possibly used as a workers residence during the homesteading period of the site (Frank Avila, personal communication 2015).

3
METHODS

3.1 RECORDS SEARCH

On June 22, 2015, Æ obtained a records search from the Central Coast Information Center (CCIC) of the California Historical Resources Information System (CHRIS) housed at the University of California, Santa Barbara (Appendix A). Information Center staff examined site record files, location maps, and other materials to identify previous investigations and recorded resources within 0.25 mile of the study area. Data sources also included the Historic Property Data File, the National Register of Historic Places, the California Register of Historical Resources, the listing of California Historical Landmarks, the California Inventory of Historic Resources, and the California Points of Historical Interest.

3.2 NATIVE AMERICAN OUTREACH

Æ contacted the California Native American Heritage Commission (NAHC) to determine whether any sites recorded in the Commission's Sacred Lands File occur in or near the study area. On July 6, 2015 the NAHC supplied a list of local Native American individuals and/or groups with interests and knowledge about the area (Appendix B). Those included on the list were contacted by letter and telephone to request comments or information about the study area.

3.3 PHASE 1 SURFACE SURVEY

On July 14 and 15, September 17, and September 23, 2015, Æ archaeologists Simone Schinsing, Ryan Wendel, and Marc Linder conducted an intensive pedestrian field survey of the subject parcels to identify any archaeological or historical resources that may be impacted by future development. The survey was performed by walking parallel transects spaced 15 meters apart. Surface visibility was between 0 and 100 percent, with many of the areas plowed for agricultural purposes, and the remaining areas covered with agricultural duff. The ground surface and rodent burrow backdirt piles were examined carefully for archaeological remains. Observations were documented and the study area was photographed using a digital camera.

3.4 RESOURCE DOCUMENTATION

On July 15, 2015, Æ archaeologists Simone Schinsing and Marc Linder documented a newly identified site, CA-SLO-2798/H. On July 17, 2015 Æ archaeologist Marc Linder documented a newly identified feature (P-40-038310). The resources were mapped with a handheld Trimble Geo XT global positioning receiver with sub-meter accuracy. All site information and cultural constituents were recorded on Department of Parks and Recreation (DPR) 523 forms (see Appendix C: Site Record for DPR forms and a detailed site map).

3.5 PHASE 2 SITE TESTING

The Phase 2 investigation was conducted to define the surface and subsurface extent of CA-SLO-2798/H, reveal site stratigraphy, search for subsurface features, and provide additional data needed to assess the significance and integrity of the site. Between August 12 and 19, 2015, Æ archaeologists excavated 24 shovel test pits (STP), two test excavation units (TEU), and four surface transect units (STU) as part of the Phase 2 investigation. Along with excavation, Æ archaeologists conducted a close interval surface survey and collected all diagnostic artifacts and formed tools.

3.5.1 Surface Reconnaissance and Collection

The surface of CA-SLO-2798/H was inspected intensively using parallel and meandering transects spaced no more than 5 meters apart. Formed tools, diagnostic artifacts, artifact concentrations, and other cultural debris were marked with pin flags, which facilitated boundary definition, site mapping, analysis, and artifact collection and also guided the placement of subsurface sampling units. Diagnostic artifacts and other formed tools pin-flagged during the surface reconnaissance or discovered on the site surface over the course of the testing phase (e.g., bifaces, milling tools, and historic artifacts with maker's marks) were designated as Surface Collection Points (SCP). Prior to collection, individual artifacts were numbered consecutively, recorded on an inventory record, and plotted onto the site map using a Trimble GeoXT GPS unit.

3.5.2 Shovel Test Pits (STP)

Shovel test pits were used to detect and define the extent of buried cultural material. Shovel test pits measured 50 centimeters in diameter and were excavated in 20-centimeter levels until bedrock or culturally sterile sediments are encountered. No units were excavated below 100 centimeters. All excavated sediments were screened by level through 1/8-inch hardware mesh. Recovered artifacts and a brief sediment description were recorded by level. Individual unit locations were mapped and numbered consecutively.

3.5.3 Test Excavation Units (TEU)

Test excavation units were used to reveal stratification and increase artifact yields. They were placed in areas known or suspected to contain subsurface deposits or buried features. The 0.5 by 1.0 meter units were excavated with shovels and trowels in 10-centimeter arbitrary levels. Sediments were dry-screened through 1/8-inch mesh. Screen residues were sorted in the field, and all cultural material was bagged, labeled, and transported to Æ's laboratory for processing. For each excavation level, field technicians used a Unit Level Record to document the provenience, depth range, excavation technique, sediment characteristics with Munsell color assignments, and artifact descriptions. At least one wall of each test excavation unit was drawn in profile. Test excavation units did not extended below 100 centimeters.

3.5.4 Surface Transect Units (STU)

Surface transect units were used to reveal the horizontal extent and relative density of near surface cultural material, to recover a controlled sample of debitage and historic artifacts for analysis, and to search for cultural features. Surface transect units measured 1 by 1 meter square

and were excavated with a shovel in a single 20-centimeter level parallel to the ground surface. The removed sediment was screened through 1/8-inch hardware mesh. Artifacts were bagged together and recorded along with a sediment description. The surface transect units were numbered consecutively and their locations were plotted on the site map.

3.6 LABORATORY PROCESSING AND ANALYSIS

All cultural material collected during fieldwork was brought to Æ's laboratory. Upon arrival at the facility, sample bags were compared with field bag logs to ensure an accurate accounting of all items. Individual lot numbers were assigned for each unique provenience or site document. A provenience information log (PIL) was created, listing provenience details, excavation method and volume, and other relevant data for each assigned lot (Appendix D).

Materials from all units were sorted and analyzed. Within the units all residue per level was size-sorted into 1/2-, 1/4-, and 1/8-inch size grades. The 1/2-inch, 1/4-inch, and 1/8-inch size grade materials were fully sorted and cataloged.

Material from the units was sorted into discrete artifact classes by level. Both prehistoric and historic artifacts were identified by raw material type and function, and cataloged by count and weight. Upon completion of analyses, the data were entered into a computer-generated accession catalog. Each material or artifact category in each lot was assigned a specimen number and described using a sequence of three-letter codes. These data were entered into a relational database along with counts and weights specific to each size grade. The resulting preliminary catalog provided an inventory of materials recovered from each provenience.

Cultural remains were then submitted to technical analysts. In-house specialists Ryan Wendel and Bryon Schroeder analyzed vertebrate and invertebrate faunal remains, lithic materials, and historic artifacts from CA-SLO-2798/H. Following technical analysis, specialist data files were compiled and used as the basis of the final catalog. Records for unanalyzed cultural material and miscellaneous items (e.g., asphaltum) were added to form a complete specimen catalog. All cataloged artifacts and materials were placed in plastic bags along with archival tags denoting provenience and artifact information before delivery to the curation facility.

3.6.1 Lithic Artifacts

Analysis of lithic artifacts can provide information regarding site-specific stone tool use, technological organization, raw material procurement strategies, and how those technologies and strategies changed through time. Additionally, some stone tools provide clues to the age and cultural associations of the sites in which they are found.

3.6.1.1 Flaked Stone Tools

Æ's analysis of flaked stone tools is designed to identify the site's archaeological information potential and to assist in answering research questions focused on site function and place in regional settlement systems. Analysis of flaked stone tools followed a multidimensional approach wherein the variables of reduction technology, morphology, function, and systemic context are examined independently. Under this system, flaked stone tools and cores are defined as any stone objects that have been modified by humans through intentional chipping/knapping.

Many items recovered from archaeological sites exhibit noncultural edge damage that resembles use wear (Flenniken and Haggarty 1979; Knudson 1979). It is important to differentiate cultural from noncultural edge damage to interpret technological organization correctly. For this study, macroscopic edge damage is considered to be an unreliable determinant of tool utilization, because it can result from postdepositional mechanical impacts. Instead, use wear was determined solely by the presence of microscopic abrasional wear traces such as polishes and striations. Use-wear analysis was conducted using a 20–90x stereoscopic zoom microscope and was completed for each tool identified during initial laboratory processing. Other forms of tool modification were identified, such as the edge grinding used by prehistoric knappers to strengthen the platforms of bifacial edges during tool manufacture.

The first step during Æ's analysis of flaked stone tools was to assign each specimen to one of six traditional descriptive classes for purposes of cataloging. These classes include projectile points, drills, bifaces, cores, cobble tools, patterned flake tools, and unpatterned flake tools. The maximum length, width, and thickness as well as the weight of each tool was recorded. Fragmentation was also documented, including whether a piece was complete or nearly complete; a distal, proximal, or indeterminate end; or a longitudinal, medial, marginal, or internal fragment.

Reduction Technology

Reduction technology was examined as a means of distinguishing between relatively expedient technologies that require little production input and a more formal technology that requires substantial input. Tools were classified depending upon the extent of flaking (marginal versus invasive), whether the flaking was bifacial or unifacial, and whether the flaking was patterned or unpatterned. Patterned tools have been flaked so that their final shape and size reflect choices made during manufacture, rather than reflecting the size and shape of the original piece of raw material. Conversely, unpatterned tools largely reflect the original size and shape of the raw material or flake blank. The overall picture of technological organization was enhanced by also recording the type of blank form from which the tool was made, evidence of rejuvenation/ maintenance, and presence of hafting/backing modifications.

Morphology

Tool morphology was examined as a means of ascertaining stylistic variations among patterned tools and to study the relationship between function and morphology. Morphological classes were defined without direct consideration of function.

Function

Functional analysis was designed first to accurately differentiate between use-related wear and natural or postdepositional forms of modification, and then to discern how the tool was used (e.g., cutting, scraping, etc.). Tools were assigned to a primary functional class; multifunctional tools have each function recorded separately. Functional tool categories fall into five larger groups: projectiles, cutting tools, scrapers, cores, and miscellaneous tools. In recognition that stone edges are prone to natural erosion that may obscure use wear, the degree of weathering on each tool was recorded.

Functional analysis was completed using a 20–90x stereoscopic zoom microscope and largely followed the precepts of the "low-power approach" advocated by Ahler (1979) and Odell and Odell-Vereecken (1980). For this analysis only the presence or absence of use wear was recorded. The type of polish or the material worked was not identified.

Systemic Context

Systemic context refers to an artifact's place in the continuum that includes raw material procurement, manufacture, use, rejuvenation, and discard. Four use phases are defined: (1) tool blanks that are complete but not yet used; (2) broken, unused manufacturing rejects; (3) complete, used tools; and (4) exhausted tools or those broken during use.

Other Attributes

Attributes of flaked stone cores and tools that were documented in addition to the four independent variables described above (reduction technology, tool morphology, tool function, and systemic context) include cortex, heat alteration, and raw material type and quality.

3.6.1.2 Lithic Debitage

Debitage analysis was a two-step process involving size-sorting followed by technological classification of individual flakes. Size-sorting was necessary because many diagnostic attributes used for flake classification are retained more frequently on larger flakes than on smaller flakes; grading by size allows for control of this variability. Size grading was accomplished by shaking debris through square mesh screens to separate larger flakes (used for a variety of technological analyses) from smaller flakes (used here only to gauge pressure flaking). Large flakes are defined below as those retained by 1/4-inch mesh, whereas small flakes are retained by 1/8-inch mesh.

The second component of the analysis involved typing flakes into predefined categories based on data derived from replication studies. Importantly, assemblages are not interpreted solely by their most prevalent flake type, a method that has been correctly criticized by numerous scholars (e.g., Ahler 1989a; Sullivan and Rosen 1985). Instead, the debitage analysis uses several flake classes to construct profiles that form technological "signatures." These profiles are then compared with those produced experimentally.

3.6.2 Vertebrate Faunal Remains

Animal remains in archaeological sites can provide important information on subsistence practices, diet, land use, and past environmental conditions. Vertebrate faunal remains were recovered from CA-SLO-2798/H during Phase 2 investigations. To help define the potential of these remains to answer important research questions, they were identified to the lowest possible taxon (class, order, family or species).

Identification

Prior to analysis, all faunal material was sorted by 1/2-, 1/4-, and 1/8-inch size. All bone from 1/8-inch and larger mesh sizes was identified and analyzed. Bone was identified to the lowest

taxonomic level possible using comparative collections and published reference material. Size, portion, age, and percentage data were recorded for each identifiable element. Age was determined based on the stage of epiphyseal fusion (following Hudson [1984]). Each identified element was given its own subspecimen number, counted, weighed, and bagged separately. Fragments belonging to the same element and taxon were grouped together, counted, weighed, and given the same subspecimen number. The standard unit of measurement for faunal assemblages is the number of identified specimens (NISP) (Grayson 1984; Reitz and Wing 1999). Due to the fragmentary nature and low identifiability rates, minimum number of individuals (MNI) and NISP calculations were not attempted for this project.

Modification

For the current study, the analyst noted natural and cultural modifications such as burning, gnawing, rootlet etching, cut marks, and polish. Identification of these types of bone modification aid in understating postdepositional actions as well as cultural practices associated with processing faunal materials.

Bone burning can occur through both natural and cultural means. The type of burning on bone can indicate whether bone has been burned as a result of cooking (cultural) or wildfires (natural). The color, location, and percentage of burning was noted for each burned specimen. Color classifications follow McCutcheon (1992) and Akins (1987), and are based upon experiments conducted on modern bone. The burn classifications are:

- Cooking brown (brown);
- Burnt/stained (very dark brown);
- Burnt (blackened);
- Heat-altered (gray); and
- Calcined (white).

Cooking brown is manifested by a light to dark brown color over the entire bone and is a result of exposure to fire without skinning or defleshing (Akins 1987). Burnt bone is black or dark brown and results from exposure to low heat or flame from either natural wildfire or cooking. Heat-altered bone is light gray to dark gray, and formed by exposure to high heat for a short duration of time. Calcined bone color ranges from gray to blue and eventually a neutral white caused by exposure to temperatures over 600°C for longer than 25 minutes (Bennett 1999; David 1990; Lyman 1994; McCutcheon 1992; McKim et al. 2007).

3.6.3 Invertebrate Faunal Remains

Marine shell remains can provide a direct link to subsistence. Changes in the composition of invertebrate remains could result from different site functions, land-use strategies, human population levels, and/or environmental conditions—or from a combination of these variables. A small sample of invertebrate remains was recovered from CA-SLO-2798/H. These specimens were size-sorted and classified to the lowest possible taxon. When necessary, reference books

(McConnaughey and McConnaughey 1985; Morris 1966; Morris et al. 1980; Ricketts et al. 1985; Smith and Carlton 1975) and a comparative collection housed at Æ's Lompoc laboratory were consulted. Taxonomic identifications were made to the species level whenever possible. In addition to provenience and taxon, recorded variables include lab mesh size; shell morphological element, or body part; weight; and presence and type of modification (if any).

3.6.4 Historical Artifact Analysis

Analysis of the historic artifact assemblage typically starts with sorting objects into broad functional groups, followed by further subdivision into categories and types that reflect the historic use of the object. This system classifies artifacts under descriptive headings, thereby permitting interpretation of artifact function as well as activities carried out in a specific location.

Each item was examined for chronological indicators, including technology of manufacture, makers' marks, or brand name identification. These temporal data are used to establish a *terminus post quem* (TPQ), the earliest date at which an assemblage could have been deposited. For example, a bottle with a maker's mark in use after 1933 could not have been deposited prior to this date.

Broad temporal information can be derived from the technology used to manufacture bottles (Rock 1989), nails (Adams 2002), or solder-closed evaporated milk cans (Kimball 2005:18). Detailed temporal data can be found in the makers' marks found on ceramic tableware and glass bottles and jars (Toulouse 1971). More detailed still, information about the manufacturing dates of specific companies can be found in a variety of published and Internet-based resources.

3.7 EVALUATION OF HISTORICAL RESOURCES

Æ's work for the proposed Project was designed to identify archaeological and historical sites within the Project area and determine whether any sites so identified qualify as historical resources according to the CRHR criteria. To qualify for listing in the CRHR, a property must represent a significant theme in California history, archaeology, architecture, engineering, or culture, and must be a good representative of that theme. Moreover, the property must retain integrity, that is, an ability to convey its association with important events, individuals, or themes by means of its physical characteristics.

3.7.1 CRHR Significance Criteria

Section 15064.5(a)(3) of the CEQA Guidelines states that a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (Public Resources Code Section 5024.1, Title 14 California Code of Regulations Section 4852). A site meets the criteria of eligibility for the CRHR if it:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(2) Is associated with the lives of persons important in our past;

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

Cultural resources meeting one or more of these criteria are defined as "historical resources" under CEQA. Resources included in a local register of historical resources (pursuant to Section 5020.1[k] of the Public Resources Code), or identified as significant in a historical resources survey (meeting the criteria in Section 5024.1[g] of the Public Resources Code), also are considered "historical resources" for the purposes of CEQA. The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources, or identified in a historical resources survey, does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

Associative values (Criteria 1, 2, and 3) are identified within the context of local, regional, and national history. Historical research is required to evaluate significant historical associations under these criteria. Criterion 4, which is most often applied to archaeological sites, requires specification in terms of an archaeological context and research design. In addition to archaeological research potentials, sites may possess public and ethnic values which should be considered when evaluating significance (Hardesty and Little 2000).

3.7.2 Significance Assessments

Assessments of significance are based on the type and quantities of data present at the site as well as connections with historic events or people. Archaeologically, a potentially significant deposit may include diagnostic artifacts such as projectile points and shell beads; milling tools and other ground stone artifacts; invertebrate and vertebrate faunal remains; and/or features such as hearths, roasting pits, or house pits. Materials such as charcoal or other organic remains suitable for radiocarbon dating, source-identified obsidian, shell beads, projectile points, or other stylistic artifacts would permit the study of cultural chronology. Faunal and floral remains provide information on food procurement, diet, seasonality, and the biotic environment, while obsidian, shell beads, or other nonlocal materials would enable studies of trade and commerce.

Thus, a site typically would be judged to meet CRHR eligibility criteria if it exhibits temporally discrete features, strata, or components; variability in flaked and ground stone assemblages and faunal remains; sufficient quantities of artifacts and debris to provide statistically valid samples for analysis; internal spatial variability that might reflect functional differentiation in site use; vertical or horizontal structure that might reflect discrete single component occupations or readily separable multicomponent occupations; and/or documentation of important historical associations.

These types of data can be used to answer questions about settlement structure, social and political organization, and intra-site functional patterning with possible implications for mobility, seasonality, and ethnicity. The ability to answer these types of research questions would make a site deposit significant. However, if such remains are lacking, or if their contextual integrity has

been seriously impaired by postdepositional disturbances, then the site likely would not be considered an important resource.

Generally, significance is based on how well the subject resource represents a research theme, provides important scientific information about the theme, or helps to understand important events or people associated with the resource and its inherent qualities. A resource must demonstrate more than just association with a theme; it must be a good representative of the theme, capable of illustrating or explaining the various thematic elements of a particular time and place in history.

3.7.3 Research Themes

Data potentials of a particular archaeological site are identified through the linkage of the site with research themes. During our assessments of the Project area, several basic research themes were used to guide our evaluations. Cultural chronology, subsistence, technological evolution, consumer behavior, and land-use are common themes that can be applied to both prehistoric and historic-period sites.

3.7.3.1 Chronology

A key factor in assessing archaeological data potentials is the capacity for chronological control of the cultural assemblage. Temporally diagnostic artifact forms, historical documents, datable carbon, source-identified obsidian specimens, and preserved stratigraphy are among the major sources of chronological data. For prehistoric resources, projectile points, shell beads, and certain milling tools are sensitive to temporal variation. Identification of components may depend on chronometric analyses that establish absolute ages or from stratified deposits that indicate relative antiquity. The same applies for historic-period deposits; recovered materials need to connect the archaeological features or artifacts with the period of use by important individuals or to defined historical associations.

3.7.3.2 Subsistence

Remains of animals and plants typically provide the most direct evidence of prehistoric subsistence, site function, seasonality, and economic trends over time. Taxonomic identifications, documentation of bone modification, and analyses of assemblage characteristics such as body part representation and fracturing patterns can provide information on resource selection, procurement, and processing. Recovery and analysis of macrobotanical remains assist in evaluating the role and relative importance of vegetal resources in subsistence. Changes in the composition of floral and faunal assemblages can indicate shifts in environmental conditions through time.

3.7.3.3 Technology/Consumer Behavior

Lithic artifacts are often the most abundant type of cultural residue left by prehistoric site occupants. Types of artifacts and their relative frequencies provide information about specific activities conducted at the site. Microscopic edge-wear analysis of flaked stone tools can reveal tool function and the types of activities that occurred. Diversity in the lithic tool assemblage can reflect the intensity and duration of site occupation. When considered together, the types of

artifacts, their function, and diversity in the lithic assemblage contributes to an understanding of overall site function and the role of the site in settlement systems. Analyses of lithic artifacts provides valuable data on lithic technology and how that technology changed through time in response to changing land-use strategies.

3.7.3.4 Land Use

Reconstructing land use activities over time—such as prehistoric settlement systems or historic ranching and military activities—is essential to gain an understanding of how people interact with their environments and how their activities have shaped or altered the physical features of the landscape. Variations in topography, availability of transportation, the availability of natural resources (especially water), and economic factors influenced the ways people utilize their environment. The ultimate goal of the study of prehistoric mobility and settlement patterns is to determine where a particular site falls within local and regional settlement systems. Does a site represent a seasonal camp, a raw material procurement area, or a single-use location? For historic-period resources, an examination of the types of physical features and properties present within a site can provide insight into ongoing land-use practices (McClelland et al. 1999).

Other themes such as chronology, subsistence, technology, and consumer behavior can directly inform on prehistoric and historic land use. For example, changes in land use can be caused by many factors including a shift in resource availability, improved marketability of products, improved technology, climate changes, and new economic conditions, as well as previous successes or failures. The details of site content, formation processes, and spatial relationships are critical to interpreting the nature and history of the site.

3.7.4 Integrity

To be eligible for the CRHR, a resource must possess both significance and integrity. To properly assess integrity, however, significance must first be established. Only after significance is established can the issue of integrity be addressed. Thus, cultural resources that are not significant per CRHR criteria are by definition not eligible for listing and do not require an integrity assessment.

Though all properties change over time, a property/site must retain integrity in order to continue to convey its identity. At archaeological sites, physical properties—like vertical and horizontal structure—provide a relevant measure of integrity. A site is considered to possess integrity if its original stratigraphy remains generally unaltered so that the chronology of activity can be identified. Additionally, any disturbances (postdepositional processes) should not obscure or change the interpretation of an activity occurring at the site, as expressed in its features and artifacts. If both conditions are generally met, the site will have retained its ability to yield scientifically important information.

4
PHASE 1 FINDINGS

4.1 RECORDS SEARCH RESULTS

The CCIC records search revealed that fourteen prior cultural resources investigations were conducted within 0.25 mile of the current Project area, six of which occurred within a portion of the Project area (Table 4-1). The records search also identified three previously documented archaeological sites within 0.25 mile (Table 4-2; Appendix A).

4.1.1 Previous Investigations

Several studies have covered all or portions of the Project area. The earliest of these efforts included an investigation of multiple discontiguous locations throughout the City as part of an Interpretive Planning Map for San Luis Obispo (City) and Environs. Dills (1979) surveyed a portion of the southern end of the current Project area as part of this investigation and found no evidence of cultural materials. In 1988, Engineering-Science drafted a Hazardous Waste Management Plan Environmental Impact Report (EIR) for San Luis Obispo County. As part of the EIR, Engineering-Science conducted a study of about 140 acres between Highway 227 (Broad Street) at the San Luis Obispo County airport and South Higuera Street, including a small portion of the current Project area. This effort also failed to identify any cultural resources within the Project area.

Gibson (1999a) surveyed two lots within the eastern Project boundary. He conducted a subsequent Phase 1 study of four lots within the western portion of the current Project boundaries (Gibson 1999b). Together, these studies covered the current Project area and no cultural materials were identified during either study.

More recent studies conducted within this southern area of San Luis Obispo identified a range of cultural resources including prehistoric sites and historic-period industrial and agricultural sites. During a surface survey for the Los Osos Valley Road/Highway 101 Interchange, Thor Conway surveyed the western portion of the current Project area (Conway 2002). This study identified several previously recorded prehistoric and historic sites, as well as the potential for additional cultural resources within the vicinity

Other surface investigations in the vicinity identified two historic material loci which were not recorded (Bertrando 2007); and included the formal recording of the Union Oil Tank Farm (Conway 2008). Conway identified 57 historic cultural features and 287 isolated occurrences in his archaeological survey of the 340-acre Tank Farm parcel. He noted evidence of nineteenth and early twentieth century ranching and agricultural activities as evidenced by original fence lines, a redwood structure, and trash scatters. Additionally, he recorded the remains the Union Oil Tank Farm that included four large oil tank reservoirs and multiple pumping stations constructed in 1910. The Tank Farm property abuts the northern boundary of the current Project area.

Table 4-1
Previous Cultural Resource Studies with 0.25 mile of the Project Area

Report No.	Date	Author(s)	Title	Proximity to Project Area	Results
138	1975	Dills, C.	Information to Aid in Interpretive Planning Map for San Luis Obispo (city) and Environs	Within	
235	1980	Bente, V. and Hilderman-Smith	Diablo Canyon Power Plant Early Warning System Cultural Resources Literature Search and Report on the Field Investigation of Selected Pole Siting's	Within	CA-SLO-10
311	1975	Dills, C.	Proposed Expansion of SLO Wastewater Treatment Plant and Repair of Arroyo Grande-Grover City-Oceano Wastewater Facility – Archaeological Impact	Within 0.25 Miles	
1643	1988	Engineering-Science Inc.	Draft Hazardous Waste Management Plan, Environmental Impact Report	Within	CA-SLO-93, CA-SLO-94, CA-SLO-491, CA-SLO-576, CA-SLO-578, CA-SLO-579, CA-SLO-580, CA-SLO-581, CA-SLO-582, CA-SLO-583, CA-SLO-615, CA-SLO-616, CA-SLO-785, CA-SLO-1113, CA-SLO-1114, CA-SLO-1115, CA-SLO-1140, CA-SLO-1141, CA-SLO-1142, CA-SLO-1143, CA-SLO-1149, CA-SLO-1150, CA-SLO-1153, CA-SLO-1189, CA-SLO-1190, CA-SLO-1194
1759	1988	Gibson, R.	Results of Archaeological Surface Survey for the KSBY-TV/Periera Estate Project, SLO Co, CA	Within 0.25 Miles	CA-SLO-1365
3333	1997	Conway, T.	Phase 1 Archaeological Survey of the Spice Hunter Property, Tank Farm Road, San Luis Obispo, CA	Within 0.25 Miles	
4706	2002	Conway, T.	Archaeological Background for the Los Osos Valley road/Highway 101 Interchange PEAR Phase 1 Cultural Resources Survey, San Luis Obispo, CA	Within	
5410	2004	Conway, T.	An Archaeological Survey of 7.2 Acres at Tank Farm Road, San Luis Obispo, San Luis Obispo County, California	Within 0.25 Miles	

Table 4-1 (continued)
Previous Cultural Resource Studies with 0.25 mile of the Project Area

Report No.	Date	Author(s)	Title	Proximity to Project Area	Results
5498	2005	Singer, C.	Cultural Resources Survey and Impact Assessment for a 20.2 Acre Residential Property at 4675 South Higuera Street in San Luis Obispo County, California	Within 0.25 Miles	
6148	2006	Bonner, W. and Keasling, J.	Cultural Resource Records Search Results and Site Visit for Cingular Telecommunications Facility Candidate SNBBCAL085B (KCBY Communications)	Within 0.25 Miles	
6154	2008	Conway, T.	An Archaeological Surface Survey at the Unocal San Luis Obispo Tank Farm, San Luis Obispo, San Luis Obispo County, California	Within 0.25 Miles	CA-SLO-2044
6181	2007	Bertrando, E.	Cultural Resource Inventory of the Ernie Ball Subdivision APN: 053-053-258-001. 155 Suburban Road, San Luis Obispo, CA	Within	
*	1999	Gibson, R.	Results of Phase One Archaeological Surface Survey for Lots 27 and 28 of the Harford and Chapman Subdivision, Buckley Road, San Luis Obispo County, CA	Within	
*	2012	Denardo, Carole and Rachael Greenlee	Additional Archaeological Phase 2 Testing and Evaluation at the Chevron San Luis Obispo County, California	Within 0.25 Miles	

* Reports supplied by the client – not at the CCIC.

Additional archaeological study of the Tank Farm property was completed by Garcia and Associates (Denardo and Greelee 2013). Their Phase 1 and Phase 2 study documented and/or excavated 24 historic features, 1 prehistoric feature, 6 groups of historic and 2 groups of prehistoric isolated occurrences, and supplemental excavation and documentation of 11 features and 1 isolate group. Garcia and Associates recommended four of the historic resources on the property significant and eligible for listing to the National Register of Historic Places (NRHP)/CRHR.

4.1.2 Previously Recorded Sites

Prior to *Æ*'s study no archaeological or historical sites had been recorded within the Project area, though several were identified nearby. In 1988, Robert O. Gibson recorded CA-SLO-1365 as a prehistoric milling location in a Franciscan rock outcrop. The site includes two bedrock mortars.

In 1989, Charles Dills recorded CA-SLO-1002H, the Pereira Octagon Barn, as a "barn of unusual construction" (Dills 1989:1). The unique eight-sided structure was erected in 1906 and used for more than half a century as a dairy during an important time in the modernization of dairy practices in the area (Richard and Landwehr 2013). The site was recommended eligible to the National Register of Historic Places in 2013 under Criteria A and C, and was formally listed on the NRHP in January 2014.

In 2006, Environmental Science Associates (ESA) recorded CA-SLO-2617H (San Luis Obispo Tank Farm). Subsequent studies have updated the site record, recorded and excavated additional features, and documented the property and its historic context (Conway 2008; Garcia and Associates 2010 and 2012).

Table 4-2
Resources Recorded Within the 0.25-Mile Records Search Buffer

Resource No.	Date Recorded	Recorder(s)	Description
CA-SLO-1002H	1989	C. Dills	Pereira Octagon Barn
CA-SLO-1365	1988	R. Gibson	Prehistoric milling location with two bedrock mortars on a Franciscan chert outcrop
CA-SLO-2617H	2006	ESA	Historic oil tank farm with over 70 historic and prehistoric features

4.2 NATIVE AMERICAN CONSULTATION

On July 6, 2015, the NAHC responded to *Æ*'s information request and indicated that a search of their Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate Project area. The lack of information in the NAHC files does not preclude the presence of tribal resources, and the NAHC recommended contacting local groups or individuals who might have additional information on the study area.

4.2.1 Native American Communication

On July 6, 2015, *Æ* archaeologist Simone Schinsing sent notification letters to each of the individuals on the NAHC list requesting their comments and providing contact information to

direct any concerns or comments regarding the study area (Table 4-3). A sample of this letter is provided in Appendix B.

Table 4-3
Native Americans Contacted for the Avila Ranch Project

Contact	Affiliation	Date of Letter	Phone Calls	Comments
Xielolixii Salinian-Chumash Nation	Salinan/ Chumash	7/6/2015	7/20/2015	Called - Left a message.
Mona Olivas Tucker *yak tityu tityu*–Northern Chumash Tribe	Chumash	7/6/2015	7/20/2015	Called – Ms. Tucker expressed her concern for the sensitivity of the area. She stresses that the project must proceed slowly with extreme caution. Her first request would be for avoidance of any sites on the property.
Matthew Darian Goldman	Chumash	7/6/2015	7/20/2015	Called - No message machine.
Fred Segobia Salinan Tribe of Monterey, San Luis Obispo	Salinan/ Chumash	7/6/2015	7/20/2015	Called – Message left, no response to date.
Fred Collins Northern Chumash Tribal Council	Chumash	7/6/2015	7/20/2015	Called – Message left, no response to date.
Crystal Baker Coastal Band of the Chumash Nation	Chumash	7/6/2015	7/20/2015	Called - She is not at this number, no other number for her.
Lei Lynn Odom	Chumash	7/6/2015	7/20/2015	Peggy will call back once they review the maps, no response to date.
Peggy Odom	Chumash	7/6/2015	7/20/2015	Spoke to Lei Lynn on her behalf.
Chief Mark Steven Vigil San Luis Obispo County Chumash Council	Chumash	7/6/2015	7/20/2015	Called – Message left, no response to date.

Æ received one response from outreach to local tribal representatives. Chairman Mona Olivas Tucker of the *yak tityu tityu*–Northern Chumash Tribe expressed concern for the sensitivity of the area. She stresses that the project must proceed slowly and with extreme caution. Her first request would be for avoidance of any sites on the property.

4.3 PHASE 1 SURVEY RESULTS

Æ conducted a pedestrian survey of the Project area between July and September 2015. During the field survey one newly identified archaeological site as well as one isolated historic feature were recorded within the Project parcel (Figure 4-1).

4.3.1 CA-SLO-2798/H

The newly identified site (CA-SLO-2798/H) includes both a prehistoric tool and debris scatter and a historic-period debris scatter. The site rests atop two gradually sloping knolls in the

southern portion of the Project area and covers 760 feet north-south by 670 feet east-west, for a total area of 640,232 square meters. Sediments at the site vary between light brown sandy silt, and dark brown sandy clay loam.

The historic component of the site is a building remnant atop the northeastern knoll, with artifacts spread across the top and scattered downslope. The historic concentration measures approximately 300 feet east-west by 140 feet north-south. Structural debris includes bricks and brick fragments, milled lumber, concrete, structural stones, cinderblock fragments, window glass, and asphalt composite roofing. Other materials associated with the former structure include ceramic and terracotta floor tiles and drain pipe fragments. Domestic debris is also scattered across the area and include glass bottles and fragments, ceramic fragments, cut bone fragments, and miscellaneous metal objects (mainly ranching or agricultural in nature). Repeated plowing and crop cultivation has scattered and crushed much of the material. Makers' marks and object identification suggest historic occupation between 1920 and 1950.

The prehistoric component of the site is primarily oriented north-south, and partially crosses within the western edge of the historic concentration on the northeastern knoll, stretching south to the southwestern knoll. Three prehistoric tools were recorded within the historic artifact scatter during the Phase 1 survey, including a complete granitic handstone, a Monterey chert core tool, and a Franciscan chert hammerstone. Beyond the historic concentration, one proximal fragment of a Monterey chert biface, one complete Franciscan chert biface, one Franciscan chert exhausted core, and 15 scattered flakes were recorded.

4.3.2 P-40-038310

An octagonal silo foundation was identified within the proposed access road corridor connecting South Higuera Street to the main Project area. The foundation is 16 feet 8 inches in diameter with walls 10 inches thick and 21 inches tall. It is made of large aggregate concrete with 2/3-inch rebar, and each corner has a 9/16-inch mounting bolt protruding vertically from the concrete. The center forms a basin that is currently filled with modern and possibly historic debris including bricks, barbed wire, nails, hardware, and bottle glass. An adhesive left on the top of the walls is in a circular shape, suggesting either a sealant was used, or circular shaped object was used on the basin after the silo was removed.

Dates of construction and dismantling of the silo are unknown; however octagonal silos were somewhat popular in the early twentieth century and exhibited both beneficial and impeding specifications for agricultural storage (USDA 1907). The Kirchner family, who ran the Octagon Barn dairy from 1948 to 1952, used the silo for sorghum and corn storage. The silo may have been dismantled soon after this as David Pereira remembers seeing only the basin, and not the standing silo in the 1950s (Lynn Landwehr, personal communication, October 2015).

4.4 SUMMARY OF PHASE 1 INVENTORY RESULTS

Æ conducted an intensive pedestrian survey of the Avila Ranch Project area between July and September of 2015. During fieldwork, ground visibility varied between fair and excellent (20–100 percent) as a result of ongoing agricultural activities within the Project area. Surface and subsurface disturbances due to agricultural activities are extensive throughout the survey area; nonetheless, one archaeological site and one isolate historic feature were located and recorded.

Following the Phase 1 effort, formal testing of CA-SLO-2798/H was recommended to define the boundaries and contents of the site, assess its significance and integrity, and evaluate its eligibility for listing in the CRHR.

5
PHASE 2 FINDINGS

5.1 TESTING RESULTS

Assessment of CA-SLO-2798/H began with a reconnaissance survey and surface collection (Table 5-1). Because the parcel was plowed subsequent to the initial recording of the site, several newly visible surface artifacts were recorded during Phase 2 efforts. Of note, several additional milling tools, cores, and historic items with makers marks were identified. Once surface boundaries and artifact concentrations were defined, Æ excavated 24 shovel test pits (STP), two test excavation units (TEU), and four surface transect units (STU) to better define the subsurface extent of the site and collect additional data for analysis (Figure 5-1, Figure 5-2, and Table 5-2).

5.1.1 Shovel Test Pits

Shovel test pits were arranged in a grid pattern across the parcel to glean information on subsurface cultural material depth, abundance, and placement, and to document disturbances. Historic materials noted within the 24 shovel test pits include metal, brick, ceramic, wood, shell, bone, leather, historic seeds, roof tile remains, cement and glass fragments; prehistoric remains consisted of flaked stone tools, chert debitage, and one fire altered rock. The shovel test pits contained low frequencies of subsurface cultural materials. Six shovel test pits (STPs 3, 4, 14, 15, 23, and 24) contained none; ten shovel test pits contained prehistoric material exclusively (STP 1, 2, 5, 13, 16, 17, 18, 19, 20, and 22); and two shovel test pits contained only historic materials (STP 6 and 12). The remaining six shovel test pits contained a mix of both prehistoric and historic artifacts.

5.1.2 Test Excavation Units

Based on the results from excavation of the shovel test pits, one 0.5 meter by 1.0 meter test excavation unit (TEU 1) was placed 1 meter to the south of STP 1, while one 0.5 by 1.0 meter test unit (TEU 2) was excavated 2 meters to the northeast of STP 17. TEU 1 was excavated to 70 centimeters below surface and contained 78 pieces of debitage. TEU 2 was excavated to 60 centimeters below surface and contained 74 pieces of debitage, one flake tool, and one core. No historic materials were observed in either test excavation unit.

5.1.3 Surface Transect Units

Excavation of the shovel test pits and test excavation units demonstrated that the site is mainly a surface deposit; in most units cultural material extended to a maximum depth of 20–40 centimeters below surface. Because of this, four surface transect units were excavated in the historic artifact concentration. Materials recovered from these transect units included asphaltum, bone, ceramics, debitage, metal, glass, walnut shells, and marine shell.

Table 5-1
Summary of Collected Artifacts at CA-SLO-2798/H

Unit	Specimen No.	Material Summary (number/type*)	Volume (m^3)
SCP 1	97-1	Utilized Flake	—
SCP 2	98-1	Medial Monterey chert biface	—
SCP 3	99-1	Multidirectional Franciscan chert core	—
SCP 4	100-1	Sandstone bifacial mano	—
SCP 5	101-1	Monterey chert core	—
SCP 6	102-1	Sandstone ground stone with battered ends	—
SCP 7	103-1	Stoneware sherd with “California 35”	—
SCP 8	104-1	Milk glass Ponds cold cream jar fragment	—
SCP 9	105-1	Aquamarine bottle glass base with “3”	—
SCP 10	106-1	Sandstone bowl fragment	—
SCP 11	107-1	Obsidian flake	—
SCP 12	108-1	Monterey chert battered core	—
SCP 13	109-1	Opaque white chert core	—
SCP 14	110-1	Franciscan chert unifacial tool	—
SCP 15	111-1	Monterey chert flake tool	—
SCP 16	112-1	Chert core tool	—
SCP 17	113-1	Siliceous mudstone cobble tool	—
SCP 18	114-1	Brown glass bottle base with - "2 I <O>"	—
SCP 19	115-1	Colorless glass bottle with *Fitch* on base	—
SCP 20	116-1	Sandstone bifacial mano	—
SCP 21	117-1	Polymitic conglomerate unifacial mano	—
SCP 22	118-1	Monterey chert proximal biface	—
SCP 23	119-1	Sandstone basin metate with rim fragment	—
SCP 24	120-1	Sandstone mano fragment	—
SCP 25	121-1	Porcelain teacup fragment	—
SCP 26	122-1	White granitic mano fragment	—
SCP 27	123-1	Sandstone bifacial mano fragment	—
SCP 28	124-1	Hinged iron mold	—
SCP 29	125-1	Iron cog/gear	—
SCP 30	126-1	Pink granite mano	—
SCP 31	127-1	Amethyst medicine bottle finish	—
SCP 32	128-1	Colorless crown top bottle finish	—
SCP 33	129-1	Sandstone mano fragment	—
SCP 34	130-1	Sandstone mano fragment - battered	—

Table 5-2
Summary of Units at CA-SLO-2798/H

Unit	Max Depth (cm)	Max Depth of Cultural Remains (cm)	Material Summary (number/type*)	Volume (m^3)
STP 1	100	60	10 DEB	0.195
STP 2	60	20	6 DEB	0.117
STP 3	50	0	—	0.098
STP 4	50	0	—	0.098
STP 5	60	20	2 DEB	0.117
STP 6	60	20	1 CER; 3 GLA	0.117
STP 7	70	40	2 ASP; 111± BRK; 7 CEM; 1 CER; 1 DEB; 14 GLA; 11 FER; 5.2 g SHL; 1 WOD	0.137
STP 8	70	40	5 BON; 2 CER; 2 DEB; 5 FER; 26 GLA 1 ROF; 1 SED; 0.71 g SHL; 4 WOD	0.137
STP 9	60	20	1 BRK; 1 DEB; 8.9 g SHL	0.117
STP 10	60	20	1 DEB; 1 GLA	0.117
STP 11	60	20	1 CER; 1 DEB	0.117
STP 12	60	20	1 LEA	0.117
STP 13	70	40	1 DEB	0.137
STP 14	50	0	—	0.098
STP 15	60	0	—	0.117
STP 16	50	20	2 DEB	0.098
STP 17	100	100	1 COR; 23 DEB; 1 FAR; 1 RTF; 2 UF	0.195
STP 18	60	20	2 DEB	0.117
STP 19	60	20	3 DEB	0.117
STP 20	60	20	2 DEB	0.117
STP 21	40	0	—	0.078
STP 22	70	40	7 DEB	0.137
STP 23	60	0	—	0.117
STP 24	50	0	—	0.098
TEU 1	70	70	78 DEB	0.350
TEU 2	60	50	1 COR; 74 DEB; 1 UF	0.300
STU 1	20	20	1 BON; 1 CER; 9 DEB; 138 FER; 22 GLA; 1 HAG; 1HKT; 3 PLS; 4 RAS; 5 ROF; 5 SED; 6.7 g SHL; 18 WOD	0.150
STU 2	20	20	8 ASP; 3 BON; 3 CAS; 3 CER; 5 CHR; 6 DEB; 1 EHC; 263 FER; 64 GLA; 2 HAG; 23 PLS; 2 PRC; 4 RAS; 20 ROF; 2 RUB; 4 SED; 26.2 SHL; 87 WOD	0.150
STU 3	20	20	4 ASP; 2 BON; 1 BRK; 2 CER; 4 DEB; 184 FER, 86 GLA; 1 PRC; 12 ROF; 2 RAS; 1 RUB; 6 HAG; 1 SED; 108.4 g SHL; 1 STC: 254 WOD	0.150
STU 4	20	20	1 ALU; 6 ASP; 3 BON; 5 BRK; 6 CER; 3 CHR; 1 CAS; 116 FER; 68 GLA; 6 DEB; 21 ROF; 3 PLS; 1 PRC; 1 RUB; 62.9 g SHL; 25 WOD	0.150
Total				**4.16**

* ALU=aluminum; ASP=asphaltum; BON=animal bone; BRK=brick; CAS=gun shell casing; CEM= cement CHR=charcoal; COR=Core; DEB=debitage; EHC=earthenware; FAR=fire altered rock; FER=ferrous metal; GLA=glass; HAG; historic gardening item; HKT=historic kitchen item; LEA=leather/tack; PLS=plastic; PRC; porcelain; RAS=road asphalt; ROF=roofing material; RTFK=retouched flake; RUB=rubber; SED=seed/walnut shells; SHL=marine shell; STC=stoneware; UF=utilized flake; UFT=unpatterned flake tool; WOD= wood.

5.2 SITE STRUCTURE

5.2.1 Soils and Stratification

Site sediments are in the Conception Series of moderately drained, deep soils that formed in weakly consolidated wind-deposited (aeolian) sand or stratified alluvium. These soils are usually associated with terraces close to the Pacific Ocean. Typically, intact Conception soils have a relative shallow A Horizon (about 58 centimeters) overlaying a B Horizon which extends slightly more than a meter deep (SoilWeb 2015).

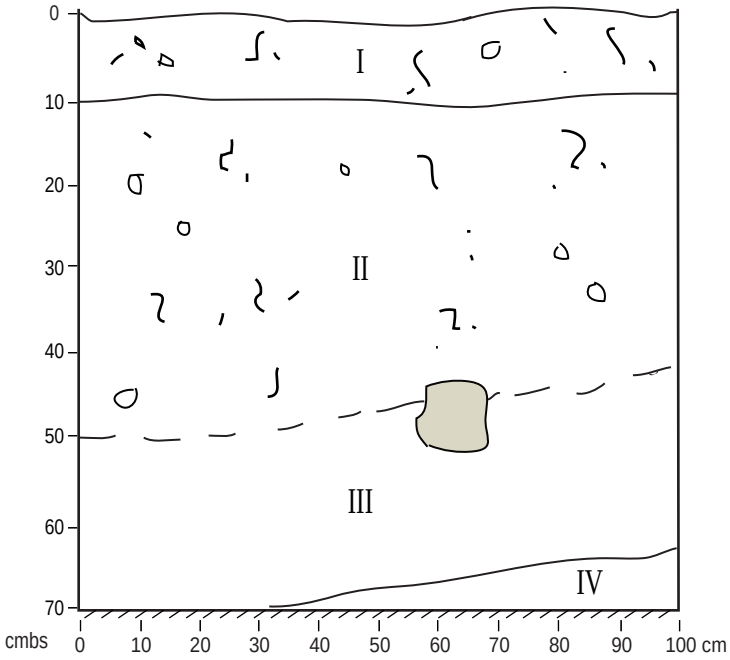
The soil profile of the south wall in TEU 1 shows that sediments within the northern, flatter area of the site consist of four different strata (Figure 5-3). Stratum I extends to 10 centimeters below surface and is comprised of very dark brown silty loam that is loose and friable, and has been severely disturbed by plowing. There is a clear boundary from Stratum I to Stratum II, which extends from 10 centimeters below surface to 43 centimeters below surface and is comprised of very dark brown clay loam. There is a gradual boundary from Stratum II to Stratum III. Extending from 43 centimeters below surface to 64 centimeters below surface, Stratum III consists of dark grey brown clay loam which reflects the same characteristics as Stratum II. There is an abrupt border from Stratum III to Stratum IV, which extends from 64 centimeters below surface to beyond 70 centimeters below surface and the termination of TEU 1. Stratum IV is olive grey clay that indicates the transition to older C horizon soils.

The soil profile of the south wall in TEU 2 demonstrates that sediments atop the southern knoll within CA-SLO-2798/H differ from those surrounding the knoll (seen in TEU 1). TEU 2 comprises three different strata (Figure 5-4). Stratum I extends to 33 centimeters below surface. Stratum Ia is dark brown sandy loam, and Stratum Ib is slightly darker. There is a clear boundary to Stratum II, which is yellowish brown sandy loam with weak structure. Sediments in this stratum become more indurated and clayey with depth, and there are iron oxide pebbles within the stratum. Stratum III is yellowish brown clay loam.

5.2.1.1 Postdepositional Formation Processes

Common postdepositional processes observed at archaeological sites include disturbances from human activities such as agriculture, ranching, and land development; and natural processes such as bioturbation and mixing of sediments from large roots. Human processes at CA-SLO-2798/H have impacted the archaeological deposit in ways that could affect site integrity. Agriculture has been practiced for at least 90 years in this area. The effects of agricultural plowing and harvesting at the site can be seen in the movement and condition of cultural materials. Surface and subsurface movement of sediments and materials at CA-SLO-2798/H from agricultural disking and plowing has churned the top 20–30 centimeters of sediment.

South Wall TEU 1



Stratum I: 10YR 2/2, very dark brown silty loam (topsoil); structureless; friable (moist) and soft (dry); slightly sticky and slightly plastic; weakly cemented; clear boundary to Stratum II. The topsoil layer has been extensively disturbed by plowing activities.

Stratum II: 10YR 2/2, very dark brown clay loam; weak structure; firm (moist) and slightly hard (dry); sticky and plastic; strongly cemented; gradual boundary to Stratum II. This is the main soil unit containing cultural materials.

Stratum III: 10YR 4/2, dark grayish brown clay loam; weak structure; firm (moist) and slightly hard (dry); sticky and plastic; strongly cemented; abrupt boundary to Stratum IV. This is a transition to the older clay layer (Stratum IV).

Stratum IV: 5Y 4/2, olive gray clay; weak structure; very firm (moist) and hard (dry); very sticky and very plastic; strongly cemented.

LEGEND

Clear Stratum Boundary

Abrupt Stratum Boundary

Bottom of Excavation

Roots

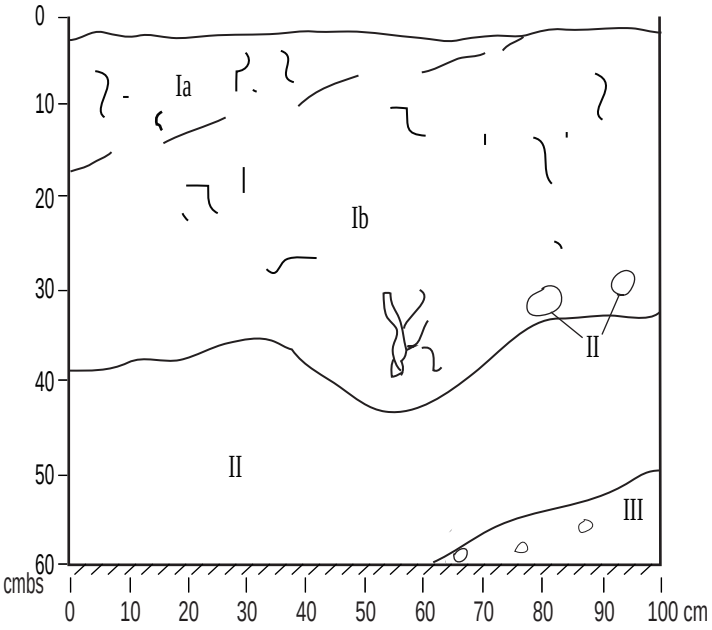
Gravel

Rock

Field Drawing: E. Enright — 08/19/2015
Final Drawing: J. Jones— 09/24/2015

Figure 5-3 Profile of the south wall of TEU 1 in CA-SLO-2798/H.

South Wall TEU 2



Stratum I: 10YR 3/3, dark brown sandy loam (wet); weak structure; very friable (moist) and noncoherent (dry); nonsticky and slightly plastic; noncemented; clear boundary to Stratum II. Stratum Ia is slightly lighter in color due to cultivated topsoil.

Stratum II: 10YR 5/4, yellowish brown sandy loam (wet); weak structure; very friable (moist) and noncoherent (dry); nonsticky and slightly plastic; weakly cemented. The layer becomes more indurated and clayey with depth.

Stratum III: 10YR 5/4, yellowish brown (wet) clay loam; weak structure; friable (moist) and slightly hard (dry); sticky and plastic; weakly cemented. Stratum III is the beginning of an older B horizon clay layer. Sediments in this stratum also contain iron oxide pebbles.

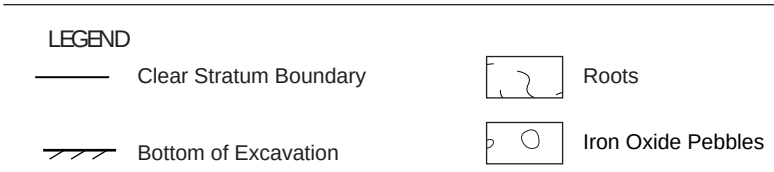


Figure 5-4 Profile of the south wall of TEU 2 in CA-SLO-2798/H.

5.3 PREHISTORIC ARTIFACT ASSEMBLAGE

The prehistoric artifact assemblage comprises 238 pieces of lithic debitage, 5 flake tools, 2 bifaces, 5 cores, 1 basin metate, 1 cobble tool, 9 manos, 2 bowl fragments, and 1 piece of ground stone with an unknown function. No organic materials (i.e. bone, shell, etc.) were found within the prehistoric component at CA-SLO-2798/H. All organic materials at CA-SLO-2798/H were recovered from within the historic concentration; a discussion of these materials is in Section 5.4.

5.3.1 Lithic Artifact Assemblage

Æ collected and analyzed 238 pieces of lithic debitage and 26 tools (including expedient non-formal, patterned, cores, and ground stone) from CA-SLO-2798/H. The results are presented below. The discussion focuses on tool descriptions, discovery location, artifact condition, research potential, and broad trends seen in the lithic artifact assemblage.

5.3.1.1 Tools

Prehistoric tools include two bifaces, five flake tools, five cores, one basin metate, one cobble tool, nine manos, and two bowl fragments (Table 5-3). One ground stone object of unknown function was also collected during the study. These tools are discussed below.

Patterned Stone Tools

Two biface fragments were collected from the surface. The first is the distal end of a well-thinned (thickness relative to length) specimen missing the tip (Specimen 98-1). The material is heat-altered black Monterey chert with white linear inclusions. The biface is 2.9 by 2.5 by 0.7 centimeters and weighs 4.72 grams. The overall flaking pattern is random and both the tip and the midsection broke along internal impurities in the material. Both lateral margins have micro-scarring indicative of use; however, only one has steeper flake scars consistent with unidirectional scraping/prying/chopping.

The second is the proximal end of a moderately well-thinned biface (thickness relative to length) that is 4.0 by 4.5 by 1.1 centimeters and weighs 25.54 grams (Specimen 118-1). The material is dark brown opaque Monterey chert with translucent white linear inclusions. The overall flaking pattern is random and the lateral margins show no evidence of use.

Unifacial Tools

A unifacial scraping tool (Specimen 110-1) of banded red/green Franciscan chert was collected from the surface. The scraping tool is 4.5 by 3.5 by 2.2 centimeters and weighs 30.25 grams. The artifact is an exhausted core that was repurposed as a scraping tool when the lateral margins were unidirectionally retouched. The subsequent edge has an angle greater than 45 degrees, which is best suited for scraping activities.

Table 5-3
Tool/Core Descriptive Class by Surface and All Excavation Units, CA-SLO-2798/H

	Surface		All Units		
	Ct.	%	Ct.	%	Total
Flaked Stone Tools and Cores					
Bifaces	2	9.1	0	0.0	2
Flake Tools	4	18.3	1	25.0	5
Cores	3	13.6	2	50.0	5
Subtotal	9	41.0	3	75.0	12
Ground and Battered Tools					
Basin Metate	1	4.5	0	0.0	1
Cobble Tool	1	4.5	0	0.0	1
Mano	9	41.0	0	0.0	9
Bowl Fragment	1	4.5	1	25.0	2
Unknown Ground stone	1	4.5	0	0.0	1
Subtotal	13	59.0	1	25.0	14
Grand Total	**22**	**100.0**	**4**	**100.0**	**26**

Expedient Tools

A single utilized flake was found in STP 17 between 0 and 20 centimeters below ground surface. The expedient tool was manufactured of a tabular pebble of Monterey chert and was unifacially retouched along one lateral margin (Specimen 54-5). The specimen is 4.4 by 2.8 by 1.4 centimeters (15.66 grams) and retouch is evident along a small portion of a single lateral margin (retouch measures 1.9 centimeters). The opposite margin is unmodified and relatively thick (1.9 centimeters) which provides a backing for the opposite retouched margin. The flake scars are even and weathered which indicate that the tool was not retouched by modern agricultural activities.

Two utilized flakes were found at 20–40 centimeters below surface in STP 17. The first specimen (55-2-1) is a complete flake (5.4 by 2.4 by 1.3 centimeters) of dark brown to dark reddish brown Franciscan chert with a lipped platform. The entire left ventral lateral margin exhibits micro-scarring and polish and the right lateral margin retains a non-cobble cortex and exhibits a lack of use wear. The second specimen (55-2-2) is an opaque light greenish gray Franciscan chert ovoid flake fragment that is 3.8 by 3.1 by 0.9 centimeters (9.73 grams). The platform has been removed creating a 360 degree lateral margin with light micro-scarring on three areas of dorsal margin.

A single utilized flake was found in TEU 2 at 20–30 centimeter below ground surface. The expedient tool (Specimen 93-2-3) was manufactured from an unmodified heat-altered flake of red Franciscan chert with linear white crystalline inclusions. The specimen is 4.1 by 2.8 by 1.0 centimeter (8.04 grams) with light micro-scarring along the left lateral margin near the unprepared striking platform.

Cores

Three cores were collected from the surface of CA-SLO-2798/H. The first (Specimen 101-1) is a multidirectional tabular core of dark brown Monterey chert with laminar white inclusions. Most of the original cortex still remains and there are seven flake scars indicative of an exploratory/test reduction strategy. The core is 10.5 by 10.0 by 4.1 centimeters and weighs 725.74 grams. The second core (Specimen 109-1) is also multidirectional and is 3.6 by 3.5 by 2.8 centimeters and is 40.46 grams. The material is opaque white chert with translucent tan mottling. A single edge was heavily battered, presumably to prepare platforms, but may also indicate its use as a pick or wedge. The final surface core (Specimen 112-1) is a multidirectional bifacial core that is 6.5 by 8.2 by 3.2 centimeters and 203.04 grams. The material is white to pinkish opaque chert with off-white ovoid inclusions. The lateral margins have been bifacially retouched, likely to manufacture a bifacial tool that was discarded before it could be extensively thinned. There is heavy battering along one margin, consistent with use for either chopping or battering.

One unidirectional flake core (Specimen 55-4) of opaque mottled strong brown to black/tan/green Franciscan chert was found in the 20–40 centimeter level of STP 17. The core is 4.7 by 3.9 by 2.4 centimeters and weighs 43.58 grams. It was originally a large blocky flake that had subsequent flakes removed off the dorsal surface from the ventral. One margin has micro scarring, however, this could be a result of platforms preparation to detach additional flakes.

One multi-directional core (Specimen 93-6) of opaque red to green striped Franciscan chert was found in the 20–30 centimeter level of TEU 2. The core is 3.1 by 1.8 by 1.7 centimeters and weighs 5.25 grams. It is either a small exhausted core or a fragment that was detached from a larger specimen, and retains a small amount of cobble cortex.

Cobble Tool

A single complete multi-purpose cobble tool (Specimen 113-1) of dark gray/black banded siliceous mudstone/siltstone was found on the surface. The cobble tool is 7.7 by 6.9 by 3.2 centimeters and 284.49 grams in weight. The exterior retains the original river rounded cortex, which is lighter in color than the darker interior. The cobble was purposefully cleaved in half, then bifacially retouched, first at a 90 degree angle to produce a steep working edge and later use (or concerted retouching) produced an irregular bifacial edge. The entire working edge exhibits heavy step fracturing and grinding consistent with use as a chopping/battering implement. Opposite of the worked edge, the unworked cobble end has heavy pitting on both the top portion and a single keel, suggestive of use as a hammerstone as well as a chopping tool.

Ground Stone

Nine manos were collected from the surface. The first mano (Specimen 100-1) is complete, comprised of tan sandstone (with obvious quartz and hematitic inclusions), and is teardrop shaped in plan view and bio-convex in cross-section. The artifact is 14.0 by 8.2 by 4.9 centimeters and weighs 997.9 grams. The dorsal and ventral surfaces are ground and heavily polished, with horizontal striations and some pitting that may be the remnants of pecking or are inconsistencies in the lithic material. There are also several large gouges on both the ventral and

dorsal surface from plowing. The edges are heavily ground and polished but not keeled, as are both ends.

The second (Specimen 116-1) is a mostly complete tan sandstone mano (Specimen 116-1) with some reddening suggestive of hearth or non-cultural postdepositional burning. The artifact is 12.9 by 10.5 by 4.2 centimeters and 911.7 grams in weight. The mano is ovoid in plan and has an asymmetrical bio-convex cross-section. Both the dorsal and ventral surfaces are heavily pecked, possibly to rejuvenate the grinding surface. Both grinding surfaces are also highly polished with visible horizontal striations. The ventral grinding surface is flatter (and more heavily pecked) than the dorsal. There is a single keeled edge with heavy grinding and polish on all of the edges. One end is snapped off from a percussive impact that occurred 90 degrees to the horizontal axis of the artifact. The other end is highly polished.

The third mano (Specimen 117-1) is a complete tan polymictic conglomerate with some reddening suggestive of hearth or non-cultural postdepositional burning. The artifact is 12.0 by 10.5 by 5.4 centimeters and 1315.4 grams in weight. It has a globular plan view and rounded cross-section. There is grinding on both the dorsal and ventral surfaces and the dorsal surface has a flattened grinding surface. The ventral grinding surface is sloped and has only light grinding and polish. The edges and one of the ends are lightly ground and polished, and one edge displays a fresh plow gouge. The mano is less formal than other handstone specimens from this site.

The fourth mano (Specimen 120-1) is made of tan sandstone and is 4.5 by 10.8 by 5.3 centimeters and 494.2 grams in weight. It is small fragment that exhibits a simple snap-break. The dorsal grinding surface has no peck marks and is concave, whereas the ventral grinding surface is flat, highly pecked, ground, and polished. The end is slightly battered and highly polished. Proportionally there are not enough edges to comment on the edge use-wear.

The fifth mano (Specimen 121-1) is mostly complete and made of white granite. The artifact is 12.1 by 8.5 by 6.5 centimeters and 997.9 grams in weight, and has two grinding surfaces. The ventral surface is concave with a high degree of polish. The dorsal is sloped at 28 degrees and is smaller than the ventral due to the morphology of the cobble. One end is highly battered and the other is broken, which may have been due to heavy use. Only one of the edges is ground and polished.

The sixth mano (Specimen 123-1) is fragmentary and manufactured from a gray sandstone cobble. The mano is 14.1 by 8.0 by 4.8 centimeters and 808.0 grams in weight. Both the ventral and dorsal surfaces are ground unidirectionally to produce steep edges and convex grinding surfaces (25 and 22 degrees). The grinding surface slopes towards a sharp edge 1.5 centimeters thick; however, no use is evident because of two large snap breaks that have detached most of the sharp edge. Both the ventral and dorsal grinding surfaces are highly polished with pecking and horizontal striations evident. The opposite edge has no evident use-wear. Only one end remains and is highly battered.

The seventh mano (Specimen 126-1) is complete and made of pink granite. The complete mano is 5.5 by 8.5 by 6.0 centimeters and 460.1 grams in weight and manufactured on the fragment of a granite cobble that has a longitudinal break. The broken surface has a reddish brown patina indicating it predates any cultural modification. Also, the edges of the break have been heavily battered and then rounded and polished. Both the dorsal and ventral grinding surfaces are heavily

polished. The edges and the end have been extensively battered, while the portions of the edge without battering are polished.

The eighth mano (Specimen 129-1) is fragmentary, made of dark gray sandstone with a tan exterior. The mano is 8.2 by 8.0 by 5.1 centimeters and 522.8 grams in weight. There are three fresh break surfaces: two longitudinal breaks that removed both ends and an angled break that removed all of an edge and most of two grinding surfaces. The remaining dorsal and ventral grinding surfaces are polished and lightly pecked. The small portion of the edge that remains is lightly ground and polished.

The final mano in the assemblage (Specimen 130-1) is fragmentary, made of light tan sandstone. The mano is 5.7 by 8.5 by 5.0 centimeters and 430.8 grams in weight. There is an older weathered longitudinal break that has been rounded. The ventral grinding surface has been cleaved off latitudinally, possibly through use as the intact end is highly battered. The dorsal grinding surface is polished and ground with some remnant peck marks. The portions of the edges that remain are polished and have some evidence of battering.

A single basin metate (Specimen 119-1) fragment of tan/gray sandstone was collected from the surface. The fragment is 14.2 by 10.1 by 8.1 centimeters and weighs 1616.2 grams. It was manufactured from a large tabular piece of sandstone. The exterior edges were shaped through percussion flaking and the base is ground, probably a result of the metate being placed on hard surfaces over extended periods of use. The interior rim has been heavily pecked but only lightly ground. The interior of the metate is highly polished from extensive use. The depth from the interior lip to the bottom of the basin is 6.3 centimeters and is lenticular in shape. The base of the metate is very thin at only 0.9 centimeters and this thin base to thick wall ratio created a weak point and likely led to the breakage of the artifact. The fragment has three simple snap breaks (one is along the thin portion of the base) and there are multiple fresh plow gouges.

There was a single bowl fragment collected from the surface (Specimen 106-1), made of gray sandstone with a brownish red patina (oxide from hematitic rich sandstone). The fragment is the base of a well weathered bowl with three weathered snap breaks. The interior retains no obvious method of manufacture. The exterior is also highly weathered but the bottom and sides do retain some evidence of grinding and polishing. The wall thickness varies from 3.9 to 2.8 centimeters whereas the base is much thinner at 1.0 centimeter. The exterior has several fresh gouges from a plow. The bowl fragment is 12.7 by 12.4 by 4.2 centimeters and weighs 1077.7 grams.

A single piece of a probable stone bowl or mortar rim (Specimen 80-5) was found in the 0–20 centimeter level of STU 1. The specimen is 5.0 by 3.8 by 3.2 centimeters and weighs 65.9 grams. The material is tan sandstone with some reddening that may be a result of its discard in a hearth or a non-cultural postdepositional fire. The outer edge of the rim is highly polished with some pecking. There are two older angled snap breaks and fresh plow gouges.

A tan sandstone artifact (Specimen 102-1) of unknown function was also collected from the site. It is 8.9 by 4.0 by 2.2 centimeters and weighs 171.6 grams. All surfaces of the artifact were extensively shaped through pecking and polishing (Figure 5-5). The dorsal surface is highly polished and convex. The ventral side, also convex, has a slight longitudinal pecked groove, possibly for hafting, along the midsection of the ventral side. Both ends are heavily battered and broken as a result of use.

Figure 5-5 Specimen 102-1 ground stone artifact of unknown function.

Lithic Tool Discussion

Phase 2 work at CA-SLO-2798/H produced 13 ground stone artifacts that indicate vegetal food processing was a major activity at the site (Table 5-4). Most ground stone artifacts were found on the apex of the northern knoll. The distribution of all but one specimen is constrained to an area both adjacent to and comingled with the primary historic debris deposit at the site. The highly mixed depositional context may suggest that these artifacts are not in their original location but rather were collected by persons associated with the historic debris. However, Frank Avila, a descendent of the owner of the ranch at that time, has no knowledge of prehistoric artifact collection by ranch workers or temporary inhabitants at the barn (personal communication 2015). More to the point, a collection of ground stone this extensive would more likely have occurred at a permanent dwelling as opposed to a barn.

An alternative explanation for the concentration of milling tools on the knoll is that seed processing was focused on the higher ground, while flaked stone tool manufacture and repair occurred elsewhere on site. The spatial distinction between milling tools and other artifacts has implications for the study of demography, population dynamics, and the gendered organization of work among Millingstone populations, a topic discussed by McGuire and Hildebrandt (1994).

In terms of chronology and component definition, the overall assemblage appears to represent a single prehistoric component of the Early Holocene Millingstone complex (Fitzgerald et al. 2000; Jones et al. 2002). Distinctive characteristics of this complex include a high frequency and variety of handstones, basin milling slabs, core tools, and a minimal biface assemblage with limited amounts of debitage. The one ground stone artifact of unknown function (Specimen 102-1; Figure 5-5) resembles similar enigmatic artifacts from other Millingstone

components. Similar specimen have been identified from the Millingstone components at CA-SLO-2 (Diablo Canyon; (Greenwood 1972:33), CA-SLO-1797 (the Cross Creek Site; Fitzgerald et al. 2000:94), and possibly CA-VEN-150 (the Browne Site; Greenwood 1969). Those specimens were also interpreted as having no known function. Fitzgerald (2000:94) suggests the specimen from the Cross Creek site has the impression of a "work in progress." Due to the lack of strong contextual data, such a limited description seems appropriate for the specimen found at CA-SLO-2798/H. At the moment these unique curvilinear ground stone artifacts seem to be associated with Millingstone period sites and as they become increasingly studied it will be interesting to see if such a pattern holds. In the future it may be profitable to submit these artifacts for pollen washes and sonication to see if there are patterned uses that may aid functional interpretations.

5.3.1.2 Debitage Analysis

The goal of a mass debitage analysis is to better understand the production, maintenance, and curation of prehistoric stone tool use at a given location on the landscape. Such an analysis focuses on several key waste flake attributes which can offer powerful insight into the changes or maintenance in prehistoric human behavior. However, a mass debitage analysis must first address the overall condition of the assemblage since the original time of discard. If there has been significant postdepositional mixing of waste flakes the reliability of such an analysis is greatly diminished (Andrefsky 2007). The mass debitage analysis of waste flakes at CA-SLO-2798/H sought to accomplish two goals: assess the conditions of the collected materials since their original discard, and assess if the collected material can be used to answer broad research questions important to both local and large-scale studies.

Twelve macroscopically distinct "types" of lithic material were evident in the assemblage based on distinctions in the hue, texture, opacity/translucency, and inclusions in lithic material (Table 5-4). A "type" is simply a category of stone with unique attributes separate from and not encompassed by the variation in any previously defined type from a specific lithic assemblage. The separation of toolstone into these discrete categories helps isolate key reduction or discard events at a site.

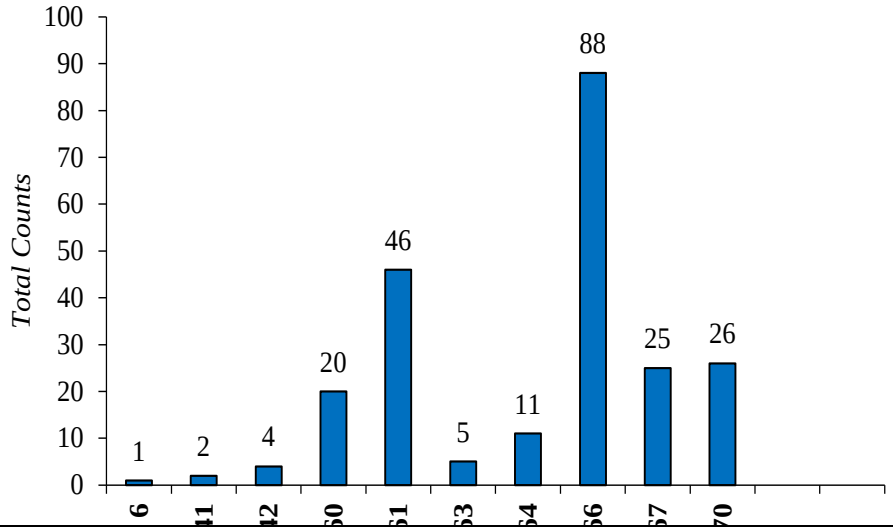
Table 5-4
Discrete Lithic Material Types at CA-SLO-2798/H

Type	Material	Description
Type 6	Obsidian	Black vitreous with no visible inclusions.
Type 41	Silicified shale/mudstone	Gray to tan opaque material. Color is distinct from general siliceous shale/mudstone category.
Type 42	Silicified shale/mudstone	Black/gray/brown in color.
Type 60	Chert	Franciscan chert that trends more to the green opaque variety, but includes the banded red and green variety.
Type 61	Chert	Red opaque Franciscan chert.
Type 63	Chert	Banded translucent gray/tan/white Monterey chert distinct from black/tan variety.
Type 64	Chert	Distinct semi-translucent white chert with pink to pinkish white inclusions.
Type 66	Chert	Black Monterey chert.
Type 67	Chert	Clear translucent chert with white inclusions.
Type 70	Chert	Tan Monterey chert.
Type 71	Chert	Translucent colorless with red inclusions.
Type 72	Chert	Pink/tan siliceous shale or mudstone.

There is a sharp divide in material types with 86 percent (n = 205) of the lithic assemblage represented by variants of Franciscan and Monterey chert. The remaining 14 percent (n = 33) of the assemblage includes siliceous mudstone/siltstone, distinct types of translucent and opaque white cherts, and a single piece of obsidian found on the surface (Figure 5-5). The materials that fall outside of the Franciscan and Monterey chert types encompass all size grades and platform types almost uniformly.

Lithic Debitage Discussion

Due to the small sample size it is difficult to determine whether the lithic debitage represents exclusively tool maintenance areas or if there are unfound tools/cores on the site. The most notable trend in the lithic debitage is in the presence of clear chert with white inclusions (Type 67) and clear chert with red inclusions (Type 71; Figure 5-6). These distinct chert types are only represented by the smallest flake categories and are localized to TEU 2. This likely indicates the maintenance of a tool that is no longer at the site. The flake portions are predominately small and broken (n = 123), which may indicate a focus on tool maintenance but is more likely a result of the high degree of postdepositional agricultural activity as these materials are close to the surface. Little more can be said if platform attributes are added to flake size; however, there are only ten pieces of lithic debitage with prepared platforms. When both flake size and cortex are considered there is a relatively low number of flakes above 1/2-inch in size and these account for more than half the flakes with cortex (n = 12 percent or 57 percent of the total assemblage). Cortex is almost exclusively rounded, which indicates secondary procurement of small cobbles did condition the overall size of the assemblage.



Note: Type 6=black vitreous obsidian; Type 41=gray/tan silicified shale/mudstone; Type 42= black/gray/brown silicified shale/mudstone; Type 60=banded green and red Franciscan chert; Type 61=red opaque Franciscan chert; Type 63=banded translucent gray /tan/white Monterey chert; Type 64=white chert with pink inclusions; Type 66; black Monterey chert; Type 67=clear chert with white inclusions; Type 70=tan Monterey chert; Type 71=clear with red inclusions; Type 72=pink/tan siliceous shale/mudstone.

Figure 5-6 Frequency of discrete lithic types.

The lithic debitage does not provide a robust set of data to address local or larger-scale research questions. There is a relatively sparse scatter of material located across the entire site. TEU 1 and TEU 2 were placed within the most intact deposits (indicated by initial shovel test pits) and found sparse deposits at the 20–30 centimeter depth. However, the overall counts are too low to provide any meaningful interpretation of larger behavioral patterns or trends. Most interestingly, a lithic type (Type 71) localized to TEU 2 may indicate a discrete tool maintenance episode. As a more general trend, if the fragmentary nature of the lithic debitage is not from plow activity then tool production/maintenance played a larger role at the site than did core reduction. This is a cautioned interpretation given the overall limited nature of the excavations.

5.3.2 Fire-Altered Rock

Two pieces of fire-altered rock were collected. The first is a reddened cobble (Specimen 92-5) of an indeterminable mafic source found in TEU 2 at a depth of 20–30 centimeters; it weighs 320.16 grams. The second was found in STP 17 in the 0–20 centimeter level below the plowed ground surface. It is a reddened and gray piece of sandstone that weighs 130 grams.

5.4 HISTORIC ASSEMBLAGE

The historic assemblage from CA-SLO-2798/H consists of 1,799 items concentrated around the former structure location along the central eastern margin of the site. The recovered historic materials consist primarily of domestic, personal, structural, and undetermined artifacts. These artifacts represent activities associated with both personal consumption and agricultural activities associated with the historically recorded barn and agricultural complex at the site. The vertebrate and invertebrate faunal materials are included within the historic artifact context as they were recovered primarily near the surface (0–20 centimeter level) and in association with the historic concentration at the site.

5.4.1 Vertebrate Fauna

Excavations at CA-SLO-2798/H yielded a total vertebrate faunal assemblage of 14 bone specimens with a combined weight of 115.6 grams. All of the faunal remains in this assemblage were recovered from the 0–20 centimeter and 20–40 centimeter levels within STP 8 and STUs 1–4. These units were placed within the historic concentration. Given the bones' location within the historic concentration and the high level of preservation observed, the bone has been analyzed within the historic period context of the site. All bone recovered from the Phase 2 testing was analyzed.

5.4.1.1 Assemblage Composition

The analyzed sample is comprised primarily of fragmentary specimens, creating a low rate of identification. More than half of the sample (57.1 percent) was unclassified (n = 8). The majority of bone specimens belong to the Mammalia class, with no bird or fish bone recovered. The medium/large mammal group is the largest percentage by count and weight of the identifiable bone, with small rodent/insectivore comprising the remainder.

Identification of specific bone elements is difficult due to the fragmentation of this sample. The unidentified bone consists of three medium/large mammal long bone fragments, and five

unidentified medium/large mammal bone fragments. Two rodent bones were also only identifiable to the order Rodentia and consist of a fused coccygeal and pelvis fragment and a thoracic vertebra, both from unidentified medium rodents. The remainder of the assemblage consists of identifiable medium and large mammal bones. The identifiable mammal bones include one cattle bone (*Bos taurus*) and three pig bones (*Sus scroffa*). The pig bones consist of a right humerus of a sub-adult with fractures at both articulations, the proximal articulation of a right sub-adult pig humerus, and the proximal articulation of an adult pig right scapula. The cattle bone is the shaft of an adult right tibia, butchered at both ends. The butchering indicates this bone represents a low value shank roast cut (Shulz and Gust 1983).

5.4.1.2 Modification

Natural and cultural modification of bone is common within archaeological assemblages and can shed light on cultural practices as well as postdepositional processes within the site. There is slight modification of bone in this assemblage, consisting of one butchered cow tibia shaft that also has evidence of being heat altered, likely from cooking. The remaining bones show erosion and breakage, likely from the decades of plowing that occurred at the site.

5.4.1.3 Summary

The small sample size and degree of bone fragmentation makes it difficult to determine the role of vertebrate fauna at CA-SLO-2798/H. Most of the sample is comprised of medium and large mammals indicating human cultural action. The large mammal remains likely represent artiodactyl species such as cow and deer; the medium mammals are probably carnivores such as coyote or smaller domesticated animals such as pigs. Rodent remains are also present in this sample and are likely deposited through natural action. Overall, the analyzed sample provides some insight into faunal diversity and historic faunal utilization. The faunal remains indicate that domestic cows and pigs were present at the site, with evidence of cattle consumption present on the tibia shaft. This low value roast cut likely corresponds with the small sample of historic tableware refuse and signifies occasional meals taken at the site. However, given the low count of faunal remains collected during the study, it is difficult to provide any solid determinations of the role animals played at the site and in the historic dietary practices of the site inhabitants.

5.4.2 Invertebrate Fauna

Of the sorted material from the Phase 2 excavations at CA-SLO-2798/H, 226.21 grams of marine shell was analyzed. This sample includes all specimens field screened through 1/8-inch and larger mesh. As noted in Chapter 4, screen residues were size sorted into 1/2-, 1/4-, and 1/8-inch fractions prior to processing and cataloging. Shell from each size grade was examined and classified to the lowest possible taxon. When necessary, reference books (McConnaughey and McConnaughey 1985; Morris 1966; Morris et al. 1980; Rehder 2007; Ricketts et al. 1985; Smith and Carlton 1975) were consulted. Taxonomic identifications were made to the species level whenever possible. In addition to provenience and taxon, recorded variables include lab mesh size; shell morphological element, or body part; weight; and presence and type of modification (if any). Given the small sample size and fragmentary nature of the marine shell assemblage, element counts and MNI calculations were not conducted. Therefore, the assemblage was analyzed utilizing gross weights of each individual group of species or family.

5.4.2.1 Assemblage Composition

Nine unique marine invertebrate taxa were identified in the analyzed shell assemblage, eight of which were identifiable to the level of genus or better. The remaining specimen consists of one unidentified crab fragment. The collection is primarily composed of Pismo clam (*Tivela stultorum*), which accounts for 88 percent of the assemblage by weight. The next most abundant categories by weight are, in descending order, black abalone (*Haliotis cracherodii*, 6.4 percent), red abalone (*Haliotis rufescens*, 2.3 percent), unidentified abalone (*Haliotis sp*, 1.9 percent), black turban snail (*Tegula funebralis*, 1.2 percent), unidentified oyster (*Crassostrea* sp, 0.44 percent), unidentified mussels (*Mytilus sp*, 0.31 percent), and California mussel (*Mytilus californianus*, 0.004 percent). The shellfish assemblage is dominated by species that prefer open coast and protected open coast habitats. The presence of marine fauna at this inland site indicates that these species were likely brought onto the site for various consumption practices.

5.4.3 Historic Artifact Descriptions

The historic artifact assemblage from CA-SLO-2798/H consists of 1,799 items concentrated around the primary historic concentration along the central eastern margin of the site, with only nine artifacts collected outside of this concentration. Table 5-5 shows the distribution of all artifacts from CA-SLO-2789/H by functional category. All of the historic artifacts recovered at the site are fragmentary as a result of continuous plowing and agricultural uses of the site area, therefore inflating the artifact counts. Given the high artifact fragmentation and inflated counts, minimum vessel counts (MVC) and minimum number of individual (MNI) artifact counts are utilized to more accurately detail the assemblage and provide more relevant cultural context for the artifacts.

Table 5-5
Distribution of Historic Artifacts from CA-SLO-29787/H by Functional Group

Functional Group	Count	Percent
Activities	9	0.5
Domestic	607	33.7
Personal	13	0.7
Structural	795	44.2
Undetermined	375	20.9
Total	**1,799**	**100.0**

Materials primarily consist of domestic, personal, structural, and undetermined artifacts (Table 5-6). The assemblage is dominated by undetermined and structural debris due to the fragmentary nature of metal and wood artifacts. These artifacts comprise approximately 65 percent of the assemblage and consist primarily of wood, brick, concrete, wire nails, and unidentified iron alloy fragments. Additional unidentified artifacts consist of approximately 88.6 grams of asphaltum and 0.3 grams of charcoal. These materials were collected from units excavated within the historic deposit and were analyzed with the historic assemblage. Aside from building material, domestic refuse is the second highest percent of goods at the site. Artifacts in this class include food processing and consumption artifacts, hygiene artifacts, and any other artifact associated with everyday residential activities. Domestic artifacts comprise

approximately 33.7 percent of the assemblage. Additional smaller categories of artifacts include ammunition, machine parts, and farming equipment.

Table 5-6
Historic Artifacts at CA-SLO-2978/H by Group and Category

Group and Category	Material	Object	Count	MNI
Activities				
Firearms/Ammunition	Metal	.22 Long Cartridge Casing	1	1
	Metal	Shotgun Cartridge Shell	1	1
Subtotal Firearms			2	2
Transportation	Glass	Tail Light Fragment	1	1
	Metal	Gear	1	1
	Metal	Poppet Valve (Internal Combustion Engine)	1	1
	Metal	Sparkplug cover plate	1	1
	Metal/Ceramic	Sparkplug	2	2
	Metal/Leather	Horse tack fragment	1	1
Subtotal Transportation			7	7
Subtotal Activities			**9**	**9**
Domestic				
Food Preparation/Consumption				
Serving Ware	Glass	Lid	1	1
Tableware	Jadeite	Flatware	4	1
	Glass	Cup	2	1
	Glass	Plate	1	1
	Fiestaware	Bowl	1	1
	Fiestaware	Flatware	3	1
	Porcelain	Decorative mug	2	1
	Porcelain	Cup/Mug	1	1
	Stoneware	Undetermined fragments	2	1
	Whiteware	Plate	5	1
	Whiteware	Saucer	1	1
	Whiteware	Decorative flatware	1	2
	Whiteware	Flatware	6	0
Subtotal Food Preparation/Consumption			30	13
Food Refuse	Walnut Shell	Walnut Shell	11	7
	Faunal	Faunal Remains	14	3
	Shell	Shell Fragments	81	9
Subtotal Food Refuse			106	19
Food Products/Packaging				
Bottles				
	Glass	Colorless glass	134	3
	Glass	Aqua glass	13	1
	Glass	Amber glass	39	2
	Glass	Cobalt glass	2	1

Table 5-6 (continued)
Historic Artifacts at CA-SLO-2978/H by Group and Category

Group and Category	Material	Object	Count	MNI
	Glass	Green glass	6	2
Cans	Metal	Unidentified fragments	259	2
	Metal	Sanitary can	4	1
Subtotal Containers			457	12
Household				
	Glass	Lighting Glass	14	1
Subtotal Household			14	1
Subtotal Domestic			**607**	**46**
Personal				
Clothing				
Fasteners	Metal	Lace hook	1	1
	Metal	Buckle	1	1
Subtotal Clothing			2	2
Grooming				
Cosmetics	Glass	Cold Cream Jar	5	1
Medicine	Glass	Pharmaceutical Bottles	5	2
Hair Care	Glass	Fitch's Hair Tonic	1	1
Subtotal Grooming			11	4
Subtotal Personal			**13**	**6**
Structural				
Building Material				
Adobe Tile	Adobe	Fragment	1	1
Brick	Brick	Fragments	117	1
Cinder	Cinder	Fragments	9	1
Concrete	Concrete	Fragments	7	1
Composite shingles	Tar/asphalt	Fragments	53	1
Window	Glass	Window pane fragments	59	2
Wood	Wood	Fragments	389	1
Subtotal Building Material			636	8
Tools/Hardware				
Tools	Metal	Iron alloy ball cast	1	1
Hardware	Metal	Staple, hex nut, washer, bolts	8	7
	Metal	Unidentified hardware	2	1
Subtotal Tools/Hardware			11	9
Nails				
Wire	Metal		146	40
Square Cut	Metal		1	1
Roofing Nail	Metal		1	1
Subtotal Nails			148	42
Subtotal Structural			**795**	**59**
Undetermined Use				
Misc. Metal Items				
Fragments	Metal	Fragments	202	1
Mechanical Pencil	Metal	Fragments	2	1

Table 5-6 (continued)
Historic Artifacts at CA-SLO-2978/H by Group and Category

Group and Category	Material	Object	Count	MNI
Tube	Metal	Unidentified cream tube	1	1
Aluminum Fragments	Aluminum	Fragments	3	1
Eyehole Bracket	Metal	Unidentified bracket	1	1
Tab	Metal	Metal tab	1	1
Wire	Metal	Baling Wire (7, 10, 12, 13 gauge)	55	1
Wire	Copper Alloy	Fragments	1	1
Fragment	Copper Alloy	Fragment	1	1
Spring	Metal		1	1
Subtotal Misc. Metal Items			268	10
Undifferentiated Items				
Asphaltum	Asphaltum	Fragments	55	1
Plastic	Plastic	Fragments	29	1
Clinker	Clinker	Fragments	10	1
Charcoal	Charcoal	Fragments	9	1
Rubber	Rubber	Fragments	4	1
Subtotal Undifferentiated Items			107	6
Subtotal Undetermined Use			**375**	**16**
Total			**1,799**	**139**

Datable glass artifacts demonstrate that the historic assemblage dates to the early 1920s to the early 1970s, with a *terminus post quem* (TPQ) of the early 1920s. The TPQ was established based upon the presence of a solarized amethyst glass applied prescription bottle finish. The use of manganese as an ingredient in colorless glass manufacture was common during the late 1800s through the early 1920s when machine bottle manufacturing and industry practices moved away from using manganese in the process (Lockhart 2006). Therefore, the presence of an applied amethyst finish indicates a production date prior to the early 1920s. Although diagnostic maker's marks were difficult to assess given the fragmentary nature of the assemblage, certain diagnostic traits of the partial maker's marks were utilized to date the assemblage.

One partial maker's mark from a colorless glass flask base has the labeling code "D-23" and an Owens Illinois maker's mark consisting of an "I" inside an "O." This mark indicates the bottle was a distilled spirits bottle manufactured after 1954 at the Owens Illinois bottle plant in Los Angeles (SHA 2015a, SHA 2015b). Furthermore, the presence of ironstone fiesta ware provides a date range between 1959 and 1973, when Homer Laughlin produced this distinct type of ceramic (Carnegie Public Library 2015). A third maker's mark, which has "Fitch" in cursive on a base, is from a F.W. Fitch hair oil bottle. The Fitch Corporation produced numerous grooming products between 1917 and 1949, when the company was sold (Page 2011:12–15). The Fitch name was continued and production of Fitch products continued through the 1970s. The large window of production and lack of a manufacturer's mark on this bottle prevents it from serving as an accurate temporal diagnostic.

Several additional diagnostic historic period artifacts were recorded during the initial Phase 1 inventory of the site. These artifacts include a 1911–1929 Owens Illinois bottle base, a 1948

Owens Illinois 7-UP bottle base, and two mid 1940s Owens Illinois amber bottle bases (Toulouse 1971). These bases, along with those collected during the Phase 2 investigation, indicate that the period of site occupation was between the 1920s to the early 1960s. The domestic assemblage at CA-SLO-2798/H represents limited consumption activities. The minimum vessel counts for both food containers and tableware indicate a very small number of these artifacts. This small assemblage likely relates to occasional food consumption at the barn which was present historically on the property.

The few grooming artifacts, the Ponds cold cream jar and the Fitch's Hair Tonic bottle, likely represent light hygiene practices at the site. However, given the low frequency of these hygiene and food consumption artifacts, the site likely never served as a permanent residence. It is possible ranch workers resided temporarily at the site based on the presence of these domestic artifact combined with the historical recollections of Frank Avila (property owner), who asserts that individuals and possibly his grandfather, Manuel F. Avila, resided at the location during the early historic occupation of the property. The abundance of mechanical artifacts and building materials is consistent agricultural practices. Thus, this historic assemblage represents minimal consumption and work related to the use of the barn for various agricultural and ranching activities associated with early to mid-1900s farming.

5.5 CHRONOLOGY

Ground stone tools are found at sites from many periods in prehistory; however, the quantity and forms of milling equipment found at CA-SLO-2798/H suggest occupation during the Early Holocene, between 8000 and 5000 B.C., as part of the Millingstone adaptive pattern (Greenwood 1972; Jones et al. 2008). The quantity and variety of milling tools, in conjunction with the types and limited quantities of other artifacts, further suggests a Millingstone component. While one piece of obsidian was present, the quantity and provenience suggested that hydration analysis would not be productive. No prehistoric marine shells or other organic materials suitable for radiocarbon dating were present.

The historic component at CA-SLO-2798/H is a small scatter of domestic refuse and structural debris. Artifact analysis places the historic-period occupation in the early-to-mid 1900s, with a TPQ of the early 1920s. This correlates with the barn discussed in Section 2.4.1.2 that stood on the property in the 1920s. This structural and domestic debris scatter may be the remnants of the barn. The presence of the barn also correlates to site improvements made by the Avila family, who purchased the property in 1910 (Frank Avila, personal communication, October 2015). Although it is unknown when the historic barn was abandoned or destroyed, some historic artifacts date to the 1960s or early 1970s, indicating that the barn was possibly abandoned around this time; however, the site has continued to function as an agricultural field up to the present, with peas and safflower growing at the site during fieldwork.

5.6 DISTRIBUTION PATTERNS

CA-SLO-2798/H is a relatively large site that covers two low knolls and continues downslope to the north and west toward and across the creek. Historic artifacts are confined to the northern knoll, distributed across its apex and slightly downslope on all sides. The highest frequencies of historic materials are on the apex of the knoll; artifact frequency decreases with distance from the knoll-top. It is evident that modern agricultural activities have accelerated this process.

Prehistoric artifacts, excluding milling equipment, are primarily located across the southern knoll and around the northern knoll, skirting the eastern edge of the creek and crossing the creek in one area. Milling equipment is almost entirely confined to the top of the northern knoll.

The site is primarily a surface deposit, with most prehistoric and historic artifacts recorded from the surface to 30 centimeters. A total of 152 pieces of lithic debitage were found within the two 0.5 by 1 meter test excavation units (n = 78, TEU 1; n = 74, TEU 2). The depth and total counts of the excavated artifacts are almost identical between the two units (Figures 5-7 and 5-8). The first two arbitrary levels contain materials displaced by agricultural activity. However, materials in the 20–30 centimeter level of both test units suggests an intact buried deposit is present in this level. The additional materials below 30 centimeters are likely a result of postdepositional movement from rodent activity and lose sandy sediments.

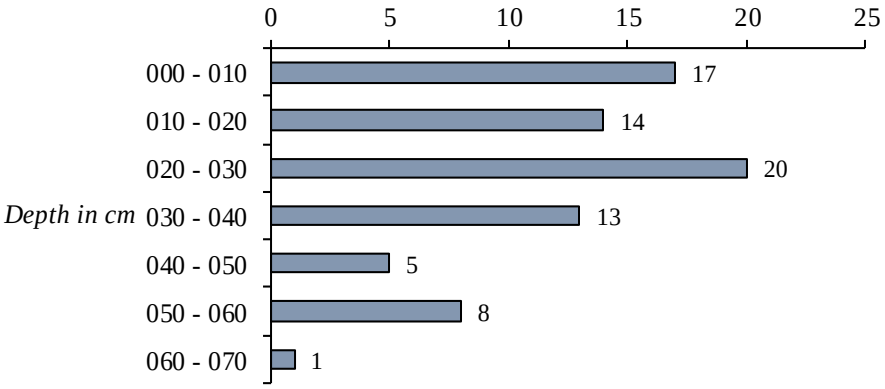


Figure 5-7 Lithic frequency by level depth for TEU 1.

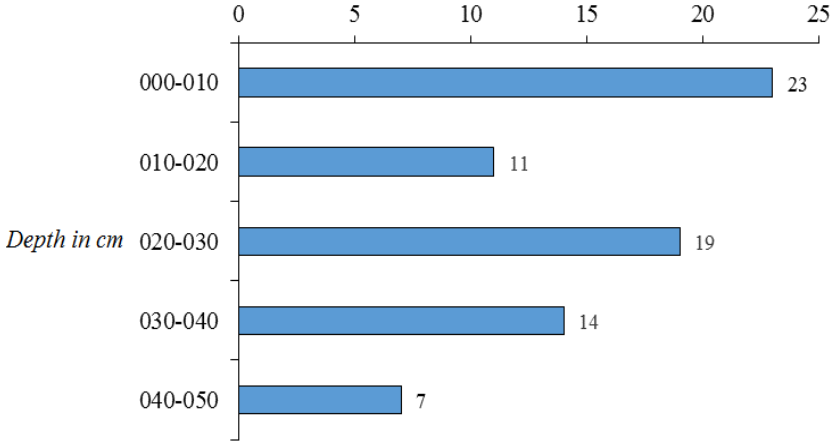


Figure 5-8 Lithic frequency by level for TEU 2.

5.7 SUMMARY AND INTERPRETATION

5.7.1 Summary

Testing at CA-SLO-2798/H included 24 shovel test probes, 2 test excavation units, and 4 surface transect units and revealed two occupational components: a complex prehistoric lithic scatter containing flaked and ground stone tools, and a historic structural and domestic debris scatter. Site sediments are Conception Series soils and differ in depth and type between the low, gradually sloping knolls and flatter areas surrounding the drainage. The site has been disturbed by agricultural activities; however, surface collection yielded 33 diagnostic historic artifacts and numerous prehistoric tools.

The prehistoric artifact assemblage consists of 238 pieces of lithic debitage, 4 flake tools, two bifaces, three cores, two pieces of fire altered rock, and 13 ground stone artifacts. One piece of obsidian debitage was collected, but due to the limited quantity, hydration and x-ray florescence analysis was deemed unproductive. No organic materials, bone, or marine shells were found with the prehistoric component. All organic material recovered from CA-SLO-2798/H was associated with the historic component.

Unfortunately, due to the lack of organic remains or a sufficient quantity of obsidian, absolute dating was not feasible for the prehistoric component. As discussed above, the assemblage is typical of an Early Holocene Millingstone site. The distribution patterns of prehistoric artifacts at the site may demonstrate a separation of work areas, with milling activity on the northern knoll and stone tool reduction across the southern knoll and flatter areas edging the creek.

The historic cultural assemblage from CA-SLO-2798/H consists of 1,799 items. The historic artifact assemblage is dominated by undetermined and structural debris due to the fragmentary nature of metal and wood artifacts. Aside from building material, domestic refuse is the second highest percent of goods at the site including food processing and consumption artifacts, hygiene artifacts, and any other artifact associated with everyday residential activities. Excavations at CA-SLO-2798/H yielded a total vertebrate faunal assemblage of 14 bone specimens with a combined weight of 115.6 grams. The faunal remains indicate that domestic cows were consumed at the site. However, given the low count of faunal remains, it is difficult to provide any solid determinations of the role animals played at the site and in the historic dietary practices of the site inhabitants. Rodent remains are also present in this sample which indicates bioturbation activates at the site. Additionally, 226.21 grams of marine shell was analyzed showing nine unique marine invertebrate taxa. The CA-SLO-2798/H shellfish assemblage is dominated by species that prefer open coast and protected open coast habitats. The presence of marine fauna at this inland site indicates that these species were likely brought onto the site for various consumption practices. Additional smaller categories of artifacts include ammunition, machine parts, and farming equipment.

6
SIGNIFICANCE EVALUATION

Two cultural resources were recorded during archaeological inventory at Avila Ranch. Æ evaluated both resources for significance and eligibility for listing on the CRHR. The following section evaluates the significance of each resource. If a property appears significant, an evaluation of integrity is then conducted, as both significance and integrity must be met to be eligible for listing on the CRHR.

6.1 P-40-038310

The historic feature is an octagonal foundation that once supported a grain silo. This feature is approximately 500 feet south-southeast of the historic Pereira Octagon Barn (CA-SLO-1002H). It is unknown when construction of this feature took place, or if it is directly associated with CA-SLO-1002H; however, due to the unusual shape and use of large aggregate within the concrete, it is likely the feature dates to the early nineteenth century. CA-SLO-1002H was built in 1906 and used for 50 years as a dairy barn, and subsequently a beef cattle barn. CA-SLO-1002H was listed on the National Register of Historic Places in 2014 for its importance in early San Luis Obispo dairy practices and for its unique architectural design.

6.1.1 Application of CRHR Significance Criteria

The newly recorded octagonal feature may be associated with the Pereira Octagon Barn due to its presumed age and proximity; however, there is no direct evidence that P-40-038310 is associated with the barn, its builders, or its operations. Though the shape of the foundation is distinctive it is not unique, as documentary evidence suggests that various agriculturalists experimented with octagonal silos during the early twentieth century (USDA 1907). Therefore, P-40-038310 does not appear significant under CRHR Criteria 1, 2, or 3. Neither is the feature significant under CRHR Criterion 4 because it lacks the potential to provide new or important data useful for interpretation or documentation of early subsistence and land use patterns in San Luis Obispo County that is not available from other sources. While the Octagon Barn itself is significant under several criteria, this remnant foundation does not possess the same character defining features, and therefore Æ concludes that P-40-038310 is not significant under any CRHR criteria.

6.2 CA-SLO-2798/H

CA-SLO-2798/H has two occupational components; one is a historic structural and domestic refuse scatter, and the other is a prehistoric tool and debris scatter. The historic component dates to the early-to-mid 1900s, while the prehistoric component appears to have characteristics consistent with the Early Holocene Millingstone adaptive pattern.

6.2.1 Application of CRHR Significance Criteria

There is no evidence that either the prehistoric or historic component of CA-SLO-2798/H is associated with a specific event, person, or group important to local or California prehistory or history. The site does not embody distinctive characteristics of a type or method of construction, nor does it have unique aesthetic qualities. Therefore, CA-SLO-2798/H does not appear significant under CRHR Criteria 1, 2, or 3.

The archaeological data potentials at CA-SLO-2798/H (CRHR Criterion 4) can be identified through the linkage of the material remains with relevant research themes such as cultural chronology, subsistence, technology, demography and population dynamics, consumer behavior, trade and exchange, and prehistoric or historic land-use systems. The historic archaeological deposit at CA-SLO-2798/H is attributed to the early-to-mid twentieth century agriculture. Testing within the historic component revealed a low frequency and variety of artifacts, principally glass, ceramics, and structural debris, contained primarily in the top 20 centimeters of soil. The assemblage has also low quantities of vertebrate and invertebrate faunal remains. Due to the limited quantity and variety of artifacts and debris and lack of clear historic associations, the historic-period assemblage from CA-SLO-2798/H lacks potential to provide meaningful data on questions regarding local or regional history. The historic deposit of CA-SLO-2798/H therefore does not appear significant under Criterion 4.

The prehistoric archaeological deposit at CA-SLO-2798/H consists of a low-frequency, primarily surface scatter of milling equipment and flaked stone tools indicative of an Early Holocene Millingstone site. Ground stone at CA-SLO-2798/H includes nine manos, one basin metate, two stone bowl rims, and one enigmatic ground stone artifact. The presence of such a robust ground stone assemblage with a comparably weak biface assemblage and lack of associated organic artifacts is indicative of the Early Holocene Millingstone adaptive pattern. Since artifacts indicative of later periods were not discovered, the site appears to represent a single occupational component. Such sites are uncommon in the area.

Artifact distribution throughout the site is notable. Flaked stone tools and debitage primarily skirt the east side of the creek, and in one area, artifacts were found on the west side of the creek. Debitage is found across the site in small quantities, however the highest density of flaked stone was recovered from the southern knoll, and a flatter area at a bend in the creek. The sample of flaked stone from the site is small; however, the assemblage may represent small tool maintenance episodes. The use of high power magnification and a comparative use wear collection would provide information specific to the creation of the informal stone tools (utilized flakes).

Conversely, ground stone artifacts are focused almost exclusively on the northern knoll. One outlier, a sandstone bowl fragment, was found northwest of the concentration, close to the creek. This distribution pattern is striking, and offers the potential to investigate questions of demography and population dynamics such as settlement group composition, separation of milling and flint knapping work areas, and the definition of women’s versus men’s use areas.

Although organic material suitable for radiocarbon dating is absent from the prehistoric assemblage, one piece of obsidian debitage was on the surface and there is potential for additional obsidian specimens at the site which could provide data on site chronology and trade

and exchange. Ground stone artifacts can also provide information on chronology, as well as informing on subsistence and production technology. Additionally, ground stone can be submitted for pollen washes and sonication to extract botanical remains to aid functional interpretations and identify food types and sources. The site, being a single occupation deposit, assists in detailing activities within a single time period without concern for mixing if components.

Because single component Millingstone occupations are rare in the area, CA-SLO-2798/H is an important archaeological resource which holds important data potentials that could contribute substantially to our understanding of local and regional prehistory. Therefore, the prehistoric component of CA-SLO-2798/H is judged significant under CRHR Criterion 4.

6.2.2 Integrity

The prehistoric portion of CA-SLO-2798/H has been subject to plowing and agricultural use throughout the past century; however, the site appears to be a single component Millingstone occupation. Because the site is has a single component, postdepositional processes such as plowing are less likely to affect the integrity of the deposit by mixing earlier and later materials. Moreover, the internal spatial patterning at the site appears to be preserved, with a differentiation between flaked and ground stone use areas. Therefore, CA-SLO-2798/H retains integrity.

6.2.3 Evaluation Summary

The historic portion of CA-SLO-2798/H does not meet any of the four CRHR significance criteria. The prehistoric portion of CA-SLO-2798/H is considered significant under Criterion 4. Even though the site has been plowed and postdepositional movement has occurred at the site, these processing have not diminished the integrity of the deposit to the extent that interpretation of site use, period, and activities are not possible. The site still has the ability to convey its important data, and Æ therefore recommends the prehistoric component of CA-SLO-2798/H eligible for listing on the CRHR under Criterion 4.

7
SUMMARY AND RECOMMENDATIONS

Applied EarthWorks, Inc. conducted a cultural resources inventory and evaluation for the proposed residential and commercial development at the Avila Ranch in San Luis Obispo, California. As part of this study, Æ completed a records search at the Central Coast Information Center and a Phase 1 surface survey of the Project area, recording one previously unidentified archaeological site, CA-SLO-2798/H, and one isolated historic feature, P-40-038310. To define subsurface cultural material density, contents, and integrity of CA-SLO-2798/H, Æ completed subsurface testing to evaluate site significance and eligibility for listing on the CRHR. Additionally, Æ reached out to the local Native American community through contact with the Native American Heritage Commission (NAHC) and local tribal representatives.

Based upon the results of background research and field survey, Æ concluded that P-40-038310 is not significant or eligible for listing on the CRHR. Æ found that the prehistoric component of CA-SLO-2798/H has the potential to provide important new information about local and regional prehistory, retains integrity, and is therefore eligible for listing on the CRHR under Criterion 4.

The site represents a single component Millingstone occupation, and Æ collected a moderately robust collection of ground and flaked stone artifacts during the inventory and evaluation. To mitigate the impacts of Project development on this significant historical resource, Æ recommends collection of additional formed tools to increase the inventory of flaked and ground stone, thus expanding the record of these items and improving the sample available for analysis. No patterned features (e.g., hearths, storage pits, house remnants) were discovered during testing, but such features may be present and would provide important new data potentials.

Typically, data recovery excavation would be proposed to accomplish the mitigation goals described above. The nature of this site, however, makes standard data recovery impractical; the relatively sparse distribution of materials across the large site area would necessitate an unusually large volume of excavation to achieve the mitigation goals, and still might not reveal features or a substantial number of additional tools. Rather, Æ recommends systematic and controlled grading of the site prior to construction to seek buried features and additional diagnostic artifacts. Controlled grading should occur in 10-centimeter lifts to culturally sterile sediments or maximum construction depth (whichever is reached first) under the supervision of an archaeologist and Native American monitor. The archaeologist will collect any formed tools exposed during grading and add this information to the archaeological record. If features such as hearths, storage pits, or structural remains are exposed, the archaeologist will temporarily redirect grading to another area so the features can be exposed, recorded, and sampled according to standard archaeological procedures. If additional artifacts and/or features are uncovered, they should be described and analyzed in a technical report that can be appended to this report; they site record may also require updating.

Due to the Project's proximity to the creek and overall archaeological sensitivity of the area, cultural resource monitoring should be employed during all ground disturbing activities within

the Project area. Monitoring involves inspection of subsurface construction disturbance at or in the immediate vicinity of known sites, or at locations that may harbor buried resources that were not identified on the site surface. Such archaeological monitoring should be conducted by a qualified professional archaeologist familiar with the types of historical and prehistoric resources that could be encountered within the Avila Ranch Project area. A Native American monitor should also be present because the area is a culturally sensitive location.

If buried cultural materials are discovered by archaeologists or construction personnel during monitoring, work in the immediate area of the find must be diverted until the discovery is evaluated and any necessary plans are developed for treatment of the find(s) or mitigation of adverse effects. In this regard, prior to construction it would be appropriate to provide worker education regarding the recognition of possible buried cultural remains and protection of all cultural resources, including prehistoric and historic resources, during construction. Such training should provide construction personnel with direction regarding the procedures to be followed in the unlikely event that previously unidentified archaeological materials, including Native American burials, are discovered during construction. Training would also inform construction personnel that exclusion zones must be avoided and that unauthorized collection or disturbance of artifacts or other cultural materials is not allowed.

If human remains are discovered during, work must stop at the discovery location and any nearby area reasonably suspected to overlie human remains (California Public Resources Code [PRC] 7050.5). The San Luis Obispo County Coroner will be contacted to determine whether the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (California PRC 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treating and disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in California PRC 5097.98.

9

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APPENDIX A

Records Search Results

California
Archaeological
Inventory

SAN LUIS OBISPO AND
SANTA BARBARA COUNTIES

Central Coast Information Center
Department of Anthropology
University of California, Santa Barbara
Santa Barbara, CA 93106-3210
(805) 893-2474
FAX (805) 893-8707
centralcoastinfo@gmail.com

6/22/2015

Erin Enright
Applied EarthWorks, Inc.
811 El Capitan Way, Suite 100
San Luis Obispo, CA 93401

Re: Avila Ranch / Project #3205 Records Search File No.:

The Central Coast Information Center received your record search request for the project area referenced above, located on the Pismo Beach USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a one-quarter mile radius:

As indicated on the data request form, the locations of reports and resources are provided in the following format: ☐ custom GIS maps ■ shapefiles ☐ hand-drawn maps

Resources within project area:	None
Resources within 1/4-mile radius:	SLO-1002, -1365
Reports within project area:	E-138, -235, -1643, -4706, -6154, -6181
Reports within 1/4-mile radius:	E-311, -1759, -3333, -5410, -5498, -6148

Resource Database Printout (list):	■ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	■ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	■ not requested	☐ nothing listed
Report Database Printout (list):	■ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	■ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	■ not requested	☐ nothing listed
Resource Record Copies:	■ enclosed	☐ not requested	☐ nothing listed
Report Copies:	■ enclosed	☐ not requested	☐ nothing listed
OHP Historic Properties Directory:	☐ enclosed	☐ not requested	■ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	■ nothing listed

CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☐ nothing listed
Caltrans Bridge Survey:	☐ enclosed	■ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	■ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	■ not requested	☐ nothing listed
Historical Maps:	☐ enclosed	■ not requested	☐ nothing listed
Local Inventories:	☐ enclosed	☐ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:	☐ enclosed	☐ not requested	☐ nothing listed
Shipwreck Inventory:	☐ enclosed	■ not requested	☐ nothing listed
Soil Survey Maps:	☐ enclosed	■ not requested	☐ nothing listed

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of California Historical Resources Information System (CHRIS) data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the CHRIS.

Sincerely,

Jessika Akmenkalns
Assistant Coordinator

Report List

Avila Ranch / Project #3205

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SL-00138		1975	Dills, C.	Information to aid in Interpretive Planning Map for San Luis Obispo (city) and Environs		
SL-00235		1980	Bente, V.	Diablo Canyon Power Plant Early Warning System Cultural Resources Literature Search and Report on the Field Investigation of Selected Pole Sitings.		40-000010
SL-00311		1975	Dills, C.	Proposed Expansion of SLO Wastewater Treatment Plant and Repair of Arroyo Grande-Grover City-Oceano Wastewater Facility -- Archaeological Impact.		
SL-01643		1988	Engineering-Science, Inc.	Draft Hazardous Waste Management Plan, Environmental Impact Report		40-000093, 40-000094, 40-000299, 40-000491, 40-000576, 40-000578, 40-000579, 40-000580, 40-000581, 40-000582, 40-000583, 40-000615, 40-000616, 40-000785, 40-001113, 40-001114, 40-001115, 40-001140, 40-001141, 40-001142, 40-001143, 40-001149, 40-001150, 40-001153, 40-001189, 40-001190, 40-001194
SL-01759		1988	Gibson, R.	Results of archaeological surface survey for the KSBY-TV/Periera Estate project, SLO Co, CA		40-001365
SL-03333		1997	Conway, Thor	Phase 1 Archaeological Survey of the Spice Hunter Property, Tank Farm Road, San Luis Obispo		
SL-04706		2002	Conway, Thor	Archaeological Background for the Los Osos Valley Road / Highway 101 Interchange PEAR Phase 1 Cultural Resources Survey, San Luis Obispo, CA		
SL-05410		2004	Conway, T.	An Archaeological Survey of 7.2 Acres at Tank Farm Road, San Luis Obispo, San Luis Obispo County, California.		
SL-05498		2005	Singer, Clay A.	Cultural Resources Survey and Impact Assessment for a 20.2 Acre Residential Property at 4675 South Higuera Street in San Luis Obispo County, California (APN 076-061-076).		
SL-06148		2006	Bonner, Wayne H. and Keasling, James M.	Cultural Resource Records Search Results and Site Visit for Cingular Telecommunications Facility Candidate SNBBCAL085B (KSBY Communications Inc.), 1772 Calle Joaquin, San Luis Obispo County, California		

Report List

Avila Ranch / Project #3205

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SL-06154		2008	Conway, Thor	An Archaeological Surface Survey at the Unocal San Luis Obispo Tank Farm, San Luis Obispo, San Luis Obispo County, California		40-002044
SL-06181		2007	Bertrando, Ethan.	Cultural Resource Inventory of the Ernie Ball Subdivision APN: 053-258-001. 155 Suburban Road, San Luis Obispo, CA		

Resource List

Avila Ranch / Project #3205

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-40-001002	CA-SLO-001002		Site				SL-06133
P-40-001365	CA-SLO-001365		Site				SL-01759, SL-01784, SL-06133

APPENDIX B

Native American Consultation

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

July 2, 2015

Simone M. Schinsing
Applied Earthworks, Inc.
811 El Capitan Way, Ste. 100
San Luis Obispo, CA 93401

Sent by Fax: (805) 594-1577
Number of Pages: 3

Re: Phase I Archaeological Study for Avila Ranch Development, San Luis Obispo, San Luis Obispo County.

Dear Ms. Schinsing,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the abeence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Government Program Analyst

Native American Contact List
San Luis Obispo County
July 1, 2015

Lei Lynn Odom
1339 24th Street
Oceano , CA 93445
(805) 489-5390
Chumash

Matthew Darian Goldman
495 Mentone
Grover Beach CA 93433
805-748-6913
Chumash

San Luis Obispo County Chumash Council
Chief Mark Steven Vigil
1030 Ritchie Road
Grover Beach CA 93433
(805) 481-2461

(805) 474-4729 Fax
Chumash

Salinan-Chumash Nation
Xielolixii
3901 Q Street, Suite 31B
Bakersfield , CA 93301
(408) 966-8807 Cell
Salinan
Chumash

Peggy Odom
1339 24th Street
Oceano , 93445
(805) 489-5390
Chumash

Northern Chumash Tribal Council
Fred Collins, Spokesperson
67 South Street
San Luis Obispo CA 93401
fcollins@northernchumash.
(805) 801-0347 (Cell)
Chumash

yak tityu tityu - Northern Chumash Tribe
Mona Olivas Tucker, Chairwoman
660 Camino Del Rey
Arroyo Grande CA 93420
olivas.mona@gmail.com
(805) 489-1052 Home
(805) 748-2121 Cell
Chumash

Coastal Band of the Chumash Nation
Crystal Baker
P.O. Box 723
Atascadero , CA 93423
(805) 466-8406
Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Phase I Archaeological Study for the Avila Ranch Development, San Luis Obispo County.

Native American Contact List
San Luis Obispo County
July 1, 2015

Salinan Tribe of Monterey, San Luis Obispo
Fred Segobia
46451 Little Creek Court Salinan
King City , CA 93930 Chumash
831-385-1490

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Phase I Archaeological Study for the Avila Ranch Development, San Luis Obispo County.

Applied EARTHWORKS Inc.

811 El Capitan Way, Suite 100
San Luis Obispo, CA 93401
O: (805) 594-1590 | F: (805) 594-1577

July 6, 2015

Crystal Baker
Coastal Band of the Chumash Nation
P.O. Box 723
Atascadero, CA 93423

Re: Phase 1 Archaeological Study for the Avila Ranch Development, San Luis Obispo, California

Dear Ms. Baker:

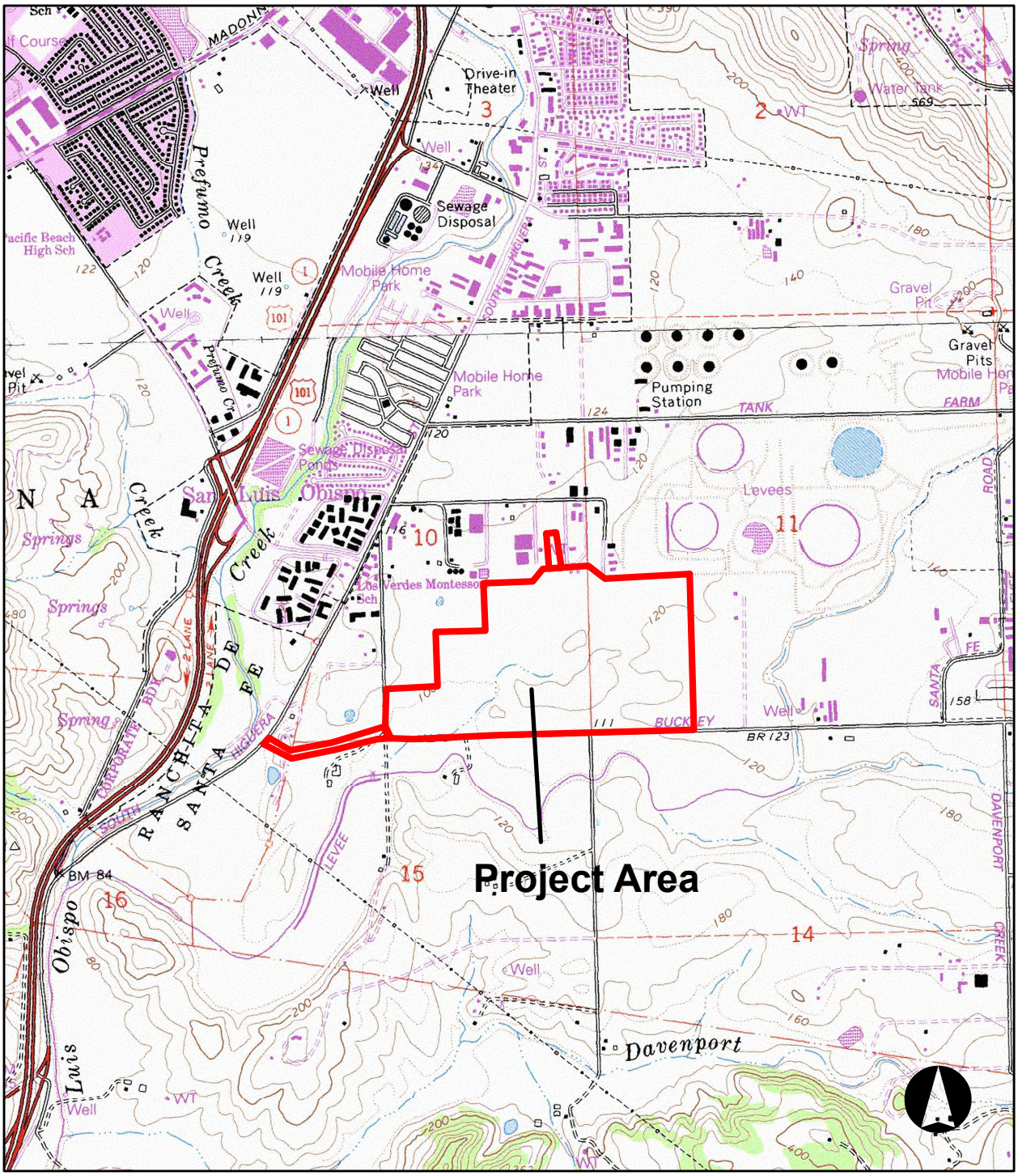
Applied EarthWorks, Inc. is conducting a cultural resources study of Avila Ranch, a proposed development area located in San Luis Obispo, San Luis Obispo County, California. The proposed project will involve the development of a series of commercial and residential units on the property. The project area is depicted on the attached copy of the Pismo Beach CA 7.5' Quadrangle Map and is located in Township 31S, Range 12E, Sections 10 and 11.

Your name and address were provided to us by the Native American Heritage Commission (NAHC), which lists you as an individual with knowledge of Native American resources in San Luis Obispo County, California. This letter is being submitted to formally request any information you may have regarding Native American cultural resources within or adjacent to the project site. If you have information regarding the study area or have interest in the project, please call or send a letter to my attention. Your comments will be included in our cultural resources study report.

Please call me at (805) 594-1590 or email me at sschinsing@appliedearthworks.com if you have any questions or require additional information.

Sincerely,

Simone M. Schinsing, Staff Archaeologist
Applied EarthWorks, Inc.



USGS Quad:
San Luis Obispo (1965 Revised 1994)

0 0.25 0.5 1 Miles
Scale 1:24,000

Project Location Map

Avila Ranch (AE#3205)
San Luis Obispo, San Luis Obispo County, California

Applied EARTHWORKS Inc.

APPENDIX D

Provenience Information Log

Site	Lot	AU	EXM	Unit	Level	Unit Size	Feature	Field Mesh	Exc Vol	Wet Screen	Productive	Exc Date	Comment
CA-SLO-2798/H	1			STP 1	000-020	50cm		1/8	0.039	n	y	8/13/15	
CA-SLO-2798/H	2			STP 1	020-040	50cm		1/8	0.039	n	y	8/13/15	
CA-SLO-2798/H	3			STP 1	040-060	50cm		1/8	0.039	n	y	8/13/15	
CA-SLO-2798/H	4			STP 1	060-080	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	5			STP 1	080-100	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	6			STP 2	000-020	50cm		1/8	0.039	n	y	8/12/15	
CA-SLO-2798/H	7			STP 2	020-040	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	8			STP 2	040-060	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	9			STP 3	000-020	50cm		1/8	0.039	n	n	8/12/15	
CA-SLO-2798/H	10			STP 3	020-040	50cm		1/8	0.039	n	n	8/12/15	
CA-SLO-2798/H	11			STP 3	040-050	50cm		1/8	0.0195	n	n	8/12/15	
CA-SLO-2798/H	12			STP 4	000-020	50cm		1/8	0.039	n	n	8/12/15	
CA-SLO-2798/H	13			STP 4	020-040	50cm		1/8	0.039	n	n	8/12/15	
CA-SLO-2798/H	14			STP 4	040-050	50cm		1/8	0.0195	n	n	8/12/15	
CA-SLO-2798/H	15			STP 5	000-020	50cm		1/8	0.039	n	y	8/12/15	
CA-SLO-2798/H	16			STP 5	020-040	50cm		1/8	0.039	n	n	8/12/15	
CA-SLO-2798/H	17			STP 5	040-060	50cm		1/8	0.039	n	n	8/12/15	
CA-SLO-2798/H	18			STP 6	000-020	50cm		1/8	0.039	n	y	8/12/15	
CA-SLO-2798/H	19			STP 6	020-040	50cm		1/8	0.039	n	n	8/12/15	
CA-SLO-2798/H	20			STP 6	040-060	50cm		1/8	0.039	n	n	8/12/15	
CA-SLO-2798/H	21			STP 7	000-020	50cm		1/8	0.039	n	y	8/14/15	
CA-SLO-2798/H	22			STP 7	020-040	50cm		1/8	0.039	n	y	8/14/15	
CA-SLO-2798/H	23			STP 7	040-060	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	24			STP 7	060-070	50cm		1/8	0.0195	n	n	8/14/15	
CA-SLO-2798/H	25			STP 8	000-020	50cm		1/8	0.039	n	y	8/13/15	
CA-SLO-2798/H	26			STP 8	020-040	50cm		1/8	0.039	n	y	8/14/15	
CA-SLO-2798/H	27			STP 8	040-060	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	28			STP 8	060-070	50cm		1/8	0.0195	n	n	8/14/15	
CA-SLO-2798/H	29			STP 9	000-020	50cm		1/8	0.039	n	y	8/13/15	
CA-SLO-2798/H	30			STP 9	020-040	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	31			STP 9	040-060	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	32			STP 10	000-020	50cm		1/8	0.039	n	y	8/13/15	
CA-SLO-2798/H	33			STP 10	020-040	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	34			STP 10	040-060	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	35			STP 11	000-020	50cm		1/8	0.039	n	y	8/13/15	
CA-SLO-2798/H	36			STP 11	020-040	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	37			STP 11	040-060	50cm		1/8	0.039	n	n	8/13/15	
CA-SLO-2798/H	38			STP 12	000-020	50cm		1/8	0.039	n	y	8/14/15	
CA-SLO-2798/H	39			STP 12	020-040	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	40			STP 12	040-060	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	41			STP 13	000-020	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	42			STP 13	020-040	50cm		1/8	0.039	n	y	8/14/15	
CA-SLO-2798/H	43			STP 13	040-060	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	44			STP 13	060-070	50cm		1/8	0.0195	n	n	8/14/15	
CA-SLO-2798/H	45			STP 14	000-020	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	46			STP 14	020-040	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	47			STP 14	040-050	50cm		1/8	0.0195	n	n	8/14/15	
CA-SLO-2798/H	48			STP 15	000-020	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	49			STP 15	020-040	50cm		1/8	0.039	n	n	8/14/15	

Site	Lot	AU	EXM	Unit	Level	Unit Size	Feature	Field Mesh	Exc Vol	Wet Screen	Productive	Exc Date	Comment
CA-SLO-2798/H	50			STP 15	040-050	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	51			STP 16	000-020	50cm		1/8	0.039	n	y	8/14/15	
CA-SLO-2798/H	52			STP 16	020-040	50cm		1/8	0.039	n	n	8/14/15	
CA-SLO-2798/H	53			STP 16	040-050	50cm		1/8	0.0195	n	n	8/17/15	
CA-SLO-2798/H	54			STP 17	000-020	50cm		1/8	0.039	n	y	8/17/15	
CA-SLO-2798/H	55			STP 17	020-040	50cm		1/8	0.039	n	y	8/17/15	
CA-SLO-2798/H	56			STP 17	040-060	50cm		1/8	0.039	n	y	8/17/15	
CA-SLO-2798/H	57			STP 17	060-080	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	58			STP 17	080-100	50cm		1/8	0.039	n	y	8/17/15	
CA-SLO-2798/H	59			STP 18	000-020	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	60			STP 18	020-040	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	61			STP 18	040-060	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	62			STP 19	000-020	50cm		1/8	0.039	n	y	8/17/15	
CA-SLO-2798/H	63			STP 19	020-040	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	64			STP 19	040-060	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	65			STP 20	000-020	50cm		1/8	0.039	n	y	8/17/15	
CA-SLO-2798/H	66			STP 20	020-040	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	67			STP 20	040-060	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	68			STP 21	000-020	50cm		1/8	0.039	n	n	8/17/15	
CA-SLO-2798/H	69			STP 21	020-040	50cm		1/8	0.039	n	n	8/18/15	
CA-SLO-2798/H	70			STP 22	000-020	50cm		1/8	0.039	n	y	8/17/15	
CA-SLO-2798/H	71			STP 22	020-040	50cm		1/8	0.039	n	y	8/17/15	
CA-SLO-2798/H	72			STP 22	040-060	50cm		1/8	0.039	n	n	8/18/15	
CA-SLO-2798/H	73			STP 22	060-070	50cm		1/8	0.0195	n	n	8/18/15	
CA-SLO-2798/H	74			STP 23	000-020	50cm		1/8	0.039	n	n	8/18/15	
CA-SLO-2798/H	75			STP 23	020-040	50cm		1/8	0.039	n	n	8/18/15	
CA-SLO-2798/H	76			STP 23	040-060	50cm		1/8	0.039	n	n	8/18/15	
CA-SLO-2798/H	77			STP 24	000-020	50cm		1/8	0.039	n	n	8/18/15	
CA-SLO-2798/H	78			STP 24	020-040	50cm		1/8	0.039	n	n	8/18/15	
CA-SLO-2798/H	79			STP 24	040-050	50cm		1/8	0.0195	n	n	8/18/15	
CA-SLO-2798/H	80			STU 1	000-020	1x1m		1/8	0.15	n	y	8/19/15	
CA-SLO-2798/H	81			STU 2	000-020	1x1m		1/8	0.15	n	y	8/19/15	
CA-SLO-2798/H	82			STU 3	000-020	1x1m		1/8	0.15	n	y	8/19/15	
CA-SLO-2798/H	83			STU 4	000-020	1x1m		1/8	0.15	n	y	8/19/15	
CA-SLO-2798/H	84			TEU 1	000-010	1x.05m		1/8	0.0375	n	y	8/18/15	
CA-SLO-2798/H	85			TEU 1	010-020	1x.05m		1/8	0.05	n	y	8/18/15	
CA-SLO-2798/H	86			TEU 1	020-030	1x.05m		1/8	0.05	n	y	8/18/15	
CA-SLO-2798/H	87			TEU 1	030-040	1x.05m		1/8	0.05	n	y	8/18/15	
CA-SLO-2798/H	88			TEU 1	040-050	1x.05m		1/8	0.05	n	y	8/19/15	
CA-SLO-2798/H	89			TEU 1	050-060	1x.05m		1/8	0.05	n	y	8/19/15	
CA-SLO-2798/H	90			TEU 1	060-070	1x.05m		1/8	0.05	n	y	8/19/15	
CA-SLO-2798/H	91			TEU 2	000-010	1x.05m		1/8	0.05	n	y	8/18/15	
CA-SLO-2798/H	92			TEU 2	010-020	1x.05m		1/8	0.05	n	y	8/18/15	
CA-SLO-2798/H	93			TEU 2	020-030	1x.05m		1/8	0.05	n	y	8/18/15	
CA-SLO-2798/H	94			TEU 2	030-040	1x.05m		1/8	0.05	n	y	8/18/15	
CA-SLO-2798/H	95			TEU 2	040-050	1x.05m		1/8	0.05	n	y	8/19/15	
CA-SLO-2798/H	96			TEU 2	050-060	1x.05m		1/8	0.05	n	n	8/19/15	
CA-SLO-2798/H	97			SCP 1	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	98			SCP 2	surface	n/a		n/a		n/a	y	8/17/15	

Site	Lot	AU	EXM	Unit	Level	Unit Size	Feature	Field Mesh	Exc Vol	Wet Screen	Productive	Exc Date	Comment
CA-SLO-2798/H	99			SCP 3	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	100			SCP 4	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	101			SCP 5	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	102			SCP 6	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	103			SCP 7	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	104			SCP 8	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	105			SCP 9	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	106			SCP 10	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	107			SCP 11	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	108			SCP 12	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	109			SCP 13	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	110			SCP 14	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	111			SCP 15	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	112			SCP 16	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	113			SCP 17	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	114			SCP 18	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	115			SCP 19	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	116			SCP 20	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	117			SCP 21	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	118			SCP 22	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	119			SCP 23	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	120			SCP 24	surface	n/a		n/a		n/a	y	8/17/15	
CA-SLO-2798/H	121			SCP 25	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	122			SCP 26	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	123			SCP 27	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	124			SCP 28	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	125			SCP 29	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	126			SCP 30	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	127			SCP 31	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	128			SCP 32	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	129			SCP 33	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	130			SCP 34	surface	n/a		n/a		n/a	y	8/20/15	
CA-SLO-2798/H	131			DOC	n/a	n/a		n/a		n/a	n/a	8/19/15	TEU 1 archaeological profile
CA-SLO-2798/H	132			DOC	n/a	n/a		n/a		n/a	n/a	8/19/15	TEU 2 archaeological profile
CA-SLO-2798/H	133			DOC	n/a	n/a		n/a		n/a	n/a	8/18/15	notes on Outcrop's A, B, & C w/provenience info for TEUs on reverse
CA-SLO-2798/H	134			DOC	n/a	n/a		n/a		n/a	n/a	8/12/15	photographic records (2 pages total)
CA-SLO-2798/H	135			DOC	n/a	n/a		n/a		n/a	n/a	8/19/15	bag logs (7 pages total)
CA-SLO-2798/H	136			DOC	n/a	n/a		n/a		n/a	n/a	8/12/15	daily work records (7 pages total)

Applied EARTHWORKS Inc.

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18 July 2016

Stephen J. Peck, AICP
Peck Planning and Development, LLC
1850 S. Masselli St
Visalia, CA 93277

RE: Cultural Resource Mitigation Measures for Avila Ranch Development, San Luis Obispo, California

Dear Mr. Peck:

The City of San Luis Obispo has requested additional information regarding our recommendations for mitigation of adverse impacts on CA-SLO-2798/H, an archaeological site within the proposed Avila Ranch Project area. In 2015, Applied EarthWorks, Inc. (Æ) completed Phase 2 test excavations at this site and found that the prehistoric portion of CA-SLO-2798/H should be considered a significant historical resource according to the CEQA Guidelines. While the prehistoric component at CA-SLO-2798/H contains a relatively small artifact sample, the materials indicate that the site was used during the Early Holocene Period. Archaeological sites of this age are rare within San Luis Obispo County, and data from this site could help answer important questions about local and regional prehistory.

If feasible, preservation in place is the preferred measure for mitigating adverse impacts on archaeological resources. As described in Section 15126.4 of the CEQA Guidelines, preservation in place can be accomplished by redesigning a project so the site is avoided; incorporating the site into parks, greenspace, or other open space; covering the site with a layer of soil and then building only in the fill material; or deeding the site into a permanent conservation easement. As we detailed in our letter of 13 June 2016, none of these options are feasible. The site covers 15 acres, a substantial portion of the project area, and redesign of the project to avoid the area entirely would mean loss of several key project elements, such as R-1 housing and necessary infrastructure. Additional constraints are imposed by other environmental and technical requirements.

Æ has recommended data recovery and construction monitoring to compensate for the impacts to this significant resource. We believe this provides a superior mitigation in this instance and would reduce the impacts to less than significant levels. As outlined in our technical report (Schinsing et al. 2015), in this case data recovery can be accomplished through controlled grading of the site prior to construction to seek buried features and additional diagnostic artifacts. Controlled grading should occur in 10-centimeter lifts to culturally sterile sediments or maximum construction depth (whichever is reached first) under the supervision of a Registered Professional Archaeologist familiar with the types of historic and prehistoric resources that could be encountered within the Avila Ranch Project area. A Native American monitor should also be present because the area is a culturally sensitive location.

Any formed tools exposed during grading would be collected. If features such as hearths, storage pits, midden deposits, or structural remains are exposed, the archaeologist would temporarily redirect grading to another area so the features can be exposed, recorded, and sampled according to standard archaeological procedures. Any organic remains should be dated using the radiocarbon method, and the geochemical sourc and hydration rim thickness of any obsidian should be determined. Technical analyses of plant remains, bone and shell dietary debris, and other important materials would further reduce the impacts of the project.

Artifacts, features, and other materials recovered through this process should be described, illustrated, and analyzed fully in a technical report of findings; the analysis should include comparative research with other sites

of similar age. We further recommend that the applicant support publication of the findings from the project in an appropriate scientific journal.

Once controlled grading of the archaeological site is completed to the satisfaction of the Project Archaeologist, Æ recommends that cultural resource monitoring continue during on-going ground disturbance to ensure that no previously unidentified buried archaeological sites are uncovered during construction. If such buried sites are discovered, they should be treated in the same manner as described above. Once the work is completed and the reports are finalized, the collected materials should be deposited for long term curation at the San Luis Obispo County Archaeological Society repository. Taken together, these efforts will reduce the impacts of the project on CA-SLO-2798/H to less than significant levels.

In summary, the significant qualities of CA-SLO-2798/H are found in the artifact assemblage that is broadly distributed across the site. These types of archaeological materials are rare and have the potential to add important information regarding prehistoric Native American cultural adaptations in San Luis Obispo more than 5,000 years ago. Because of the extent of the site, nature of the cultural deposits, and constraints imposed by other environmental factors and City requirements, preservation in place is not a feasible mitigation. In this instance, data recovery through controlled grading and construction monitoring provides a superior means of reducing the impacts on this resource to less than significant levels.

If you have any further questions please contact me at 805-594-1590 x18 (office), or bprice@appliedearthworks.com.

Sincerely,

Barry A. Price, M.A., RPA
Principal Archaeologist
Applied EarthWorks, Inc.