Otay Hills Construction Aggregate and Inert Debris Engineered Fill Operation Project

Appendix F

Cultural Resource Evaluation

for the

Public Review
Draft Environmental Impact Report

PDS2004-3300-04-004 (MUP);
PDS2004-3310-04-001 (RP);
PDS2010-3813-10-002 (SPA);
Log No. 04-190-04

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Prepared for:

County of San Diego
Planning & Development Services
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A CULTURAL RESOURCE EVALUATION PROGRAM FOR THE OTAY HILLS QUARRY PROJECT

SAN DIEGO COUNTY, CALIFORNIA

PDS2010-3813-10-002 (SP); PDS2004-3910-0419004 (ER); PDS2004-3300-04-004 (P); PDS2004-3310-04-001 (RP); APNs 648-050-12, -13, -14, and -17, and 648-080-13, -14, and -25

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Archaeological Database Information

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Report Title:	A Cultural Resource Evaluation Program for the Otay Hills Quarry Project, San Diego County, California, PDS2010-3813-10-002 (SP); PDS2004-3300-04-004 (P); PDS2004-3310-04-001 (RP)
Type of Study:	Cultural Resource Survey and Significance Test
New Sites:	SDI-17,431 and SDI-17,433/H
Updated Sites:	SDI-7195, SDI-10,297/H, SDI-10,298, SDI-11,793, and SDI-16,788
USGS Quadrangle:	*Otay Mesa, California* (7.5 minute)
Acreage:	110 acres
Key Words:	Testing of cultural resources: SDI-7195, SDI-10,297/H, SDI-10,298, SDI-11,793, SDI-17,431, SDI-17,433/H, and SDI-16,788; *Otay Mesa* Quadrangle (7.5 minute); Otay Hills Quarry Site; significant sites SDI-10,297/H and SDI-10,298; Data Recovery Mitigation required.

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List of Abbreviations

AMSL	Above mean sea level
APN(s)	Assessor's Parcel Number(s)
BFSA	Brian F. Smith and Associates, Inc.
CEQA	California Environmental Quality Act
DPR	Department of Parks and Recreation
GPS	Global Positioning System
MLD	Most Likely Descendent
MNI	Minimum Number of Individuals
MUP	Major Use Permit
NAHC	Native American Heritage Commission
NISP	Number of Identified Specimens
OHP	(State) Office for Historic Preservation
RPO	Resource Protection Ordinance
SCIC	South Coastal Information Center
SDAC	San Diego Archaeological Center
SDMoM	San Diego Museom of Man
SDSU	San Diego State University
STP	Shovel test pit
TBW	Tizon brown ware
TU	Test unit
USGS	United States Geological Survey
YBP	Years before present

EXECUTIVE SUMMARY/ABSTRACT

The following report describes an archaeological study and institutional records searches conducted by Brian F. Smith and Associates, Inc. (BFSA) for the Otay Hills Quarry Project situated east of Brown Field, southeast of Lower Otay Reservoir, and less than one mile north of the International Border with Mexico, in San Diego County, California. The proposed project is to mine and extract rock for use in the manufacture of concrete and other related materials. The project area consists of a 110-acre parcel, and the archaeological study included a survey of the entire 110 acres, records searches to identify recorded sites, and a testing and significance evaluation program for seven resources located within the project boundaries. The project had originally been prepared to include a much larger area and involved other cultural resources; however, environmental constraints have reduced the project to current proposal configuration and only those resources affected by the project have been included in this document.

Archaeological records searches were conducted at the South Coastal Information Center (SCIC) at San Diego State University (SDSU) and the San Diego Museum of Man (SDMoM). The searches indicated that five archaeological sites, consisting of three lithic scatters and two habitation sites, have been recorded within the boundaries of the project area. The records further indicate that eight cultural resource studies have been conducted within portions of the project area. In 2004, ASM Affiliates conducted the cultural resource survey and records search for the northernmost portion of the project, consisting of a 30-acre parcel. No cultural resources were identified as a result of that study. The cultural resource study for the remaining portion of the project was conducted by BFSA in 2005 and updated in 2007 and 2011 based upon changes in project scoping and the reduction in size of the Major Use Permit (MUP) area. The 2011 update included a reduction in scope and the boundary of the MUP, resulting in the exclusion of some sites from the previous studies. Sites identified outside of the MUP are not included as part of the current study. The archaeological survey of the property concluded that seven archaeological sites are present on the 110-acre proposed quarry boundary. All previously recorded sites were relocated, and two additional resources were also identified during the survey.

Based upon the results of the study, seven cultural resources were identified on the subject property (sites SDI-7195, SDI-10,297/H, SDI-10,298, SDI-11,793, SDI-16,788, SDI-17,431, and SDI-17,433/H). Development of the quarry operation has the potential to directly or indirectly impact all of the cultural resources present within the project boundaries. Therefore, an archaeological testing and evaluation program was conducted as part of the project development review. The testing program determined that two sites (SDI-10,297/H and SDI-10,298) located within the project boundaries are significant based upon California Environmental Quality Act (CEQA), Section 15064.5 criteria and County of San Diego guidelines. The remaining five resources (SDI-7195, SDI-11,793, SDI-16,788, SDI-17,431, and SDI-17,433/H) were determined by the testing program as having limited significance; these

sites have no remaining research potential and impacts to the sites will not be significantly adverse. Mitigation measures will be required as part of project implementation to reduce potential impacts to significant sites SDI-10,297/H and SDI-10,298 to a level below significant. Grading for the proposed processing plant, or removal of the top soil to facilitate the quarry operation, must be monitored by an archaeologist and a Native American representative because of the potential to encounter buried or masked resources and the presence of significant archaeological sites immediately adjacent to the proposed quarry operation.

1.0 INTRODUCTION

1.1 Project Description

The following report describes an archaeological study and institutional records searches conducted by BFSA for the Otay Hills Quarry Project situated east of Brown Field, southeast of Lower Otay Reservoir, and less than one mile north of the International Border with Mexico, in San Diego County, California (Figures 1.1–1 and 1.1–2). The property is located in portions of Sections 29 and 32, of Township 18 South, Range 1 East of the San Bernardino Meridian in San Diego County. The 110-acre parcel lies southeast of Lower Otay Reservoir and the city of Chula Vista, immediately north of the International Border with Mexico. The project proposes to establish construction aggregates, extraction operations, and associated access roads and utilities on 110 acres situated at the base of the San Ysidro Mountains (Figure 1.1–3). The total project duration, including extraction and backfilling operations, will continue for a 120+-year period. Then the area will be reclaimed to a beneficial land use consistent with the underlying land use regulations.

The scope of work for this project included records searches, a field survey, and a testing and evaluation program. The survey of the project took place at different times beginning in the year 2000, as different areas were added and subtracted from the project's MUP area. The majority of the property was surveyed by Brian F. Smith, principal investigator, with Kevin Hunt, project archaeologist, and field personnel Gordon Henning, Robert LeVeille, and Sung An between June 21 and 27, 2000. Additional surveys were completed by Brian F. Smith, Charles Callahan, and Jeffrey Henry on November 12, 2007. The surveys have facilitated the inspection of the entire project area. Ground visibility ranged from good to poor due to differing amounts of vegetation cover and ground disturbances. The majority of the property contains introduced grasses on the lower slopes of the hills, while natural inland sage scrub and riparian vegetation remain in areas not disturbed by previous disking and grading activities. No significant constraints were encountered during the survey. The inspection of the area identified seven cultural resources within the project boundaries. A testing and evaluation program was conducted for cultural resources within the project between February and March of 2005. The testing and evaluation program for the resources was conducted under the direction of Brian F. Smith by James Clifford, Charles Callahan, Clint Callahan, Brad Comeau, Marcus Elliot, Nikki Blotner, Scott Mattingly, Ryan Robinson, Seth Rosenberg, and James Shrieve. Additional changes have been made to the current project based upon changes in project scoping and the reduction in size of the MUP area. The 2011 update included a reduction in scope and the boundary of the MUP, resulting in the exclusion of some sites from the previous studies. Sites identified outside of the MUP are not included as part of the current study.

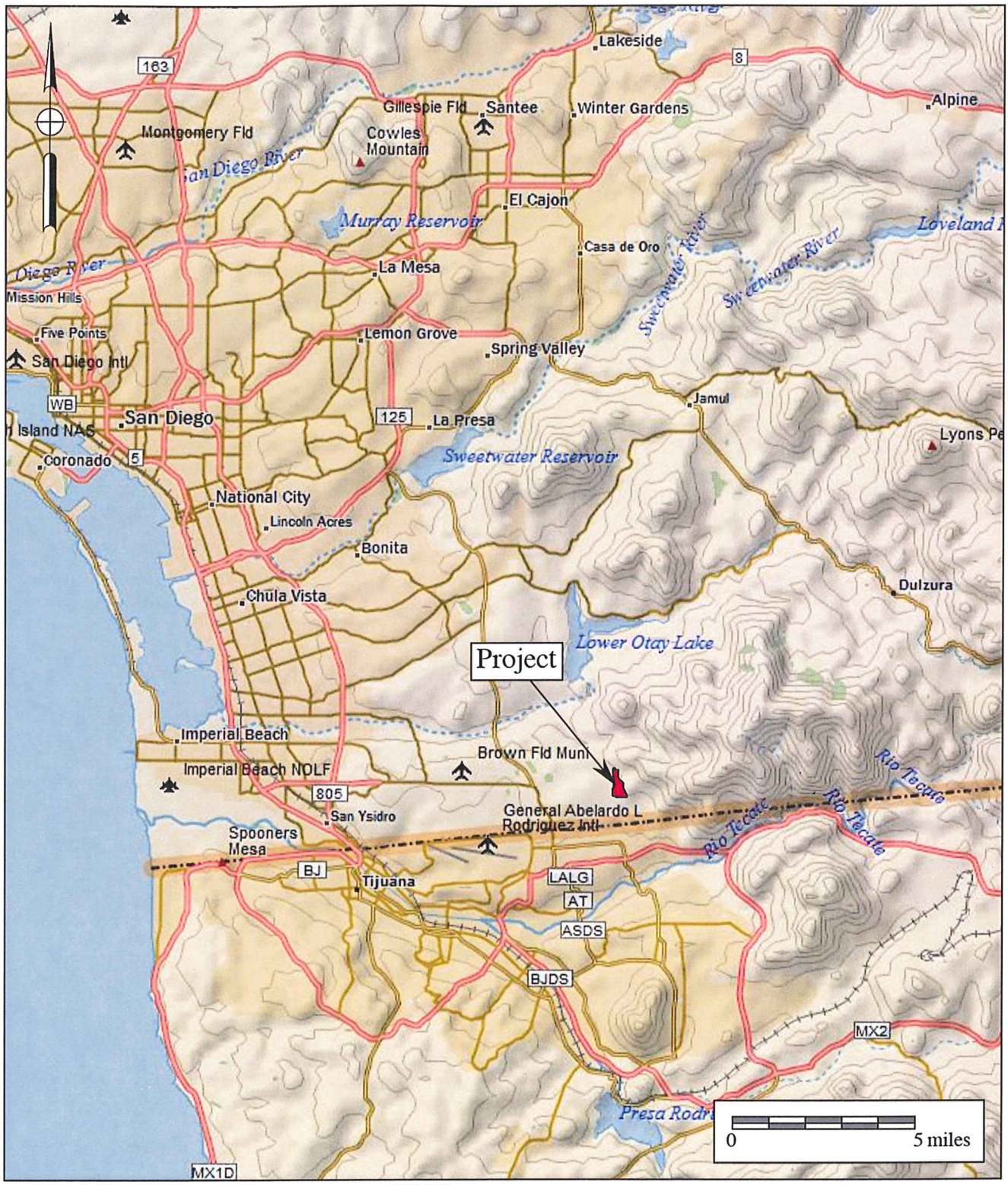


Figure 1.1–1

Project Location Map

The Otay Hills Quarry Project

(Scale 1:250,000 series)

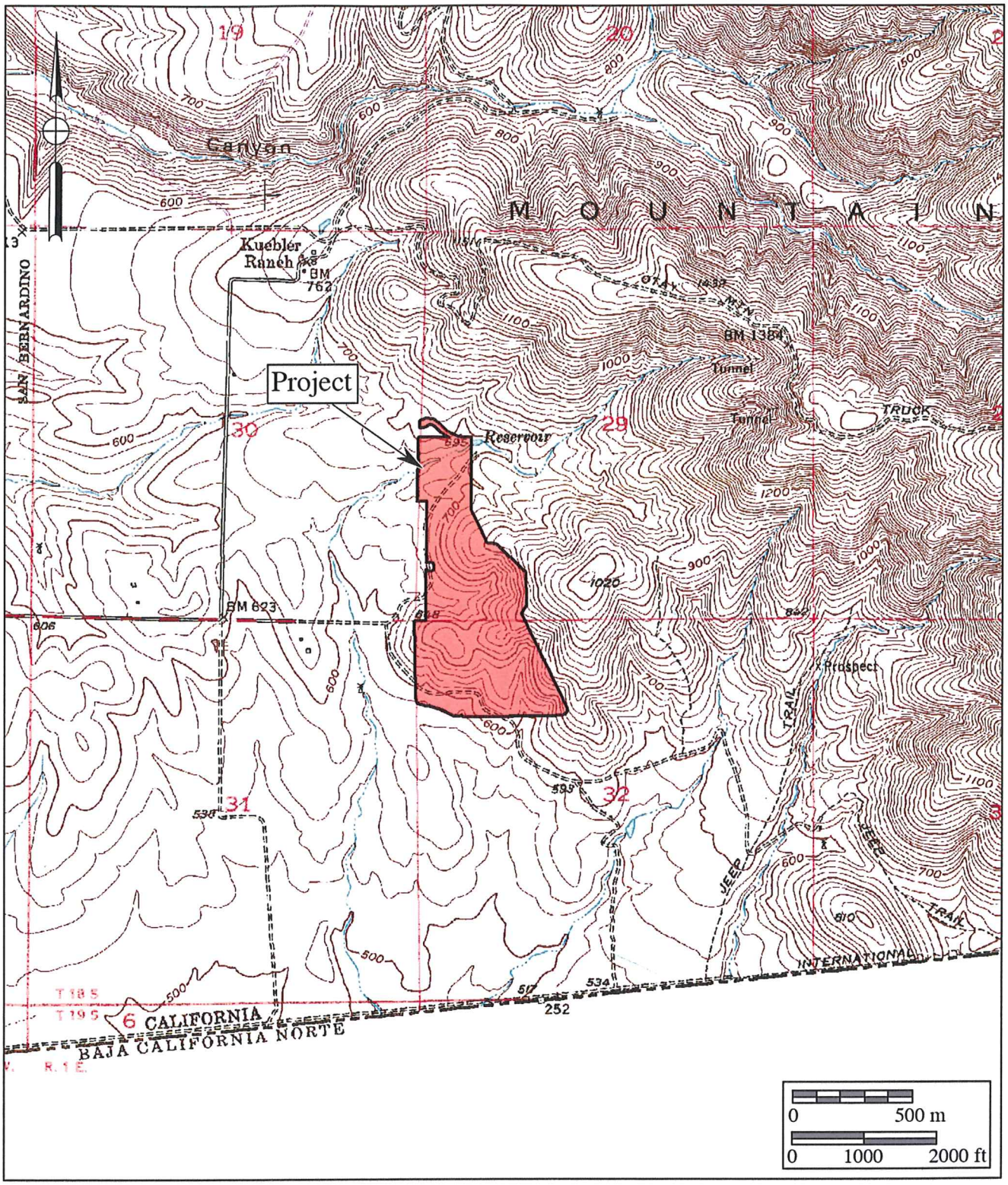


Figure 1.1–2

Project Location Map

The Otay Hills Quarry Project

USGS *Imperial Beach* and *Otay Mesa* Quadrangles (7.5-minute series)

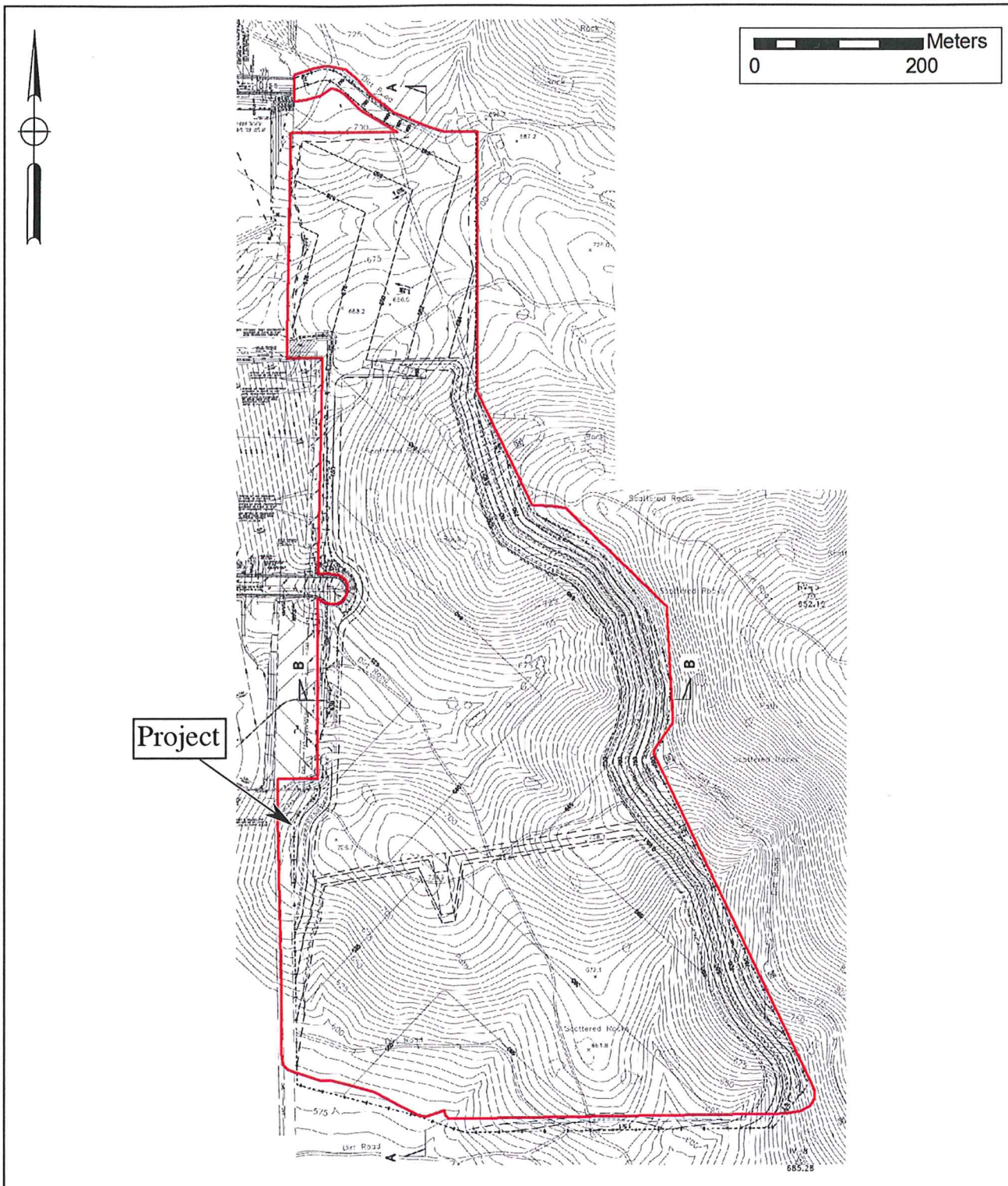


Figure 1.1–3

Project Development Map

The Otay Hills Quarry Project

1.2 Existing Conditions

1.2.1 Environmental Setting

Natural Setting

The Otay Hills Quarry Project is located on a series of hills and canyons southeast of Otay Valley in the southwestern foothills of the San Ysidro Mountains in San Diego County (see Figures 1.1–1 and 1.1–2). The topography within the project area is dominated by rolling hills, crossed by several seasonal drainages. Elevations within the project area range from approximately 700 feet above mean sea level (AMSL) in the drainages to approximately 1,100 feet AMSL near the tallest hilltops.

The project area is located on the rolling hills and gentle slopes at the base of the San Ysidro Mountains to the north and east, and the mesa edge of Otay Mesa on the west and south. This geologic mass consists of a series of knolls and mesas that are interrupted by small canyons and drainages located in the Coastal Plains Physiographic Province. Much of this area is composed of Pleistocene and Upper Pliocene marine deposits, currently known as the Lindavista, Sweitzer, and San Diego formations (Biehler 1979). The San Diego Formation is composed of gray friable sandstone and conglomerate. The Lindavista and Sweitzer formations mantle the majority of the mesa tops. These formations consist of nearshore marine and non-marine sediments deposited on a wave-cut terrace, following the deposition of the San Diego Formation. The Lindavista Formation is composed of moderate, reddish-brown interbedded sandstone and conglomerate, and the Sweitzer Formation is composed of brown, reddish-brown and red poorly sorted sandstone and conglomerate. The Otay River Valley, the major canyon bisecting Otay Mesa from east to west, is composed of Quaternary, non-marine terrace deposits and recent alluvium derived from rocks in the area. The juncture of the coastal plain and foothill provinces to the east is comprised of Plio-Pleistocene, non-marine deposits typically consisting of angular metavolcanic detritus. The hills to the north and east of the project area are comprised of Jurassic volcanics, a collection of mildly metamorphosed volcanic and volcanoclastic rock formations, characterized by the Black Mountain or Santiago Peak Volcanics (Biehler 1979). Santiago Peak Volcanics are represented throughout this area of San Diego County by outcrops of basalt and fine-grained, green metavolcanics known locally as felsite.

The project area also includes a variety of soils. The lower elevations consist of alluvial clays and sands indicative of a floodplain. The soil in the upper elevations consists of clay mixed with pockets of bentonite and/or cobbles, comprised mostly of granite, basalt, and quartzite. These lithic materials, generally hard and extremely resistant to erosion, were preferred by the prehistoric inhabitants of the San Diego region for the manufacture of flaked tools and grinding implements (Smith 1991; Robbins-Wade 1990).

The biological setting of the project area is dominated by an agricultural vegetative community consisting of introduced grasses, with areas of native coastal sage scrub along the steep slopes adjacent to drainages, and native wetland species in one large seasonal drainage that runs southwest through the northern portion of the project area. These communities are

dependent upon the amount of precipitation that the area receives. The amount of seasonal precipitation is related to the major landforms that exist throughout the county. Coastal mesas, such as Otay Mesa to the west and south, receive an average of between 12 and 16 inches (30 to 40 centimeters) of rainfall annually, mostly between October and May (Beauchamp 1986). The project area also exhibits generally mild temperatures; however, several instances of winter frost, as well as some weeks in the summer with temperatures reaching 100 degrees Fahrenheit, are recorded annually. These environments tend to support a wide variety of wildlife, particularly birds and small mammals (Beauchamp 1986).

Portions of the project area have been used for farming and grazing during the past, although currently the property is vacant. The previous plowing and cattle grazing ushered in introduced grasses and weeds that contributed to the generally poor surface visibility encountered during the investigation of the project area.

Cultural Setting

Archaeological investigations in southern California have documented a diverse and rich record of human occupation spanning the past 10,000 years. In northern San Diego and Riverside counties, most researchers organize prehistory into the Paleo Indian, Archaic, and Late Prehistoric periods, and history into the Mission, Rancho, and American Settlement periods. The San Dieguito Complex, Milling Stone Horizon, La Jolla Complex, Pauma Complex, and San Luis Rey Complex are archaeological manifestations that have been used to describe the Archaic and Late Prehistoric periods in the region.

Prehistoric Period

In southern California, the end of the Pleistocene (12,000 to 10,000 years before present [YBP]) marks the arrival of the first humans and the beginning of the archaeological record. Paleo Indian cultures, including the Fluted-Point Tradition (*e.g.,* Clovis; Moratto 1984), Paleo-Coastal Tradition (Moratto 1984; Erlandson 1994), San Dieguito (Moratto 1984; Warren 1966, 1967), and Western Pluvial Lakes Tradition (WPLT) (Bedwell 1970), are recognized as the earliest groups in California. The environment during the late Pleistocene was cool and moist, which allowed for glaciation in the mountains and the formation of deep, pluvial lakes in the deserts and basin lands (Moratto 1984). At approximately 10,000 YBP, a cool/moist climate was present in San Diego County. This is supported by pine pollen found in deposits at Point Loma and Encinitas and oak pollen identified in deposits from Otay Mesa (Gallegos and Kyle 1988; Kaldenberg 1982; Kyle et al. 1989). However, by the terminus of the late Pleistocene, the global climate became warmer, which caused the glaciers to melt, sea levels to rise, greater coastal erosion, large lakes to recede and evaporate, extinction of Pleistocene megafauna, and major vegetation changes (Moratto 1984; Martin 1967, 1973; Fagan 1991). The San Diego shoreline at 10,000 YBP, depending on the particular area of the coast, was near the 30-meter isobath, or two to six kilometers further west than its present location (Masters 1983). Many archaeological

sites dating to this period are probably submerged or have been destroyed by rising sea levels (Erlandson 1984); however, two sites located close to the San Diego coast, the Harris Site (SDI-149) and one of the Agua Hedionda sites (SDI-210), have basal components that possibly date to the terminal Pleistocene (Erlandson 1984; Warren 1966, 1967; Warren and True 1961).

The transition from the Pleistocene to the Holocene, around 10,000 YBP, was a period of major environmental change throughout North America (Antevs 1953; Van Devender and Spaulding 1979). In southern California, the general climate at the beginning of the early Holocene was marked by cool/moist periods and an increase in warm/dry periods and rising sea levels. The warming trend and rising sea levels generally continued until the late Holocene. Archaeological research indicates that southern California was occupied between 10,000 YBP and 1,300 YBP by population(s) that utilized a wide range of both marine and terrestrial resources. A number of different archaeological manifestations, based upon geographical setting, tool kit, and/or chronology, are recognized during the early and middle Holocene, including the San Dieguito, La Jolla, Encinitas, Milling Stone, and Pauma complexes.

The San Dieguito Complex has long been viewed as the earliest group of people to occupy the San Diego County region and date between 10,000 and 8,000 YBP. It has been suggested that they were related to, or were contemporaneous with, early Holocene groups in the Great Basin (Bedwell 1970). The artifacts recovered from San Dieguito sites duplicate the typology attributed to the WPLT (Bedwell 1970; Moratto 1984; Davis et al. 1969). These artifacts generally consist of scrapers and scraper planes, choppers, and bifaces, knives, crescents, and projectile points (lanceolate, leaf, stemmed), but few or no milling tools. The absence of grinding or milling stones suggests to researchers that cereal grains and nuts were not an important part of the subsistence pattern. Tools recovered from sites of the San Dieguito Complex and the general pattern of site locations have led to the interpretation that they were highly mobile hunter-gatherers (Moriarty 1969; Rogers 1966). Archaic sites, depending on assemblage characteristics and site location, are associated with the La Jolla, Milling Stone, Encinitas, and Pauma complexes, and date to the period between 9,000 and 1,300 YBP during the early and middle Holocene. Archaic sites generally contain milling tools, especially manos and metates, cobble and flake tools, dart projectile points and the concomitant use of the atlatl, shell, fish bone, mammal bone representing large and small game, and occasionally eccentric crescents. The use of plant foods that required a greater investment in processing, such as hard seeds and nuts, are associated with Archaic cultures, suggesting that plants became more important to subsistence during the early and middle Holocene. Additionally, Archaic groups buried their dead as flex inhumations, a religious and cultural practice that is distinct from the succeeding Late Prehistoric groups.

Late Prehistoric and Ethnohistoric Periods

The Late Prehistoric Period began at approximately 1,300 YBP. Cremation, ceramics, bow and arrow, small triangular points, the use of Obsidian Butte obsidian, and the reliance upon

the acorn as a main food staple are the defining characteristics of the Late Prehistoric Period (Chartkoff and Chartkoff 1984; Gallegos 2002; Moratto 1984). These characteristics are thought to represent the movement of Shoshonean- and Yuman-speaking groups and cultural traits into San Diego, Orange, Riverside, and Los Angeles counties from the southwest and Great Basin. The bow and arrow and buff and brown pottery appear to have spread west from the American Southwest across the Colorado Desert and into southern California (Moratto 1984). Economic systems diversified and intensified during this period with the continued elaboration of trade networks, the use of shell-bead currency, and the appearance of more labor-intensive, yet effective milling technologies closer to the coast, such as the bedrock mortar for use in acorn processing.

The ethnographic period began at approximately A.D. 1769 when the Mission San Luis Rey was established. Ethnographic evidence indicates that the Luiseño, Cahuilla, Kumeyaay, and Cupeño occupied San Diego County (Kroeber 1925; Moratto 1984; Shipley 1978). More specific to the project area, the northern Diegueño (Ipai/Kumeyaay) territory included the Santa Maria Valley (Luomala 1978). The villages of *Pa'mu*, *Pauaha,* and *Ahmakattkatl* are the closest villages to the project area (Carrico and Cooley 2005; Kroeber 1925). After 1778, the village of *Pa'mu* moved into the Santa Maria Valley, which included the town of Ramona. It contained at least 75 to 100 people (Shipek 1989).

The Kumeyaay are considered to be a hunting-gathering society characterized by central-placed nomadism (Carrico and Cooley 2005). A variety of food resources were used; however, emphasis was placed on acorns, seeds, rabbits, and deer (Bancroft 1884; Carrico 1986). A study by Christenson (1990) found that a diet of acorns and rabbits meets minimal daily nutritional requirements, but that a broader diet is demonstrated in the ethnographic and archaeological record. The Kumeyaay were organized by patrilocal bands and each band was associated with a particular village, or ranchería, that would comprise an area of 10 to 30 square miles (Almstedt 1974, 1980; Luomala 1978; Shipek 1982). The Kumeyaay traveled with the seasons, and unlike earlier inhabitants of the area, built their seasonal cycle around access to acorns and pinyons located in the higher elevations above 4,000 feet. In autumn, western Kumeyaay met with eastern Kumeyaay to harvest acorns, trade, and conduct ceremonies (Christenson 1990; Lee 1937). Winter was spent in sheltered inland valleys where neither high-elevation cold nor coastal fogs were a problem. Spring subsistence centered on the collection of buds and shoots and the animals that were attracted by them. Ripened grasses and fruits were the focus of summer subsistence. Groups traveled to higher elevations for the harvesting of nut crops during the fall (Luomala 1978). Hunting augmented this vegetal diet, and foothill people visited coastal bands to fish.

The cultural elements of the Kumeyaay included cremation of the dead, the use of the bow and arrow, the use of pottery for storage, and trade of food, obsidian, and shell beads (Moratto 1984). Some researchers suggest that the Yuman-speaking Kumeyaay developed *in-situ* as Archaic groups adopted these new technologies rather than being replaced by

Shoshonean-speaking groups that spread west from the deserts (Altschul and Grenda 2002; Moratto 1984; Shipley 1978). Known as the Shoshonean Wedge, this phenomenon represents population movement and the concomitant spread of customs and technology by groups in the Great Basin and Southwest into southern California. Linguistic studies suggest that ancestral groups of the Yuman-speaking Kumeyaay were able to adopt these new technologies and customs into their existing routine given that they speak a language with greater antiquity. The UtoAztecan-speaking Shoshonean groups surrounding the Kumeyaay, including the Luiseño, Gabrielino, and Serrano, speak languages belonging to a younger language family (Altschul and Grenda 2002:203-205).

Native American Perspective

In addition to the point of view discussed above, the County acknowledges that other perspectives exist to explain the presence of Native Americans in the region. The Native American perspective is that they have been here from the beginning, as described by their creation stories. Similarly, they do not necessarily agree with the distinction that is made between different archaeological cultures or periods, such as "La Jolla" or "San Dieguito." They instead believe that there is a continuum of ancestry, from the first people to the present Native American populations of San Diego. To acknowledge this perspective, consultation with affected Native American communities can be beneficial to fully understand the impact to cultural resources. The consultation is typically administered pursuant to Senate Bill 18.

Historic Period

The historic period began July 16, 1769, when the first Spanish exploring party, commanded by Gaspar de Portolá (with Father Junípero Serra in charge of religious conversion of the native populations), arrived in San Diego to secure California for the Spanish Crown (Palou 1926). The natural attraction of the harbor at San Diego and the establishment of a military presence in the area solidified the importance of San Diego to the Spanish colonization of the region and the growth of the civilian population. Missions were constructed from San Diego to as far north as San Francisco. The mission locations were based upon a number of important territorial, military, and religious considerations. Grants of land were made to persons who made an application, but many tracts reverted to the government for lack of use. As an extension of territorial control by the Spanish Empire, each mission was placed so as to command as much territory and as large a population as possible. While primary access to California during the Spanish Period was by sea, the route of El Camino Real served as the land route for transportation, commercial, and military activities. This route was considered to be the most direct path between the missions (Rolle 1969). As increasing numbers of Spanish and Mexican people, and later Americans during the Gold Rush, settled in the area, the Native populations diminished as they were displaced or decimated by disease (Carrico and Taylor 1983).

By 1821, Mexico had gained independence from Spain, and the northern territories were subject to political repercussions. By 1834, all of the mission lands had been removed from the control of the Franciscan Order, under the Acts of Secularization. Without proper maintenance, the missions quickly began to disintegrate, and after 1836, missionaries ceased to make regular visits inland to minister to the needs of the native peoples (Engelhardt 1920). Large tracts of land continued to be granted to persons who applied for them or who had gained favor with the Mexican government. Grants of land were also made to settle government debts.

California was invaded by United States troops during the Mexican War of 1846-1848. The acquisition of strategic Pacific ports and California land was one of the principal objectives of the war (Price 1967). At the time, the inhabitants of California were practically defenseless, and they quickly surrendered to the United States Navy in July 1847 (Bancroft 1886).

The cattle ranchers of the "counties" of southern California prospered during the cattle boom of the early 1850s. They were able to "reap windfall profit...pay taxes and lawyer's bills...and generally live according to custom" (Pitt 1966). Raising cattle soon declined, however, contributing to the expansion of agriculture. With the passage of the "No Fence Act," San Diego's economy changed from stock raising to farming (Rolle 1969). The act allowed for the expansion of unfenced farms, which was crucial in an area where fencing material was practically unavailable. Five years after its passage, most of the arable lands in San Diego County had been patented as either ranchos or homesteads, and growing grain crops replaced raising cattle in many of the county's inland valleys (Blick 1976; Elliott 1883 [1965]). By 1870, farmers had learned to dry farm and were coping with some of the peculiarities of San Diego County's climate (*San Diego Union*, February 6, 1868; Van Dyke 1886). Between 1869 and 1871, the amount of cultivated acreage in the county rose from less than 5,000, to more than 20,000 acres (*San Diego Union*, January 2, 1872). Of course, droughts continued to hinder the development of agriculture (Crouch 1915; *San Diego Union*, November 10, 1870; Shipek 1977). Large-scale farming in San Diego County was limited by a lack of water and the small size of arable valleys. In addition, the small urban population and poor roads restricted commercial crop growing. Nevertheless, cattle continued to be grazed in inland San Diego County. For example, in the Otay Mesa area, the "No Fence Act" had little effect because ranches were still spaced far apart and natural ridges kept the cattle out of growing crops (Gordinier 1966).

During the first two decades of the twentieth century, the population of San Diego County continued to grow. The population of the inland county declined during the 1890s, but between 1900 and 1910, it rose by about 70 percent. The pioneering efforts were over; the railroads had broken the relative isolation of southern California, and life in San Diego County became similar to other communities throughout the west. After World War I, the history of San Diego County was primarily determined by the growth of San Diego Bay. In 1919, the United States Navy decided to make the bay the home base for the Pacific Fleet (Pourade 1967). During the 1920s, the aircraft industry also established itself at the bay (Heiges 1976). The establishment of these industries led to the growth of the county as a whole; however, most of

the growth occurred in the north county coastal areas, where the population almost tripled between 1920 and 1930. During this time period, the history of inland San Diego County was subsidiary to that of the city of San Diego, which became a Navy center and industrial city (Heiges 1976). In inland San Diego County, agriculture became specialized, and recreational areas were established in the mountain and desert areas. Just before World War II, urbanization began to spread to the inland county, including the area of southeastern San Diego County that contains the current study area.

1.2.2 Records Search Results

As part of the current study, BFSA conducted archaeological record searches at the SCIC at SDSU and the SDMoM. A total of 70 cultural resources have been recorded within one mile of the Otay Hills Quarry Project boundaries. These sites are listed in Table 1.2–1. As is typical of Otay Mesa, most of the prehistoric sites are characterized as lithic scatters, approximately 63 percent (N=44), varying from two artifacts to a moderately dense scatter of lithic artifacts. In most cases, these sites were identified during surveys and have not been tested; therefore their subsurface characteristics are not known. Another two sites are described as lithic scatters with subsurface deposits; these sites have been tested, which has enabled the addition of a subsurface classification to the site descriptions. Two sites are described as habitation sites (SDI-12,707 and SDI-12,710), while other prehistoric sites are quarry sites, milling stations, or marine shell scatters. Three sites (SDI-12,196H, SDI-12,701/H, and SDI-12,713/H) have both prehistoric and historic components, while other historic sites consist of refuse scatters of features. Most of these sites have not been subjected to testing programs.

In addition to the 70 sites, more than 20 isolated prehistoric artifacts are recorded within one mile of the project. Most of these consist of one or two flakes or tested cobbles that are not associated with a concentration of artifacts; therefore they have been identified, mapped, and recorded. The large quantity of recorded isolates is a result of the intense usage of the Otay Mesa area as a prehistoric raw material source.

The project area has been subjected to a number of cultural resource studies related to environmental impact studies, including 23 that have occurred within one mile of the project area. All of the studies are listed in Table 1.2–2, previously recorded sites within the vicinity of the current project are summarized in Table 1.2–1, and the complete records search results from the SCIC and the SDMoM are provided in Appendix B.

TABLE 1.2–1
Archaeological Sites Located Within One Mile of the Otay Hills Quarry Project

Site(s)	Description
SDI-7195, SDI-7214, SDI-7218, SDI-8075, SDI-8076, SDI-8081, SDI-8652, SDI-8653, SDI-8654, SDI-10,082, SDI-10,295, SDI-10,297, SDI-10,298, SDI-10,299, SDI-10,627, SDI-11,397, SDI-11,793, SDI-11,794, SDI-11,795, SDI-11,798, SDI-12,103, SDI-12,690, SDI-12,691, SDI-12,692, SDI-12,698, SDI-12,699, SDI-12,702, SDI-12,705, SDI-12,706, SDI-12,708, SDI-12,709, SDI-12,711, SDI-12,715, SDI-12,877, SDI-12,878, SDI-13,224, SDI-14,317, SDI-14,318, SDI-14,435, SDI-14,726, SDI-14,727, SDI-15,041, SDI-15,062, SDI-15,063, and SDI-16,788	Lithic scatters
SDI-8079 and SDI-8082	Lithic scatters with subsurface deposits
SDI-12,704, SDI-12,716, and SDI-12,721	Temporary camps (lithic scatters and bedrock milling)
SDI-10,276, SDI-12,723, and SDI-13,225	Bedrock milling stations
SDI-10,668, SDI-12,697, SDI-12,796, and SDI-15,040	Quarry sites with lithic scatters
SDI-11,801 and SDI-12,862	Marine shell scatters
SDI-12,707 and SDI-12,710	Prehistoric habitation sites
SDI-10,293	Prehistoric cobble dwelling circles
SDI-11,799/H	Historic cistern and refuse scatter
SDI-12,701/H and SDI-12,713/H	Historic structures and prehistoric lithic scatters
SDI-11,802/H, SDI-12,888/H, and SDI-15,040/H	Historic refuse scatters
SDI-12,196/H	Historic refuse scatter and prehistoric lithic scatter
SDI-10,068 and SDI-10,069	Information missing from the SCIC
SDI-503, SDI-504, SDI-505, SDI-506, SDI-512, SDI-513, SDI-514, SDI-575, SDI-576, SDI-631, SDI-632, SDI-669, SDI-671, SDI-672, SDI-673, SDI-674, P-37-017014, P-37-013722, and P-37-013723	Prehistoric isolates

TABLE 1.2–2
Previous Studies Conducted in the Area of the Otay Hills Quarry Project

ASM Affiliates
1976 "Cultural Resource Survey of a 30-Acre Portion of the Proposed Otay Hills Quarry." Report on file at South Coastal Information Center, San Diego State University.

Berryman, Stanley R.
1976 "Biological and Archaeological Survey, Tentative Parcel Map 12400, Otay Mesa." Report on file at South Coastal Information Center, San Diego State University.

Buysse, Johnna and Brian F. Smith
1999 "An Archaeological Evaluation of Cultural Resources for the Airway Truck Parking Project, County of San Diego." Brian F. Smith and Associates. Report on file at South Coastal Information Center, San Diego State University.

County of San Diego
1983 "Supplemental Draft Environmental Impact Report Phase 2 of the Otay Mesa Land Use Plan GPA 84-01." Report on file at South Coastal Information Center, San Diego State University.

Cultural Systems Research, Inc.
1982 "Cultural Resource Identification and National Register Assessment Program of the Proposed Miguel-Tijuana 230 KV International Interconnection Project." Volume 1 – IV. Report on file at South Coastal Information Center, San Diego State University.

1983 "Cultural Resource Data Recovery Program of the Proposed Miguel-Tijuana 230 KV International Interconnection Project." Report on file at South Coastal Information Center, San Diego State University.

Gallegos, Dennis and Carolyn Kyle, Richard Carrico, Roxana Phillips
1988 "Cultural Resource Survey and Testing Program for the East Mesa Detention Facility, San Diego, California." Report on file at South Coastal Information Center, San Diego State University.

Graves Engineering, Inc.
1985 "Environmental Impact Report San Diego International Raceway Otay Mesa, San Diego County EAD LOG #84-19-13." Report on file at South Coastal Information Center, San Diego State University.

Gross, Timothy
1996 "Archaeological Survey for the Joint Task Force-Six Border Road Repair Project,

Otay Mountain, California." Affinis. Report on file at South Coastal Information Center, San Diego State University.

Hector, Susan and Stephen Van Wormer
1982 "Results of an Archaeological Test Program Conducted at SDI-10,862 Lower Otay County Park, County of San Diego." Report on file at South Coastal Information Center, San Diego State University.

Hector, Susan
1987 "Archaeological Investigations on Alta Road County of San Diego." Report on file at South Coastal Information Center, San Diego State University.

Kyle, Carolyn and Dennis R, Gallegos
1994 "Cultural Resource Survey and Test of Five Sites for the Otay Water District Central Area and Otay Mesa Interconnection Pipeline Alignments." Report on file at South Coastal Information Center, San Diego State University.

McDonald, Meg, James D. Eighmey, and Drew Pallette
1998 "National Register Significance Evaluation of Six Sites for the Border Lights Project on Otay Mesa, San Diego County, California." Report on file at South Coastal Information Center, San Diego State University.

Robbins-Wade, Mary and Timothy Gross
1990 "Historic Properties Inventory for the Southeast Otay Mesa Sludge Processing Facilities and Pipeline (Southern Sludge Processing Facility to Southeast Otay Mesa Sludge Processing Facility), San Diego, California." Report on file at South Coastal Information Center, San Diego State University.

Schaefer, Jerry
1999 "Archaeological Survey Report for the SR-125 Quino Management Areas: West Otay Mountain, West Marron and East Marron, San Diego County, California." Report on file at South Coastal Information Center, San Diego State University.

Smith, Brian and James Moriarty
1985 "An Archaeological Reconnaissance of the Proposed San Diego Motor Racing Park, Otay Mesa, San Diego County." Report on file at South Coastal Information Center, San Diego State University.

Thesken, Jay and Richard L. Carrico
1982 "Archaeological Survey of the Proposed Otay Mesa Correctional Facility." Report on file at South Coastal Information Center, San Diego State University.

TMI Environmental
1990 "Draft Supplemental Environmental Impact Report for American International Raceway." Report on file at South Coastal Information Center, San Diego State

University.

WESTEC Services, Inc.
1979 "Proponents Environmental Assessment Miguel to Tijuana Interconnection Project 230 KV Trans Mission Line." Report on file at South Coastal Information Center, San Diego State University.

1986 "Otay Mesa OHV Park Environmental Impact Report." Report on file at South Coastal Information Center, San Diego State University.

1987 "East Mesa County Detention Facility Draft Environmental Impact Report." Report on file at South Coastal Information Center, San Diego State University.

1988 "East Mesa County Detention Facility Supplemental Environmental Impact Report." Report on file at South Coastal Information Center, San Diego State University.

Xinos Enterprises
1988 "Extended Environmental Initial Study for Bradley Auto Storage Auction Pool P88-020 Log # 88-19-14." Report on file at South Coastal Information Center, San Diego State University.

1.3 Applicable Regulations

Resource importance is assigned to districts, sites, buildings, structures, and objects that possess exceptional value or quality illustrating or interpreting the heritage of San Diego County in history, architecture, archaeology, engineering, and culture. A number of criteria are used in demonstrating resource importance. Specifically, criteria outlined in CEQA, the San Diego County Resource Protection Ordinance (RPO), and the San Diego County Local Register provide the guidance for making such a determination. The following sections detail the criteria that a resource must meet in order to be determined important.

1.3.1 California Environmental Quality Act (CEQA)

According to CEQA (§15064.5a), the term "historical resource" includes the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR. Section 4850 et seq.).
2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the

preponderance of evidence demonstrates that it is not historically or culturally significant.

3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14, Section 4852) including the following:

    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    b) Is associated with the lives of persons important in our past;
    c) 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
    d) Has yielded, or may be likely to yield, information important in prehistory or history.

4) The fact that a resource is neither listed in, nor determined eligible for listing in the California Register of Historical Resources, and is not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Section 5020.1(j) or 5024.1.

According to CEQA (§15064.5b), a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change as:

1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
2) The significance of an historical resource is materially impaired when a project:

a) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
c) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

1. When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).
2. If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
3. If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21803.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
4. If an archaeological resource is neither a unique archaeological nor historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to

address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5 (d) & (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides:

(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:

1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5)
2) The requirement of CEQA and the Coastal Act.

1.3.2 San Diego County Local Register of Historical Resources (Local Register)

The County requires that resource importance be assessed not only at the state level as required by CEQA, but at the local level as well. If a resource meets any one of the following criteria as outlined in the Local Register, it will be considered an important resource:

1) Is associated with events that have made a significant contribution to the broad patterns of San Diego County's history and cultural heritage;
2) Is associated with the lives of persons important to the history of San Diego or its communities;
3) Embodies the distinctive characteristics of a type, period, San Diego County 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.

1.3.3 San Diego County Resource Protection Ordinance (RPO)

The County of San Diego's RPO protects significant cultural resources. The RPO defines "Significant Prehistoric or Historic Sites" as follows:

Location of past intense human occupation where buried cultural deposits can provide information regarding important scientific research questions about prehistoric or historic activities that have scientific, religious, or other ethnic value of local, regional, State, or Federal importance. Such locations shall include, but not be limited to:

1) Any prehistoric or historic district, site, interrelated collection of features or artifacts, building, structure, or object either:

    a) Formally determined eligible or listed in the National Register of Historic Places by the Keeper of the National Register; or
    b) To which the Historic Resource ("H" Designator) Special Area Regulations have been applied; or

2) One-of-a-kind, locally unique, or regionally unique cultural resources which contain a significant volume and range of data and materials; and
3) Any location of past or current sacred religious or ceremonial observances, which is either:

    a) Protected under Public Law 95-341, the American Indian Religious Freedom Act or Public Resources Code Section 5097.9, such as burial(s), pictographs, petroglyphs, solstice observatory sites, sacred shrines, religious ground figures; or
    b) Other formally designated and recognized sites, which are of ritual, ceremonial, or sacred value to any prehistoric or historic ethnic group.

The RPO does not allow non-exempt activities or uses damaging to significant prehistoric or historic lands on properties under county jurisdiction. The only exempt activity is scientific investigation authorized by the County. All discretionary projects are required to be in conformance with applicable county standards related to cultural resources, including the noted RPO criteria for prehistoric and historic sites. Non-compliance would result in a project that is inconsistent with county standards.

2.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

Pursuant to the County of San Diego *Guidelines for Determining Significance – Cultural Resources* (2007), any of the following will be considered a significant impact to cultural resources:

1) The project, as designed, causes a substantial adverse change in the significance of a historical resource as defined in §15064.5 of the State CEQA guidelines.
2) The project, as designed, causes a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the State CEQA guidelines.
3) The project, as designed, disturbs any human remains, including those interred outside of formal cemeteries.
4) The project proposes non-exempt activities or uses damaging to, and fails to preserve, significant cultural resources as defined by the RPO.

3.0 RESEARCH DESIGN

The cultural resource survey and significance testing program for the Otay Hills Quarry Project was required by the County of San Diego. The investigation included an archaeological reconnaissance of the property, records searches, significance testing of five prehistoric sites and one prehistoric site with an isolated historic feature, as well as an assessment of one isolated historic feature on the parcel. The cultural resource study for the Otay Hills Quarry Project focused on the relationship between the environmental setting and the human response to environmental factors.

The theoretical construct or research orientation was designed for the significant resources located within the project and focused primarily on the manifestation in the archaeological record of prehistoric subsistence patterns in the Otay Mesa area. The question provided below posed as a working hypothesis.

> *Question: How did the prehistoric subsistence patterns in the Otay Mesa area change through time?*

Previous research has indicated that the majority of sites within the Otay Mesa area represent a repetitive pattern of location characteristics and artifact assemblages (Carrico et al. 1992; Smith 1995). Sites in the vicinity are generally located on elevations near drainages; larger, more diverse sites are located in areas of vegetation transition, while smaller sites are located in zones of single or limited biological resources. Over time, environmental changes during the Archaic Period likely had a significant impact on the subsistence pattern in the Otay Mesa area. Therefore, in inland areas of the coastal zone, such as Otay Mesa, the semi-arid climate resulted in a concentration of water and other resources in drainage areas, resulting in a drainage-oriented settlement pattern. It follows that within the Otay Hills Quarry Project, site location, frequency, and size would be expected to be directly related to resource abundance, particularly in ecological transition zones and drainage patterns and, furthermore, that as the environmental conditions changed, so too did the subsistence pattern.

Discriminating between the La Jolla (Archaic) and Kumeyaay (Late Prehistoric) subsistence practices is central to the issue of adaptive change. It appears likely that the transition between the foraging strategy of the La Jolla Period and the collector strategy of the Late Prehistoric Period was a gradual one, possibly fueled by the changing environmental conditions at the end of the Archaic Period. The degree to which the resulting archaeological assemblages represent adaptations to inland resources is of much interest in San Diego County (Laylander 1993). The inland expression of the La Jolla Complex is characterized by diminishing shellfish remains, a diversified tool kit made of inland quarried lithic material in addition to cobbles, a broad range of resource exploitation, increased milling, increased sedentism, and an emphasis on terrestrial hunting and gathering (Moriarty 1966; Gallegos 1991;

Kaldenberg 1982; True 1958; Warren et al. 1961; Meighan 1954; and Forstadt et al. 1992). The apparent similarities between La Jolla Complex and Late Prehistoric Kumeyaay subsistence adaptations make distinguishing between the two a complicated issue, until the later appearance of pottery, smaller projectile points, cremations, and exotic lithic materials (Gallegos 1992; Christenson 1992). While it is generally understood that a gradual intensification in the use of a broad range of resources took place during this period, the ways in which this adaptation is expressed in artifact assemblages and settlement patterns is less well understood.

Determination of site function is an important aspect of this research topic, particularly as it relates to site location through time. The assignment of site function has generally been reduced to an extrapolation of primary site activities based upon artifact recoveries (*i.e.,* food processing, lithic production, milling, etc.). However, the word "function" is used to describe not only the activities conducted at a site, but also the role played by the site in the subsistence pattern of a particular group. Thus, the analysis of site function can be focused at two levels: site-specific function and regional or subsistence function.

At the testing level, the small sample size taken from any one site is not typically sufficient to substantially advance our knowledge of prehistoric patterns. This is particularly true of small, localized sites such as the four lithic scatters investigated during this study, where the artifact assemblage is limited to single representatives from one or two different artifact classes (*i.e.,* a single core or a single metate fragment). However, the fact that small lithic scatters are so common, particularly on Otay Mesa, indicates the importance of understanding the role of such limited-use sites in the prehistoric subsistence system as a whole through time. It follows that each site holds the potential to contribute to this type of study, however limited the data collected. As large-scale archaeological studies in areas such as Otay Mesa progress and more is understood regarding prehistoric subsistence systems, the data gathered from small, limited-use sites may find increased significance.

The optimal data needs for this study include the determination of the cultural affiliation and general dates of use for each site. It is hoped that time- and culture-sensitive artifacts will be recovered. The identification and recovery of any faunal remains found at any of the sites is very important, and the identification of the floral materials present at the time of prehistoric occupation is also essential. Any faunal materials that are recovered must be identified to species, and any other cultural information, such as evidence of cooking, butchering, or other modifications, must be analyzed. Such analysis will provide information regarding diet and subsistence patterns by revealing the types of plant and animal resources that were exploited and the environments that existed when the exploitation took place.

4.0 ANALYSIS OF PROJECT EFFECTS

The archaeological program for the Otay Hills Quarry Project consisted of archaeological records searches, an intensive survey of the entire project area, and the significance evaluation of seven cultural resources. This archaeological study conformed to County of San Diego Archaeological/Historical Guidelines. Statutory requirements of CEQA and subsequent legislation (Section 15064.5) were followed in evaluating the significance of these cultural resources. Specific definitions for archaeological resource type(s) used in this report are those established by the State Historic Preservation Office (SHPO March 1995).

4.1 Methodology

4.1.1 Field Methodology

Field Survey

Portions of the Otay Hills Quarry Project had been previously subjected to archaeological surveys, and the archaeological records searches indicated that five previously recorded cultural resources were present within the study area (sites SDI-7195, SDI-10,297/H, SDI-10,298, SDI-11,793, and SDI-16,788). An intensive pedestrian survey, employing a series of parallel transects spaced at 10-meter intervals, was conducted in order to relocate these sites and any other archaeological resources within the project boundaries. The first field reconnaissance of the project was conducted by Brian F. Smith, principal investigator, with Kevin Hunt, project archaeologist, and field personnel Gordon Henning, Robert LeVeille, and Sung An between June 21 and 27, 2000. The entire project area was surveyed in 10-meter intervals and special attention was given to locations where potential archaeological sites might be located. These surveys resulted in the identification and recordation of two additional archaeological sites, SDI-17,431 and SDI-17,433/H. All cultural resources were recorded as necessary according to the Office of Historic Preservation's (OHP) manual, *Instructions for Recording Historical Resources,* using Department of Parks and Recreation (DPR) forms. As additional areas were added to the project, supplemental surveys were conducted. In 2007, the final survey was completed by Brian F. Smith with Charles Callahan and Jeffrey Henry (November 12, 2007). The total area surveyed was 210 acres, although the current project footprint has been reduced to 110 acres due to environmental constraints.

Testing and Significance Evaluation

The cultural resource testing program was conducted for the seven resources (sites SDI-7195, SDI-10,297/H, SDI-10,298, SDI-11,793, SDI-16,788, SDI-17,431, and SDI-17,433/H) intermittently between 2005 and 2007. For the seven cultural resources, the testing program consisted of a surface collection, subsurface investigations, detailed recordation of all prehistoric and historic features, and significance evaluations. To initiate this process, a site datum was established and all surface artifacts and features, as well as test excavations, were mapped using

a handheld Global Positioning System (GPS) unit. The collected artifacts were bagged, labeled, and returned to the laboratory of BFSA for further analysis.

Subsequently, a series of shovel test pits (STPs) was instituted at each site to identify the nature and extent of any subsurface deposits. Placement of the STPs within each site depended on the extent of the surface artifacts and location of milling features. The shovel test series consisted of 30-by-30-centimeter excavations, which proceeded in decimeter levels downward to a minimum depth of 30 centimeters, where sufficient soils remained. In addition, one-by-one-meter test units (TUs) were excavated to evaluate potential subsurface deposits where shovel test data identified the presence of cultural deposits. Each TU was also excavated in standard decimeter levels downward to a minimum depth of 30 centimeters. All excavated soils were sifted through one-eighth-inch mesh screens.

4.1.2 Laboratory Analysis

In keeping with generally accepted archaeological procedures, the specimens collected during the investigations were categorized as to artifact form, mineralogy, and function. Comparative collections curated in the laboratory of BFSA are often helpful in identifying unusual or highly fragmentary specimens. The cataloging process for the recovered specimens utilized a classification system commonly employed in this region. After cataloging and identification, the collections were marked with the appropriate provenience and catalog information, then packaged for permanent curation. No radiocarbon dating or other specialized studies were conducted as part of this project due to a lack of appropriate material.

A copy of this report will be permanently filed with the SCIC. All project field notes, artifact collections, photographs, and other paperwork associated with our involvement in this project will be curated at the offices of BFSA in Poway, California.

4.1.3 Curation

The project field notes, photographs, and reports will be curated at the offices of BFSA in Poway, California. All recovered cultural materials will be curated at the San Diego Archaeological Center upon completion of the mitigation data recovery program.

4.1.4 Native American Participation

The archaeological survey and testing program did not locate evidence of Native American religious, ritual, or other special activities at this location. For this reason, in accordance with the requirements of the time (2005), no consultation with the Native American community was sought. However, in accordance with more recently established requirements, a search of the Sacred Lands Files was conducted by the Native American Heritage Commission (NAHC). The results of this search are provided in Appendix F and indicated that no recorded sacred sites or Traditional Cultural Properties (TCPs) are present near the Otay Hills Quarry Project.

4.2 Results

During the course of the archaeological survey of the Otay Hills Quarry Project, various archaeological sites were recorded and registered at the SCIC; however, only seven archaeological sites are located within the current 110-acre project boundaries (Figure 4.2–1). The seven sites within the project were subsequently tested for significance according to CEQA (Section 15064.5) criteria. The majority of the sites are characterized as prehistoric short-use resource extraction/processing sites exhibiting moderately disturbed contexts. The historic element includes a cistern feature, which was mapped, documented, and evaluated. The significance evaluation results for the seven sites, including details of the artifact recovery from excavations, are presented in sections 4.3 through 4.9. Additional detailed site records are presented in Appendix D. An evaluation of the significance of these sites is presented in Section 5.0.

Figure 4.2–1
Cultural Resource Location Map

(Deleted for Public Review; Bound Separately)

Figure 4.2–2
Project Map Showing Site Locations

(Deleted for Public Review; Bound Separately)

4.3 Field Investigations — Site SDI-17,431

4.3.1 Site Description

Site SDI-17,431 is a prehistoric limited-use area located on a fairly steep, west-facing slope, south of Site SDI-10,297/H, within the western portion of the project area (Figure 4.2–1). The site was identified during the initial survey in 2000 and subsequently tested during the current investigation. Elevations at the site range from 665 to 690 feet AMSL. Disturbances in the area include activities associated with past agricultural practices, as well as disking along the lower slope and the grading of a dirt road that runs north to south along the western edge of the site; some degree of erosion has also occurred across the site area. Vegetation in the area consists of dense, tall grasses with some scattered sage scrub species throughout the site. There are also small, metavolcanic bedrock outcrops scattered throughout the site area, which were inspected for the presence of bedrock milling; however, no such features were identified. The general configuration of the resource is shown in Figure 4.3–1. The setting of the site is shown in Plates 4.3–1 and 4.3–2. Testing of Site SDI-17,431 consisted of the collection and mapping of all surface artifacts and the excavation of five STPs.

4.3.2 Description of Field Investigations

Field investigations at Site SDI-17,431 were conducted using the standard methodologies described in Section 4.1. A total of 11 artifacts were recovered during the current investigation. A summary of artifact recovery from the site is presented in Table 4.3–1, while detailed provenience information in provided in the artifact catalog (Appendix E).

Surface Recordation

The entire surface of the site was inspected for artifacts and features, and a datum was established at the site. The datum, as well as all artifacts and excavations, were mapped using a handheld GPS unit (Figure 4.3–1). The majority of the site surface was covered with dense tall grasses; subsequently, surface visibility was poor across most of the area.

All artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 4.3–1. The surface artifacts were widely scattered throughout the site area. The surface collection, summarized in Table 4.3–1 and detailed in Appendix E, consisted of 11 artifacts. The assemblage included one precision tool and 10 pieces of lithic production waste.

Figure 4.3–1
Data Recovery Map
SDI-17,431

(Deleted for Public Review; Bound Separately)

Plate 4.3–1: Overview of Site SDI-17,431, looking east.

Plate 4.3–2: Overview of Site SDI-17,431, looking north.

TABLE 4.3–1
Summary of Artifact Recovery, Site SDI-17,431

Artifact Category	Surface	Shovel Tests	Total	Percent
Lithic Production Waste				
Flakes	10	–	10	90.91
Precision Tools				
Utilized Debitage	1	–	1	9.09
Total	11	–	11	100.00
Percent	100.00	–	100.00	

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-17,431 was investigated through the excavation of five STPs. STPs were excavated across the entire site, and were placed according to the locations of the surface artifacts. The locations of the STPs are shown in Figure 4.3–1. All shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters. None of the five STPs excavated at Site SDI-17,431 were positive for cultural material. Detailed excavation data for the STPs at Site SDI-17,431 is presented in Table 4.3–2.

TABLE 4.3–2
Shovel Test Excavation Data, Site SDI-17,431

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
1	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
2	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
3	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
4	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
5	0-10	No Recovery			

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
	10-20	No Recovery			
	20-30	No Recovery			

4.3.3 Laboratory Analysis

Laboratory analysis for Site SDI-17,431 included the standard procedures described in Section 4.1 of this report. All artifacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-17,431 included a total of 11 lithic artifacts, summarized in Table 4.3–1 and detailed in Appendix E.

Lithic Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 90.91 percent (N=10) of the lithic artifact collection, including 10 flakes made from locally available medium-grained metavolcanic material (MGM). For the purposes of this analysis, the terms medium-grained and fine-grained metavolcanic are a direct reference to the coarseness of the groundmass of the stone and not to distinct mineral size populations reflected in porphyritic textures of stones. In large part, the majority of metavolcanics local to the area are not porphyritic, but are rather aphanitic, in texture. Because larger grains generally indicate longer cooling rates, the phenocrysts indicate that the magma experienced an initial phase of slow cooling deep underground. In rocks with coarse-grained groundmasses, the phase of slow cooling was followed by a phase of faster underground cooling. This could happen if the magma migrates to shallower, cooler rocks, or if a volcanic eruption taps off some magma from the chamber. Overall, the coarseness of the ground mass may affect the isotropic nature of the material selected for knapping, and therefore, the selection process of metavolcanic materials for specific knapping purposes. The remaining lithic collection consisted of one precision tool (9.09 percent), a single piece of utilized debitage also made from MGM. Detailed material type and tool measurement data can be found in the artifact catalog (Appendix E). Activities indicated by the artifacts recovered from the site include a limited amount of lithic tool production and maintenance.

4.3.4 Discussion

The current testing program demonstrated that Site SDI-17,431 consists of a sparse surface scatter of artifacts with no associated subsurface deposit. The overall site dimensions, as identified by the surface distribution of artifacts, measure approximately 31 meters (101 feet) from north to south by 45 meters (147 feet) from east to west, covering 893 square meters (9,603 square feet). The surface scatter, which has been collected and analyzed, was widely scattered across the site. Shovel test excavations indicate that no subsurface deposits are located at Site SDI-17,431. Based upon the sparse nature of the surface scatter and the limited variety and quantity of material recovered from the site, the site exhibits no additional research potential.

The site is interpreted as a limited-use area where activities included tool manufacture and maintenance. The limited quantity and range of lithic material suggests a limited use of the site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. The research potential of the site has been exhausted through the current testing program.

4.3.5 Summary

Analysis of cultural materials recovered from Site SDI-17,431 revealed a sparse surface scatter of artifacts with no associated subsurface deposit. The recovered materials indicate that site activities were focused on lithic tool manufacture and maintenance.

Site SDI-17,431 exhibits no intact subsurface cultural deposits and no potential for buried cultural features. The site exhibits no unique elements and no additional research potential. The research potential of this site has been exhausted with the current investigation. Therefore, according to the criteria listed in CEQA, Section 15064.5, Site SDI-17,431 is not considered an important cultural resource.

4.4 Field Investigations — Site SDI-7195

4.4.1 Site Description

Site SDI-7195 is a small, sparse, prehistoric lithic scatter located on a low, west-facing slope, in the northeastern portion of the project area (Figure 4.2–1). Elevations at the site range from 665 to 685 feet AMSL. Disturbances in the area consist of activities associated with previous agricultural practices, including disking, and some degree of erosion has also occurred. Vegetation in the area consists of dense, tall grasses with some scattered sage scrub species throughout the site. Small, metavolcanic bedrock outcrops are also scattered throughout two small drainages along the north and south edges of the site, all of which were inspected for the presence of bedrock milling; however, no such features were identified. The general configuration of the resource is shown in Figure 4.4–1. The setting of the site is shown in Plates 4.4–1 and 4.4–2. Testing of Site SDI-7195 consisted of the collection and mapping of all surface artifacts and the excavation of nine STPs.

4.4.2 Description of Field Investigations

Field investigations at Site SDI-7195 were conducted using the standard methodologies described in Section 4.1. A total of 17 artifacts were recovered during the current investigation of the site. A summary of total artifact recovery is presented in Table 4.4–1, while detailed provenience information is presented in the artifact catalog (Appendix E).

Surface Recordation

The entire surface of the site was inspected for artifacts and features, and a datum was established at the site. The datum, as well as all artifacts and excavations, were mapped using a handheld GPS unit (Figure 4.4–1). The majority of the site surface was covered with dense grasses; subsequently, surface visibility was poor across much of the area.

All artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 4.4–1. The surface artifacts were widely scattered throughout the site area. The surface collection, summarized in Table 4.4–2 and detailed in Appendix E, consisted of a total of 10 artifacts. The assemblage included two precision tools and eight pieces of lithic production waste.

Figure 4.4–1
Data Recovery Map
Site SDI-7195

(Deleted for Public Review; Bound Separately)

Plate 4.4–1: Overview of Site SDI-7195, looking north.

Plate 4.4–2: Overview of Site SDI-7195, looking northeast.

TABLE 4.4–1
Summary of Artifact Recovery, Site SDI-7195

Artifact Type	Surface	Shovel Tests	Total	Percent
Lithic Production Waste				
Debitage	–	1	1	5.88
Flakes	8	6	14	82.35
Precision Tools				
Retouched Debitage	1	–	1	5.88
Utilized Flake	1	–	1	5.88
Total	10	7	17	100.00*
Percent	58.82	41.18	100.00	

**Rounded totals may not equal 100.00 percent.*

TABLE 4.4–2
Summary of Surface Artifacts, Site SDI-7195

Artifact Type	Total	Percent
Lithic Production Waste		
Flakes	8	80.00
Precision Tools		
Retouched Debitage	1	10.00
Utilized Flake	1	10.00
Total	10	100.00
Percent	100.00	

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-7195 was investigated through the excavation of a total of nine STPs. STPs were excavated across the entire site, but focused on the areas with the highest concentration of surface artifacts. The locations of the STPs are shown in Figure 4.4–1. All of the shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless bedrock was encountered. Of the nine STPs excavated at Site SDI-7195, six were positive for cultural materials. The artifact recovery from the STPs is summarized in Table 4.4–1 and detailed in Table 4.4–3. Although the majority of the STPs contained cultural material, recovery was very low, with a maximum recovery of only two artifacts in one STP (STP 2); therefore, no TU was excavated at Site SDI-7195.

The subsurface expression of the site, as identified by the subsurface tests that produced

artifacts, was smaller than the surface expression. The subsurface deposit at Site SDI-7195 covers approximately 867 square meters (9,337 square feet).

TABLE 4.4–3
Shovel Test Excavation Data, Site SDI-7195

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
1	0-10	No Recovery			
	10-20	No Recovery			
2	0-10	No Recovery			
	10-20	No Recovery			
	20-30	2	Flakes	MGM	1
3	0-10	1	Flake	MGM	2
	10-20	No Recovery			
	20-30	No Recovery			
4	0-10	No Recovery			
	10-20	1	Debitage	MGM	3
5	0-10	1	Flake	MGM	4
	10-20	No Recovery			
	20-30	No Recovery			
6	0-10	No Recovery			
	10-20	No Recovery			
	20-30	1	Flake	MGM	5
7	0-10	1	Flake	MGM	6
	10-20	No Recovery			
	20-30	No Recovery			
8	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
9	0-30	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			

4.4.3 Laboratory Analysis

Laboratory analysis for Site SDI-7195 included the standard procedures described in Section 4.1 of this report. All artifacts and ecofacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and

analyzed. Recovery from Site SDI-7195 included a total of 17 lithic artifacts, summarized in Table 4.4–1 and detailed in Appendix E.

Lithic Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 88.24 percent (N=15) of the lithic artifact collection, including 14 flakes and one piece of debitage, all of which were made from locally available MGM and fine-grained metavolcanic material (FGM). The remaining lithic collection, two precision tools (11.76 percent), consisted of one utilized flake and one retouched piece of debitage, also made from MGM. Detailed material type and tool measurement data can be found in the artifact catalog (Appendix E). Activities indicated by the artifacts recovered from the site include a limited amount of lithic tool production and maintenance.

4.4.4 Discussion

The current testing program demonstrated that Site SDI-7195 consists of a sparse surface artifact scatter and shallow subsurface deposit containing only 17 artifacts. The overall site dimensions, as identified by the surface distribution of artifacts, measure approximately 48 meters (157 feet) from north to south by 84 meters (275 feet) from east to west, covering 2,465 square meters (26,536 square feet). The surface artifacts, which have been collected, were widely scattered across the site. Shovel test excavations indicate that subsurface deposits extend to a maximum depth of 30 centimeters. Based upon the sparse nature of the deposit, and the limited variety and quantity of material recovered from the site, the site exhibits no additional research potential.

The site is interpreted as a small limited-use area where activities included lithic tool manufacture and maintenance. The limited quantity and range of lithic material suggests a limited use of the site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. The research potential of the site has been exhausted through the current testing program.

4.4.5 Summary

Analysis of cultural materials recovered from Site SDI-7195 revealed a sparse cultural deposit at the site, extending to a maximum depth of 30 centimeters. The recovered materials indicate that site activities were focused on lithic tool manufacture and maintenance.

Site SDI-7195 exhibits a sparse cultural deposit, with little potential for buried cultural features. The site exhibits no unique elements and no additional research potential for the prehistory of the region. The research potential of this site has been exhausted through the current investigation. Based upon the information derived from the current testing program, Site SDI-7195 is not considered an important cultural resource according to criteria listed in CEQA, Section 15064.5.

4.5 Field Investigations — Site SDI-10,297/H

4.5.1 Site Description

Site SDI-10,297/H is a large prehistoric temporary camp and isolated historic feature located on the crest of a low hill and situated south of Site SDI-10,298, just outside the western boundary of the project area (Figure 4.2–1). Although the site is located outside the current project boundaries, it lies very close to the western project boundary and may extend into the project, and because of potential indirect impacts from the proposed project, the site was included in the current investigation. The site, originally recorded by BFSA in 1984 as a dense surface artifact scatter, was relocated during the survey phase of the current investigation in June of 2000. Elevations at the site range from 670 to 685 AMSL. Disturbances in the area consist of activities associated with agricultural use, including disking, some degree of erosion, and graded dirt roads that run along the eastern and southern edges of the site. The general configuration of the resource is shown in Figure 4.5–1. The setting of the site is shown in Plates 4.5–1 and 4.5–2. Testing of the site by BFSA consisted of the mapping and collection of all surface artifacts, and the excavation of 15 STPs and one standard TU.

Figure 4.5–1
Data Recovery Map
Site SDI-10,297/H

(Deleted for Public Review; Bound Separately)

Plate 4.5–1: Overview of Site SDI-10,297/H, looking northwest.

Plate 4.5–2: Overview of Site SDI-10,297/H, looking east.

4.5.2 Description of Field Investigations

Field investigations at Site SDI-10,297/H were conducted using the standard methodologies described in Section 4.1. A total of 504 artifacts and 0.1 gram of marine shell were recovered during investigations at the site. A summary of recovery from the site is presented in Table 4.5–1. Detailed provenience information is provided in the artifact catalog (Appendix E).

Surface Recordation

The entire surface of the site was inspected for artifacts and features, and a datum was established at the site. The datum, as well as all artifacts, features, and excavations, were mapped using a handheld GPS unit (Figure 4.5–1). The majority of the site surface was covered with dense grasses; subsequently surface visibility was poor across most of the site.

All artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 4.5–1. The surface artifacts were widely scattered throughout the site area. The surface collection, summarized in Table 4.5–2 and detailed in Appendix E, consisted of 95 artifacts. The assemblage included one ground stone tool, two multi-use tools, two core tools, five percussion tools, 16 precision tools, and 69 pieces of lithic production waste.

Aside from the prehistoric artifacts recovered from the surface of the site, an isolated historic feature (Feature A) was identified during the survey phase of the current investigation. The feature is located near the center of the prehistoric lithic scatter of Site SDI-10,297/H, near the apex of a low hill, and was obscured from view by a large bush growing from the center of the feature. The historic feature consists of a circular cistern constructed with brick and mortar. The cistern is circular and bell-shaped with a wide base and a narrow neck; it measures approximately seven feet in diameter at the surface, 12 feet in diameter at the base, and four feet in depth. These types of cisterns were typically utilized for water storage in residential contexts; the narrow neck design tended to reduce evaporation. A review of aerial photographs suggests that the cistern at Site SDI-10,297/H may have been associated with a historic structure previously situated near this location. No evidence of the structure was identified, and no historic artifacts were documented during the current investigation. Historic Feature A at Site SDI-10,297/H is shown in Plate 4.5–3.

TABLE 4.5–1
Summary of Artifact Recovery, Site SDI-10,297/H

Artifact Type	Surface	Shovel Tests	TU	Total	Percent
Ecofacts					
Ostrea sp.	–	–	0.1 g	0.1 g	–
Core Tools					
Core Tools	2	–	2	4	0.79
Lithic Production Waste					
Core	1	–	–	1	0.20
Debitage	2	2	21	25	4.96
Flakes	66	53	318	437	86.71
Ground Stone Tools					
Metate	1	–	–	1	0.20
Percussion Tools					
Hammerstones	5	–	1	6	1.19
Precision Tools					
Biface	–	–	1	1	0.20
Graver	–	–	1	1	0.20
Perforators	1	–	–	1	0.20
Retouched Flakes	2	–	2	4	0.79
Teshoa Flakes	1	–	–	1	0.20
Utilized Debitage	–	–	2	2	0.40
Utilized Flakes	12	4	2	18	3.57
Multi-Use Tools					
Hammer/Core	2	–	–	2	0.40
Miscellaneous:					
Fire-Affected Rock (FAR)	–	–	121.8 g	–	–
Total	95	59	350	504	100.00*
Percent	18.85	11.71	69.44	100.00	

**Rounded totals may not equal 100.00 percent.*

TABLE 4.5–2
Summary of Surface Artifacts, Site SDI-10,297/H

Artifact Type	Total	Percent
Core Tools		
Core Tools	2	2.11
Lithic Production Waste		
Core	1	1.05
Debitage	2	2.11
Flakes	66	69.47
Ground Stone Tools		
Metate	1	1.05
Percussion Tools		
Hammerstones	5	5.26
Precision Tools		
Perforators	1	1.05
Retouched Flakes	2	2.11
Teshoa Flakes	1	1.05
Utilized Flakes	12	12.63
Multi-Use Tools		
Hammer/Core	2	2.11
Total	95	100.00
Percent	100.00	

Plate 4.5–3: Overview of Feature A, Site SDI-10,297/H, facing west.

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-10,297/H was investigated through the excavation of a total of 15 STPs and one TU. STPs were excavated across the entire site, but focused on areas with the highest concentration of surface artifacts. The locations of the STPs are shown in Figure 4.5–1. All of the shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless bedrock was encountered. Of the 15 STPs excavated at Site SDI-10,297/H, all but one (STP 12) were positive for cultural material. Depth of recovery extended to a maximum depth of 30 centimeters in all positive STPs. Shovel test excavation results are summarized in Table 4.5–3.

TABLE 4.5–3
Shovel Test Excavation Data, Site SDI-10,297/H

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
1	0-10	1	Flake	FGM	86
		1	Flake	MGM	87
	10-20	2	Flakes	MGM	88
	20-30	1	Flake	MGM	89
2	0-10	1	Utilized Flake	MGM	90
		1	Debitage	MGM	91

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
	10-20	No Recovery			
	20-30	No Recovery			
3	0-10	1	Flake	MGM	92
	10-20	1	Utilized Flake	MGM	93
	20-30	No Recovery			
4	0-10	1	Flake	MGM	94
	10-20	No Recovery			
	20-30	No Recovery			
5	0-10	3	Flakes	MGM	95
	10-20	1	Flake	MGM	96
	20-30	1	Flake	MGM	97
6	0-10	1	Utilized Flake	MGM	98
		2	Flakes	MGM	99
	10-20	No Recovery			
	20-30	No Recovery			
7	0-10	No Recovery			
	10-20	1	Flake	MGM	100
	20-30	No Recovery			
8	0-10	6	Flakes	MGM	101
	10-20	3	Flakes	FGM	102
		3	Flakes	MGM	103
	20-30	1	Utilized Flake	MGM	104
9	0-10	6	Flakes	MGM	105
	10-20	1	Flake	FGM	106
	20-30	4	Flakes	MGM	107
10	0-10	No Recovery			
	10-20	No Recovery			
	20-30	2	Flakes	MGM	108
11	0-10	1	Flake	FGM	109
	10-20	2	Flakes	MGM	110
	20-30	2	Flakes	MGM	111
12	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
13	0-10	1	Flake	FGM	112

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
		1	Flake	MGM	113
	10-20	1	Flake	MGM	114
	20-30	No Recovery			
14	0-10	No Recovery			
	10-20	1	Debitage	MGM	115
		1	Flake	MGM	116
	20-30	2	Flakes	MGM	117
15	0-10	1	Flake	MGM	118
	10-20	No Recovery			
	20-30	1	Flake	MGM	119

Subsurface testing of Site SDI-10,297/H continued with the excavation of one standard one-square-meter TU. The TU was positioned to sample the area of greatest potential to produce subsurface deposits, as identified by the STPs and surface collections. TU 1 was placed in the northern portion of the site, near STPs 8 and 9. The location of the TU is illustrated in Figure 4.5–1.

The TU was excavated in standard decimeter levels to subsoil, and all removed soils were sifted through one-eighth-inch mesh hardware cloth. Recovery from TU 1 consisted of 350 lithic artifacts and 0.1 gram of marine shell. The recovered lithic artifacts consisted of 339 pieces of lithic production waste, two core tools, one percussion tool, and eight precision tools. The small amount of recovered shell consisted entirely of *Ostrea* sp. (0.1 gram). Cultural material was recovered to a maximum depth of 30 centimeters in TU 1, at which point bedrock was encountered. The TU recovery is summarized by depth in Table 4.5–4 and detailed in Table 4.5–5.

TABLE 4.5–4
Summary of Test Unit Recovery by Depth, Site SDI-10,297/H

Artifact Category	0-10 cm	10-20 cm	20-30 cm	Total	Percent
Ecofacts					
Marine Shell	–	–	0.1 g	0.1 g	–
Core Tools	–	1	1	2	0.57
Lithic Production Waste					
Debitage	10	7	4	21	6.00
Flakes	125	139	54	318	90.86
Percussion Tools					

Artifact Category	0-10 cm	10-20 cm	20-30 cm	Total	Percent
Hammerstone	–	1	–	1	0.29
Precision Tools					
Biface	–	–	1	1	0.29
Graver	1	–	–	1	0.29
Retouched Flake	2	–	–	2	0.57
Utilized Debitage	–	1	1	2	0.57
Utilized Flakes	1	–	1	2	0.57
Miscellaneous					
FAR	58.6 g	–	63.2 g	121.8 g	–
Total	139	149	62	350	100.00*
Percent	39.71	42.57	17.71	100.00*	

** Rounded totals may not equal to 100.00 percent.*

TABLE 4.5–5
TU Excavation Data, Site SDI-10,297/H

TU	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
1	0-10	21	Flakes	FGM	139
		1	Retouched Flake Fragment	MGM	140
		1	Retouched Flake	MGM	141
		1	Graver	MGM	142
		1	Utilized Flake	MGM	143
		10	Debitage	MGM	144
		102	Flakes	MGM	145
		2	Flakes	Quartz	146
		58.6 g	FAR	MGM	147
	10-20	17	Flakes	FGM	120
		119	Flakes	MGM	121
		2	Flakes	Chert	133
		1	Utilized Debitage	FGM	134
		1	Core Tool	MGM	135
		1	Hammerstone, fragment, unidentifiable	MGM	136
		7	Debitage	MGM	137
		1	Flake	Quartz	138
	20-30	1	Debitage	FGM	122

TU	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
		9	Flakes	FGM	123
		1	Biface, Blank	MGM	124
		1	Core Tool	MGM	125
		1	Utilized Debitage	MGM	126
		1	Utilized Flake	MGM	127
		3	Debitage	MGM	128
		44	Flakes	MGM	129
		63.2 g	FAR	MGM	130
		1	Flake	Quartz	131
		0.1 g	Marine Shell	*Ostrea* sp.	132

The soil from TU 1 was characterized as a very dark grayish brown (10YR 4/2) clay loam to a depth of approximately 15 centimeters, overlying a compact dark grayish brown (10YR 4/2) clay subsoil with large cobble inclusions to the maximum depth of the unit at 30 centimeters. A color photograph of the north wall profile of TU 1 is provided in Plate 4.5–4 and a sketch of the north wall profile of TU 1 is presented in Figure 4.5–2. The subsurface expression of the site, as identified by the subsurface tests that produced artifacts, was smaller than the surface expression. The subsurface deposit at Site SDI-10,297/H covers approximately 5,095 square meters (54,853 square feet).

Plate 4.5–4: North wall profile of Test Unit 1, zero to 30 centimeters, Site SDI-10,297/H, facing north.

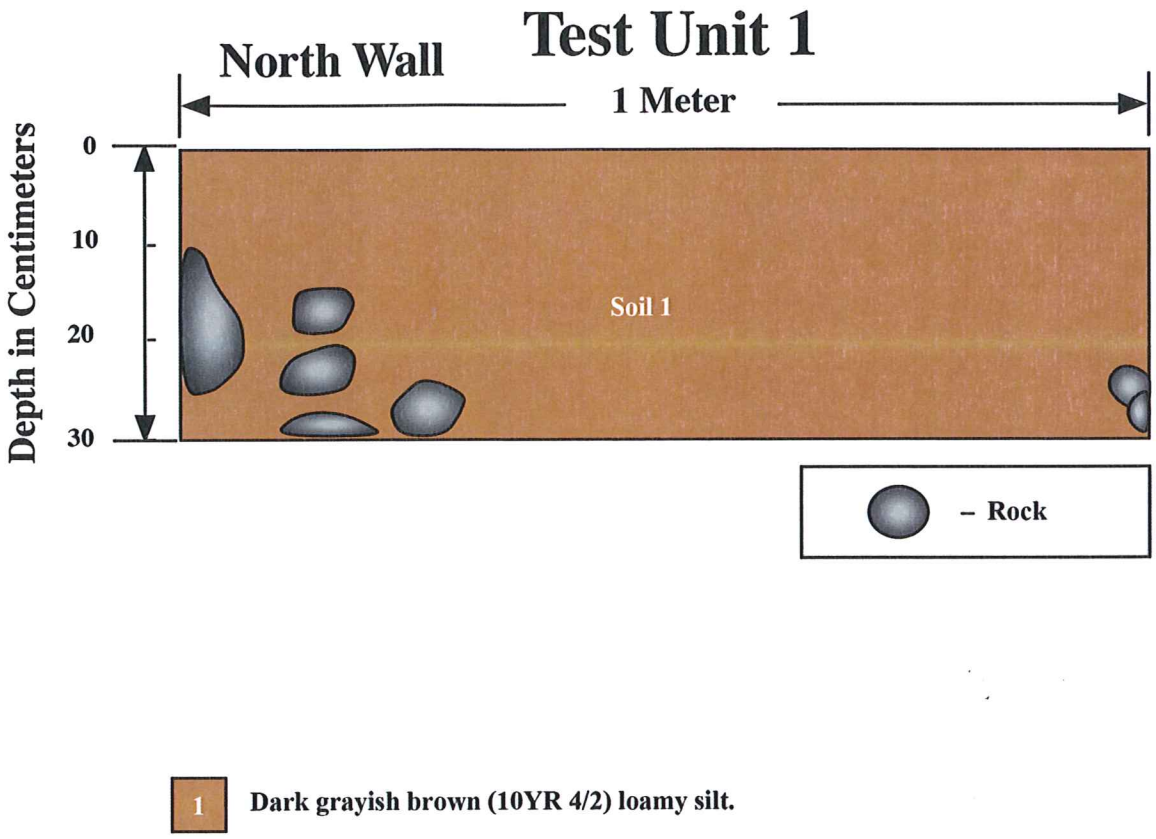


Figure 4.5–2
North Wall Profile of Test Unit 1
Site SDI-10,297/H
The Otay Hills Quarry Project

4.5.3 Laboratory Analysis

Laboratory analysis for Site SDI-10,297/H included the standard procedures described in Section 4.1 of this report. All artifacts and ecofacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-10,297/H, including a total of 504 artifacts, 0.1 gram of marine shell, and 121.8 grams of FAR, is summarized in Table 4.5–1 and detailed in Appendix E.

Lithic Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 91.87 percent (N=463) of the lithic artifact collection, including one core, 437 flakes, and 25 pieces of debitage. The remaining lithic collection consisted of one ground stone tool (a metate; 0.20 percent), six percussion tools (1.19 percent), four core tools (0.79 percent), 28 precision tools (5.56 percent), and two multi-use tools (0.40 percent). Activities indicated by the artifacts recovered from the site include a limited amount of procurement and processing of plant and animal resources, as well as lithic tool production and maintenance.

The lithic artifact collection included a range of material types, the majority of which are locally available. The lithic artifact collection was diverse, with the majority of artifacts being made from local MGM and FGM, which made up 98.02 percent (N=494) of the total. Other locally available materials included quartz (1.19 percent; N=6), quartzite (0.20 percent; N=1), and granite (0.20 percent; N=1). The only material recovered that is not immediately locally available was chert, which made up 0.40 percent (N=2) of the collection and was found exclusively as lithic production waste. The lithic material distribution of the artifact assemblage is presented in Table 4.5–6.

TABLE 4.5–6
Lithic Material Distribution, Site SDI-10,297/H

Artifact Category	Chert	FGM	Granite	MGM	Quartz	Quartzite	Total	Percent
Core Tools								
Core Tools	–	–	–	4	–	–	4	0.79
Ground Stone								
Metate	–	–	1	–	–	–	1	0.20
Lithic Production Waste								
Core	–	–	–	1	–	–	1	0.20
Debitage	–	1	–	23	1	–	25	4.96
Flake	2	60	–	370	5	–	437	86.71
Percussion Tools								

Artifact Category	Chert	FGM	Granite	MGM	Quartz	Quartzite	Total	Percent
Hammerstone	–	1	–	5	–	–	6	1.19
Precision Tools								
Biface	–	–	–	1	–	–	1	0.20
Graver	–	–	–	1	–	–	1	0.20
Perforator	–	–	–	1	–	–	1	0.20
Retouched Flake	–	–	–	4	–	–	4	0.79
Teshoa Flake	–	–	–	–	–	1	1	0.20
Utilized Debitage	–	1	–	1	–	–	2	0.40
Utilized Flake	–	5	–	13	–	–	18	3.57
Multi-Use Tools								
Hammer/Core	–	–	–	2	–	–	2	0.40
Miscellaneous								
FAR	–	–	–	121.8 g	–	–	121.8 g	–
Total	2	68	1	426	6	1	504	100.00*
Percent	0.40	13.49	0.20	84.52	1.19	0.20	100.00	

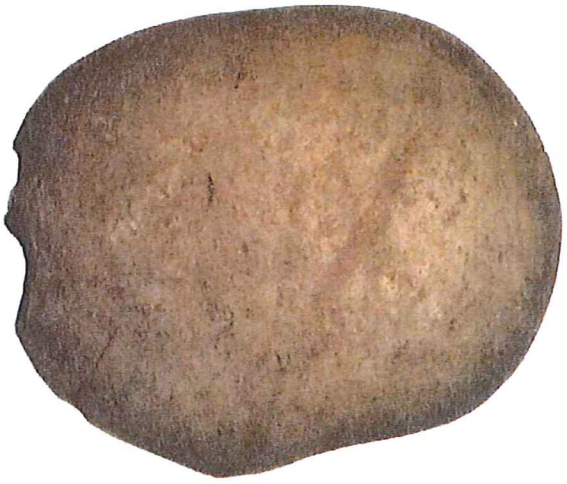
**Rounded totals may not equal 100.00 percent.*

4.5.4 Discussion

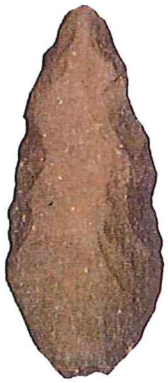
The current testing program demonstrated that Site SDI-10,297/H consists of a moderate prehistoric surface artifact scatter and a shallow subsurface deposit that yielded 504 artifacts and a small amount of marine shell. The historic component of the site consists of a single, isolated historic cistern with no associated artifacts or refuse deposits. The overall site dimensions, as identified by the surface distribution of artifacts, measure approximately 119 meters (390 feet) from north to south by 145 meters (477 feet) east to west, covering 30,818 square meters (101,109 square feet). The surface scatter, which has been collected and analyzed, was widely scattered across the site. TU and shovel test excavations indicate that the subsurface deposits extend to a depth of 30 centimeters. Based upon the nature of the deposit and the variety and quantity of material recovered from the site, the site exhibits additional research potential. Select artifacts from Site SDI-10,297/H are shown in Plate 4.5–5.

Cat. No. 1, core tool, MGM

Cat. No. 35, perforator, MGM



Cat. No. 48, Teshoa Flake, quartzite



Cat. No. 124, stage 3 biface, MGM

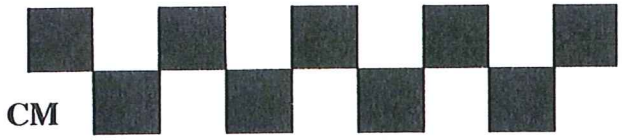


Plate 4.5–5: Select artifacts from Site SDI-10,297/H.

The prehistoric component of the site is interpreted as a temporary camp where activities included food resource extraction and processing, as well as lithic tool manufacture and maintenance. The lithic tool assemblage and presence of marine shell indicates that both floral and faunal resources were collected and processed by the occupants of the site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. However, the large quantity and range of lithic tools present suggests repeated use of the site; therefore, the site exhibits additional research potential. The historic component consists of a single, isolated historic cistern most likely utilized for water storage. Because the cistern is an isolated find with no associated artifacts or refuse deposits, the feature does not exhibit additional research potential.

4.5.5 Summary

The analysis of the prehistoric cultural materials recovered from Site SDI-10,297/H revealed a significant cultural deposit at the site extending to a depth of 30 centimeters. The recovered materials, including lithic artifacts and marine mollusk shell, indicate that site activities were focused on floral and faunal food procurement and processing, as well as lithic tool manufacture and maintenance. Subsistence at the site appears to have been based upon both botanical and faunal resources.

Site SDI-10,297/H exhibits the potential for additional subsurface deposits and/or buried cultural features. Because the testing and evaluation program identified an intact subsurface deposit, the site is considered to have additional research potential. Based upon the information derived from the testing program, the prehistoric component of Site SDI-10,297/H is considered an important resource according to criteria listed in CEQA, Section 15064.5. The historic feature identified at the site consists of a cistern with no associated artifacts or refuse deposits and, as an isolated find, is considered not important according to criteria listed in CEQA, Section 15064.5.

4.6 Field Investigations — Site SDI-10,298

4.6.1 Site Description

Site SDI-10,298 is a prehistoric temporary camp located on a relatively flat area that extends off-property to the west and downslope to the southeast, situated northwest of Site SDI-7195 in the northwest corner of the project area (Figure 4.2–1). The site was relocated during the survey phase of the current investigation in June of 2000. Elevations at the site range from 695 to 795 feet AMSL. The majority of the area has been disturbed by previous agricultural activities, recent grading, and the construction of a large underground aqueduct that runs through a portion of the site and a modern fence that runs across the site along the western edge of the property. Vegetation in the area consists of dense, introduced grasses and weeds. The setting of the site is shown in Plate 4.6–1. The general configuration of the resource is shown in Figure

4.6–1. Testing of the site by BFSA consisted of the collection and mapping of all surface artifacts, and the excavation of seven STPs and one standard TU.

4.6.2 Description of Field Investigations

Field investigations at Site SDI-10,298 were conducted using the standard methodologies described in Section 4.1. A total of 186 artifacts, 0.5 gram of faunal bone, and 1.3 grams of marine shell were recovered during investigations at the site. A summary of recovery from the site is presented in Table 4.6–1, while detailed provenience information is provided in the artifact catalog (Appendix E).

Surface Recordation

The entire surface of the site was inspected for artifacts and features, and a datum was established at the site. The datum, as well as all artifacts and excavations, were mapped using a handheld GPS unit (Figure 4.6–1). The majority of the site surface was covered with dense grasses; subsequently, surface visibility was poor across most of the area. All artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 4.6–1. The surface artifacts were widely scattered throughout the site area. The surface collection, summarized in Table 4.6–2 and detailed in Appendix E, consisted of 42 lithic artifacts. The assemblage included one percussion tool, two precision tools, and 39 pieces of lithic production waste.

Figure 4.6–1
Data Recovery Map
Site SDI-10,298

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Plate 4.6–1: Overview of Site SDI-10,298 from SDI-10,297/H, looking north.

TABLE 4.6–1
Summary of Artifact Recovery, Site SDI-10,298

Artifact Type	Surface	Shovel Tests	TU	Total	Percent
Ecofacts					
Faunal Bone	–	0.2 g	0.3 g	0.5 g	–
Chione sp.	–	< 0.1 g	0.1 g	0.1 g	–
Laevicardium sp.	–	0.3 g	–	0.3 g	–
Modiolus sp.	–	< 0.1 g	–	0.1 g	–
Mytilus sp.	–	0.7 g	–	0.7 g	–
Unidentifiable	–	< 0.1 g	–	0.1 g	–
Lithic Production Waste					
Debitage	5	7	7	19	10.22
Flakes	34	59	69	162	87.10
Hammerstones	1	–	1	2	1.08
Precision Tools					
Retouched Debitage	–	–	1	1	0.54
Utilized Flakes	2	–	–	2	1.08
Miscellaneous					

Artifact Type	Surface	Shovel Tests	TU	Total	Percent
FAR	–	–	471.3 g	471.3 g	–
Total	42	66	78	186	100.00*
Percent	22.58	35.48	41.94	100.00	

**Rounded totals may not equal 100.00 percent.*

TABLE 4.6–2
Summary of Surface Artifacts, Site SDI-10,298

Artifact Type	Total	Percent
Lithic Production Waste		
Debitage	5	11.90
Flakes	34	80.95
Percussion Tools		
Hammerstones	1	2.38
Precision Tools		
Utilized Flakes	2	4.76
Total	42	100.00*
Percent	100.00	

** Rounded totals may not equal 100.00 percent.*

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-10,298 was investigated through the excavation of a total of seven STPs and one TU. STPs were excavated across the portion of the site within the project boundaries, but focused on the areas with the highest concentration of surface artifacts. The locations of the STPs are illustrated in Figure 4.6–1. All of the shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless bedrock was encountered. Of the seven STPs excavated at Site SDI-10,298, five (STPs 1, 2, 3, 4, and 5) were positive for cultural material. Depth of recovery extended to a maximum depth of 40 centimeters in all positive STPs. The recovery from the STPs included 66 pieces of lithic production waste, 0.2 gram of faunal bone, and 1.0 gram of marine shell. Shovel test excavation results are summarized in Table 4.6–3.

TABLE 4.6–3
Shovel Test Excavation Data, Site SDI-10,298

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
1	0-10	1	Flake	Quartz	69
	10-20	0.1 g	Faunal Bone	–	70
	20-30	1	Flake	MGM	71
2	0-10	1	Debitage	MGM	40
		4	Flakes	MGM	41
	10-20	1	Debitage	MGM	42
		4	Flakes	MGM	43
	20-30	2	Debitage	MGM	44
		7	Flakes	MGM	45
		< 0.1 g	Marine Shell	Unidentifiable	46
		< 0.1 g	Faunal Bone	–	47
		2	Debitage	MGM	48
		4	Flakes	MGM	49
3	0-10	No Recovery			
	10-20	1	Flake	MGM	50
	20-30	No Recovery			
4	0-10	7	Flakes	MGM	51
		< 0.1 g	Faunal Bone	–	52
	10-20	3	Flakes	MGM	53
		6	Flakes	MGM	54
		< 0.1 g	Marine Shell	*Modiolus* sp.	55
		0.4 g	Marine Shell	*Mytilus* sp.	56
		0.1 g	Faunal Bone	–	57
	20-30	6	Flakes	MGM	58
		0.1 g	Marine Shell	*Mytilus* sp.	59
		< 0.1 g	Faunal Bone	–	60
	30-40	3	Flakes	MGM	61
		< 0.1 g	Marine Shell	*Chione* sp.	62
		0.3 g	Marine Shell	*Laevicardium* sp.	63
5	0-10	5	Flakes	MGM	64
	10-20	1	Flake	FGM	65

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
		6	Flakes	MGM	66
		0.2 g	Marine Shell	*Mytilus* sp.	67
	20-30	1	Debitage	MGM	68
6	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
7	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			

Subsurface testing of Site SDI-10,298 continued with the excavation of one standard one-square-meter TU. The TU was positioned to sample the area of greatest potential to produce subsurface deposits, as identified by the STPs and surface collections. TU 1 was placed in the western portion of the site, near STPs 2 and 4. The location of the TU is illustrated in Figure 4.6–1.

The TU was excavated in standard decimeter levels to subsoil, and all removed soils were sifted through one-eighth-inch mesh hardware cloth. Recovery from TU 1 consisted of 78 lithic artifacts, 0.3 gram of faunal bone, 0.4 gram of marine shell, and 471.3 grams of fire-affected rock. The recovered lithic artifacts consisted of 76 pieces of lithic production waste, one percussion tool, and one precision tool. The small amount of recovered shell consisted of *Chione* sp. (0.1 gram), *Mytilus* sp. (<0.1 gram), and *Tagelus* sp. (<0.1 gram). Cultural material was recovered to a maximum depth of 30 centimeters in TU 1, where bedrock was encountered. The TU recovery is summarized by depth in Table 4.6–4 and detailed in Table 4.6–5.

TABLE 4.6–4
Summary of Test Unit Recovery by Depth, Site SDI-10,298

Artifact Category	0-10 cm	10-20 cm	20-30 cm	Total	Percent
Ecofacts					
Faunal Bone	0.3 g	–	–	0.3 g	–
Marine Shell	<0.1 g	0.1 g	<0.1 g	0.1 g	–
Lithic Production Waste					
Debitage	–	3	4	7	8.97
Flakes	29	14	26	69	88.46
Percussion Tools					
Hammerstone	1	–	–	1	1.28

Artifact Category	0-10 cm	10-20 cm	20-30 cm	Total	Percent
Precision Tools					
Retouched Debitage	1	–	–	1	1.28
Miscellaneous					
FAR	471.3 g	–	–	471.3 g	–
Total	31	17	30	78	100.00*
Percent	39.74	21.79	38.46	100.00	

**Rounded totals may not equal 100.00 percent.*

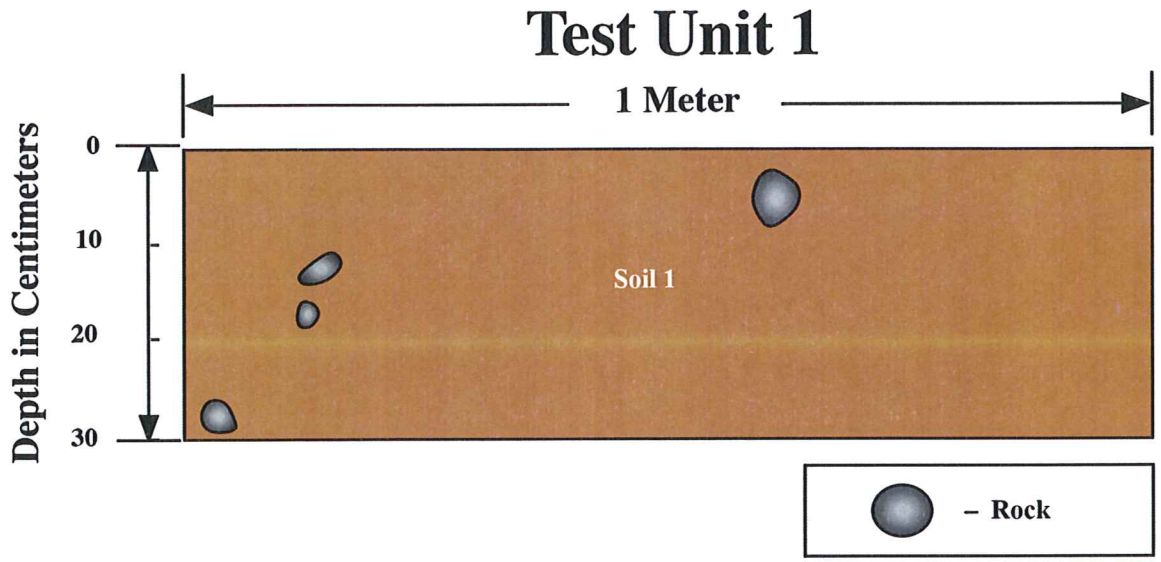
TABLE 4.6–5
Test Unit Excavation Data, Site SDI-10,298

TU	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
1	0-10	2	Flakes	FGM	72
		1	Hammerstone, single-edged, made from mano fragment	MGM	73
		1	Retouched Debitage	MGM	74
		27	Flakes	MGM	75
		471.3 g	FAR	MGM	76
		< 0.1 g	*Chione* sp.	Marine Shell	77
		< 0.1 g	*Tagelus* sp.	Marine Shell	78
		0.3 g	Otolith	Faunal Bone	79
	10-20	1	Debitage	FGM	80
		1	Flake	FGM	81
		2	Debitage	MGM	82
		13	Flakes	MGM	83
		0.1 g	*Chione* sp.	Marine Shell	84
	20-30	4	Debitage	MGM	85
		26	Flakes	MGM	86
		< 0.1 g	*Mytilus* sp.	Marine Shell	87

The soil from TU 1 was characterized as a very dark grayish brown (10YR 3/2) clay loam to a depth of approximately 15 centimeters, overlying a compact, very dark grayish brown (10YR 3/2) clay subsoil with large cobble inclusions to the maximum depth of the unit at 30 centimeters. A drawing of the north wall profile of TU 1 is presented in Figure 4.6–2. A color photograph of the north wall profile of TU 1 is provided in Plate 4.6–2.

Plate 4.6–2: North wall profile of Test Unit 1, zero to 30 centimeters, Site SDI-10,298, facing north.

The subsurface expression of the site, as identified by the subsurface tests that produced artifacts, was smaller than the surface expression. The subsurface deposit at Site SDI-10,298 covers approximately 1,116 square meters (12,013 square feet).



1 Very dark grayish brown (10YR 3/2) loamy silt.

Figure 4.6–2
North Wall Profile of Test Unit 1
Site SDI-10,298
The Otay Hills Quarry Project

4.6.3 Laboratory Analysis

Laboratory analysis for Site SDI-10,298 included the standard procedures described in Section 4.1 of this report. All artifacts and ecofacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-10,298, including 186 artifacts, 1.3 grams of marine shell, 0.5 gram of faunal bone, and 471.3 grams of FAR, is summarized in Table 4.6–1 and detailed in Appendix E.

Lithic Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 97.31 percent (N=181) of the lithic artifact collection, and included 162 flakes and 19 pieces of debitage. The remaining lithic collection consisted of two percussion tools (1.08 percent) and three precision tools (1.61 percent). Activities indicated by the artifacts recovered from the site include a limited amount of procurement and processing of plant and animal resources, as well as lithic tool production and maintenance.

The lithic artifact collection included a small range of material types, all of which are locally available. The majority of artifacts were made from local MGM and FGM, which made up 99.46 percent (N=185) of the total. The only other material represented was a single quartz flake (0.54 percent). The lithic material distribution of the artifact assemblage is presented in Table 4.6–6.

TABLE 4.6–6
Lithic Material Distribution, Site SDI-10,298

Artifact Category	FGM	MGM	Quartz	Total	Percent
Lithic Production Waste					
Debitage	1	18	–	19	10.22
Flake	10	151	1	162	87.10
Percussion Tools					
Hammerstone	–	2	–	2	1.08
Precision Tools					
Retouched Debitage	–	1	–	1	0.54
Utilized Flake	1	1	–	2	1.08
Miscellaneous					
FAR	–	471.3 g	–	471.3 g	–
Total	12	173	1	186	100.00*
Percent	6.45	93.01	0.54	100.00	

**Rounded totals may not equal 100.00 percent.*

In addition to the artifacts, a small amount of faunal bone (0.5 gram) was recovered. None of the faunal bone was identifiable to a specific genus or even family given its highly fragmented and small nature, although most of the faunal bone fragments were able to be placed into animal classes based upon the overall shape and thickness of the faunal bone fragment. Most of the faunal bone fragments were small/medium fish (N=13), although four fragments were too small to determine a specific animal class and were placed in the indeterminate category. Fish elements identified include one otolith and two vertebrae; the remaining fish bones were unable to be identified to a specific element. The single otolith specimen was too fragmented for accurate species identification. The faunal catalog is provided in Appendix E.

4.6.4 Discussion

The testing demonstrated that Site SDI-10,298 consists of a moderate prehistoric surface artifact scatter and shallow subsurface deposit that yielded 186 artifacts, as well as a small amount of marine shell and faunal remains. The overall site dimensions within the project, as identified by the surface distribution of artifacts, measure approximately 80 meters (263 feet) north to south by 62 meters (205 feet) east to west, covering 3,726 square meters (40,111 square feet). The surface scatter, which has been collected and analyzed, was widely scattered across the site. TU and shovel test excavations indicate that the subsurface deposits extend to a depth of 40 centimeters. Based upon the nature of the deposit, and the variety and quantity of material recovered from the site, the site exhibits additional research potential.

The site is interpreted as a temporary camp where activities included limited food resource extraction and processing, as well as lithic tool manufacture and maintenance. The lithic tool assemblage, as well as the faunal remains and marine shell, indicate that both floral and faunal resources were collected and processed by the occupants of the site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. However, the large quantity of lithic tools and FAR, and the presence of faunal remains and marine shell, suggest repeated use of the site; therefore, the site exhibits additional research potential.

4.6.5 Summary

The analysis of the prehistoric cultural materials recovered from Site SDI-10,298 revealed a significant cultural deposit at the site extending to a depth of 40 centimeters. The recovered materials, including lithic artifacts and marine mollusk shell, indicate that site activities were focused on floral and faunal food procurement and processing, as well as lithic tool manufacture and maintenance. Subsistence at the site appears to have been based upon plants and fish.

Site SDI-10,298 exhibits the potential for subsurface deposits and/or buried cultural features. Because the testing and evaluation program identified an intact subsurface deposit, the site is considered to have additional research potential. Based upon the information derived

from the current testing program, Site SDI-10,298 is considered an important resource according to criteria listed in CEQA, Section 15064.5.

4.7 Field Investigations — Site SDI-11,793

4.7.1 Site Description

Site SDI-11,793 is a small, sparse prehistoric lithic scatter located on a low, southwest-facing slope in the southwestern corner of the project area (Figure 4.2–1). Only a small portion of the site lies within the project area, as the majority extends off the property to the west and south. Elevations at the site range from 570 to 600 feet AMSL. Disturbance in the area includes activities associated with previous agricultural practices, including disking and some recent off-road activity. Vegetation at the site consists almost entirely of dense tall grasses. There were also small metavolcanic bedrock outcrops scattered in the center of the site area, all of which were inspected for the presence of bedrock milling; however, no such features were identified. The general configuration of the resource is shown in Figure 4.7–1. The setting of the site is shown in Plates 4.7–1 and 4.7–2. Testing of the site by BFSA consisted of the collection and mapping of a single surface artifact and the excavation of three STPs.

4.7.2 Description of Field Investigations

Field investigations at Site SDI-11,793 were conducted using the standard methodologies described in Section 4.1. A total of three artifacts were recovered during investigations at the site. A summary of recovery from the site is presented in Table 4.7–1.

Surface Recordation

The entire surface of the site was inspected for artifacts and features, and a datum was established at the site. The datum, as well as all artifacts and excavations, were mapped using a handheld GPS unit (Figure 4.7–1). The majority of the site surface was covered with dense grasses; subsequently, surface visibility was poor across much of the site.

The single artifact observed on the surface of the site was mapped and collected, the location of which is illustrated in Figure 4.7–1. The surface collection, summarized in Table 4.7–1, consisted of a single metavolcanic core.

Figure 4.7–1
Data Recovery Map
Site SDI-11,793

(Deleted for Public Review; Bound Separately)

Plate 4.7–1: Overview of Site SDI-11,793, looking south.

Plate 4.7–2: Overview of Site SDI-11,793, looking southeast.

TABLE 4.7–1
Summary of Artifact Recovery, Site SDI-11,793

Artifact Type	Surface	Shovel Test	Total	Percent
Lithic Production Waste				
Core	1	-	1	33.33
Flakes	–	2	2	66.67
Total	1	2	3	100.00
Percent	33.33	66.67	100.00	

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-11,793 was investigated through the excavation of a total of three STPs. STPs were excavated across the portion of the site lying within the project boundaries. The locations of the STPs are illustrated in Figure 4.7–1. All shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless bedrock was encountered. Only one of the three STPs excavated at Site SDI-11,793 was positive for cultural materials (STP 2). Depth of recovery extended to a maximum depth of 10 centimeters in the positive shovel test. Artifact recovery from all shovel test excavations is summarized in Table 4.7–1 and detailed in Table 4.7–2. The recovery was very low for the STP excavations, with only two artifacts recovered from the uppermost excavation level of a single STP; for this reason, no TU was excavated at Site SDI-11,793.

TABLE 4.7–2
Shovel Test Excavation Data, Site SDI-11,793

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
1	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
2	0-10	2	Flakes	MGM	2
	10-20	No Recovery			
3	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			

4.7.3 Laboratory Analysis

Laboratory analysis for Site SDI-11,793 included the standard procedures described in Section 4.1 of this report. All artifacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Total recovery from Site SDI-11,793 included three artifacts, which are summarized in Table 4.7–1.

Lithic Artifact Analysis

Lithic production waste accounted for the only category of lithic artifacts, representing 100.00 percent of the lithic artifact collection. The collection included two flakes and one core, all of which were made from locally available MGM. Activities indicated by the artifacts recovered from the portion of the site within the project boundaries include a limited amount of lithic tool production and maintenance.

4.7.4 Discussion

The current testing program demonstrated that the portion of Site SDI-11,793 within the project area consists of a very sparse surface artifact scatter and a shallow localized subsurface deposit that yielded only two artifacts. The overall site dimensions, as identified by the single surface artifact and the positive STP, measure approximately 138 meters (454 feet) by 27 meters (90 feet), covering 2,513 square meters (27,052 square feet). The surface expression, which has been collected and analyzed, included a single artifact located near the graded road at the eastern edge of the site. The shovel test excavations indicate that the subsurface deposit extends to a maximum depth of only 10 centimeters in a small, localized area. Based upon the sparse nature of the deposit, and the limited variety and quantity of material recovered from the site, the site exhibits no additional research potential.

The site is interpreted as a small limited use area where activities included lithic tool manufacture and maintenance. The limited quantity and range of lithic material suggests a limited use of the site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. The research potential of the site has been exhausted with the current testing program.

4.7.5 Summary

The analysis of the cultural materials recovered from Site SDI-11,793 revealed a sparse cultural deposit at the site, extending to a maximum depth of 10 centimeters. The recovered materials indicate that site activities were focused on lithic tool manufacture and maintenance.

Site SDI-11,793 exhibits a sparse cultural deposit with no unique elements, with little research potential for the prehistory of the region. The site exhibits no substantial subsurface cultural deposits and little potential for buried cultural features. The research potential of this site has been exhausted with the current investigation. Therefore, according to the criteria listed in CEQA, Section 15064.5, Site SDI-11,793 is not considered an important cultural resource.

4.8 Field Investigations — Site SDI-17,433/H

4.8.1 Site Description

Site SDI-17,433/H is a historic rock enclosure located on an east-facing slope, in the southwestern portion of the project area (Figure 4.2–1). Based upon the current project plans, the feature is situated within the quarry-use area. The feature, identified during the initial survey phase of the current investigation in June of 2000, was recorded as an isolated find, as no associated artifacts or refuse deposits were encountered. The feature lies at an elevation of approximately 700 feet AMSL.

The majority of the area surrounding the feature has been disturbed, with evidence of past grading activities, including a dirt road that runs just east of the feature. Vegetation around the feature consists of introduced grasses and weeds with very few native sage scrub species scattered across the slope. The general configuration of the resource is depicted in Figure 4.8–1, and pictured in Plates 4.8–1 and 4.8–2.

Field investigations of Site SDI-17,433/H consisted of the removal of brush from the margins of the feature, the mapping of its location, and sketching and photographing the feature. The survey of the site was conducted on June 26, 2000, and the site recordation was conducted on March 15, 2005. Testing of the site was conducted on November 12, 2007.

4.8.2 Description of Field Investigations

Site SDI-17,433/H consists of an isolated feature with no associated artifacts or deposits. The feature was recorded, mapped, and tested. Field investigations at Site SDI-17,433/H were conducted using the standard methodologies described in Section 4.1. Results of these field investigations are discussed in the following paragraphs.

Figure 4.8–1
Data Recovery Map
Site SDI-17,433/H

(Deleted for Public Review; Bound Separately)

Plate 4.8–1: Overview of Historic Feature A, Site SDI-17,433/H, looking north.

Plate 4.8–2: Overview of Historic Feature A, Site SDI-17,433/H, looking west.

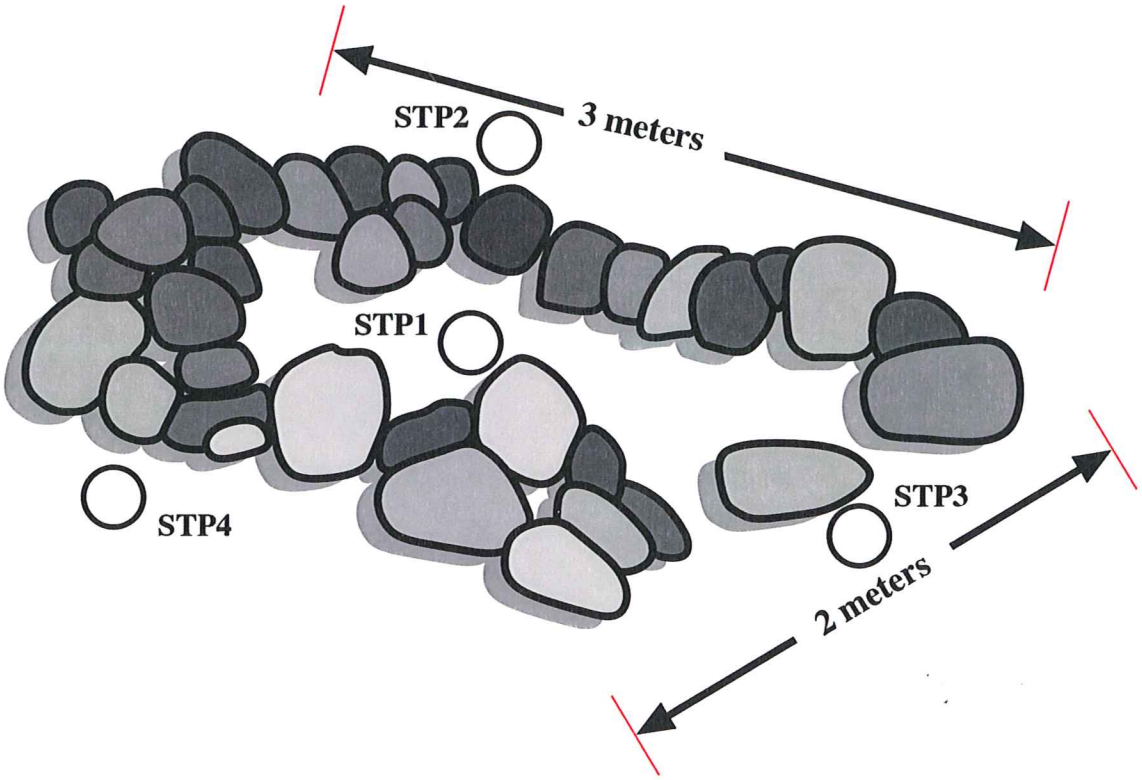
Surface Recordation

The entire surface of the area surrounding the feature was inspected for associated artifacts and additional features, but none were identified. The isolated historic feature was mapped using a handheld GPS unit. Vegetation consisted of dense grasses over the majority of the surrounding area; subsequently, surface visibility was poor. The location of the single feature, identified as Site SDI-17,433/H, is shown in Figure 4.8–1 and represented in a drawing in Figure 4.8–2.

Site SDI-17,433/H consists of a single rock enclosure constructed of large, stacked, natural cobbles that are locally available. The cobbles are loosely stacked and no mortar was used in the construction of the enclosure. Several large pieces of corrugated metal were also found within the feature, which may have served as roofing material at one time. The feature measures approximately three meters in length, two meters in width, and 0.75 meter in height at its tallest point. Site SDI-17,433/H is shown in Plates 4.8–1 and 4.8–2.

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-17,433/H was investigated through the excavation of four STPs. One STP was excavated on the inside of the rock enclosure and three were excavated immediately outside of the rock structure on the north, west, and south sides. The locations of the STPs are illustrated in Figure 4.8–2. All of the shovel tests were excavated in decimeter levels to a depth of 30 centimeters, at which point bedrock or sterile soil was encountered. The soil was characterized as silty loam with rocks. None of the STPs were positive for cultural materials. Plate 4.8–3 shows an overview of the testing and Table 4.8–1 details the shovel test results.



– Negative Shovel Test Pit

0 20 40 60 80
Scale in Centimeters

Figure 4.8–2
Historic Feature A
Site SDI-17,433/H
The Otay Hills Quarry Project

Plate 4.8–3: Overview of Site SDI-17,433/H, testing, looking west.

TABLE 4.8–1
Shovel Test Excavation Data, Site SDI-17,433/H

Shovel Test	Depth (cm)	Quantity/ Weight	Artifact Type	Material	Cat. No.
1	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
2	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
3	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			
4	0-10	No Recovery			
	10-20	No Recovery			
	20-30	No Recovery			

4.8.3 Discussion

The current investigation demonstrated that Site SDI-17,433/H consists of a single, stacked rock enclosure. The overall dimensions of the feature measure approximately three meters (10 feet) from west to east by two meters (seven feet) from north to south, covering six square meters (65 square feet). As Site SDI-17,433/H consists solely of an isolated rock enclosure with no associated artifacts, the resource is considered to be not significant and has no additional research potential.

The feature is interpreted as a historic enclosure utilized by early farmers, possibly for containing domestic animals or storage. The construction design, technique, and materials are indicative of domestic animal pens utilized throughout the early farming period. Site SDI-17,433/H represents an isolated feature with no associated artifacts or refuse deposits, and is considered to be not significant according to criteria listed in CEQA, Section 15064.5.

4.8.4 Summary

The investigation of Site SDI-17,433/H revealed an isolated rock enclosure with no associated surface artifacts. The construction design, technique, and materials indicate that the feature was utilized as an enclosure for domestic animals or storage purposes. Temporary enclosures built with locally available stone, such as this one, were commonly employed during the early farming period in San Diego County.

As Site SDI-17,433/H represents an isolated find with no associated artifacts, it is considered to have no additional research potential. Therefore, the feature is not considered to be an important cultural resource according to the criteria listed in CEQA, Section 15064.5.

4.9 Field Investigations – Site SDI-16,788

4.9.1 Site Description

Site SDI-16,788 is a lithic scatter situated on the alluvial slopes of the mountain terraces on the foot of the San Ysidro Mountains. The site was previously recorded and tested in 2004 by Gallegos and Associates. No additional work was conducted at this site by BFSA, as the efforts by Gallegos and Associates were sufficient to conclude the site was not significant. The test data and site significance discussion were presented in the report entitled "Cultural Resource Survey for the Alta Lot Line Project, Otay Mesa, California" (Guerrero and Gallegos 2003).

4.9.2 Description of Field Investigations

According to the previous site study by Gallegos and Associates, the investigation of SDI-16,788 consisted of the collection of surface artifacts and the excavation of seven shovel tests. All STPs were excavated to a minimum depth of 50 centimeters, or until bedrock was encountered. A total of four STPs (STPs 1 through 4) were positive for cultural material. The remaining STPs were negative. This effort resulted in the recovery of 163 artifacts, all listed as debitage or lithic production waste. The site was recorded as approximately 40 meters by 40

meters without any subsurface component. A copy of the detailed site form prepared by Gallegos and Associates in 2004 is provided in Appendix D.

4.9.3 Summary

Based upon the stated conclusions of Guerrero and Gallegos, SDI-16,788 is identified as lacking any further research potential. The site is evaluated as representing only limited significance under County Guidelines Criteria. The previous study of the sites has exhausted the research potential of the site.

4.10 Discussion

The cultural resources study of the Otay Hills Quarry Project consisted of an archaeological survey and program of site evaluations and recordation. The resources within the Otay Hills Quarry Project are listed in Table 4.10–1.

TABLE 4.10–1

Cultural Resources Located Within the Otay Hills Quarry Project

Cultural Resource	Evaluation
SDI-7195	Tested/ Limited Significance
SDI-10,297/H	Tested/Significant
SDI-10,298	Tested/Significant
SDI-11,793	Tested/Limited Significance
SDI-16,788	Tested/Limited Significance
SDI-17,431	Tested/Limited Significance
SDI-17,443/H	Tested/Limited Significance

The archaeological survey of the proposed project area resulted in the relocation of prehistoric sites SDI-7195, SDI-10,297/H, SDI-10,298, SDI-11,793, and SDI-16,788, and the identification of unrecorded prehistoric site SDI-17,431 and historic feature SDI-17,433/H. All of these resources were subjected to a testing and significance evaluation program. Five of the sites (SDI-7195, SDI-11,793, SDI-16,788, SDI-17,431, and SDI-17,433/H) were also determined to represent sites of limited significance as defined by County of San Diego Significance Guidelines for Cultural Resources. Two of the resources, sites SDI-10,297/H and SDI-10,298, have yielded substantial subsurface recovery and have been determined to be considered significant under criteria set out in CEQA (Section 15064.5) and County of San Diego guidelines.

The information gathered during testing and documentation of the seven resources within the project area indicates that the majority of the sites were utilized primarily as temporary

camps and limited-use resource processing locations within the prehistoric subsistence pattern in the area. Two sites, SDI-12,707 and SDI-12,710, which lie immediately adjacent to the project (and were actually originally within the project), have been identified as prehistoric habitation sites that sustained larger populations for longer periods of time. The sites within the project are interpreted as auxiliary to the two large habitation sites. All of the sites had been previously disturbed, and each site has been subjected to a variety of disturbances, including erosion, grading activities, and agricultural uses. At all of the sites where bedrock was present in exposed portions of the Lindavista Formation, the upper mudstone/sandstone composed of coarse-grained, light gray sandstone with angular to subrounded metavolcanic clasts had weathered to a point where the identification and delineation of less well-used surfaces, such as grinding slicks, was difficult.

Sites SDI-7195, SDI-11,793, and SDI-17,431 consisted of sparse surface scatters. These three sites are interpreted as limited-use areas where activities included food resource extraction and processing and/or limited lithic tool maintenance. Sites SDI-10,297/H and SDI-10,298 are considered temporary camps where activities included food resource extraction and processing, as well as limited lithic tool manufacturing and maintenance, which was more focused and longer in duration. Assignment of a cultural affiliation to the sites is difficult because no temporally diagnostic artifacts were recovered, and due to the poor condition of any recovered carbon samples, radiocarbon dating was not undertaken for this phase of work. Archaic and Late Prehistoric sites have been recorded at the east end of Otay Mesa, as the region was extensively utilized over the past 5,000 years.

The prehistoric sites within the Otay Hills Quarry project area are located in an environment that would have offered many natural resources to its prehistoric inhabitants. Many of the sites are located near seasonal drainages, and the area would have offered an environment with consistent food and water resource potential in prehistoric times, and an ideal location for the procurement of a variety of plant and vertebrate animal resources. Two of the sites within the project, SDI-10,297/H and SDI-10,298, have substantial subsurface deposits that represent a source of research potential related to the occupation of this area of San Diego County. The information gathered during testing represents a large portion of the research potential of five of the resources (SDI-7195, SDI-11,793, SDI-16,788, SDI-17,431, and SDI-17,433/H), and it is unlikely that any significantly different information would be gathered from further investigation of these resources.

As stated previously, at the testing level, the small sample size taken from any one site is not typically sufficient to substantially advance our knowledge of prehistoric patterns. This is particularly true of small, localized sites such as SDI-10,297/H and SDI-10,298, where the artifact assemblage is initially limited to a lower frequency of artifact classes (*i.e.*, flake stone, ground stone, vertebrate fauna, etc.). However, the fact that temporary camps/habitation sites occur at a much lower frequency on Otay Mesa than the lithic scatters also identified during this study indicates the importance of studying these sites to help understand the role of such sites in

the prehistoric subsistence system as a whole through time. Therefore, on the basis of the low frequency of these site types across Otay Mesa, any habitation and temporary camp/artifact scatter sites such as SDI-10,297/H and SDI-10,298 have the potential to yield information important to the regional prehistory of San Diego County.

Although the amount of data gathered by the current phase of site testing does not immediately lend itself to answering questions about prehistoric subsistence patterns in Otay Mesa and how they changed through time, data recovery from SDI-10,297/H and SDI-10,298 may very well provide that data based upon the sites' research potential and projected artifact density. In addition, data recovery for sites SDI-10,297/H and SDI-10,298 may also answer additional research questions posed within the Otay Management Plan regarding Chronology, Subsistence and Paleoenvironmental Reconstruction, Settlement Patterns, Trade and Travel, and Technology (see Gallegos et al. 1998, Section 6.6.3).

5.0 INTERPRETATION OF RESOURCE IMPORTANCE AND IMPACT IDENTIFICATION

5.1 Resource Importance

The Otay Hills Quarry cultural resources study was conducted to provide an inventory of archaeological sites within the project and to assess resources for significance and evaluate potential impacts represented by the planned development. As has been noted previously, the work conducted by BFSA at the Otay Hills Quarry Project is one of several cultural resources studies for the property. The result of these studies has been the recordation of seven cultural resources within the project. All of the sites have been registered at the SCIC and site update forms have been prepared as necessary. The goal of the archaeological study is to determine the potential impacts to cultural resources associated with the quarry operation. The project encompasses 110 acres and will become a rock quarry and processing plant. All sites within the development boundaries will be directly impacted. The cultural resource sites are shown in relationship to the project area and proposed quarry area in Figure 4.2–2; the results of the testing program for the project are presented in Table 5.1–1.

A total of seven resources within the project have been tested and evaluated in accordance with the guidelines of the County of San Diego and in compliance with CEQA. For this review, Section 15064.5 of CEQA and the County of San Diego's cultural resources guidelines were utilized as the foundation for resource evaluations. Because rock quarry projects are exempt from review under the County's RPO, those review criteria were not incorporated into the impact analysis. Since none of the recorded archaeological sites have been previously listed on the California Register or National Register of Historic Places, legislation dealing with these registers will not be incorporated into this review, as CEQA takes precedence due to the study being part of an Environmental Impact Report. However, any resources considered important based upon CEQA criteria (listed below) are also considered to be potentially eligible for the California and National registers. The significance criteria used to evaluate the Otay Hills Quarry sites is listed in Section 5.1.1.

The results of the evaluations are provided in the individual site reports and summarized in Table 5.1–1. A total of two of the sites that were tested are recommended as significant based upon CEQA criteria. The sites that have been determined to be important were evaluated based upon their potential to provide information that would be applicable to numerous regionally important research topics. None of these sites are recommended as regionally significant because all have been subjected to various disturbances and none of the sites contain regionally unique or religious elements. The remaining five resources that were tested are recommended as not significant based upon either set of criteria.

TABLE 5.1–1
Evaluation Summary for Cultural Resources

Site	Tested (Y/N)	Evaluation	Mitigation Required
SDI-7195	Yes	Limited Significance	No
SDI-10,297/H	Yes	Significant	Yes
SDI-10,298	Yes	Significant	Yes
SDI-11,793	Yes	Limited Significance	No
SDI-16,788	Yes	Limited Significance	No
SDI-17,431	Yes	Limited Significance	No
SDI-17,433/H	Yes	Limited Significance	No

Based upon the information provided in the technical report, the following significance determinations were made for the resources within the project:

Tested Resources (7):	**Number of Resources**	**Significant (CEQA and County Guidelines)**
	2 Resources	Significant
	5 Resources	Limited Significance

The evaluations of site significance were based upon criteria utilized by the County of San Diego and as provided in CEQA. The current testing program included test excavations or detailed recordation of seven archaeological resources conducted to a standard level of analysis in accordance with County of San Diego guidelines.

The entire collection of prehistoric sites produced only a small amount of shell and faunal bone, which is striking in comparison to many sites to the west of the Otay Hills Quarry, where major occupations included noteworthy collections of shell and faunal bone (Smith et al. 2004). Provisions for site dating will be included in the mitigation program, although the sources of dating will be tenuous. The majority of prehistoric sites identified for the project appear to be older Archaic sites predating the Kumeyaay occupation of the area, and with no diagnostic artifacts of features identified, none of the sites could be assigned to a specific time period. The isolated historic features (a cistern and a rectangular rock enclosure) are also included in this group of resources on the subject property.

5.1.1 Evaluation Procedures

The cultural resources tested within the project were evaluated according to the criteria presented in Section 15064.5 of CEQA, as amended, and County of San Diego guidelines. The

characteristic that was consistently cited for the sites evaluated as significant following the testing program was the potential of the subsurface deposits to produce additional information that would be applicable to numerous regionally important research topics. None of the prehistoric sites that were tested contained the wide spectrum of feature types, ceremonial areas, cultural deposits, or elements of the material culture that would represent a focused occupation by sizeable populations for many centuries. The series of sites at Otay Hills Quarry are primarily temporary camps and limited-use areas associated with resource exploitation, although two of the sites represent larger habitation areas.

The evaluation criteria for the project from Section 15064.5 is summarized below:

Determining the Significance of Impacts to Archaeological and Historical Resources

As part of the evaluation of resources at the Otay Hills Quarry Project, the term "historical resources" as described in CEQA shall include the following:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (pub. Res. Code SS5024.1, Title 14 CCR, Section 4850 et seq.).

(2) A resource included in the local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852) including the following:

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

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

(C) 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

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

(4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(i) or 5024.1.

In addition, CEQA also states that impacts to a local community, ethnic, or social group must also be considered. If a resource is determined to be not important under these criteria, it is assumed that the resource cannot be significantly impacted and, therefore, mitigating measures are not warranted. However, any resources found to be important according to these criteria must be assessed for project-related actions that could directly or indirectly impact such resources. Impacts that adversely affect important resources are considered to be significant impacts for which mitigating measures are warranted. Resources within the project were also evaluated against the listing information included in the County of San Diego's cultural resources guidelines, but not the RPO.

The project is exempt from the RPO Pursuant to RPO Section 86.605.d, which states:

(d) Any sand, gravel, or mineral extraction project, provided that the following mitigation measures are required as a condition of a Major Use Permit approved for such project:

(1) Any wetland buffer area shall be restored to protect environmental values of adjacent wetlands;
(2) In a floodplain, any net gain in functional wetlands and riparian habitat shall result in or adjacent to the area of extraction;
(3) Native vegetation shall be used on steep slope lands to revegetate and landscape cut and fill areas in order to substantially restore the original habitat value, and slopes shall be graded to produce contours and soils which reflect a natural landform which is consistent with the surrounding area; and
(4) Mature riparian woodland may not be destroyed or reduced in size due to sand, gravel, or mineral extraction. Use of the extraction area after reclamation shall be subject to all conditions of this Chapter.

5.1.2 Discussion of Individual Site Importance

The testing program conducted at the Otay Hills Quarry produced the information necessary to evaluate the resources according to the criteria presented in Section 5.1.1. The site evaluations are provided in the individual site reports included in Section 4.0. For all of the sites that have been evaluated as significant, the basis for the finding was the potential of the site to provide information that would contribute to local and regional research issues related to the prehistoric occupation of the project sites (CEQA, Section 15064.5, Criterion D). None of the sites that were tested were found to qualify as important under any other criteria of CEQA or as regionally important, nor were any sites listed on, or as eligible for, the National Register of Historic Places. No sites were listed on the California Register of Historical Resources.

The cultural resources within the Otay Hills Quarry Project were evaluated on the basis of data gathered during the current investigation. Of the seven sites tested and evaluated, two are recommended as significant based upon CEQA and County of San Diego guidelines, and the remaining five were evaluated as limited significance or importance. The seven resources are listed by significance category in Table 5.1–2.

TABLE 5.1–2
Significance Recommendations

Site	Recommendation
SDI-7195	Limited Significance
SDI-10,297/H	Significant
SDI-10,298	Significant
SDI-11,793	Limited Significance
SDI-16,788	Limited Significance
SDI-17,431	Limited Significance
SDI-17,433/H	Limited Significance

5.1.3 Discussion of Collective Site Importance

Site significance has been discussed throughout this report on the basis of individual site evaluations using CEQA and County of San Diego criteria. Although CEQA does not require consideration of site importance based upon the association of multiple site districts, the discussion of obvious inter-site relationships of prehistoric sites in the Otay Hills Quarry Project merits discussion. In small measure, the absence of samples appropriate for radiocarbon dates limits the confirmation of site linkage chronologically. Chronological studies are recommended for future work at this project that will assist to analyze the temporal spectrum of prehistoric occupation sites within the project.

Utilizing data from the testing program, some conclusions may be drawn from a multiple site analysis. Geographically, several of the prehistoric sites in the project and in the surrounding area are associated with contiguous landforms that are characterized by metavolcanic exposures and elevations that form many opportunities for quarries and food collecting. The consistency of the land-use pattern at the sites is noteworthy. Sites on the eastern margins of Otay Mesa, where the flat mesa landform intersects with the base of the San Ysidro Mountains, correspond to merging ecological zones, greater water resources, and substantial lithic and food resources. This widespread abundance of resources is reflected in a pattern of prehistoric sites that demonstrate that the human response to the plentiful setting was the horizontal expansion of occupation sites to access resources, with only limited examples of more intensely used occupation areas.

Judging from site characteristics, artifact density and quantity, and subsurface deposits, the matrix of a prehistoric resource exploitation pattern can be recognized. Although the sites within the project are not isolated, and are in fact connected geographically, temporally, and culturally to related sites within a short distance of the project, together these sites form a recognizable collection of habitation and processing sites that are associated with major Kumeyaay and Archaic La Jolla Complex encampments in Otay Valley and Salt Creek to the north.

In a hierarchical analysis of sites, the weight of importance is directly based upon the range of human activities represented or inferred from the material culture left behind in the archaeological record. Using Binford's model (Binford 1980), it is expected that the sites with the highest number of activities represent the permanent or semi-permanent settlements where all members of a group participated in cultural activities. Conversely, special-use sites, such as a quarry or hunting blind, are used by only a limited selection of the group's population for activities that require a minimal tool kit and have a brief duration of use. Focusing on the Otay Hills Quarry sites, use of a hierarchical approach to site typology is difficult because the majority of the sites display a lack of variety of artifact types and features. None of the sites can be classified as a habitation site based upon the frequency and variety of artifacts, which suggests that use of the sites within the project was auxiliary to the larger occupation sites directly east of the project.

5.2 Impact Identification

In order to assess the effects of the proposed Otay Hills Quarry Project on cultural resources, a set of assumptions was used for the impact analysis:

- The area of potential development will include all areas that lie within the quarry project boundaries.
- In areas where quarry activities are indicated on the project plan, impacts to cultural resources are assumed to be direct, particularly those resulting from grading and

quarry activities. All direct impacts will result in the disturbance or removal of the resources.

- Cultural resources that are located outside of the quarry boundaries will not be affected by the project; however, indirect impacts may be a concern for those sites that lie near the quarry operation.

The proposed project will directly impact seven recorded cultural resources within the Otay Hills Quarry. Impacts to the sites mentioned below will be fully mitigated by the measures that are recommended.

1. Direct impacts from the development of the Otay Hills Quarry:

   (A) Sites SDI-10,297/H and SDI-10,298 are recommended as significant based on CEQA criteria and San Diego County guidelines. Both sites would be directly affected by the project. The sites are interpreted as temporary camps where activities included limited food resource extraction and processing, as well as lithic tool manufacture and maintenance. The lithic tool assemblage, as well as the faunal remains and marine shell, indicate that both floral and faunal resources were collected and processed by the occupants of the sites. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the sites. However, the large quantity of lithic tools and fire-affected rock, and the presence of faunal remains and marine shell, suggests repeated use of the sites. These two sites contain subsurface deposits that represent significant research potential (see Section 6.6). Direct impacts to the sites would be significant.

   (B) Direct Impacts to five limited-significance resources: Within the limits of grading and brushing for the proposed project, five resources will be impacted which have been tested and evaluated as limited-significance sites. Impacts to these resources will not be significant because the research potential of these sites has been exhausted through the testing procedures:

SDI-7195
SDI-11,793
SDI-16,788
SDI-17,431
SDI-17,433/H

2. Potential Indirect Impacts to Four Significant Sites: Four significant sites are recorded immediately adjacent to the project. These sites are SDI-10,297/H, SDI-10,298, SDI-12,707, and SDI-12,710. The two significant sites identified on the project, SDI-10,297/H and SDI-10,298, both straddle the project boundary line, with portions of the sites on the project and portions located west of the project. While significant testing for this project did not extend into those portions of SDI-10,297/H and SDI-10,298 that lie outside of the proposed quarry boundaries, the potential exists that significant elements of these sites may be present beyond the limits of the MUP. Direct impacts to SDI-10,297/H and SDI-10,298 will be contained within the MUP boundaries and should not extend beyond those limits onto adjacent property. However, because these sites are evaluated as significant, those portions of these sites located adjacent to, but outside of, the MUP could be indirectly impacted if quarry activities stray beyond the MUP limits.

   The two sites located immediately east of the MUP boundaries, SDI-12,707 and 12,710, are significant habitation sites. These sites should not be impacted by any quarry operations; however, any activities that stray beyond the MUP boundaries into the area of those two sites could impact significant cultural deposits.

5.2.1 Summary of Impact Significance

The area within the limits of grading and brushing at the Otay Hills Quarry will directly impact seven cultural resources, either completely or partially. Two of these sites were evaluated as significant based upon CEQA guidelines; impacts to these sites are considered significant. Impacts to the remaining five sites will not be significant.

Two significant sites lie adjacent to the quarry and may be indirectly impacted. Impacts and significance recommendations are summarized in Table 5.2–1.

TABLE 5.2–1
Summary of Impacts and Significance Recommendations

Impacts	Number of Sites
Directly Impacted	
Significant Resources	2
Non-Significant Resources	5
Total	7
Indirectly Impacted	
Significant Resources	4
Non-Significant Resources	0
Total	4

Assuming that the culmination of discretionary review will be the development of the area within the limits of grading and brushing, the project would eventually impact seven cultural resources. A list of the significant sites that will be impacted is provided in Table 5.1–1.

Off-Site Impacts

No off-site improvements have been identified that would represent a source of potential impacts to any cultural resources. Therefore, no off-site impacts will be addressed as part of this review. In the event that any quarry operations move outside of the boundaries of the major use permit, impacts to cultural sites are possible.

5.3 Proposed Project Alternatives

The impact analysis discussed in Section 5.2 was based upon the current project boundaries and area of potential impacts (Alternative 1). Project alternatives for the project design include the following:

1. No Project/No Development Alternative
2. No Project/Existing Plan Alternative
3. Extraction to Natural Grade Alternative
4. Extraction to 50-Foot Depth Alternative
5. Extraction to 200-Foot Depth Alternative

The "No Project" alternatives would result in the preservation of all cultural resources within the project, including two significant cultural resources. The three alternatives (Alternatives 3-5) that stipulate different depths for the quarry operation would substantially have no different level of impact to cultural resources than the proposed project. Since the cultural resources are present

either on or within the first four feet of the existing ground surface, the project or any alternative that includes the quarry operation to different depths will have the same effect on cultural resources.

5.4 Cumulative Impacts

A cumulative impact, in terms of cultural resources, refers to increasing total effect on cultural sites due to past, present, and future activities of public and private entities and natural processes. The key to assessing cumulative impacts to archaeological sites is that these resources are not renewable nor can they be replaced. The importance and significance of cultural resources comes from their association with our heritage, as well as the research value and the information that they contain. Hence, the issue that must be explored in a cumulative impact analysis is the cumulative loss of information, as well as the loss of recognized cultural landmarks and vestiges of our cultural history. The CEQA definition of a cumulative impact from the Office of Planning and Research, Section 15355 is:

> Cumulative impacts refer to two or more individual effects, which when considered together, are considerable or which compound or increase other environmental impacts. Furthermore:
>
> (a) The individual effect may be changes resulting from a single project or a number of separate projects.
> (b) The cumulative impact from several projects is the change in the environment, which results from the incremental impacts of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

A cumulative impact analysis considers the development of the proposed project, in conjunction with other modern development in the vicinity and the effects of natural events, on cultural resources. The potential cumulative effect of these projects is the loss of cultural resources, which would collectively contribute to the loss of San Diego prehistory. However, project-specific mitigation can be implemented to reduce the effect of this development, by ensuring scientific recovery, study, and curation of important cultural resources.

The following section discusses the cumulative impacts for the prehistoric cultural resources located within the Otay Hills Quarry Project. The Management Plan for Otay Mesa Prehistoric Resources (Gallegos et al. 1998) was used as a guide for defining site types and resource study area, and for site comparisons. In addition, information obtained through the records search conducted at the SCIC was also used for the cumulative impact assessment. The current status of archaeological sites outside of the project boundaries was not verified through

visual inspection. Assumptions of site status were based upon aerial maps showing developed lands and site record information.

5.4.1 Resource Study Area

The Otay Hills Quarry Project is located in the eastern portion of the Otay Mesa at the southwestern edge of the San Ysidro Mountains. Otay Mesa comprises approximately 10,000 acres that is bordered by the coastal plain on the west, Otay River on the north, the Tijuana River on the south, and the San Ysidro Mountains on the east. In prehistoric times, the vegetation of Otay Mesa consisted of coastal sage scrub, chaparral, grasslands, and mima mounds with associated vernal pools (Gallegos et al. 1998:19). The Otay Mesa contains hundreds of archaeological sites, some of which date to the early and middle Holocene and the beginning of San Diego prehistory (Gallegos et al. 1998; Kyle et al. 1990, 1998; Smith et al. 2004, 2006).

A total of 365 prehistoric archaeological sites had been recorded in the Otay Mesa Management area as of 1998 (Gallegos et al). Many of the archaeological sites on the mesa are marginal, sparse lithic scatters (N=225; 61.64 percent) and constitute part of the cultural manifestation known as the "Otay Smear," which is characterized as an extensive surface lithic scatter consisting primarily of cores and debitage and a few tools (Gallegos et al. 1998). There is a natural abundance of cobble materials, associated with the Lindavista and Otay formations, which are well suited for making stone tools. Habitation sites and temporary camps are interspersed throughout the Otay Mesa, located near water sources and at the head of drainages. Major habitation sites contain knives, atlatl dart points, milling and cobble tools, cores, drills, hammerstones, scrapers, beads, pendants, bone, and shell, ranging in age between 9,500 and 300 YBP (Gallegos et al. 1998; Smith et al. 2004, 2006). Metavolcanic quarries are located in the San Ysidro Mountains, on the east side of the mesa, near outcrops of Santiago Peak Volcanic materials. The quantity and variety of sites on the Otay Mesa attests to the availability of tool stone materials, plant and animal resources, and water that provided sustenance to prehistoric populations.

Radiocarbon information is available for only 22 of the 365 sites recorded in the Otay Mesa management area and less than one percent of these resources have been preserved in open space (Gallegos et al. 1998). Only five habitation sites (SDI-222, SDI-4281, SDI-8654, SDI-11,424, and SDI-10,198) and two quarry sites (SDI-10,666 and SDI-10,667) are in open space easements or undeveloped and available for long-term preservation as they are in state or county lands (Gallegos et al. 1998). The preserved sites, however, do not represent the temporal range and diversity of prehistoric cultural resources. Consequently, it is recommended that a minimum of 10 percent of all sites within river valleys, canyons, and in the Santiago Peak Volcanic formation be identified for preservation (Gallegos et al. 1998). Many of the other sites have been destroyed by development (*e.g.,* roads, residences, industrial), or their current status is unknown. Nearly all have been impacted by agriculture activities, including plowing, disking, and grazing.

5.4.2 Cumulative Projects

A total of 22 projects have been identified within a one-mile radius of the proposed Otay Hills Quarry Project (Table 5.4–1). These projects include international border security projects, commercial projects that involve development of a raceway and motor park, transmission line projects, industrial quarries, public service projects that involve sewer, water, and correctional facility construction and improvements, off-road vehicle parks, resource management, transportation, and unspecified development. Collectively, these projects reflect the eastward expansion of housing and industrial development in the Otay area and the need for improved and increased infrastructure and recreational areas, in addition to heightened international border security. In addition to development, much of this area has been disturbed by agriculture since the early 1900s. Over 45 linear miles and over 8,336 acres in the eastern Otay Mesa area have been subjected to cultural resource investigations in the past 30 years. Additionally, nearly all of the land within a one-mile radius of the current project has been surveyed for cultural resources, and several archaeological sites located within this survey area have been identified, tested, and evaluated for significance.

5.4.3 Prehistoric Archaeological Sites in the Immediate Project Area

There have been 56 prehistoric archaeological sites recorded within a one-mile radius of the Otay Hills Quarry Project (Table 5.4–2). Scant, surface lithic scatters, temporary camps/artifact scatters, and habitations are the types of sites identified in, or immediately near, the project area. The sparse, surface scatters can be characterized as part of the "Otay Smear" and are generally located atop the mesa. The other temporary camps/artifact scatters and habitation locales are located along the canyon and drainages that feed into the Otay or Tijuana rivers. Of the 56 prehistoric archaeological sites recorded within a one-mile radius, 15 sites have been destroyed by grading and other development activities based upon a 2007 Google Earth aerial photograph and site records. The destroyed sites are listed in Table 5.4–3.

Table 5.4–1
Summary of Cumulative Projects for the Otay Hills Quarry Project

General Project Type	Description	Number of Projects	General Project Location	Estimated Acreage and/or Linear Miles
Border Security	Road Repair (Gross 1996); Border Lights (McDonald et al. 1998)	2	Multiple sections; Sections 31, 32, and 33	10 acres; 25 miles
Commercial	International Raceway (Graves 1985); San Diego Motor Racing Park (Smith and Moriarty 1985); EIR American International Raceway (TMI 1990); Bradley Auto Storage (Xinos Enterprises 1998)	4	Sections 31 and 32	1,483.5 acres
Development (unspecified)	TPM 12400 (Berryman 1976)	1	Sections 31 and 32	320 acres
Energy	Miguel-Tijuana 230 KV International Connection (Cultural Systems Research, Inc. 1982, 1983 and Westec Services 1999)	3	Sections 19, 20, 29, and 32	2+ miles
Industrial	Quarry (ASM Affiliates 2004)	1	Section 29	30 acres
Public Services	East Mesa Detention Facility (Gallegos et al. 1987, 1988); Otay Water District and Pipeline Alignments (Kyle et al. 1994); Sludge Processing (Robbins-Wade and Gross 1990); Otay Mesa Correctional Facility (Thesken and Carrico 1982)	5	Sections 19, 30, 31, and 32	873+ acres; 18 miles
Recreation	Otay Mesa OHV Park (Westec 1986)	1	Sections 21 and 28	400+ acres
Resource Management	Otay Mesa Land Use Plan (Co. of San Diego 1983)	2	Multiple sections	5,100 acres
Transportation	Truck Parking (Buysse and Smith 2000); Alta Road (Hector 1987); SR-125 Quino Mgmt. Areas (Schaefer 1999)	3	Sections 29, 30, and 31	120 acres; 2 miles

Table 5.4–2
Summary of Prehistoric Sites Within One Mile of the Otay Hills Quarry Project

Site Type*	Disturbances	Total	Significance	Status
Habitation	Roads, plowing, erosion, reservoir construction, and fence construction	3	1 Significant 2 Non-Significant	1 Intact 2 Destroyed
Temporary Camp; Artifact Scatter	Roads, jeep trails, plowing, erosion, pot hunted, and modern trash	13	1 Significant 1 Potentially Significant 11 Not Evaluated	1 Partially Intact 1 Destroyed 11 Unknown
Non-Site (surficial lithic scatters)	Roads, jeep trails, plowing, erosion, reservoir construction, fence construction, and grazing	40	8 Non-Significant 32 Not Evaluated	12 Destroyed 28 Unknown

**Site type definitions after Gallegos et al. 1998 (Management Plan for Otay Mesa Prehistoric Resources).*

TABLE 5.4–3
Summary of Destroyed Prehistoric Sites in a One-Mile Radius of the Project Area

Site	Type
SDI-7215	Lithic Scatter ("Non-Site")
SDI-8076	Habitation
SDI-8079	Habitation
SDI-8077	Lithic Scatter ("Non-Site")
SDI-8082	Lithic Scatter ("Non-Site")
SDI-8652	Lithic Scatter ("Non-Site")
SDI-8653	Lithic Scatter ("Non-Site")
SDI-10,478	Lithic Scatter ("Non-Site")
SDI-10,668	Lithic Scatter ("Non-Site")
SDI-12,878	Lithic Scatter ("Non-Site")
SDI-12,886	Lithic Scatter ("Non-Site")
SDI-12,887	Lithic Scatter ("Non-Site")
SDI-14,726	Lithic Scatter ("Non-Site")
SDI-14,727	Lithic Scatter ("Non-Site")
SDI-15,041	Temporary Camp/Artifact Scatter

Sparse, Surface Lithic Scatters or "Non-Sites"

Sparse, surface lithic scatters, or "non-sites," are the most common type of cultural resource identified on the mesa and in the immediate project vicinity. Sparse, surface lithic scatters represent prehistoric actions of knappers testing cobbles to determine the suitability of the interior lithic material, and possibly the production and use of a tool on the spot for a one-time event. The research potential of these "non-sites" is almost non-existent because often the boundaries are difficult to define, they cannot be compared with other sites or loci, and they cannot be said to represent a statistical sample of either lithic production waste or tools (Gallegos et al. 1998:51). Furthermore, archaeological tests of sparse lithic scatters have demonstrated that these site types lack research potential and Native American concerns, and hence are not eligible for inclusion in the California or National Register of Historic Places. Cumulative disturbances to these sparse lithic scatters, or "non-sites," include plowing, roads, jeep trails, erosion, reservoir construction, fence construction, and grazing (Table 5.4–2). Several lithic scatters or "non-sites" have been destroyed (N=12) from development projects conducted within a one-mile area of the proposed project (Table 5.4–3). However, the current status of most (N=28) of these scant, surface lithic scatters is unknown.

Most sites (N=41; 73.21 percent) in a one-mile radius consist of sparse, surface lithic scatters that are represented mostly by lithic production waste, and few if any tools. Gallegos et

al. (1998) refers to these sparse lithic scatters as "non-sites," since the surface artifact density ratio (number of artifacts divided by site size) is less than 0.03 and they lack a subsurface deposit. Surface lithic scatters, or non-sites, are generally found south of the project area, between the project area and international border, although others are found north of the project area, along the Otay Mesa Truck Trail, and west of the project area, on the eastern edge of the mesa. These sparse lithic scatters represent small, task-specific locations that are part of a regional pattern of resource acquisition associated with habitation sites elsewhere.

Temporary Camps/Artifact Scatters

The second most common site type on Otay Mesa is the temporary camp/artifact scatter, which is defined as having three artifacts every 100 square meters, some bone and shell, and the lack of a significant subsurface deposit (Gallegos et al. 1998). Seventy-one (31 temporary camps and 40 artifact scatters) have been recorded in the Otay Mesa Management Plan Area (Gallegos et al. 1998) and 13 of these temporary camps/artifact scatters have been identified within a one-mile radius of the proposed project. Two of the 13 temporary camps/artifact scatters within a one-mile radius have been identified as significant or potentially significant (Table 5.4–2). The temporary camp/artifact scatter that has been identified as significant (SDI-8654, Locus C) is about one-half mile from the northwest edge of the proposed project. This locus was tested and found to contain some shell, six core/cobble tools, two flake tools, four cores, and 68 pieces of debitage (Gallegos et al. 1998:41). It remains partially intact. The other potentially significant temporary camp (SDI-15,041) is located about one-half mile south of the project area near the border. The initial recordation, conducted over 10 years ago for SDI-15,041, noted modern trash from dumping and immigrant traffic and it has since been destroyed by improvements to the border fence (Table 5.4–3).

The other 11 temporary camps/artifact scatters are positioned to the north, south, and east of the project area, including along the eastern edge of the Otay Mesa, along the Otay Mesa Truck Trail, and near the international border. The remaining 11 temporary camps/artifact scatters in a one-mile radius of the project area have not yet been evaluated and their current status is unknown (Table 5.4–2). Temporary camps/artifact scatters have suffered similar modern and historic disturbances as the sparse lithic scatter, although modern trash dumping and pot hunting have also affected this site type (Table 5.4–2).

Habitation

The third site type, the habitation site, is the least common site type on the Otay Mesa and in the immediate project vicinity; however, the habitation site is the most important as it typically contains information that can be used to address a range of research issues, including chronology, subsistence, settlement, trade, and technology. Habitation sites are the location where people conducted subsistence, utilitarian, and ceremonial activities for an extended period. Consequently, the cultural material from this type of sites is varied and abundant, typically

containing multiple tool types and lithic materials, rare materials and artifacts, animal bone, and marine shell. Three habitation sites (Table 5.4–2) have been found in a one-mile radius of the proposed project; however, only a portion of one of these (SDI-8654, Loci B and D) is available for long-term preservation and is partially intact. The other two habitation sites (SDI-8076 and SDI-8079) have been destroyed (Table 5.4–3).

5.4.4 Otay Hills Quarry Prehistoric Sites

Traditional Cultural Properties (TCPs)

Federal and state laws mandate that consideration be given to the concerns of contemporary Native Americans with regard to potentially ancestral human remains, associated funerary objects, and items of cultural patrimony. Consequently, an important element in assessing the significance of the study site has been to evaluate the likelihood that these classes of items are present in areas that would be affected by the proposed project.

Also potentially relevant to prehistoric archaeological sites is the category termed TCPs in discussions of cultural resource management (CRM) performed under federal auspices. According to Patricia L. Parker and Thomas F. King (1998), "traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. Examples of properties possessing such significance include:

1. A location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
2. A rural community whose organization, buildings and structures, or patterns of land use, reflect the cultural traditions valued by its long-term residents;
3. An urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
4. A location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
5. A location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

A TCP, then, can be generally defined as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.

As part of the evaluation of cultural resources for the Otay Hills Quarry Project, a Sacred

Lands File search was conducted by the NAHC. The results of this search are provided in Appendix F and indicated that no recorded sacred sites or TCPs are present near the Otay Hills Quarry Project. No TCPs are known to exist within the project area that currently serve religious or other community practices. During the current archaeological evaluation, no artifacts or remains were identified or recovered that could be reasonably associated with such practices. All prehistoric archaeological material consisted of common flaked stone and ground stone items, and those in very limited quantities.

Seven prehistoric archaeological sites are located within the Otay Hills Quarry Project. Two of these sites were evaluated as significant cultural resources and will be directly or indirectly impacted by the proposed project. These significant sites (SDI-10,297/H, and SDI-10,298) to be impacted are defined as temporary camp sites (after Gallegos et al. 1998) since they contain a subsurface deposit consisting of 10 or more artifacts per 10-centimeter level, or at least 100 artifacts per cubic meter. Only one of these sites, SDI-10,297/H, was identified in the Otay Mesa Prehistoric Resources Management Plan (Gallegos et al. 1998); this site will be directly impacted by the proposed development, and the mitigation plan for it includes data recovery and temporary fencing for the protection of the portion of the site outside of the project footprint (see subsequent chapters in this report).

The Otay Hills Quarry sites that will be impacted, SDI-10,297/H and SDI-10,298, are in addition to the 14 habitation sites identified by Gallegos et al. (1998) on the Otay Mesa and represents habitation locales that are the farthest east on the mesa and closest to the San Ysidro Mountains. Of the 14 habitation sites on Otay Mesa, identified in Gallegos et al. (1998:vii, 73), only seven (SDI-222, SDI-4281, SDI-8654, Loci B and D, SDI-10,198, SDI-11,424, SDI-12,707, and SDI-12,710) are undeveloped and available for long-term preservation, as the remaining sites have been destroyed or their status is unknown. Roads, plowing, erosion, reservoir construction, and fence construction have impacted the habitation sites within the current project area and those in a one-mile vicinity (Tables 5.4–2 and 5.4–3). Clearly, these previous impacts and the foreseeable direct impacts of the quarry project will result in a cumulative impact to prehistoric resources given the continued loss of habitation sites on the Otay Mesa. However, mitigation can be implemented to reduce the effect of the proposed development by ensuring the scientific recovery and study of the habitation sites (SDI-10,298) to be directly impacted by the proposed project. This will ensure that important information about prehistory is not lost. Therefore, since the actions of the proposed project can be mitigated through data recovery, curation, and reporting, the Otay Hills Quarry Project will not have a significant cumulative impact to cultural resources.

The other five sites identified within the Otay Hills Quarry Project (SDI-7195, SDI-11,793, SDI-16,788, SDI-17,431, and SDI-17,433/H) can be characterized as "non-sites" and are not significant. All of these sparse lithic scatters, or "non-sites," will be directly impacted by the proposed development. These marginal, non-significant sites are defined as "non-sites" (after Gallegos et al. 1998) since they lack a substantial subsurface deposit and surface artifact density

ratios are less than three artifacts present in a 100-square-meter area. Nonetheless, cumulative impacts to this site type are not considered significant given that this site type lacks research potential or Native American concerns.

5.4.5 Summary

The current status of most of the 56 sites in a one-mile radius of the proposed project area has been discussed based upon a current aerial photograph and site record information. All of the sites have been impacted to a varying extent by roads and plowing. Fifteen sites, including two habitation sites, one temporary camp/artifact scatter, and 12 scant, surface lithic scatters, or "non-sites," have been destroyed, or have likely been destroyed, in a one-mile radius of the project area. Only three separate loci (B, C, and D) of one site, SDI-8654 (Kuebler Ranch Site), are intact or partially intact and preserved in open space in a one-mile radius of the project area. These loci have been characterized as habitation and temporary camps/artifact scatters and a portion of one of the loci (SDI-8654, Locus D) has been subjected to data recovery (Kyle et al. 1990). The data recovery investigation at Site SDI-8654, Locus D indicated that the locale was occupied approximately 7,000 YBP and that site occupants had a complex, finely-made tool kit, processed seeds and other vegetable foods, collected shellfish and fish, and hunted small mammals (Kyle et al. 1990:6-9). Site SDI-8654 was identified and included as one of the five habitation sites preserved in open space in the Otay Mesa Management Plan (Gallegos et al. 1998).

Given the loss of prehistoric resources, especially habitation sites, in the general vicinity of the project area and on the Otay Mesa from past projects, in combination with the previous impacts of roads, plowing, and erosion on prehistoric resources, the proposed Otay Hills Quarry development is considered to have a cumulative impact on prehistoric resources since it represents the continued destruction of non-renewable cultural resources. The development of the proposed quarry on sites SDI-10,297/H and SDI-10,298 will be a cumulative impact to prehistoric cultural resources given that the prehistoric resources may significantly contribute to the diversity and temporal range of sites on the Otay Mesa. Furthermore, the sites are positioned on the eastern edge of the mesa where it transitions into the San Ysidro Mountains, and as such is ideally suited for answering important questions regarding subsistence and settlement, chronology, technology, and trade.

Mitigation can be implemented to reduce the cumulative impact of the proposed development by ensuring the scientific recovery, study, documentation, and curation of the significant sites (SDI-10,297/H and SDI-10,298). Important information about prehistory will not be lost through well-planned and executed mitigation that documents and gathers all data from these non-replaceable and non-renewable resources. Consequently, since the actions of the proposed project can be mitigated through data recovery, curation, and reporting, the cumulative impact of the proposed project will be reduced to a level below significant.

6.0 MANAGEMENT CONSIDERATIONS – MITIGATION MEASURES AND DESIGN CONSIDERATIONS

6.1 Mitigated Impacts

The proposed development of Otay Hills Quarry will impact cultural resources. As noted in the impact analysis section, it is assumed that the sites within the limits of grading and brushing will be subjected to impacts as a result of project approval. For the purpose of determining appropriate impact mitigation measures, the impacts to cultural resources will be considered on a project-wide basis. The phasing of the project does not affect the net result of the eventual direct and indirect impacts to the cultural resources. Where significant archaeological sites will be impacted, measures will be required to mitigate the potential impacts to a level below significant. In general, the mitigation of impacts to important archaeological sites may be achieved through avoidance (preservation) or data recovery. Because cultural resources are finite, avoidance and preservation are preferred mitigation measures. Avoidance would require that cultural resources be set aside and preserved in open space easements. The sizes of the easements would be based upon the boundaries of the sites or the areas of significance as defined by the testing program.

Where the quarry operation will impact significant sites and avoidance is not feasible, mitigation of potential impacts may be achieved through data recovery. With few exceptions, the significance of the important sites was rooted in the information potential represented by the subsurface deposits of artifacts and ecofacts. Therefore, the research potential of the sites may be realized through the extraction of data through excavations and the analysis of artifacts and provenience information.

The necessary treatment of cultural resources within Otay Hills Quarry is provided in Section 9.0, which lists the mitigation measures for all of the significant cultural resources.

6.2 Recommendations

In accordance with Section 15064.5 of CEQA and the guidelines of the County of San Diego, the sites evaluated as important, which will be adversely impacted, will require mitigation measures in the form of avoidance (preservation) and/or data recovery programs to reduce the significance of the impacts. Preservation is the preferred method to reduce adverse impacts to significant resources. In order to reduce impacts to a level below significant, those areas of the project that represent direct impacts could be redesigned to avoid the significant sites, or data recovery programs will be necessary at those sites that are important and will be impacted, but cannot be preserved. Where preservation is not the preferred mitigation alternative and data recovery is selected, the data recovery programs must include adequate subsurface samples of the significant deposits to meet the requirements for data recovery. The general mitigation proposal is provided in Section 6.3, while specific project mitigation procedures are provided in Section 6.4, and site-specific mitigation measures are provided in Section 6.5.

6.3 Proposed Mitigation Measures

Proposed mitigation measures for the Otay Hills Quarry Project include data recovery and monitoring. Impact mitigation guidelines are summarized below:

(1) Sites SDI-10,297/H and SDI-10,298 are located within the area that is to be impacted by the quarry operation. These sites also extend beyond the project boundary onto adjacent properties. The mitigation of adverse impacts will be achieved through the implementation of a data recovery plan. Sites for which this type of mitigation program would be appropriate are those deemed to be significant for their research potential and which cannot be preserved in open space. The sites that have been identified as significant (SDI-10,297/H and SDI-10,298) and not preserved will be included in the data recovery program.

(2) Because of the large number of cultural resources within the project and the fact that past uses or dense groundcover may have masked additional sites, all brushing and grading that affects areas in native soils within the Otay Hills Quarry Project area shall be monitored by an archaeologist and a Native American monitor. The monitoring of the brushing and grading of the surface areas shall be conducted by one or more archaeologists and Native American monitors, as dictated by the size of the grading operation. All utility excavations, road grading, or brush removal must be coordinated with the archaeological and Native American monitors. Any known resources must be intensively monitored during any earth-disturbing activities to ensure that any important features, isolates, or deposits are either recorded and collected or excavated. Should any resources be encountered during the monitoring of the earth-disturbing activities, which were not previously recorded, the earth-disturbing activity will be temporarily halted or redirected to another area while the nature of the discovery is evaluated. Any resources that may be encountered will require testing to determine their significance. If the testing demonstrates that a resource is significant, then a data recovery program will be necessary.

6.4 Project-Specific Mitigation Measures

The general categories of measures to mitigate potential impacts to cultural resources within the Otay Hills Quarry Project are provided below:

(A) Mitigation of Impacts to Two Sites Recommended as Significant Based Upon CEQA and County of San Diego Guidelines: Within the project, two sites have been tested and recommended as significant. The sites are located within the proposed construction or quarry zone. The mitigation measures recommended for the significant sites are discussed in Section 6.5.

SITE	RECOMMENDED MITIGATION
SDI-10,297/H	Data Recovery

SITE	RECOMMENDED MITIGATION
SDI-10,298	Data Recovery

(B) Mitigation of Impacts to Non-Significant Resources: The following resources have been tested and evaluated by both CEQA and County of San Diego Significance Guidelines for Cultural Resources. All of these resources were evaluated as having limited significance, and no mitigation measures are recommended.

SDI-7195 SDI-11,793 SDI-16,788 SDI-17,431 SDI-17,433/H

(C) Measures Needed for Significant Resources That May Be Indirectly Impacted: Mitigation measures will be required for four sites that are located adjacent to the area of development, but could be indirectly impacted. Minimally, temporary or permanent fencing may be necessary to ensure that the quarry operation does not intrude into these significant sites.

SITE	RECOMMENDED MITIGATION
Off-Site Portion of SDI-10,297/H	Fencing
Off-Site Portion of SDI-10,298	Fencing
SDI-12,707	Fencing
SDI-12,710	Fencing

6.5 Mitigation Plan for the Otay Hills Quarry

The proposed development of the Otay Hills Quarry will directly impact two significant archaeological sites. In order to comply with the regulations of CEQA and County of San Diego guidelines for the treatment of cultural resources, the following mitigation plan was developed. The goal of this plan is the successful mitigation of impacts to significant resources, if there is clearly no alternative to project design, and the preservation of valuable, nonrenewable cultural resources.

The technical report for the archaeological study includes information regarding the seven sites identified within the project. These sites were occupied first by the La Jolla Complex (Archaic Period), and again during the Late Prehistoric Period by the Kumeyaay Indians. The historic features represent use of the property during the early 1900s for homesteading and agricultural enterprises. The artifact collection from the cultural resource sites within the project comprises a limited representation of prehistoric use, and probably reflects the focus of most activity upon lithic metavolcanic resources common in the project area that attracted prehistoric

people to this location, as well as repeated occupation of two locations along a major seasonal drainage at the base of the San Ysidro Mountains.

A total of seven archaeological resources were identified within the Otay Hills Quarry Project area. All seven sites were tested and evaluated for significance based upon CEQA criteria and the County of San Diego Significance Guidelines for Cultural Resources and RPO criteria. Two of the seven sites (SDI-10,297/H and SDI-10,298) evaluated were determined to be significant. The remaining five resources (SDI-7195, SDI-11,793, SDI-16,788, SDI-17,431, and SDI-17,433/H) were evaluated as limited significance sites. None of the seven resources were significant based upon the County of San Diego's RPO criteria since the quarry project involves extraction activities and is exempt from the RPO (RPO Section 86.605.d). Nonetheless, the sites identified as CEQA-significant cultural resources represent a substantial prehistoric use within the project area. The responsibility for the proper treatment of these cultural resources is an important element of the environmental planning for the project.

The mitigation plan presented in this section is for the significant resources (SDI-10,297/H and SDI-10,298) that will be directly impacted by the proposed project. The mitigation plan for the significant sites (SDI-10,297/H and SDI-10,298) that will be directly impacted by the proposed project is a data recovery program. The major goal of the mitigation plan for the sites is the reduction of adverse impacts to these CEQA-significant sites through a data recovery program. The data recovery program will reduce the impacts to the resources to a level less than significant. In accordance with CEQA (Section 15064.5) and the guidelines of the County of San Diego, sites evaluated as important, which will be adversely impacted by the proposed project, will require mitigation measures in the form of avoidance and/or a data recovery program to reduce the significance of potential impacts. In order to reduce impacts to a level below significant, a data recovery program will be necessary at sites that will be impacted and cannot be preserved.

For SDI-10,297/H and SDI-10,298, mitigation can be achieved through data recovery because the principal aspect of the significance of the sites is directly related to the research potential and information value represented in the cultural deposits. Successful mitigation of impacts is contingent upon the development and execution of a comprehensive data recovery program. This program will be based upon the following premise:

> *The significant sites that will be impacted have been identified as significant according to CEQA, which stipulates that their importance lies in the information potential represented in the individual cultural deposits.*

If the importance of a site is directly associated with the information potential it retains, then identifying the range and types of data available at the site and the regional archaeological objectives that can be furthered with the addition of data from the site will provide the

foundation for achieving mitigation through data recovery. As will be demonstrated in subsequent sections, data recovery will suffice to mitigate direct impacts to the specific cultural resource identified as CEQA significant, though it will not be able to be preserved, assuming that the calculated sample sizes can be supported by the applicant.

The data recovery program must include adequate subsurface samples of the significant deposit. Special studies, including radiocarbon dating, faunal analysis, macrofloral analysis (float studies), residue analysis, ceramic analysis (if recovered in substantial quantities), obsidian hydration and sourcing, and flake attribute analysis shall be conducted to exhaust the research potential of the site areas to be impacted. In addition, lithic analyses will be conducted in order to determine how tools were made and how tools were used. Artifact assemblage analysis will compare and contrast qualitative (*e.g.,* use-wear) and quantitative (*e.g.,* weight) data for each type of artifact represented. The recovered materials should be treated according to standard archaeological procedures. Each specimen should be washed (only if necessary for identification), cataloged, and analyzed, and a technical report of findings should be prepared in accordance with professional archaeological standards and guideline requirements. Upon completion, the archaeological materials must be permanently curated at an acceptable repository. The research design for data recovery at each of the two sites is presented in the following subsection.

The final part of the mitigation plan for the Otay Hills Quarry Project is a monitoring program that involves archaeological and Native American monitors. The mitigation monitoring requirements are listed in Section 6.3. The mitigation plan for the Otay Hills Quarry Project is as follows:

(1) The significant sites SDI-12,707 and SDI-12,710, and the off-site portions of SDI-10,297/H and SDI-10,298, will not be directly impacted. Temporary or permanent fencing shall be installed during the mining operation and reclamation and shall be maintained.

(2) The significant portions of sites SDI-10,297/H and SDI-10,298 located within the limits of grading and brushing and will require mitigation by data recovery to those portions of the sites that will be directly impacted. The research design for data recovery is presented in the next section (Section 6.6) and the proposed sample size is summarized in Table 6.5–1.

(3) For SDI-10,297/H and SDI-10,298, the laboratory analyses and special studies methodology is provided in the research design (see Section 6.6).

(4) Native American representatives will be contacted to participate in the mitigation program (see Section 6.8).

(5) Cultural materials recovered from the project shall be placed in permanent storage at the San Diego Archaeological Center (SDAC), or some other recognized curation facility, or shall be repatriated.

(6) Following the successful completion of the data recovery program for SDI-10,297/H and SDI-10,298, all areas of native soils to be brushed and graded should be monitored by a qualified archaeologist and Native American monitor (see Section 6.8).

In the following sections, the research design for a formal data recovery program is presented.

TABLE 6.5–1
Summary of Data Recovery Mitigation Measures for Significant Sites

Site	Applicable Significance Criteria	Size of Subsurface Deposit (m2)*	Proposed % of Total Subsurface to be Excavated (m2)**	Proposed Test Units per Phase (m2 or Units)			Total Square Meters or Units
				Phase 1	Phase 2	Phase 3	
SDI-10,297/H	CEQA and County of San Diego	4,300	4.1 to 7.3%	172 to 300	5 to 12	Unlikely	177 to 312
SDI-10,298	CEQA and County of San Diego	1,116	5 to 10.0%	45 to 78	11 to 34	Unlikely	56 to 112

**Due to the small size of the testing sampling program, the actual size of the subsurface deposits may be adjusted during data recovery to more accurately reflect the deposit dimensions. Any adjustments to the deposit dimensions will affect the quantity of TUs needed to accomplish data recovery goals.*
***The proposed percentage of subsurface area to be excavated is dependent upon site size and complexity, as well as agency requirements. A range of five to 10 percent is presented here. A 10 percent sample is recommended for Otay Mesa Prehistoric Resources (Gallegos et al. 1998).*

6.6 Research Design for the Data Recovery Program at Sites SDI-10,297/H and SDI-10,298

The research design presented here was prepared for the prehistoric sites SDI-10,297/H and SDI-10,298. Generally, these types of sites can be characterized as lithic scatters with a somewhat large variety and quantity of tools, as well as bone and shell. Preliminary data from testing suggests that the sites may have been occupied throughout prehistory during the Archaic and Late Prehistoric periods. Collectively, these types of sites were positioned near the head of an intermittent stream that drains into the Tijuana River. The position of SDI-10,297/H and SDI-10,298 on the far eastern side of the mesa, but very near quarries of Santiago Peak Volcanic materials in the San Ysidro Mountains, provides the opportunity to examine the subsistence, domestic, and possible ritualistic activities undertaken at this location in comparison to other habitation sites on the Otay Mesa and in the general region.

6.6.1 General Methodology

As noted previously, for those significant sites which cannot be feasibly preserved, and for which the applicant has committed support of a data recovery program to mitigate impacts, the success of the program will be contingent upon extracting a sample that will exhaust the data potential of the site. The County of San Diego has not adopted a policy that exactly identifies the specific level of excavation required to achieve mitigation of impacts by data recovery; however, the Management Plan developed for Otay Mesa Prehistoric Resources (Gallegos et al. 1998) recommends a 10 percent sample of the site deposits. In most cases, the level of sampling is dictated by site size and complexity and agency requirements. Data recovery is commonly discussed in terms of sampling percentages, referring to the percent of the area of the significant subsurface deposit that will be excavated.

The general approach for achieving the mitigation of impacts through data recovery will begin with an indexing of the sites. This will include a sufficient sample of the subsurface deposit, consisting of four to seven percent of each deposit, to stratify the deposits into areas of differing artifact content, densities, and activity areas. The indexing process will utilize a static grid to cover each site, with a sample unit placed in each grid cell. Utilizing a grid will produce a very structured, non-random, and uniform index of the content of each cultural deposit. Within the portion(s) of each site that retains the greatest research potential, an additional one to three percent of that area will be excavated. At the sites considered to retain the greatest research potential, a third level of stratified sampling may be implemented to focus block excavations on areas that demonstrate intense artifact recovery, features, or multi-cultural depositional patterns. For sites in the data recovery program, the total area excavated will be between five and 10 percent of the significant subsurface deposit (area of greater research potential). This volume of recovery will be sufficient to successfully pursue the research objectives of the research design, as well as to provide other researchers with a large information resource.

The excavation of the subsurface deposits will be accomplished with standard one-square-meter TUs excavated by hand in 10-centimeter levels. A more detailed description of the field methods to be used is provided in Section 6.6.4. All units will be screened, mapped, measured, and photographed through standard stratigraphic control measures.

For the phases of work at SDI-10,297/H and SDI-10,298, the first phase will be the site indexing and the second phase will be the focused investigation. A third phase, if warranted, would be extremely focused on high potential elements of either significant site. Each phase has specific goals: the site index is a non-random representative sample of the total area of the site to be impacted, while the second and third phases will be a focused, biased, and intuitive study of the area within the deposit that has the greatest potential. The use of this type of data recovery has been successfully completed for many projects in southern California, notably in San Diego County at the Rancho San Diego development (Byrd and Serr 1993), as well as at the 4S Ranch Project, where 26 regionally important sites were subjected to data recovery as mitigation for development-related impacts (Raven-Jennings et al. 1996).

The grid for site indexing will be determined by the number of units needed to accomplish the sample level of four to seven percent. To calculate the grid size, the number of TUs that represent the Phase 1 sample was divided into the calculated area of the deposit. The resulting quotient represents the area within each grid cell, and the square root of this value provides the dimension of the grid cell. For example, assuming a site contained 2,000 square meters of a cultural deposit, a five percent sample would be 100 square meters. The grid size would be determined by dividing the deposit size (2,000 square meters) by the number of TUs (100), which equals 20 square meters. The square root of 100 square meters is approximately five meters, thus, the intersection of each grid line is spaced at five meters. Within each five-square-meter grid cell, one TU would be excavated to complete the site index.

For consistency, all samples will be phased, with an index phase followed by a focused, intuitive phase in the area of greatest importance. The phases of the sampling procedure to be used at the site included in the data recovery program are:

Phase 1: The first phase of excavation at any particular site will typically involve a four to seven percent sample used to index the site content and document intra-site variation. TUs will be uniformly distributed within each site using a grid system. For most sites, the presence of multiple rock outcroppings will constitute voids in the sample grid. These areas will be deleted from the calculations of site deposits when the data recovery programs are initiated; however, the areas represented by the outcrops cannot be calculated at this time.

Phase 2: The second phase of excavation will consist of a one to three percent sample of each site area identified as representing the greatest research potential. The stratification of the site following the Phase 1 work will typically identify an area of approximately 10

percent of the sample area distinguished as retaining additional research potential. For this sampling phase, the TUs would not be randomly placed, but would be intuitively located at the discretion of the archaeologist.

Phase 3: The last phase of excavation will be conducted at any sites that are found to contain particularly important deposits worthy of extended excavation. The sample size of any such area is dependent upon the nature of the deposit and its research potential.

The procedures noted above will be applied to SDI-10,297/H and SDI-10,298. The actual number of square meters to be excavated in any particular site will depend upon the site size, complexity, research potential, and agency requirements. The projected size of the sample is not a minimum or maximum, but an estimate of the sample needed to satisfy the data needs of the research objectives. The possibility exists that previously unidentified subsurface deposits will be identified during data recovery, increasing the research potential of the site. In this case, the sample size of the Phase 1 or Phase 2 excavations may be readjusted. The field procedures are described in Section 6.6.4, including standard unit sizes and standard sifting screen size (one-eighth-inch mesh).

6.6.2 Site-Specific Sampling During Data Recovery

SDI-10,297/H

This site is a prehistoric temporary camp situated on a relatively flat area along the project's western boundary. The deposit encompasses an area of approximately 4,300 square meters. For the mitigation plan, the site will be directly impacted and data recovery will be utilized to mitigate impacts. The sampling program for the site will focus on a uniform indexing of the significant areas of the site. This first level of index sampling will consist of a four to seven percent sample of the 4,300-square-meter deposit. This represents a sample of 172 to 300 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based upon an area of increased research potential estimated to be approximately 10 percent of the 4,300 square meters; the exact number of Phase 2 excavations will depend upon the results of the Phase 1 excavations. Table 6.4–1 summarizes the sample size. The proposed data recovery excavations are summarized as follows:

Size of Subsurface Deposit: 4,300 square meters.

Phase 1: Four to seven percent sample representing 172 to 300 square meters or TUs.

Phase 2: One to three percent sample of the overall area of increased research potential (estimated at 430 square meters), resulting in the excavation of five to 12 TUs. The total

number of units excavated during Phase 2 will vary depending upon the stratification of the subsurface deposit into areas of greater research potential.

Total Proposed Sample Size for Data Recovery: 177 to 312 square meters, representing approximately 4.1 to 7.3 percent of the areas of greatest research potential.

A third phase of mitigation sampling is not likely at SDI-10,297/H, as this site is not considered a candidate for intense artifact deposits or substantial subsurface features.

SDI-10,298

This site is a prehistoric temporary camp situated on a relatively flat area in the northwest corner of the project. The testing program delineated a surface scatter over an area of 3,726 square meters and a centralized subsurface deposit. The deposit encompasses an area of approximately 1,116 square meters. For the mitigation plan, the site will be directly impacted and data recovery will be utilized to mitigate impacts. The sampling program for the site will focus on a uniform indexing of the significant areas of the site. This first level of index sampling will consist of a four to seven percent sample of the 1,116-square-meter deposit. This represents a sample of 42 to 84 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based upon an area of increased research potential estimated to be approximately 10 percent of the 1,116 square meters; the exact number of Phase 2 excavations will depend upon the results of the Phase 1 excavations. Table 6.5–1 summarizes the sample size. The proposed data recovery excavations are summarized as follows:

Size of Subsurface Deposit: 1,116 square meters.

Phase 1: Four to seven percent sample representing 45 to 78 square meters or TUs.

Phase 2: One to three percent sample of the overall area of increased research potential (estimated at 111.6 square meters), resulting in the excavation of 11 to 34 TUs. The total number of units excavated during Phase 2 will vary depending on the stratification of the subsurface deposit into areas of greater research potential.

Total Proposed Sample Size for Data Recovery: 56 to 112 square meters, representing approximately five to 10 percent of the areas of greatest research potential.

A third phase of mitigation sampling is not likely at SDI-10,298, as this site is not considered a candidate for intense artifact deposits or substantial subsurface features.

6.6.3 Research Questions

The data recovery program must comply with the regulations of the County of San Diego, and the results of this program should successfully exhaust the research potential of the site in order to reduce the impacts to a level below significant. The data recovery program will also follow the California OHP publication *Preservation Planning Bulletin No. 5., Guidelines for Archaeological Research Design* (1991).

The design for the data recovery program for the Otay Hills Quarry Project includes a consideration of the types of data that are potentially available and applies this information to the current regional research questions pertaining to the cultures represented at the sites. The research questions posed include those that can be more appropriately addressed during data recovery of significant sites to further these research issues.

This research design incorporates research questions based upon the current state of knowledge in anthropological theory and area-specific research concerns. For the purposes of this research design, the study area includes the western San Diego County region, and more specifically, the Otay Mesa Management Plan area (Gallegos et al. 1998). As a prelude to archaeological data recovery, theoretical research hypotheses must be applied to the proposed data recovery program to ensure that the information recovered will address these important research concerns. The hypotheses contained herein are designed so that they may be tested against the archaeological data recovered from the sites.

The Otay Hills Quarry Project is located south of the Otay River Valley. Comparatively little is known about the prehistory of the Otay region of San Diego County—the development of the National City and Chula Vista areas prior to the establishment of CEQA laws resulted in the loss of a considerable amount of archaeological sites. By way of contrast, recent and rapid development of the area east of Chula Vista has resulted in the discovery of, and recovery from, numerous archaeological sites in that area. Recent work by Kyle et al. (1990), Pigniolo et al. (1990), McDonald et al. (1993), and Smith et al. (2004 and 2006) has identified several prehistoric habitation sites within the eastern Otay River watershed; occupants of these sites and others may have used the sites located within the Otay Hills Quarry Project area.

Because of the presence of habitation sites within the current project area, the proposed research questions primarily consider the placement of these sites within the overall subsistence and settlement system of prehistoric populations inhabiting the Otay Mesa area. Other site types represented at Otay Hills Quarry include temporary camps that were likely inhabited during hunting and quarrying forays in the area. Questions were developed for this research design to examine these site types as well. By designing fieldwork to address these subjects of inquiry, the results of the archaeological program will be made more meaningful to both theoretical and substantive research concerns.

The mitigation and data recovery program for the Otay Hills Quarry sites will focus on understanding the use of natural resources by the prehistoric occupants of Otay Hills Quarry through time. The research design for the data recovery program was formulated using

information from surrounding sites to determine the variety of characteristics manifested in the area, including site location in relation to water, vegetation, lithic resources, and elevations. The theoretical orientation and major research objectives for the Otay Hills Quarry sites were based upon an attempt to determine the vertical and horizontal variability within the site (*i.e.,* Do the individual sites being tested exhibit any differences in the kinds or relative quantities of artifacts or cultural ecofacts [shell, bone, etc.] within the vertical [temporal] or horizontal [spatial] planes?) and between sites. Vertical variation in the deposit might indicate either a shift in the subsistence strategy or in the kinds of subsistence materials available over a period of time. A shift in subsistence strategy over time might signify that different cultural groups were present at different times, or that one group adopted new lifestyles. Horizontal variations in the sample might indicate specialized activity areas or intra-site organization. Between sites, spatial patterning may indicate the use of different areas during different time periods, which suggests that certain sites were more suitable for certain activities.

The data recovery program is designed to retrieve the maximum amount of information from each site that can be applied to a wide variety of research topics concerning the region as a whole. Specifically, the research goals focus on gathering site-specific data to define intra-site organization, temporal placement, trade associations, and site function. Furthermore, the sites should be analyzed in spatial context to address the goals of environmental archaeology and define the relationship of the sites to the biophysical environment. Subsistence and settlement, chronology, technology, quarrying activities, and regional exchange and inter-group relations are the topics from which archaeological questions were formulated. These topics are presented below with individual research questions, although collectively they are designed to contribute to the overall understanding of how the prehistoric inhabitants of Otay Hills Quarry utilized the natural resources of the area through time and how the sites relate in the total subsistence and settlement regime of the Otay Mesa during prehistory.

Research Topics

1. Subsistence and Settlement Patterns

The degree to which the archaeological cultures represent alternate adaptations to inland resources has been an issue of much interest and debate in San Diego County (Laylander 1993). As is true elsewhere in California, an early hunting orientation was replaced by a more diversified, plant-oriented strategy during the Archaic Period, becoming ever more broad-based over time (Moratto 1984). The Late Prehistoric Period was characterized by an even wider use of resources, with new strategies that focused on a few storable species, especially acorns (Chartkoff and Chartkoff 1984). This change may have been fueled, particularly in northern San Diego County, by the siltation of previously resource-rich lagoons circa 3,500 YBP (Warren 1964). In the southern portion of the county, the formation of San Diego Bay encouraged the growth of an even more specialized marine orientation. A subsistence shift may have occurred when the coastal areas north of Mission Bay became less attractive, prompting a switch to inland

strategies (Gallegos and Kyle 1988). If the Tijuana Lagoon also became silted, this may have pushed some groups into the Otay Hills Quarry area, which is easily within a day's walk from both San Diego Bay to the west and the Sweetwater wetlands to the north.

Researchers generally believe that the adaptation to the environment by Archaic peoples in San Diego County initially emphasized hunting over gathering (in the guise of the now-subsumed San Dieguito Complex), and marine over terrestrial resources, and that this practice was "replaced" by the Late Prehistoric Kumeyaay subsistence pattern, where inland, terrestrial resources gained ascendancy. Generally, archaeologists agree that increased settlement densities and a terrestrial resource focus, particularly on the gathering and processing of acorns, are Late Prehistoric characteristics. The appearance of pottery, smaller projectile points, cremations, and the use of exotic lithic materials, especially Obsidian Butte obsidian, is evidence used to recognize this adaptive change (Gallegos 1992; Christenson 1992). The Archaic site is often defined on the basis of what is lacking, such as pottery or small projectile points, but for certain types of artifacts, even if utilized, would not be expected to be present at these sites anyway.

Recent evidence indicates, however, that the Archaic subsistence strategy was much more dependent upon inland resources than previously thought (Raven-Jennings and Smith 1999; Buysse and Smith 2003). Therefore, contrasting inland Archaic and Late Prehistoric Kumeyaay sites presents much more of a challenge than comparing coastal La Jolla Complex and Late Prehistoric Kumeyaay sites. The inland expression of the La Jolla Complex (Warren et al. 1961) is characterized by a decreased quantity of marine mollusks, a greater variety of tools made of inland quarried stone in addition to cobbles, a broader range of resources used and resource zones exploited, increased milling, increased sedentism, and an emphasis on terrestrial hunting and gathering, all of which blur the distinctions between the La Jolla Complex and the later Late Prehistoric Kumeyaay lifeways (Moriarty 1966; Gallegos 1991; Kaldenberg 1982; True 1958; Warren et al. 1961; Meighan 1954; Forstadt et al. 1992). As a result, many archaeologists propose continuity between the inland La Jolla Complex and the Late Prehistoric Kumeyaay, stressing the overall similarity of the tool kits and the general extension of Archaic lifeways into the Late Prehistoric Period (Warren 1964, 1968; True 1966, 1970; True et al. 1974; Byrd and Serr 1993; Cardenas 1986).

Various researchers (True and Waugh 1982; Byrd and Serr 1993) have found it useful to employ Binford's (1980) distinction between foragers and collectors to contrast local Archaic and Late Prehistoric patterns. The difference between foraging and collecting strategies is a matter of relative mobility and the spatial relationship between consumers and resources, both of which have implications for the resulting archaeological record. The Archaic La Jollan Complex is associated with the foraging strategy, where residential camps are placed near desired resources and occupied for short periods of time. This focus on very local resource procurement and consumption results in quite small, resource-specific locations and tool kits. The Late Prehistoric Kumeyaay pattern is characterized as a collector strategy, where habitation sites were of a seasonal nature, and thus are larger and display more diversity in tools. Logistical forays are

staged from these areas to seek out a wide variety of resources beyond the camp boundary, which result in the appearance of many ancillary resource procurement locations. At the large sedentary camps, faunal resources in particular appear to be very diverse, with various animal classes represented. Waugh (1986), while noting this correlation, stated that it is uncertain if this diversity was due to more inhabitants in a small area, or whether the sedentism itself was a response to the depletion or absence of larger animals.

The transition between a forager and a collector strategy was not abrupt, however, and sites from the Late Archaic Period (3,000 to 1,300 YBP) represent the gradual transformation of Archaic lifeways into a collector mode. Although the change appears at different times throughout California, the Late Archaic is characterized by increased hunting and an emphasis on acorns (Chartkoff and Chartkoff 1984). In the Santa Barbara area, the shift to a broader resource base began around 5,000 to 3,000 YBP, reached up to 50 miles inland, and was labeled the Campbell Tradition (Harrison and Harrison 1966). The Campbell Tradition represents a more diversified economy that was focused on acorn processing, mollusk gathering, terrestrial hunting of rabbits, deer, and waterfowl, and the beginnings of a specialized maritime economy. The technological hallmarks of this tradition include stone bowls, mortars and pestles, hopper mortars, projectile points, drill-like implements, flake scrapers, large knives, and ornaments made of shell, bone, and stone (Koerper et al. 1986). The latter part of the Campbell Tradition is termed Middle Period in the Santa Barbara area (King 1981), where increasing complexity is posited on the basis of multiplying varieties of beads and ornaments, in addition to the technological developments listed above. The Campbell Tradition was initially characterized as an intrusion of Alaskan peoples (Harrison and Harrison 1966); however, more recent studies all point to a gradual, *in situ*, development of the Chumash people over the course of 7,000 years (Moratto 1984).

Wallace (1955) also separates this time period from preceding patterns for southern California as Horizon III of his Intermediate Cultures (3,000 to approximately 2,000/1,000 YBP). He notes that mortars and pestles become more common, perhaps signaling the initial use of acorns, along with basket-hopper mortars. Additionally during this time period, projectile points become smaller and there are increasing quantities of *Olivella* beads, bone awls, and steatite artifacts, as exemplified by the Campbell Tradition. Similarly, Moriarty (1966) places a major change during this time period, calling it Diegueño I (pre-ceramic Yuman), and attributes the change in subsistence and settlement to the amalgamation of desert peoples with the resident La Jolla Complex people circa 3,000 to 2,000 YBP. Other researchers, while not giving this period a specific name, have noted an increasingly broad resource base and a proliferation of inland occupation sites at this time period (Norwood 1980; Forstadt 1992; Cardenas 1986).

In San Diego County, the Campbell Tradition has previously been considered only weakly represented due to the lack of evidence for marine mammal hunting (Warren 1968) and the lack of evidence for the utilization of inland environments (Warren 1964). However, recent investigations from Rolling Hills Ranch (Smith et al. 2004), Scripps Poway Parkway (Raven-

Jennings and Smith 1999), Rancho San Diego (Byrd and Serr 1993), and sites SDI-4,648 and W-348 (Cardenas and Van Wormer 1984), offer increasing evidence of relatively intense use of inland San Diego County by the end of the Middle Archaic (3,000 YBP). Byrd and Serr (1993), in fact, question whether the Archaic exploitation of inland environments was not already well established prior to 3,000 YBP, but note the lack of evidence.

In addition, the hiatus or decline in the occupation of coastal sites during the Late Archaic and early Late Prehistoric, which caused consternation due to the lack of radiocarbon dates between approximately 2,000 and 600 YBP, appears to be in the process of being filled in by the discovery of inland occupation sites in northern and southern San Diego County. Several reasons have been put forward to explain what seems to be the lack of coastal occupation during this time period. Given the known decimation of coastal resources during this same period, an exodus from the larger coastal villages to locations inland may have occurred. However, rather than utterly disappear, the La Jolla complex resurfaces inland at this same time period and is transformed by a tool kit meant for a different environment, which has subsequently been identified as Pauma Complex. As inland San Diego County continues to be developed, it is likely that the idea that site location shifted toward the inland to exploit more abundant, terrestrial resources will be accepted. Alternatively, the lack of radiocarbon dates from this time period may be explained by error factors in the radiocarbon method, or it may be indicative of bias in the selection of radiocarbon samples (Laylander 1993).

In short, a mixed hunting/gathering strategy prevailed over most time periods in San Diego County, yet there are enough cumulative differences to make the effort to discriminate between Archaic and Late Prehistoric sites and site components, in order to isolate and characterize subsistence and settlement strategies over time, a worthy task. Several sites along the Sweetwater River in Rancho San Diego, where inland multi-component Archaic and Late Prehistoric sites were investigated (Byrd and Serr 1993), as well as those at Scripps Poway Parkway farther north (Raven-Jennings and Smith 1999), may provide insights into the inland settlement pattern during a little-known period of county prehistory. Comparisons between the Otay Hills Quarry sites, Site SDI-10,297/H and SDI-10,298, may provide useful information about the occupation of the immediate Otay Hills Quarry area.

In addition to temporal and spatial variability, the question of seasonal or continuous site use must be considered. It is reasonably well documented that the Late Prehistoric Kumeyaay practiced seasonal migration (Smith and Moriarty 1983; Kroeber 1925; Luomala 1978; Carrico and Taylor 1983). There is some disagreement concerning whether La Jollan groups shifted from a marine subsistence strategy (circa 9,000 to 5,000 YBP) to a more diverse, seasonal migration (circa 5,000 to 2,000 YBP), or if their subsistence strategy was diversified throughout the duration of their presence along the coast (Smith and Moriarty 1985a, 1985b; Smith 1987).

Seasonal site use in the project area is probably related in part to the availability of fresh water. For example, many documented sites lie along Otay River and various tributary drainages, including Salt Creek, where the attraction to water and food resources directly

associated with the water courses is evidenced by the configuration of the sites in long, narrow stretches parallel to the flow of the river and its tributaries. The attractiveness of these drainage areas might be due to the seasonal availability of preferred resources and water (Jochim 1976).

Discriminating between the Archaic La Jollan and Late Prehistoric Kumeyaay subsistence practices is central to the issue of adaptive change through time. In particular, it is necessary to document (whenever possible) the actual resources taken through the collection and analysis of ecofactual data in combination with the artifactual data. The Otay Hills Quarry sites, SDI-10,297/H and SDI-10,298, may contain rich artifact and ecofact deposits that should provide sufficient data for determining specific subsistence strategies and making distinctions between foraging and collecting oriented sites. Additionally, since the site may contain both Archaic and Late Prehistoric components, insights into the timing of this adaptive transition can likely be addressed.

Research Questions:

- Do the sites appear to be temporary (seasonal) or year-round habitation sites? During what time period are Archaic sites fully residential and more typical of a collector, not forager, strategy? What is the settlement pattern practiced in the region as a reflection of these sites?
- Is the lack of faunal remains dated to the period of the Archaic/La Jolla Complex a result of the relative unimportance of mammals in the diet, poor preservation, off-habitation processing of animal products, and/or destructive processes such as grinding bone into meal?
- Can faunal remains provide information about the seasonality of the use of the sites?
- What is the significance of marine fish and mollusks at the Otay Hills Quarry sites?
- What makes the location of Otay Hills Quarry appealing during prehistory? How does the location fit in with the La Jolla Complex preference for locations along transport routes with central locations? How do the locations of the Otay Hills Quarry sites relate to known resource distributions through time? What resources are being utilized?
- How does artifact and feature density relate to use of the Otay Hills Quarry sites?
- At the Otay Hills Quarry sites, are there a number of radiocarbon dates from the coastal "hiatus" period of between 2,000 and 600 YBP? If so, does this represent the abandonment of coastal sites and the utilization and intensification of inland sites in San Diego County?
- How did the occupations of the Otay Hills Quarry sites compare to other sites in the area? How do they relate to these sites spatially and temporally?
- Does the settlement pattern of Otay Mesa reflect use of the Santiago Peak volcanic materials that are present on the mesa and in quarries in the foothills, or does the settlement pattern reflect processing and use of various plant and/or animal resources

located prehistorically on the mesa and in adjacent canyons, or both?

2. Chronology

Chronology is the foundation of most archaeological research; in the current case, where contrasts between time periods are sought, it is imperative to maximize the number of solidly dated associations. Culture-sensitive materials include pottery and projectile points, while relative and absolute dating techniques can be employed on obsidian, shell, charcoal, and soil samples. Detailed investigations at sites in the Otay Mesa area containing significant subsurface deposits are severely lacking. One reason for this is that, until recently, development and associated archaeological investigations in the Otay region have been relatively limited. Also, many of the identified sites in the area, particularly on the east side of Otay Mesa, are limited-use lithic extraction sites or artifact scatters. These sites were often repeatedly utilized over many years, but determining the dates of their use is often impossible due to a lack of subsurface deposition or datable material. In addition, farming activity has been extensive throughout the area for the past 100 years, further contributing to the dispersal and erosion of deposits.

Based upon earlier work, most sites in Otay Mesa fall into either the Early Archaic Period (7,600 to 3,500 YBP), when the Tijuana Lagoon was open, or in the later portion of the Late Prehistoric Period (560 to 260 YBP). The oldest site, so far identified by radiometric dating, is SDI-11,079, which was occupied from approximately 9,400 to 8,250 YBP (Kyle et al. 1998). Dates on coastal Site SDI-4281 included 3,840 ± 60 YBP and 4,340 ± 50 YBP, although a single piece of Tizon Brown Ware (TBW) suggests a later component might also be present (Bingham 1976). Bingham suggested that Site SDI-4281 served as a primary camp or village due to the fact that the midden deposit was at least 70 centimeters deeper than at nearby Site SDI-222, although the radiocarbon dates suggest occupation may have been of longer duration at Site SDI-222 (7,260 ± 80 to 3,640 ± 60 YBP) (Bingham 1976). Similarly, at the largely Archaic Keubler Ranch site, where radiocarbon dates on shell indicate that the site was occupied between 6,430 ± 140 and 7,620 ± 100 YBP, an additional single ceramic sherd was recovered (Kyle et al. 1990). Site SDI-10,185, located at the head of Spring Canyon, was radiocarbon dated to 3,568 ± 80 YBP (Robbins-Wade 1990). Comparison of the results from these sites to those located in Otay Hills Quarry might shed some light on the utilization of inland southern San Diego County, particularly at the transition from the Archaic to the Late Prehistoric.

Research Questions:

- When did the Late Prehistoric Kumeyaay and Archaic La Jollan occupations of Otay Hills Quarry sites occur? How spatially separate are they?
- Is there a hiatus within the Archaic or between the La Jollan and Kumeyaay habitations of inland sites, as has been documented in coastal areas between 2,000 and 600 YBP, or is there continued use of the area during this period?
- Do the assemblages at Otay Hills Quarry provide data in support of continuity or

change in tool kits and subsistence activities?

- Some researchers maintain that radiocarbon dates taken from shell and soil are not comparable. Do paired shell/soil samples at Otay Hills Quarry agree or disagree as to the date range of these sites?
- Are the previously accepted culturally diagnostic artifact types (marine shell, ground stone tools, Coso obsidian, and cobble-based tools for La Jolla Complex; ceramics, small projectile points, Obsidian Butte obsidian, and bedrock milling for Late Prehistoric) accurate cultural markers for these sites?
- What accounts for the relatively intense early to middle Holocene occupation of the mesa and then the absence of habitation sites on the mesa during the late Holocene?

3. Technology

The relative lack of temporally diagnostic artifacts at sites in San Diego County limits the analytic value of even a large sample of sites unless a model can be proposed that allows at least some sites to be dated based upon the groupings of non-diagnostic artifacts for a particular time period. To expand the interpretive value of the non-diagnostic artifacts recovered, characteristic tools kits of the Late Prehistoric Kumeyaay and Archaic La Jollans should be identified in datable contexts. If diagnostic tool kits could be identified, these could be used to assist in the interpretation of the cultural affiliation of other sites that lack temporally diagnostic tools or absolute dates.

Cobble and domed scrapers, scraper planes, and cobble tools in general (Kowta 1969; Kaldenberg 1982), along with associated cortical debitage (Rosen 1989), marine shell, and heavier tools are thought to be associated with the La Jolla Complex. Quarried materials, lighter flake tools, a high frequency of medium processing tools such as perforators, drills, and flake scrapers (Cardenas and Van Wormer 1984), and an increased use of fine-grained materials such as quartz, chalcedony, and jasper are typical of the Late Prehistoric Kumeyaay (Gallegos 1992).

Ground stone tools are believed by some archaeologists to be temporally sensitive. Portable metates appear to be associated with Archaic sites (Byrd and Serr 1993), while mortars and pestles are considered hallmarks of the Late Prehistoric Kumeyaay (Carrico and Taylor 1983; Byrd and Serr 1993). Bedrock milling stations are considered by some to be diagnostic of Late Prehistoric use (Forstadt et al. 1992; Byrd and Serr 1993), although some believe that they may be also be found at Late Archaic sites as well (Westec Services 1981). Byrd and Serr (1993) found evidence of bedrock milling at an Archaic site and at several Late Prehistoric sites, suggesting that perhaps the presence of milling features as a diagnostic temporal trait remains undefined.

Tool function is another key issue in the understanding of cultural change, since La Jollan and Late Prehistoric Kumeyaay tools are relatively simple and redundant in terms of lithic materials and functional types represented. For example, without residue analysis, it is not known whether a mano represents a plant- or animal-processing tool. Therefore, the possibility

exists that the same tools were put to different uses over time. The ethnographic literature associates ground stone tools not only with plant processing but also with the grinding of small animals (Michelson 1967; Luomala 1978), which has been supported by blood residue analysis of metates (Carbone 1984; Yohe et al. 1991) and manos (Byrd and Serr 1993), wherein rabbit blood was identified on both types of tools.

Without empirical evidence, it is difficult to ascertain the function of even those tools that have a more obvious use. As Carrico and Kyle (1987) pointed out, the presence of knives may indicate not only hunting, but also any activities that included scraping and cutting, such as in the processing of wood, shell, and hide. Byrd and Serr's (1993) residue analysis was a case in point: hammerstones showed residues from rabbit and deer, one Desert Side-Notched projectile point contained pronghorn blood and another had trout (or salmon) blood, and an Elko projectile point included rabbit blood residue. This inquiry is further confounded by the fact that assemblage-oriented analysis to determine cultural discriminations is often derailed by seasonal or special activity tool kits (Binford 1980).

Early and middle Holocene lithic reduction strategies have been found to be different from Late Prehistoric reduction strategies. The Santiago Peak volcanics and the Bedford Canyon metasediments found on the Otay Mesa and San Ysidro Mountains have been used extensively for the production of large tools (adzes, scrapers, scraper planes, cores, and hammerstones) and bifaces (Schroth and Flenniken 1997). The use of quarry material from these formations may be a temporal marker of early to middle Holocene use, as larger dart and spear points would have required larger blocks of material. Conversely, the use of small, arrow projectile points during the late Holocene does not require the use of such large blocks of material as this type of point can be fashioned from a small flake or from materials (*e.g.,* quartz) with smaller core sizes.

What is needed, in short, is more information about both the function and the temporal associations of tools in order to arrive at a clearer understanding of Archaic and Late Prehistoric activities. Tool-rich sites with long occupational histories provide ideal opportunities to perform this task. Of particular interest is the functional characterization of the "multi-purpose" tools found at Otay Hills Quarry. The strategy utilized in the field, therefore, centered on maximizing the recovery of tools and associated soil samples so that ample analytical studies could be employed. Residue studies performed on a wide range of tools aided in the classification of tool function.

Research Questions:

- Is the presence of a tool kit, which includes scrapers, scraper planes, and cobble and domed scrapers, that comprises a significant portion of the total tool recovery (*i.e.,* greater than 20 percent), indicative of Archaic use?
- What types of artifacts were made with FGM? Was there variation in the use of ultra fine-grained materials, both local and non-local, from the Archaic to the Late Prehistoric?

- Considering the close proximity to lithic quarry sites, were bifaces and debitage from Archaic contexts reflective of earlier stages of reduction, or are they finished tools?
- Were milling functions different between Archaic and Late Prehistoric sites? What resources were ground or pounded in mortars and on portable metates? Did these differ through time?
- What were the functions of the different tool categories? Did these functions change over time? Were different resources processed with different lithic tools?
- Can assemblages and/or certain tool categories be used to indicate subsistence activities in the absence of faunal remains?

4. The Role of Temporary Camps Within the Project Area

Several sites in the Otay Hills Quarry Project area can be characterized as temporary camps. These sites are represented by a light scatter of lithic production waste, a higher proportion of ground stone or precision tools, and in one instance, a small amount of vertebrate bone. These camps were probably the location of small resource procurement groups who exploited animal or plant resources and quarried raw lithic material in the area. Due to the ephemeral nature of these sites, midden accumulation is minimal, and very little information can be gleaned from these sites, which are essentially surface scatters. However, a number of questions can be posed including site type and the determination of the range of activities represented at the sites. This data may serve in placing the sites within the context of the settlement system of prehistoric groups in the area.

The range of tools at a particular site provides valuable clues regarding the activities represented there. For example, ground stone tools are generally associated with processing of animal and vegetal food resources, whereas projectile points are associated with hunting. Other tool types are less obvious as to their function, and the activities associated with their presence at sites is more problematic. Unifacial tools and utilized lithic production waste fall into this category of ambiguous use; in reality, these tools were probably used for a variety of purposes and therefore may indicate the processing of animal or plant resources. Specialized analyses may be performed on artifacts in order to relate their true function. Microscopic analyses of use-wear on tools can provide a basis for the identification of the range of activities undertaken at a given site (*c.f.* Keeley 1980). Trace analysis of microscopic plant and animal residual on stone tools (*c.f.* Yohe et al. 1991) may augment microwear analysis, provided the tools are recovered from undisturbed subsurface contexts with an associated soil sample. Finally, determination of reduction stages represented at the site, as exhibited in flaked tools and lithic debitage, can provide valuable clues regarding the range of lithic production activities and tool use (*c.f.* Magne 1985). This data regarding the range of site activities gleaned from the artifact assemblages recovered from the temporary campsites at Otay Hills Quarry may provide valuable information regarding the use of these sites within the settlement systems practiced by prehistoric populations in the area.

Research Questions:

- What activities are exhibited at temporary camps? What does the range of activities represented say about the use and purpose of these sites? Do diagnostic artifacts or assemblage profiles indicate the time period of occupation? Do the deposits at temporary camps reflect depth and integrity so as to provide dependable radiocarbon dating samples?
- At those sites where faunal remains were recovered, does this material suggest a seasonal use of the temporary camp? Do the faunal remains reflect a narrow or broad range of animals taken? Is the paucity of faunal remains noted at the Otay Hills Quarry sites a result of poor preservation, processing of animal products at habitation sites rather than temporary camps, destructive processes such as grinding bone into meal, or are mammals less important at more ephemeral, lithic-oriented sites?
- Are non-local lithic materials present at Otay Hills Quarry sites and, if so, are they more common at sites identified as temporary camps? What procurement range is indicated by the source of the non-local items? What kinds of tools are made from non-local materials?
- Can specialized studies, including use-wear studies, residue analysis, and reduction stage classification, provide additional clues regarding the range of activities conducted at the site?
- How do these sites fit into the overall settlement and subsistence systems of prehistoric populations in the area? How does the utilization of the Otay Hills Quarry sites compare to other sites in the region both spatially and temporally?

5. Exchange and Intergroup Relations

Different interpretations are placed upon the effects of interactions with people or ideas from the desert region to the east. Bull (1977, 1983) and Christenson (1992) use linguistic and ethnographic evidence to suggest the repopulation of the San Diego area by Yuman-speaking peoples from the west and Shoshonean-speaking peoples from the north with new lifeways approximately 1,000 YBP. These peoples may have moved unchallenged into the new territory, as it appears that an exodus from the coastal areas by the previous inhabitants may have already occurred. This view is given additional support by the paucity of radiocarbon dates from 1300 B.C. to A.D. 200 in many of the coastal areas. Some researchers (Rogers 1945; Carrico and Taylor 1983) skirt the issue by citing desert peoples or influences at work to account for the appearance of elements foreign to the Archaic Period like pottery and exotic lithics, supported by ethnographic accounts of trade (Luomala 1978).

The use of non-local lithic materials may be helpful in illuminating the timing and direction of interactions. Obsidian sourcing appears to be very informative as to the period of occupation. Obsidian from Archaic Period sites is usually sourced to Coso or Casa Diablo, while the typical Late Prehistoric Period obsidian source is Obsidian Butte, a source that became

available after A.D. 1640 as Lake Cahuilla was desiccated (Kaldenberg 1982).

The use of fine-grained materials appears to increase in the Late Prehistoric Period (True 1966; Cardenas and Van Wormer 1984; Byrd and Serr 1993). Chert, chalcedony, and jasper were once thought to indicate trade ties to the eastern desert, but studies by Pigniolo (1992) have identified a number of more local sources for various cryptocrystalline materials. A closer look at local sources may be in order before hypothesizing long-distance trade relations on the basis of the presence of these materials (Laylander 1993). Furthermore, the time period for these materials, previously attributed to the Late Prehistoric because of the eastern contacts known during that period, might become an open question. For example, Pigniolo's (1992) study of the Piedra de Lumbre chert source indicated high rates of production and trade of this material in the early Archaic as well as the Late Prehistoric Period.

Some indirect evidence might shed light on the origin of these resources. Robbins-Wade (1990) proposed that exotic lithic materials should be distributed differently than local materials in that they would be found in base camps, but not in field camps. An identification of the distribution of local versus non-local cryptocrystalline materials by site type in Kumeyaay territory may reveal important information regarding the distribution of these materials among different site types. Furthermore, if some of these "exotic" materials are concluded to be available locally, the identification of these quarries would have implications for seasonal forays, since often procurement of such sources are "embedded" in other resource-procurement travels (Binford and O'Connell 1984).

Research Questions:

- Does the occurrence of fine-grained materials vary between Late Prehistoric Period and Archaic Period sites?
- Does the trade route exhibit change through time? More specifically, does early to middle Holocene trade appear to be north-south with the movement of Coso obsidian between Inyo and San Diego County, and does late Holocene trade appear to be east-west with the movement of Obsidian Butte obsidian and other items from the Gulf of Mexico?
- Is there any steatite at the sites, and if so, can a specific source be determined? What does this say about the exchange and movement between groups?
- Are shell beads being made at these sites? If so, why?

6.6.4 Field Methodology

A field plan to carry out the necessary data recovery procedures is presented. The program is consistent with the policies and guidelines of the County of San Diego, with the California OHP publication *Preservation Planning Bulletin No. 5*, *Guidelines for Archaeological Research Design* (1991) and the Otay Mesa Prehistoric Resources Management Plan (Gallegos et al. 1998). The data recovery program will focus upon the excavation of units measuring one-

square-meter to a minimum depth of 30 centimeters, or until bedrock is encountered. If cultural materials are present beyond this depth, the excavation shall continue until one sterile level is exposed. The units will be excavated in controlled, 10-centimeter levels. All removed soils will be sifted through one-eighth-inch mesh hardware cloth. All artifacts recovered during the screening process shall be properly labeled with provenience information (site trinomial number, unit number, level, and date of recovery) in the field, and subsequently subjected to standard laboratory procedures of washing (if appropriate) and cataloging. The excavation of each unit will be documented with field notes, illustrations, and photographs. At least one photograph and one hand-drawn sketch of each unit should be provided showing the north sidewall profile, or profile of the unit wall, containing the best stratigraphic detail. As part of the phasing of the fieldwork, the recovery from the first phase of test units at the site will be assessed to determine if the artifact collection shows variability or redundancy. In the event that all research needs have been met and the TU results have an identical pattern of stratigraphy and recovery, the Phase 2 units might be reduced in quantity. All units and features will be mapped utilizing the established datum at each site.

Any features that are discovered during excavation will be exposed through careful hand excavation. Additional TUs may be needed to fully expose the features, which will then be recorded by sketching and photography. Any datable materials found in association with discovered features will be collected for radiocarbon dating. In addition, several bulk soil samples will be collected and processed; these samples could be used not only to date the deposits should charcoal not be present, but will also provide potential flotation samples for the recovery of charred plant remains. Bulk soil samples will be collected from all features. In addition, columns of bulk soil samples will be collected from at least five percent of the excavated units (or three column samples) across the site. Column samples will consist of the collection of a one-gallon bag of soil from each 10-centimeter level from TU walls.

In addition, during hand excavation, special attention will be given to the identification of lithic tools found *in situ* and their potential for residue analysis. When possible, such tools will be bagged separately, thereby excluding them from the wet-screening process. A sample of the surrounding soil will be collected to serve as a control sample.

Following the completion of the TU excavations, backhoe trench excavations may be used to provide additional information about site size, integrity, depth, presence of features, and stratigraphy. The number and locations of the trenches to be excavated will be determined on the basis of the size of the site and the recovery from the TUs. The trenching will be directed by a project archaeologist and will be completed only if the second phase of TUs is completed (if deemed necessary). In addition, soil from the trenches will be sampled approximately every 20 feet and sifted through a one-eighth-inch mesh screen. If the trenches reveal the presence of deposits or features within a site that were not previously detected, then additional units will be excavated to expose the features and permit further investigation and recordation. All trenches

must be mapped, measured, photographed, and sketched to show changes in soil stratigraphy, depth of midden, and/or bioturbation.

6.6.5 Laboratory Analysis

All of the materials recovered from the field excavations will be subjected to standard laboratory analysis. Artifacts may be washed, if necessary, to permit proper identification. The artifacts will be sorted and cataloged, including counts, materials, condition, weight, provenience, and unique artifact identification numbers.

The lithic artifacts recovered from the project will be subjected to analysis, which will include recordation of critical measurements and weight, and inspection for evidence of use-wear, retouch, patination, or stains. Artifact analysis will involve intra-site and inter-site comparisons of the qualitative and quantitative variables recorded for each artifact type. In addition, artifact analysis will use other artifact studies on the Otay Mesa (*e.g.,* Gallegos et al. 1998; Kyle et al. 1990, 1998). The recovered flakes (or a representative sample) will be subjected to an analysis of attributes such as size, condition, type, termination, and material. The attribute analysis will include the flake collections recovered during the testing program. Lithic analyses will be conducted in order to determine how tools were made and used by prehistoric inhabitants.

Non-lithic materials, such as ecofacts (shell and bone), shall be subjected to specialized analyses. The shell will be cataloged by species and weight of recovery per level. The bone material will be weighed and subsequently submitted for specialized faunal analysis. The laboratory analysis of the column samples may include flotation procedures to remove seeds and other microfaunal remains from the soil, followed by the screening of the remainder through a one-sixteenth-inch mesh sieve, if the potential for non-lithic materials is noted in the deposit.

Other specialized studies, which will be conducted if the appropriate materials are encountered during the data recovery program, will include marine shell species identification, faunal analysis, otolith analysis (for seasonality), oxygen isotopic analysis (also for seasonality), radiocarbon dating, obsidian sourcing and hydration, lithic analyses, ceramic analysis, macrofloral analysis (float studies), and residue (plant and animal) studies. These specialized studies are briefly described below:

(a) Shell Analysis

The recovery of shell is possible at sites within the project, as a small amount of shell was observed during the testing program. Analysis of the shell recovery would include the speciation of all shell fragments collected. Shell analysis should include the Number of Identified Specimens (NISP) and weight by species. In addition, hinges will be counted and sided in order to determine the Minimum Number of Individuals (MNI) represented. Subsistence, environmental setting, and settlement patterns are questions that potentially can be answered with this data.

(b) Faunal Analysis

All bone will be identified, when possible, by genus and species or the lowest taxonomic category possible. For those bone fragments where species identification is not possible, they will be placed into the appropriate class, order, or family level based upon size. Small, small/medium, medium, and large will be the size classes used. The characteristics of element, side, portion, fragment size, condition, age, and modifications (*e.g.,* rodent gnawing, cutting, or burning) should be recorded. The degree of long bone fusion and epiphyses will allow for distinction between juveniles and adult individuals, which in turn can be used for seasonality and harvesting of specific age classes. Attempts should be made to distinguish between cultural and non-cultural bone by considering the effects of cultural practices, such as burning and butchering, and natural factors, such as bioturbation and digestive modification. Otoliths, if recovered, will be analyzed to species, size of fish, and season of capture. The faunal analysis will provide information concerning diet, settlement, activity areas within the sites, the habitats exploited, methods of processing, and possibly seasonality.

(c) Radiocarbon Dating

Any shell, bone (faunal), charcoal from hearths, or other reliable materials that are suitable for radiocarbon dating will be submitted. A minimum of eight samples from each site, assuming eight appropriate samples are recovered, will be submitted for standard or accelerator mass spectrometry (AMS) radiocarbon analysis depending on size. Suitable materials recovered during testing or in existing collections may also be used. The radiocarbon dating will be useful in conjunction with the stratigraphic recovery of cultural materials to establish the chronology of the sites. Therefore, the collection of samples for dating should be based upon the presence of diagnostic artifacts, features, or geological strata delineations. In conjunction with the research topics, any possible opportunities to delineate parts of sites into Late Prehistoric and Archaic periods will be advanced through the use of dating methods. The temporal placement of the Otay Hills Quarry sites will be compared with other sites on the Otay Mesa (Gallegos et al. 1998) and sites positioned north of the Otay River (Smith et al. 2004, 2006).

(d) Residue Studies (Protein, Pollen, Phytolith) and Macrobotanical Analyses (Float Studies)

Protein, pollen, and phytolith studies can help determine subsistence and diet, environmental reconstruction, and tool use. Organic residue on lithic artifacts may be useful in the determination of the species of animals and plants utilized by prehistoric groups using specific tool types. However, the use of residue studies is necessarily dependent upon the identification of such residues on artifacts. The detection of residue must be made prior to any washing of artifacts, or the residue samples will be lost. A minimum of four artifacts from each site will be submitted for residue analyses. Previous pollen and phytolith studies conducted with artifacts from Otay Mesa sites have shown that one out of every four provides positive results,

suggesting that a number of samples need to be submitted to provide meaningful results (Gallegos et al. 1998:4-5). Soil, or column samples, should be collected and submitted for macrobotanical analyses (float studies) from at least three different parts of each site in order to reconstruct the environment and diet.

(e) Isotopic Profiles

The analysis of Oxygen-18 isotopic profiles from shells may be used to determine the season during which the shells were collected. This process measures the ratio of isotopes of oxygen, which is determined by water temperature. A minimum of five shells shall be used in this analysis, particularly if no other means of determining seasonality can be utilized. However, use of this type of analysis is not likely due to the paucity of shell with clean edges.

(f) Obsidian Hydration and Sourcing

Any recovered obsidian artifacts will be submitted to a specialist to determine the source of the lithic material. The obsidian shall also be analyzed to produce hydration rim measurements, which may then be used to provide relative dates for the use of the artifacts. All samples large enough (10 millimeters in length) will be submitted for analysis.

(g) Lithic Analysis

A sample of the cores and flakes will be subjected to technological debitage analysis in order to identify reduction techniques that might be temporally sensitive or materially different. Cores and flakes will be separated based upon raw material types and reduction stage categories. Flake attribute analysis will focus on six main attributes: material, condition, size, type, platform preparation, and termination. The purpose of this analysis is to identify the types of reduction and tool production that took place at the Otay Hills Quarry sites. Replication studies will focus on the replication of tools and use-wear to determine the mostly likely use of the tools. The results of the protein and pollen residue studies will be taken into consideration for this analysis. Schroth and Flenniken (1997) have identified reduction strategies for the Otay Mesa and the results from this study will be compared to it.

(h) Ceramic Analysis

If a substantial quantity of ceramic fragments are recovered, ceramic analyses should be conducted in order to examine the quantity, type, and size of the vessel(s) represented at each site. Rim radius, circumference percentage, rim form, and lip form should be recorded for each rim sherd and the MNI should be determined for each vessel type, if at all possible. All potsherds should be recorded by size and efforts should be made to piece together large pieces in order to reconstruct the former vessel. Any evidence of decoration (*e.g.,* paint or incising) or residue (*e.g.,* asphaltum) should also be noted for each ceramic piece.

6.7 Curation

Evidence must be provided to the satisfaction of the director of Planning and Development Services (PDS) that all archaeological materials recovered during both the significance testing and data recovery phases and monitoring have been curated at a San Diego facility that meets federal standards per 36 CFR Part 79, and therefore would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within San Diego County, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid. Alternatively, the archaeological materials may be repatriated to a Kumeyaay Native American tribe.

6.8 Native American Consultation

Native American involvement in development projects is required and consists of consultation and monitoring. A Native American monitor is required for surface and subsurface investigations (survey, significance testing, and data recovery). Additionally, a Native American monitor is required to be present for any grading monitoring for the potential presence of cultural resources. The Native American monitor shall be consulted during the investigations. Native American groups shall be given a minimum notice of two weeks that a monitor is required. If a monitor is not available, work may continue without the monitor. The principal investigator shall include in the report any concerns or comments that the monitor has regarding the project and shall include as an appendix any written correspondence or reports prepared by the monitor.

Local Native American representatives shall be contacted and included as part of the mitigation program. Native American monitoring may be required during the archaeological excavations. As part of the mitigation program, a pre-excavation agreement should be made with the local Native American representatives. This agreement will describe the procedures to be invoked in the event any human remains are encountered or items of sacred or religious significance are discovered.

6.9 Provisions for the Discovery of Human Remains

The possibility exists that human remains may be discovered during the data recovery programs, although no human remains were identified during the testing program. In the event that human burials are encountered, standard procedures for such discoveries will be implemented, including notification of the San Diego County Coroner's Office, the County of San Diego, the NAHC in Sacramento, and local Native American representatives. Fieldwork will be discontinued in the area of any such discovery. The property owner or their representative shall consult with the Most Likely Descendent (MLD), as identified by the NAHC. The MLD may make recommendations to the property owner as to the preferred course

of action. The consultation shall follow the requirements of Public Resources Code §5097.98 and CEQA §15064.5(e).

6.10 Report Preparation and Submittal

Following the completion of the fieldwork and laboratory analysis, a technical report will be prepared for submittal to the County of San Diego. The technical report will include descriptions of all of the fieldwork conducted, artifacts and ecofacts recovered, results of laboratory work and any special analyses, and discussions of the proposed research issues. Maps and graphics will be provided as appropriate to document the program and convey information.

6.11 County Requirements for Project Approval

Grading Monitoring

Prior to approval of grading and/or improvement plans and issuance of any grading or construction permits, the applicant shall:

A. Implement a grading monitoring plan to mitigate potential impacts to undiscovered buried archaeological resources on the Otay Hills Quarry Project, P04-004, RP04-001, Log No. 93-19-006J, to the satisfaction of the planning director. This program shall include, but shall not be limited to, the following actions:

1. Provide evidence to the Department of PDS that a County-approved archaeologist has been contracted to implement a grading monitoring program to the satisfaction of the director of PDS. A letter from the project archaeologist shall be submitted to the director of PDS. The letter shall include the following guidelines:

    a. The consulting archaeologist shall contract with a Kumeyaay Native American monitor to be involved with the grading monitoring program.
    b. The County-approved archaeologist/historian and Native American monitor shall attend the pre-grading meeting with the contractors to explain and coordinate the requirements of the monitoring program.
    c. The consulting archaeologist shall monitor all areas identified for development.
    d. An adequate number of monitors (archaeological/historic/Native American) shall be present to ensure that all earth-moving activities are observed and shall be on-site during all grading activities.

e. During the original cutting of previously undisturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on-site full-time. Inspections will vary based upon the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections will be determined by the principal investigator.
f. During the cutting of previously disturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on-site as determined by the principal investigator of the excavations. Inspections will vary based upon the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections will be determined by the principal investigator in consultation with the Native American monitor.
g. Isolates and clearly non-significant deposits will be minimally documented in the field and the monitored grading can proceed.
h. In the event that previously unidentified potentially significant cultural resources are discovered, the archaeologist shall have the authority to divert or temporarily halt ground-disturbance operations in the area of discovery to allow evaluation of potentially significant cultural resources. The archaeologist shall contact the county archaeologist at the time of discovery. The archaeologist, in consultation with the county archaeologist, shall determine the significance of the discovered resources. The county archaeologist must concur with the evaluation before construction activities will be allowed to resume in the affected area. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the consulting archaeologist and approved by the county archaeologist, then carried out using professional archaeological methods.
i. If any human remains are discovered, the principal investigator shall contact the county coroner. In the event that the remains are determined to be of Native American origin, the MLD, as identified by the NAHC, shall be contacted by the property owner or their representative in order to determine proper treatment and disposition of the remains.
j. Before construction activities are allowed to resume in the affected area, the artifacts shall be recovered and features recorded using professional archaeological methods. The principal investigator

shall determine the amount of material to be recovered for an adequate artifact sample for analysis.

k. In the event that previously unidentified cultural resources are discovered, all cultural material collected during the grading monitoring program shall be processed and curated at a San Diego facility that meets federal standards per 36 CFR Part 79, or a culturally affiliated Tribal facility that meets 36 CFR Part 79 standards and therefore would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility, as outlined above, within San Diego County, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid.

Or

Evidence that all cultural resources collected during the grading monitoring program have been repatriated to a Native American group of appropriate Tribal affinity. Evidence shall be in the form of a letter from the Native American tribe to whom the cultural resources have been repatriated, identifying that the archaeological materials have been received.

l. In the event that previously unidentified cultural resources are discovered, a report documenting the field and analysis results and interpreting the artifact and research data within the research context shall be completed and submitted to the satisfaction of the director of PDS prior to the issuance of any building permits. The report will include DPR Primary and Archaeological Site forms.

m. In the event that no cultural resources are discovered, a brief letter to that effect shall be sent to the director of PDS by the consulting archaeologist that the grading monitoring activities have been completed.

B. Provide evidence to the director of PDS that the following notes have been placed on the grading plan:

1. The County-approved archaeologist/historian and Native American monitor shall attend the pre-construction meeting with the contractors to explain and coordinate the requirements of the monitoring program.
2. During the original cutting of previously undisturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on-site full-time to perform full-time monitoring as determined by the principal investigator of the excavations. The frequency of inspections will depend upon the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features.
3. During the cutting of previously disturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on-site as determined by the principal investigator of the excavations. Inspections will vary based upon the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections will be determined by the principal investigator in consultation with the Native American monitor.
4. In the event that previously unidentified potentially significant cultural resources are discovered, the archaeological monitor(s) shall have the authority to divert or temporarily halt ground-disturbance operation in the area of discovery to allow evaluation of potentially significant cultural resources. The principal investigator shall contact the county archaeologist at the time of discovery. The principal investigator, in consultation with the county archaeologist, shall determine the significance of the discovered resources. The county archaeologist must concur with the evaluation before construction activities will be allowed to resume in the affected area. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the consulting archaeologist and approved by the county archaeologist, then carried out using professional archaeological methods.
5. The consulting archaeologist shall monitor all areas identified for development.
6. If any human remains are discovered, the principal investigator shall contact the county coroner. In the event that the remains are determined to be of Native American origin, the MLD, as identified by the NAHC, shall be contacted by the property owner or their representative in order to determine proper treatment and disposition of the remains.
7. Prior to rough grading inspection sign-off, provide evidence that the field grading monitoring activities have been completed to the satisfaction of the director of PDS. Evidence shall be in the form of a letter from the project archaeologist.
8. Prior to Final Grading Release, submit to the satisfaction of the director of PDS, a final report that documents the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program. The report shall also include the following:

a. DPR Primary and Archaeological Site forms.
b. Evidence that all cultural materials collected during the grading monitoring program has been curated at a San Diego facility that meets federal standards per 36 CFR Part 79, and therefore would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within San Diego County, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid.

In the event that no cultural resources area discovered, a brief letter to that effect shall be sent to the director of PDS by the consulting archaeologist that the grading monitoring activities have been completed.

Curation

Provide evidence to the satisfaction of the director of PDS that all archaeological materials recovered during all archaeological investigations of the property, including all significance testing, as well as grading monitoring activities, have been curated at a San Diego facility that meets federal standards per 36 CFR Part 79, or a culturally affiliated Tribal facility that meets 36 CFR Part 79 standards, and therefore would be professionally curated and made available to other archaeologist/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility, as outlined above, within San Diego County, to be accompanied by payment of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid.

Or

Evidence that all cultural resource materials collected during all archaeological investigations of the property, including all significance testing, as well as grading monitoring activities, have been repatriated to a Native American group of appropriate Tribal affinity. Evidence shall be in the form of a letter from the Native American tribe to whom the cultural resources have been repatriated identifying that the archaeological materials have been received.

Temporary Fencing

Prior to approval of any grading and/or improvement plans and issuance of any grading or construction permits, the applicant shall:

Prepare and implement a temporary fencing plan for the protection of archaeological sites SDI-12,707 and SDI-12,710, as well as those portions of SDI-10,297/H and SDI-10,298 that are situated adjacent to the MUP boundary, during any grading activities within one hundred feet (100') of the archaeological sites, as shown on the open space easement exhibit. The temporary fencing plan shall be prepared in consultation with a County-approved archaeologist. The fenced area shall include a buffer sufficient to protect the archaeological sites. The fence shall be installed under the supervision of the County-approved archaeologist prior to commencement of grading or brushing and be removed only after grading operations have been completed. The temporary fencing plan shall include the following requirements:

a. Provide evidence to the director of the Department of Public Works that the following notes have been placed on the grading plan:

(1) In the event that excavation or any earth-disturbing activities are to take place within 100 feet of archaeological sites SDI-12,707 and SDI-12,710, and the off-site portions of SDI-10,297/H and SDI-10,298, the temporary fencing plan shall be implemented under the supervision of a County-approved archaeologist that consists of the following:

(a) The project archaeologist shall identify the site boundaries.
(b) The project archaeologist shall determine an adequate buffer for the protection of the sites in consultation with the county archaeologist.
(c) Upon approval of buffers, install fencing under the supervision of the project archaeologist.
(d) Submit to the Department of Public Works for approval, a signed and stamped statement from a California Registered Engineer, or licensed surveyor that temporary fences have been installed in all locations of the project where proposed grading or clearing is within 100 feet of archaeological sites SDI-12,707 and SDI-12,710, as well as the off-site portions of SDI-10,297/H and SDI-10,298.
(e) Fencing may be removed after the conclusion of construction activities.

Data Recovery

Prior to approval of any grading and/or improvement plans and issuance of any grading or construction permits, the applicant shall:

1. Implement, to the satisfaction of the director of PDS, the research design detailed in the archaeological extended study, "A Cultural Resource Evaluation Program for the Otay Hills Quarry Project" prepared by Brian F. Smith. The implementation of the research

design constitutes mitigation for the proposed destruction of archaeological/historic sites SDI-10,297/H and SDI-10,298. The research design shall include, but is not limited to the following performance standards:

a. The presence of a Kumeyayy Native American monitor shall be required for the duration of the excavation portion of the data recovery.
b. Phase 1 data recovery shall include a four to seven percent (4 to 7%) excavated sample of the subsurface artifact concentrations for SDI-10,297/H and SDI-10,298.
c. At the completion of Phase 1, a letter report will be submitted to the director of PDS. The letter report shall evaluate the issues of site integrity, data redundancy, spatial and temporal patterning, features, and other relevant topics in order to assess the adequacy of the initial four to seven percent (4 to 7%) sample. Based upon this assessment, the letter report shall recommend the need for and scope of a second phase of field investigations, not to exceed 10 percent (10%) of the artifact concentrations for SDI-10,297/H and SDI-10,298.
d. Implement Phase 2 of fieldwork, as necessary.
e. Conduct artifact analysis, including lithics analysis, ceramics analysis, faunal analysis, floral analysis, assemblage analysis, and radiocarbon dating, as detailed in the archaeological extended study, "A Cultural Resource Evaluation Program for the Otay Hills Quarry Project" prepared by Brian F. Smith.

Prior to occupancy of Phase I of mining, the applicant shall:

1. Complete and submit the Final Technical Report from the principal investigator to the satisfaction of the director of PDS [DPLU, FEE].
2. Provide evidence to the satisfaction of the director of PDS that all archaeological materials recovered during the data recovery of SDI-10,297/H and SDI-10,298 have been curated at a San Diego facility that meets federal standards per 36 CFR Part 79, or a culturally affiliated Tribal facility that meets 36 CFR Part 79 standards and therefore would be professionally curated and made available to other archaeologist/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility, as outlined above, within San Diego County, to be accompanied by payment of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid.

Or

Evidence that all cultural resource materials collected during the data recovery investigations for SDI-10,297/H and SDI-10,298 have been repatriated to a Native American group of appropriate Tribal affinity. Evidence shall be in the form of a letter from the Native American tribe to whom the cultural resources have been repatriated identifying that the archaeological materials have been received.

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1868 February 6: 2 (col. 1).
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1872 January 2

8.0 LIST OF PREPARERS AND ORGANIZATIONS CONTACTED

The archaeological survey and evaluation program for the Otay Hills Quarry Project was directed by Principal Investigator Brian F. Smith. The survey phase of the investigation was conducted by Kevin Hunt, Gordon Henning, Robert LeVeille, and Sung An. The testing program was conducted by Brian F. Smith, James Clifford, Charles Callahan, Clint Callahan, Scott Mattingly, Ryan Robinson, Seth Rosenberg, and James Shrieve. This report was prepared by Tracy A. Stropes and Brian F. Smith. The report graphics and production staff consisted of Brian F. Smith, Robert Hernandez, Nora Collins, Dylan Amerine, and Doneen Phillips. Technical editing and report production were conducted by Leigh Kulbacki and Tracy Stropes.

Information regarding previously recorded resources was provided by SCIC at SDSU and the SDMoM. The NAHC provided the results of the Sacred Lands File search for the project area, as well as a list of representatives to facilitate the involvement of local tribal groups in the review process for this project. The County of San Diego provided the resource assessment and reporting guidelines for this project, as well as documentation regarding continued correspondence with Tribal organizations.

9.0 LIST OF MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Resource	Mitigation Measures	Design Considerations
SDI-17,431	Grading Monitoring	None
SDI-7,195	Grading Monitoring	None
SDI-10,297/H	Data Recovery; Grading Monitoring	None
SDI-10,298	Data Recovery; Grading Monitoring	None
SDI-16,788	Grading Monitoring	None
SDI-11,793	Grading Monitoring	None
SDI-17,433/H	Grading Monitoring	None

APPENDIX A

Resumes of Key Personnel

Brian F. Smith, MA

Owner, Principal Investigator
Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: bsmith@bfsa-ca.com

Education

Master of Arts, History, University of San Diego, California 1982

Bachelor of Arts, History and Anthropology, University of San Diego, California 1975

Experience

Principal Investigator 1977–Present

Brian F. Smith and Associates, Inc.

Brian F. Smith is the owner and principal historical and archaeological consultant for Brian F. Smith and Associates. In the past 32 years, he has conducted over 2,500 cultural resource studies in California, Arizona, Nevada, Montana, and Texas. These studies include every possible aspect of archaeology from literature searches and large-scale surveys to intensive data recovery excavations. Reports prepared by Brian Smith have been submitted to all facets of local, state, and federal review agencies, including the US Army Crops of Engineers (USACE), the Bureau of Land Management (BLM), Bureau of Reclamation (BR), the Department of Defense (DOD), and Department of Homeland Security. In addition, Mr. Smith has conducted studies for utility companies (Sempra Energy) and state highway departments (CalTrans).

Professional Accomplishments

These selected major professional accomplishments represent research efforts which have added significantly to the body of knowledge concerning the prehistoric lifeways of cultures once present in the southern California area and historic settlement since the late 18th century. Mr. Smith has been principal investigator on the following select projects, except where noted.

Downtown San Diego Mitigation and Monitoring Reporting Programs: Large number of downtown San Diego mitigation and monitoring projects submitted to the Centre City Development Corporation, some of which included Strata (2008), Hotel Indigo (2008), Lofts at 707 10th Avenue Project (2007), Breeza (2007), Bayside at the Embarcadero (2007), Aria (2007), Icon (2007), Vantage Pointe (2007), Aperture (2007), Sapphire Tower (2007), Lofts at 655 Sixth Avenue (2007), Metrowork (2007), The Legend (2006), The Mark (2006), Smart Corner (2006), Lofts at 677 7th Avenue (2005), Aloft on Cortez Hill (2005), Front and Beech Apartments (2003), Bella Via Condominiums (2003), Acqua Vista Residential Tower (2003), Northblock Lofts (2003), Westin Park Place Hotel (2001), Parkloft Apartment Complex (2001), Renaissance Park (2001), and Laurel Bay Apartments (2001).

Archaeology at the Padres Ballpark: Involved the analysis of historic resources within a seven block area of the "East Village" area of San Diego, where occupation spanned a period from the 1870s to the 1940s. Over a period of two years, BFSA recovered over 200,000 artifacts and hundreds of pounds of metal, construction debris, unidentified broken glass, and wood. Collectively, the Ballpark project and the other downtown mitigation and monitoring projects represent the largest historical archaeological program anywhere in the country in the past decade. 2000-2007.

The Navy Broadway Complex: Architectural and historical assessment of over 25 structures that comprise the Naval Supply Depot, many of which have been in use since World War I and were used extensively during World War II. The EIR/EIS which was prepared included National Register evaluations of all structures. The archaeological component of the project involved the excavation of backhoe trenches to search for evidence of the remains of elements of the historic waterfront features that characterized the bay front in the latter half of the 19th century. This study was successful in locating portions of wharves and shanties that existed on the site prior to capping of this area after construction of the sea wall in the early 20th century.

4S Ranch Archaeological and Historical Cultural Resources Study: Data recovery program consisted of the excavation of over 2,000 square meters of archaeological deposits that produced over one million artifacts, primarily prehistoric materials. The archaeological program at 4S Ranch is the largest archaeological study ever undertaken in the San Diego County area and has produced data that has exceeded expectations regarding the resolution of long-standing research questions and regional prehistoric settlement patterns.

Charles H. Brown Site: Attracted international attention to the discovery of evidence of the antiquity of man in North America. Site located in Mission Valley, in the City of San Diego.

Del Mar Man Site: Study of the now famous Early Man Site in Del Mar, California, for the San Diego Science Foundation and the San Diego Museum of Man, under the direction of Dr. Spencer Rogers and Dr. James R. Moriarty.

Old Town State Park Projects: Consulting Historical Archaeologist. Projects completed in the Old Town State Park involved development of individual lots for commercial enterprises. The projects completed in Old Town include Archaeological and Historical Site Assessment for the Great Wall Cafe (1992), Archaeological Study for the Old Town Commercial Project (1991), and Cultural Resources Site Survey at the Old San Diego Inn (1988).

Site W-20, Del Mar, California: A two-year-long investigation of a major prehistoric site in the Del Mar area of the City of San Diego. This research effort documented the earliest practice of religious/ceremonial activities in San Diego County (circa 6,000 years ago), facilitated the projection of major non-material aspects of the La Jolla Complex, and revealed the pattern of civilization at this site over a continuous period of 5,000 years. The report for the investigation included over 600 pages, with nearly 500,000 words of text, illustrations, maps, and photographs which document this major study.

City of San Diego Reclaimed Water Distribution System: A cultural resource study of nearly 400 miles of pipeline in the City and County of San Diego.

Master Environmental Assessment Project, City of Poway: Conducted for the City of Poway to produce a complete inventory of all recorded historic and prehistoric properties within the City. The information was used in conjunction with the City's General Plan Update to produce a map matrix of the City showing areas of high, moderate, and low potential for the presence of cultural resources. The effort also included the development of the City's Cultural Resource Guidelines, which were adopted as City policy.

Draft of the City of Carlsbad Historical and Archaeological Guidelines: Contracted by the City of Carlsbad to produce the draft of the City's historical and archaeological guidelines for use by the Planning Department of the City.

The Midbayfront Project for the City of Chula Vista: Involved a large expanse of undeveloped agricultural land situated between the railroad and San Diego Bay in the northwestern portion of the City. The study included the analysis of some potentially historic features and numerous prehistoric sites.

Cultural resources survey and test of sites within the proposed development of the Audie Murphy Ranch, Riverside County, California: Project Manager/Director of the investigation of 1,113.4 acres and 43 sites, both prehistoric and historic—included project coordination; direction of field crews; evaluation of sites for significance based on County of Riverside and CEQA guidelines; assessment of cupule, pictograph, and rock shelter sites, co-authoring of cultural resources project report. February-September 2002.

Cultural resources evaluation of sites within the proposed development of the Otay Ranch Village 13 Project, San Diego County, California: Project Manager/Director of the investigation of 1,947 acres and 76 sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of San Diego and CEQA guidelines; co-authoring of cultural resources project report. May-November 2002.

Cultural resources survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County: Project Manager/Director for a survey of 29 individual sites near the U.S./Mexico Border for proposed video surveillance camera locations associated with the San Diego Border barrier Project—project coordination and budgeting; direction of field crews; site identification and recordation; assessment of potential impacts to cultural resources; meeting and coordinating with U.S. Army Corps of Engineers, U.S. Border Patrol, and other government agencies involved; co-authoring of cultural resources project report. January, February, and July 2002.

Cultural resources survey and test of sites within the proposed development of the Menifee West GPA, Riverside County, California: Project Manager/Director of the investigation of nine sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of Riverside and CEQA guidelines; historic research; co-authoring of cultural resources project report. January-March 2002.

Mitigation of a Archaic cultural resource for the Eastlake III Woods Project for the City of Chula Vista, California: Project Archaeologist/ Director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. September 2001-March 2002.

Cultural resources survey and test of sites within the proposed French Valley Specific Plan/EIR, Riverside County, California: Project Manager/Director of the investigation of two prehistoric and three historic sites—included project coordination and budgeting; survey of project area; Native American consultation; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural resources survey and test of sites within the proposed Lawson Valley Project, San Diego County, California: Project Manager/Director of the investigation of 28 prehistoric and two historic sites—included project coordination; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural resource survey and geotechnical monitoring for the Mohyi Residence Project, La Jolla, California: Project Manager/Director of the investigation of a single-dwelling parcel—included project coordination; field survey; assessment of parcel for potentially buried cultural deposits; monitoring of geotechnichal borings; authoring of cultural resources project report. Brian F. Smith and Associates, San Diego, California. June 2000.

Enhanced cultural resource survey and evaluation for the Prewitt/Schmucker/Cavadias Project, La Jolla, California: Project Manager/Director of the investigation of a single-dwelling parcel—included project coordination; direction of field crews; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. June 2000.

Cultural resources survey and test of sites within the proposed development of the Menifee Ranch, Riverside County, California: Project Manager/Director of the investigation of one prehistoric and five historic sites—included project coordination and budgeting; direction of field crews; feature recordation; historic structure assessments; assessment of sites for significance based on CEQA guidelines; historic research; co-authoring of cultural resources project report. February-June 2000.

Salvage mitigation of a portion of the San Diego Presidio identified during water pipe construction for the City of San Diego, California: Project Archaeologist/Director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. April 2000.

Enhanced cultural resource survey and evaluation for the Tyrian 3 Project, La Jolla, California: Project Manager/Director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced cultural resource survey and evaluation for the Lamont 5 Project, Pacific Beach, California: Project Manager/Director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced cultural resource survey and evaluation for the Reiss Residence Project, La Jolla, California: Project Manager/Director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. March-April 2000.

Salvage mitigation of a portion of Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project and Caltrans, Carlsbad, California: Project Archaeologist/ Director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. December 1999-January 2000.

Survey and testing of two prehistoric cultural resources for the Airway Truck Parking Project, Otay Mesa, California: Project Archaeologist/Director—included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; authoring of cultural resources project report, in prep. December 1999-January 2000.

Cultural resources Phase I and II investigations for the Tin Can Hill Segment of the Immigration and Naturalization Services Triple Fence Project along the International Border, San Diego County, California: Project Manager/Director for a survey and testing of a prehistoric quarry site along the border—NRHP eligibility assessment; project coordination and budgeting; direction of field crews; feature recordation; meeting and coordinating with U.S. Army Corps of Engineers; co-authoring of cultural resources project report. December 1999-January 2000.

Mitigation of a prehistoric cultural resource for the Westview High School Project for the City of San Diego, California: Project Archaeologist/ Director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. October 1999-January 2000.

Mitigation of a prehistoric cultural resource for the Otay Ranch SPA-One West Project for the City of Chula Vista, California: Project Archaeologist/Director—included direction of field crews; development of data recovery program; management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report, in prep. September 1999-January 2000.

Monitoring of grading for the Herschel Place Project, La Jolla, California: Project Archaeologist/ Monitor—included monitoring of grading activities associated with the development of a single-dwelling parcel. September 1999.

Survey and testing of an historic resource for the Osterkamp Development Project, Valley Center, California: Project Archaeologist/ Director—included direction of field crews; development and completion of data recovery program; budget development; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and testing of a prehistoric cultural resource for the Proposed College Boulevard Alignment Project, Carlsbad, California: Project Manager/Director —included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report, in prep. July-August 1999.

Survey and evaluation of cultural resources for the Palomar Christian Conference Center Project, Palomar Mountain, California: Project Archaeologist—included direction of field crews; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and evaluation of cultural resources at the Village 2 High School Site, Otay Ranch, City of Chula Vista, California: Project Manager/Director —management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report. July 1999.

Cultural resources Phase I, II, and III investigations for the Immigration and Naturalization Services Triple Fence Project along the International Border, San Diego County, California: Project Manager/Director for the survey, testing, and mitigation of sites along border—supervision of multiple field crews, NRHP eligibility assessments, Native American consultation, contribution to Environmental Assessment document, lithic and marine shell analysis, authoring of cultural resources project report. August 1997-January 2000.

Phase I, II, and II investigations for the Scripps Poway Parkway East Project, Poway California: Project Archaeologist/Project Director—included recordation and assessment of multicomponent prehistoric and historic sites; direction of Phase II and III investigations; direction of laboratory analyses including prehistoric and historic collections; curation of collections; data synthesis; coauthorship of final cultural resources report. February 1994; March-September 1994; September-December 1995.

Archaeological evaluation of cultural resources within the proposed corridor for the San Elijo Water Reclamation System Project, San Elijo, California: Project Manager/Director —test excavations; direction of artifact identification and analysis; graphics production; coauthorship of final cultural resources report. December 1994-July 1995.

Evaluation of Cultural Resources for the Environmental Impact Report for the Rose Canyon Trunk Sewer Project, San Diego, California: Project Manager/Director —direction of test excavations; identification and analysis of prehistoric and historic artifact collections; data synthesis; co-authorship of final cultural resources report, San Diego, California. June 1991-March 1992.

Reports/Papers

Author, coauthor, or contributor, to over 2,500 cultural resources management publications, a selection of which are presented below.

2012 A Phase I Cultural Resource Study for the Payan Property Project, San Diego, CA

2012 Phase I Archaeological Survey of the Rieger Residence, 13707 Durango Drive, Del Mar, California 92014, APN 300-369-49

2011 Mission Ranch Project (TM 5290-1/MUP P87-036W3): Results of Cultural Resources Monitoring During Mass Grading / January 30, 2012 / Brian Smith

2011 Mitigation Monitoring Report for the 1887 Viking Way Project, La Jolla, California

2011 Cultural Resource Monitoring Report for the Sewer Group 714 Project

2011 Results of archaeological monitoring at the 10th Avenue Parking Lot Project, City of San Diego, California (APNs 534-194-02 and 03), August 12, 2011, Brian F. Smith

2011 Archaeological Survey of the Pelberg Residence for a Bulletin 560 Permit Application; 8335 Camino Del Oro; La Jolla, California 92037 APN 346-162-01-00 / November 9, 2011 / Brian F. Smith

2011 A Cultural Resources Survey Update and Evaluation for the Robertson Ranch West Project and an Evaluation of National Register Eligiblity of Archaeologoical sites for Sites for Section 106Review (NHPA) / 10/10/11 / Brian F. Smith & Clarence Hoff

2011 Mitigation Monitoring Report for the 43rd and Logan Project; June 7, 2012; Tracy A. Stropes and Brian F. Smith

2011 Mitigation Monitoring Report for the Sewer Group 682 M Project, City of San Diego Project #174116

2011 A Phase I Cultural Resource Study for the Nooren Residence Project, 8001 Calle de la Plata, La Jolla, California, Project No. 226965

2011 A Phase I Cultural Resource Study for the Keating Residence Project, 9633 La Jolla Farms Road, La Jolla, CA 92037

2010 Mitigation Monitoring Report for the 15th & Island Project, City of San Diego; APNs 535-365-01, 535-365-02 and 535-392-05 through 535-392-07

2010 Archaeological Resource Report Form: Mitigation Monitoring of the Sewer and Water Group 772 Project, San Diego, California, W.O. Nos. 187861 and 178351

2010 Pottery Canyon Site Archaeological Evaluation Project, City of San Diego, California, Contract No. H105126

2010 Archaeological Resource Report Form: Mitigation Monitoring of the Racetrack View Drive Project, San Diego, California; Project No. 163216; Larry J. Pierson; October 22, 2010

2010 A Historical Evaluation of Structures on the Butterfield Trails Property

2010 Historic Archaeological Significance Evaluation of 1761 Haydn Drive, Encinitas, California (APN 260-276-07-00)

2010 Results of Archaeological monitoring of the Heller/Nguyen Project, TPM 06-01, Poway, CA

2010 Cultural Resource Survey and Evaluation Program for the Sunday Drive Parcel Project, San Diego County, California, APN 189-281-14

2010 Archaeological Resource Report Form: Mitigation Monitoring of the Emergency Garnet Avenue Storm Drain Replacement Project, San Diego, California, Project No. B10062

2010 An Archaeological Study for the 1912 Spindrift Drive Project

2009 Cultural Resource Assessment of the North Ocean Beach Gateway Project City of San Diego #64A-003A; Project #154116.

2009 Archaeological constraints study of the Morgan Valley Wind Assessment Project, Lake County, California.

2008 Results of an archaeological review of the Helen Park Lane 3.1-acre Property (APN 314-561-31), Poway, California.

2008 Archaeological Letter Report for a Phase I Archaeological Assessment of the Valley Park Condominium Project, Ramona, California; APN 282-262-75-00.

2007 Archaeology at the Ballpark. Brian F. Smith and Associates, San Diego, California. Submitted to the Centre City Development Corporation.

2007 Result of an Archaeological Survey for the Villages at Promenade Project (APNs 115-180-007-3,115-180-049-1, 115-180-042-4, 115-180-047-9) in te City of Corona, Riverside County.

2007 Monitoring Results for the Capping of Site CA-SDI-6038/SDM-W-5517 within the Katzer Jamul Center Project; P00-017.

2006 Archaeological Assessment for The Johnson Project (APN 322-011-10), Poway, California.

2005 Results of archaeological monitoring at the El Camino Del Teatro Accelerated Sewer Replacement Project (Bid No. K041364; WO # 177741; CIP # 46-610.6.

2005 Results of archaeological monitoring at the Baltazar Draper Avenue Project (Project No. 15857; APN: 351-040-09).

2004 TM 5325 ER #03-14-043 Cultural Resources.

2004 An Archaeological Survey and an Evaluation of Cultural Resources at the Salt Creek Project. Report on file at Brian F. Smith and Associates.

2003 An Archaeological Assessment for the Hidden Meadows Project, San Diego County, TM 5174, Log No. 99-08-033. Report on file at Brian F. Smith and Associates.

2003 An Archaeological Survey for the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.

2003 Archaeological Investigations at the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.

2003 Archaeological Monitoring of Geological Testing Cores at the Pacific Beach Christian Church Project. Report on file at Brian F. Smith and Associates.

2003 San Juan Creek Drilling Archaeological Monitoring. Report on file at Brian F. Smith and Associates.

2003 Evaluation of Archaeological Resources Within the Spring Canyon Biological Mitigation Area, Otay Mesa, San Diego County, California. Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for the Otay Ranch Village 13 Project (et al.). Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for the Audie Murphy Ranch Project (et al.). Brian F. Smith and Associates, San Diego, California.

2002 Results of an Archaeological Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County, California . Brian F. Smith and Associates, San Diego, California.

2002 A Cultural Resources Survey and Evaluation for the Proposed Robertson Ranch Project, City of Carlsbad . Brian F. Smith and Associates, San Diego, California.

2002 Archaeological Mitigation of Impacts to Prehistoric Site SDI-7976 for the Eastlake III Woods Project, Chula Vista, California . Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for Tract No. 29777, Menifee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for Tract No. 29835, Menifee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.

2001 An Archaeological Survey and Evaluation of a Cultural Resource for the Moore Property, Poway. Brian F. Smith and Associates, San Diego, California.

2001 An Archaeological Report for the Mitigation, Monitoring, and Reporting Program at the Water and Sewer Group Job 530A, Old Town San Diego. Brian F. Smith and Associates, San Diego, California.

2001 A Cultural Resources Impact Survey for the High Desert Water District Recharge Site 6 Project, Yucca Valley. Brian F. Smith and Associates, San Diego, California.

2001 Archaeological Mitigation of Impacts to Prehistoric Site SDI-13,864 at the Otay Ranch SPA-One West Project. Brian F. Smith and Associates, San Diego, California.

2001 A Cultural Resources Survey and Site Evaluations at the Stewart Subdivision Project, Moreno Valley, County of San Diego. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological/Historical Study for the French Valley Specific Plan/EIR, French Valley, County of Riverside. Brian F. Smith and Associates, San Diego, California.

2000 Results of an Archaeological Survey and the Evaluation of Cultural Resources at The TPM#24003–Lawson Valley Project. Brian F. Smith and Associates, San Diego, California.

2000 Archaeological Mitigation of Impacts to Prehistoric Site SDI-5326 at the Westview High School Project for the Poway Unified School District. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological/Historical Study for the Menifee Ranch Project. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological Survey and Evaluation of Cultural Resources for the Bernardo Mountain Project, Escondido, California. Brian F. Smith and Associates, San Diego, California.

2000 A Cultural Resources Impact Survey for the Nextel Black Mountain Road Project, San Diego, California. Brian F. Smith and Associates, San Diego, California.

2000 A Cultural Resources Impact Survey for the Rancho Vista Project, 740 Hilltop Drive, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.

2000 A Cultural Resources Impact Survey for the Poway Creek Project, Poway, California. Brian F. Smith and Associates, San Diego, California.

2000 Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/ Cavadias Project. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project. Brian F. Smith and Associates, San Diego, California.

2000 Salvage Excavations at Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project, Carlsbad, California. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.

2000 A Report for an Archaeological Evaluation of Cultural Resources at the Otay Ranch Village Two SPA, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological Evaluation of Cultural Resources for the Airway Truck Parking Project, Otay Mesa, County of San Diego. Brian F. Smith and Associates, San Diego, California.

2000 Results of an Archaeological Survey and Evaluation of a Resource for the Tin Can Hill Segment of the Immigration and Naturalization and Immigration Service Border Road, Fence, and Lighting Project, San Diego County, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey of the Home Creek Village Project, 4600 Block of Home Avenue, San Diego, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey for the Sgobassi Lot Split, San Diego County, California. Brian F. Smith and Associates, San Diego, California.

1999 An Evaluation of Cultural Resources at the Otay Ranch Village 11 Project . Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological/Historical Survey and Evaluation of a Cultural Resource for The Osterkamp Development Project, Valley Center, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California . Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey and Evaluation of a Cultural Resource for the Proposed College Boulevard Alignment Project . Brian F. Smith and Associates, San Diego, California.

1999 Results of an Archaeological Evaluation for the Anthony's Pizza Acquisition Project in Ocean Beach, City of San Diego (with L. Pierson and B. Smith). Brian F. Smith and Associates, San Diego, California.

1996 An Archaeological Testing Program for the Scripps Poway Parkway East Project . Brian F. Smith and Associates, San Diego, California.

1995 Results of a Cultural Resources Study for the 4S Ranch . Brian F. Smith and Associates, San Diego, California.

1995 Results of an Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System . Brian F. Smith and Associates, San Diego, California.

1994 Results of the Cultural Resources Mitigation Programs at Sites SDI-11,044/H and SDI-12,038 at the Salt Creek Ranch Project . Brian F. Smith and Associates, San Diego, California.

1993 Results of an Archaeological Survey and Evaluation of Cultural Resources at the Stallion Oaks Ranch Project . Brian F. Smith and Associates, San Diego, California.

1992 Results of an Archaeological Survey and the Evaluation of Cultural Resources at the Ely Lot Split Project . Brian F. Smith and Associates, San Diego, California.

1991 The Results of an Archaeological Study for the Walton Development Group Project . Brian F. Smith and Associates, San Diego, California.

Professional Memberships

Society for California Archaeology

Tracy A. Stropes, MA, RPA

Senior Project Archaeologist
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Education

Master of Arts, Anthropology, *San Diego State University, California* 2007
Bachelor of Science, Anthropology, *University of California, Riverside* 2000

Experience

Project Archaeologist March 2009–Present
Brian F. Smith and Associates, Inc.
Duties include project management of all phases of archaeological investigations for local, state and federal agencies; field supervisor of all phases of archaeological projects; lithic analysis; National Register of Historic Places (NRHP) and California Environmental Quality Act (CEQA) site evaluations; authoring and coauthoring of cultural resource management reports primarily for southern California.

Archaeological Principal Investigator June 2008–February 2009
TRC Solutions
Archaeological Principal Investigator for cultural resource segment of Natural Sciences and Permitting Division. Duties included management of all phases of archaeological investigations for private companies and local, state and federal agencies; personnel management, field supervision of all phases of archaeological projects; laboratory supervision; lithic analysis, Native American consultation, and reporting; National Register of Historic Places (NRHP) and California Environmental Quality Act (CEQA) site evaluations; authoring and coauthoring of cultural resource management reports primarily for southern California.

Principal Investigator and Project Archaeologist June 2006–May 2008
Archaeological Resource Analysts
As a sub consultant, served as Principal Investigator and Project Archaeologist for several projects for SRS Inc. Primary tasks included filed direction, project management, personnel management, lab analysis, and authorship of company reports throughout southern California.

Project Archaeologist September 1996–June 2006
Gallegos & Associates
Duties for Gallegos and Associates included project management, laboratory management, lithic analysis, field direction, Native American consultation, report authorship, and editing for several technical reports for various projects throughout southern California. In addition, composed several data recovery and preservation programs for sites throughout California for both CEQA and NEPA level compliance.

Project Archaeologist September 1993–September 1996
Macko Inc.
Duties for Macko Inc. included project management, laboratory management, lithic analysis, field supervision, report authorship, and editing for technical reports for various projects throughout southern California.

Archaeological Field Technician January 1996–September 1993
Chambers Group Inc.
Duties for Chambers Group Inc. included archaeological excavation, survey, monitoring, wet screen facilities management, and project logistics. —January 1993 – September 1993.

Archaeological Field Technician May–September 1992
John Minch and Associates
Duties for John Minch and Associates included archaeological excavation, survey, monitoring, wet screen facilities management, and project logistics.

Reports/Papers

Principal Author

2012 A Class III Cultural Resources Study for the USGS Creepmeter Project; July 20, 2012; Tracy Stropes and Brian Smith

2011 Results of the Mitigation Monitoring Program for the Mission Brewery Villas Project City of San Diego (Project No. 52078) / April 9, 2012 / Tracy A. Stropes

2011 Mitigation Monitoring Report for the 43rd and Logan Project; June 7, 2012; Tracy A. Stropes and Brian F. Smith

2011 Mitigation Monitoring Report for the Sewer and Water Group 768 Project; April 10, 2012; Tracy A. Stopes and Brian F. Smith

2010 A Phase I Cultural Resource Study for the Butterfield Residence Project, La Jolla, California / January 17, 2011 / Tracy A. Stropes and Brian F. Smith

2010 A Cultural Resources Literature Review for the 11099 North Torrey Pines Road Project, San Diego, California; November 17, 2010; Tracy A. Stropes and Brian F. Smith

2010 A Cultural Resource Monitoring Report for the Eichen Residence Project, San Diego, California, Project No. 191775 / August 17, 2011 / Tracy A. Stropes

2010 Phase I Cultural Resources Survey for the San Jacinto Poultry Ranch Storage Building Project; November 11, 2010; Tracy Stropes and Brian Smith

2010 Cultural Resource Monitoring Report for the Salvation Army Vehicle Storage Area Project; 1015 West 12th Street, City of San Diego; Project #217113; December 5, 2011, Tracy A. Stropes, Principal Investigator

2010 Cultural Resource Monitoring Report for the Sunset Cliffs Trunk Sewer Project, City of San Diego, Project No. 178901, January 5, 2012, Tracy A. Stropes

2010 Mitigation Monitoring Report for the Sewer Group 682 Project; April 16, 2012; Tracy A. Stropes and Brian F. Smith

2010 A Phase III Cultural Resource Data Recovery Program for CA-SDI-16986, Hidden Meadows, San Diego County, California (TPM 20794) Tracy A. Stropes and Brian F. Smith

2010 Research Design, Data Recovery Program, and Mitigation, Monitoring, and Reporting Program for 1900 Spindrift Drive La Jolla, California; APN 346-44-05; January 26, 2011; Tracy Stropes and Brian F. Smith

2010 An Archaeological Study for the 1912 Spindrift Drive Project La Jolla California, Project No. 214654; L64A-003A; APN 346-44-04; January 26, 2011; Tracy Stropes and Brian F. Smith

2009 An Archaeological Assessment for the Rivera-Placentia Project, City of Riverside, California. Prepared for Riverside Construction Company.

2009 Cultural Resource Data Recovery Plan for the North Ocean Beach Gateway Project. Prepared for the City of San Diego and KTU+A.

2009 Cultural Resource Letter Report for the Borrego Substation Feasibility Study, Borrego Springs, California. Prepared for RBF Consulting.

2009 A Cultural Resource Study for the Gatto Residence Project, La Jolla, California. Prepared for Marengo Martin Architects Inc.

2008 Phase I Cultural Resource Survey for the 28220 Highridge Road Development Project, Rancho Palos Verdes, California. Prepared for REC Development.

2008 Wild Goose Expansion 3 Project Butte County, California Colusa County, California. Prepared for Niska Gas Storage LLC.

2008 Class III Cultural Resource Survey for the Burlington Northern Santa Fe Four Railway Bridge Renewal Project San Bernardino County, California. Prepared for BNSF Railway Company.

2008 I-80 Colfax Site Cultural Resource Records Search Report, Placer County California. Prepared for Granite Construction Company.

2008 I-80 Gold Run Site Cultural Resource Records Search Report, Placer County California. Prepared for Granite Construction Company.

2008 Cultural Resource Monitoring at 31431 Camino Capistrano, San Juan Capistrano California. Prepared for Herman Weissker, Inc.

2008 Cultural Resource Inventory for the Snow White Pumice Mine, Hinkley California. Prepared for U.S. Mining and Minerals Corporation.

2007 Nodule Industries of North Coastal San Diego: Change and Stasis in 10,000 Years of Lithic Technology. Masters Thesis on file, San Diego State University.

2007 Cultural Resource Inventory for Empire Homes (APN 104-180-04), Lake Forest, California. Prepared for Empire Homes.

2007 Phase I Archaeological Assessment for APN 104-200-09, Beumont, California. Prepared for Mary Chan.

2007 Cultural Resource Inventory for Empire Homes (APN 104-180-04), Lake Forest, California. Prepared for Empire Homes.

2006 Carlsbad Municipal Golf Course Data Recovery Program for CA-SDI-8694, and Indexing and Preservation Program Study for CA-SDI-8303 and CA-SDI-8797 Locus C, City of Carlsbad, CA. Prepared for City of Carlsbad.

2005 Grand Pacific Resorts Data Recovery and Index Sample Program for CA-SDI-8797, Area A, City of Carlsbad, CA. Prepared for Grand Pacific Resorts Inc.

2004 "Near the Harris Site Quarry" Cultural Resource Data Recovery and Preservation Program for CA-SDI-13028, San Diego County, California. Prepared for Harbrecht Development, L.P.

2004 Cultural Resource Survey and Boundary Test Report for the Lilac Ranch Project, San Diego County, California. Prepared for Empire Companies.

2003 Cultural Resource Data Recovery and Preservation Program for CA-SDI-12027, San Diego County, California. Prepared for Harbrecht Development Inc.

2002 Data Recovery Program for the Pacbell Site CA-SDI-5633, San Marcos, California. Prepared for Joseph Wong Design Associates.

2001 McCrink Ranch Cultural Resource Test Program Additional Information for Selected Sites, San Diego County, California. Prepared for Shapouri & Associates.

2001 The Quail Ridge Project Cultural Resource Test Program, San Diego County, California. Prepared for Helix Environmental Planning, Inc.

2000 Cultural Resource Survey and Evaluation for the North Sand Sheet Full Buildout Program, Owens Lake, California. Prepared for CH2MHill.

1995 Final Report: Archaeological Investigations Conducted for the Abalone Cove Dewatering Wells, City of Rancho Palos Verdes Los Angeles County, California. Prepared for the City of Rancho Palos Verdes, Environmental Services.

1995 Final Report: A Class III Intensive Survey of a 100-Acre Sand and Gravel Mining Area, Imperial County, California. Prepared for the Lilburn Corporation.

1994 Final Report: Data Recovery Excavations at Five Late Prehistoric Archaeological Sites Along the Los Trancos Access Road, Newport Coast Planned Community, Orange County, California. Prepared for the Coastal Community Builders, a division of The Irvine Company.

Contributing Author

2008 Lithic Analysis for Thirteen Sites Along the Transwestern Phoenix Expansion Project, Loops A and B. Prepared for Transwestern Pipeline Company, LLC.

2005 Cultural Resource Survey and Testing for the Star Ranch Property, San Diego, California.

2004 Cultural Resource Test Report for the Palomar Point Project: Site CA-SDI-16205, Carlsbad, California. Prepared for Lanikai Management Corp.

2004 Cultural Resource Survey and Test Report for the Canyon View Project, Carlsbad, California. Prepared for Shapouri & Associates.

2004 Cultural Resource Test Report for the Yamamoto Property: Site SDM-W-2046, Carlsbad, California. Prepared for Cunningham Consultants, Inc.

2004 Historical Resources Report for the Kuta and Mascari Properties, Otay Mesa, California. Prepared for Centex Homes.

2004 Cultural Resource Monitor and Test Report for the Encina Power Plant Project, Carlsbad, California. Prepared for Haley & Aldrich, Inc.

2004 Cultural Resource Test Report for Site CA-SDI-16788, Otay Mesa, California. Prepared for Otay Mesa Property, L.P.

2004 Cultural Resource Survey and Test Report for the Lonestar Project, Otay Mesa, San Diego County, California. Prepared for Otay Mesa Property, L.P.

2003 Cultural Resource Mitigation Program for the Torrey Ranch Site CA-SDI-5325, San Diego, California. Prepared for Garden Communities.

2003 Cultural Resource Survey and Test Report for the Johnson Canyon Parcel, Otay Mesa, San Diego County, California. Prepared for Otay Mesa Property, L.P.

2002 Cultural Resource Data Recovery Plan for the Shaw Project: Sites CA-SDI-13025 and CA-SDI-13067, San Diego County, California. Prepared for Shapouri & Associates.

2001 Archaeological Test Program for CA-SDI-14112 Mesa Norte Project, San Diego, California. Prepared for Hunsaker & Associates.

2001 The Vista-Oceanside Cultural Resource Survey and Test Program, Vista, California. Prepared for Shapouri & Associates.

2001 Cultural Resource Test Program for the Wilson Property, Carlsbad, California. Prepared for the City of Carlsbad.

2001 Cultural Resource Test Plan for the Oceanside-Escondido Project, County of San Diego, California. Prepared for Dudek & Associates.

2001 Cultural Resource Test Program for the Kramer Junction Expansion Project Adelanto, California. Prepared for AMEC.

2001 Cultural Resource Test Program for CA-SDI-12508 San Diego, California (LDR. No. 99-1331). Prepared for Garden Communities.

2000 Archaeological Testing of Prehistoric Sites CASDI-14115 and CA-SDI-14116 for The Mesa Grande Project, San Diego, California. Prepared for Solana Mesa Partners, LLC.

2000 Cultural Resource Survey and Test Report for the Wetmore Property, Otay Mesa, San Diego County, California. Prepared for Mr. Andy Campbell.

2000 The Torrey Ranch Cultural Resource Test Program, San Diego County, California. Prepared for Garden Communities.

2000 Cultural Resource Test Results for the Otay Mesa Generating Project. Prepared for the California Energy Commission and Otay Mesa Generating Company, LCC.

2000 The Eternal Hills Cultural Resource Survey and Test Program, City of Oceanside, California. Prepared for Eternal Hills Memorial Park.

2000 The Quail Ridge Cultural Resource Test Program, San Diego County, California. Prepared for Helix Environmental Planning Inc.

2000 Cultural Resource Testing Program for CA-SDI-5652/H and CA-SDI-9474H SR 78/Rancho Del Oro Interchange Project, Oceanside, California. Prepared for Tetratech Inc.

2000 Cultural Resource Test Results for a Portion of CA-SDI-8654 (Kuebler Ranch) Otay Mesa, San Diego County, California. Prepared for Shapouri & Associates.

2000 Historical/Archaeological Monitoring and Data Recovery Program for Prehistoric Site CA-SDI-48, Locus C Naval Base Point Loma, San Diego, California. Prepared for Department of the Navy, Southwest Division.

2000 Cultural Resource Evaluation Report for the Palomar College Science Building Project San Marcos, California. Prepared for Parsons Engineering Science Inc.

1999 Cultural Resource Monitoring Report for the Village of Ystagua Water Main Break City of San Diego, California. Prepared for the City of San Diego Water Department.

1999 The Effect of Projectile Point Size on Atlatl Dart Efficiency in Lithic Technology Vol 24, No 1 p (27-37).

1999 Cultural Resource Evaluation Report for the Oceanside-Escondido Bikeway Project, San Marcos, California. Prepared for City of San Marcos.

1999 5000 Years of Occupation: Cultural Resource Inventory and Assessment Program for the Carlsbad Municipal Golf Course Project City of Carlsbad, California. Prepared or Cotton/Beland/Associates, Inc.

1999 Silver Oaks Estates Cultural Resource Enhanced Survey and Test Report for a Portion of CA-SDI-7202 San Diego, California. Prepared for Helix Environmental Planning Inc.

1999 Historical Archaeological Test of a portion of CA-SDI-8303 for the Faraday Road Extension Carlsbad, California. Prepared for the City of Carlsbad.

1999 Cultural Resource Literature Review for the North Coast Transportation Study Arterial Streets Alternative San Diego County, California. Prepared for MLF/San Diego Association of Govt.

1998 Archaeological Test Report for a Portion of CA-SDI-9115/SDM-W-122 Carlsbad, California. Prepared for Industrial Developments International.

1998 Rainforest Ranch Cultural Resource Survey and Significance Test for Prehistoric Sites CA-SDI-14932, CA-SDI-14937, CA-SDI-14938, and CA-SDI-14946 County of San Diego, California. Prepared for Boys and Girls Club of Inland North County.

1998 Cultural Resource Evaluation Report for the Oceanside-Escondido Bikeway Project San Marcos, California.

1998 Final Report: Cultural Resource Survey Report for the Sterling Property, Carlsbad, California. Prepared for SPT Holdings LCC.

1996 Final Report: Archaeological Survey and Test for the Huber Property Carlsbad, California. Prepared for Gene Huber.

1996 Final Report: Results of Phase II Test Excavations and Phase III Data Recovery Excavations at Nine Archaeological Sites Within the Newport Coast Planned Community Phase III Entitlement Area, San Joaquin Hills, Orange County, California. Prepared for Coastal Community Builders, a division of The Irvine Company.

1995 Preliminary Report: Phase II Test Results From Nine Prehistoric Archaeological Sites Within The Proposed Upper Newport Bay Regional County Park. Prepared for EDAW, Inc.

1995 Final Report: A Phase II Test Excavation at CA-ORA-136, Block 800 City of Newport Beach, Orange County California. Prepared for the Irvine Apartment Communities, a division of The Irvine Company.

Presentations

2004 Guest Lecturer and Flintknapping Demonstration Mission San Luis Rey Band of Mission Indians Annual Inter-tribal Pow-Wow. Mark Mojado, Tribal Contact.

2003 Steep Edge Unifacial Tools of Otay Mesa: An Analysis of Edge Types from CA SDI-7215 SCA Southern California Data Sharing Meetings

2001 Identification of Late Period Behavior Patterns in Elfin Forest: Three Sites in Northern San Diego County.

2001 Society for California Archaeology Data Sharing Meetings, San Luis Obispo, California.

1996 Trans-Tehachapian Lithic Trade at the Canebreak/Sawtooth Transition. Thirteenth Annual Meeting, Society of California Archaeology, Bakersfield, California.

1994 Point Size and Atlatl Dart Efficiency. Twenty Fourth Annual Meeting, Great Basin Anthropological Conference, Elko, Nevada.

1994/96 Guest Lecturer and Flint Knapping Instruction - Archaeological Field Class Fall Semester ,Cypress College, Cypress, California. Paul Langenwalter/Henry C. Koerper, Directors.

1994/95 Annual Guest Lecturer - "Living History Days" at the Mission, Mission San Juan Capistrano, San Juan Capistrano, California.

1994 Guest Lecturer - El Monte High School, El Monte, California.

Professional Memberships

Register of Professional Archaeologists
Society for California Archaeology
Archaeological Institute of America

APPENDIX B

Archaeological Records Search Results

(Deleted for Public Review; Bound Separately)

APPENDIX C

Confidential Maps

(Deleted for Public Review; Bound Separately)

APPENDIX D

Site Record Forms

(Deleted for Public Review; Bound Separately)

APPENDIX E

Artifact Catalogs

Artifact Catalog
Site SDI-7195

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
1	ST-2	20-30	MGM	2		Flakes				
2	ST-3	0-10	MGM	1		Flake				
3	ST-4	10-20	MGM	1		Debitage				
4	ST-5	0-10	MGM	1		Flake				
5	ST-6	20-30	FGM	1		Flake				
6	ST-7	0-10	MGM	1		Flake				
8	S-1	surface	MGM	1		Flake				
9	S-2	surface	MGM	1		Flake				
10	S-3	surface	MGM	1		Flake				
11	S-4	surface	MGM	1		Flake				
12	S-5	surface	MGM	1		Flake				
13	S-6	surface	FGM	1		Flake				
14	S-7	surface	MGM	1		Flake				

Artifact Catalog
Site SDI-7195

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
15	S-10	surface	MGM	1	14	Retouched Debitage	whole	4.7	1.9	1.7
16	S-11	surface	MGM	1		Flake				
17	S-12	surface	MGM	1	25.7	Utilized Flake	whole	5.3	4.3	1.4

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
1	S-1	surface	MGM	1	179.4	Core Tool	whole	8	5.5	4.3
2	S-2	surface	Quartz	1		Debitage				
3	S-3	surface	MGM	1		Flake				
4	S-4	surface	MGM	1		Flake				
5	S-5	surface	MGM	2		Flakes				
6	S-6	surface	MGM	1		Flake				
7	S-7	surface	MGM	1		Flake				
8	S-8	surface	MGM	1		Flake				
9	S-9	surface	MGM	1		Flake				
10	S-10	surface	FGM	1		Flake				
11	S-10	surface	MGM	1		Flake				
12	S-11	surface	FGM	1	77.3	Utilized Flake	whole	6.3	5.4	2.1
13	S-12	surface	MGM	1		Flake				
14	S-13	surface	MGM	1	185.8	Hammer/Core	whole, circular	7.6	6.1	3.4

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
15	S-13	surface	MGM	1		Flake				
16	S-14	surface	MGM	1		Flake				
17	S-15	surface	MGM	1		Flake				
18	S-15	surface	Quartz	1		Flake				
19	S-16	surface	MGM	1	15.9	Utilized Flake	whole	3.7	3.6	1.6
20	S-17	surface	MGM	1	6.3	Utilized Flake	whole	2.8	2.2	0.9
21	S-18	surface	FGM	1		Flake				
22	S-18	surface	MGM	1		Flake	1 brick fragment also present			
23	S-19	surface	MGM	1		Flake				
24	S-20	surface	MGM	1	21	Retouched Flake	whole	5.8	3.6	1.1
25	S-21	surface	MGM	1		Flake				
26	S-22	surface	FGM	1	12.4	Utilized Flake	whole	3.6	3.4	1.1
27	S-23	surface	FGM	1		Flake				
28	S-24	surface	MGM	1		Flake				

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
29	S-25	surface	MGM	1		Debitage				
30	S-25	surface	MGM	1		Flake				
31	S-26	surface	FGM	1	15.6	Utilized Flake	whole	4	3.5	1.1
32	S-27	surface	MGM	1	230.5	Hammerstone	fragment, unidentifiable, burned, one of two halves of one single-edge hammerstone (see Cat.# 33)	6.8	5.1	4.8
33	S-28	surface	MGM	1	225.7	Hammerstone	fragment, unidentifiable, burned, one of two halves of one single-edge hammerstone (see Cat.# 32)	7	5.3	4.7
34	S-30	surface	MGM	1	264.1	Hammerstone	whole, spherical	6.9	6.3	5.2
35	S-31	surface	MGM	1	28.2	Perforator	whole	5.1	3.9	1.7
36	S-31	surface	MGM	1		Flake				
37	S-32	surface	MGM	2		Flakes				

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
38	S-33	surface	MGM	1		Flake				
39	S-34	surface	MGM	1		Flake				
40	S-35	surface	MGM	1		Flake				
41	S-36	surface	MGM	1	13.5	Utilized Flake	whole	3.8	3.8	0.8
42	S-37	surface	MGM	1		Flake				
43	S-38	surface	MGM	3		Flakes				
44	S-39	surface	MGM	2		Flakes				
45	S-40	surface	MGM	1	171.1	Hammer/Core	whole, spherical	7.3	6	3.2
46	S-40	surface	MGM	1		Flake				
47	S-41	surface	MGM	1	26.6	Utilized Flake	whole	5.5	3.8	1.1
48	S-41	surface	Quartzite	1	202	Teshoa Flake	whole	9.6	7.4	2.1
49	S-42	surface	MGM	1		Flake				
50	S-43	surface	MGM	1	129.4	Core Tool	fragment	7	5.8	2.4
51	S-44	surface	MGM	1	31.5	Utilized Flake	whole	4.9	4.3	1.2

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
52	S-44	surface	MGM	2		Flakes				
53	S-45	surface	MGM	1		Flake				
54	S-46	surface	FGM	1		Flake				
55	S-47	surface	MGM	2		Flakes				
56	S-49	surface	MGM	1	612.9	Hammerstone	whole, spherical	9.1	8.7	6.5
57	S-50	surface	MGM	1	16	Retouched Flake	whole	3.8	3.5	0.9
58	S-51	surface	MGM	2		Flakes				
59	S-54	surface	MGM	1		Flake				
60	S-56	surface	MGM	1		Flake				
61	S-57	surface	MGM	1		Flake				
62	S-58	surface	MGM	1		Flake				
63	S-59	surface	FGM	1	7.4	Utilized Flake	whole	3.1	3	0.7
64	S-59	surface	MGM	1		Flake				
65	S-60	surface	MGM	1		Flake				

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
66	S-61	surface	MGM	1		Flake				
67	S-62	surface	MGM	1	31.6	Utilized Flake	whole	6.6	4.5	0.9
68	S-62	surface	MGM	1		Flake				
69	S-63	surface	FGM	1		Flake				
70	S-63	surface	MGM	2		Flakes				
71	S-64	surface	FGM	1		Flake				
72	S-66	surface	MGM	1		Flake				
73	S-67	surface	MGM	1		Flake				
74	S-68	surface	Granite	1	5,800	Metate	fragment, uniface, polished, pecked, medium	20.9	19.1	13.6
75	S-68	surface	MGM	1		Flake				
76	S-69	surface	MGM	1		Flake				
77	S-70	surface	MGM	2		Flakes				
78	S-71	surface	FGM	1	6.2	Utilized Flake	whole	3.1	2.3	0.8

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
79	S-73	surface	FGM	1	413.2	Hammerstone	whole, circular	11.5	6.4	4
80	S-74	surface	MGM	1		Flake				
81	S-75	surface	MGM	1		Core	fragment			
82	S-76	surface	MGM	1		Flake				
83	S-77	surface	MGM	1	9.7	Utilized Flake	whole	3.4	2.5	1.2
84	S-77	surface	MGM	1		Flake				
85	S-78	surface	MGM	1		Flake				
86	ST-1	0-10	FGM	1		Flake				
87	ST-1	0-10	MGM	1		Flake				
88	ST-1	10-20	MGM	2		Flakes				
89	ST-1	20-30	MGM	1		Flake				
90	ST-2	0-10	MGM	1	4.8	Utilized Flake	whole	2.9	2.7	0.7
91	ST-2	0-10	MGM	1		Debitage				
92	ST-3	0-10	MGM	1		Flake				

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
93	ST-3	10-20	MGM	1	14.7	Utilized Flake	whole	4.7	2.8	1.4
94	ST-4	0-10	MGM	1		Flake				
95	ST-5	0-10	MGM	3		Flakes				
96	ST-5	10-20	MGM	1		Flake				
97	ST-5	20-30	MGM	1		Flake				
98	ST-6	0-10	MGM	1	24.4	Utilized Flake	whole	5.1	3.5	1.4
99	ST-6	0-10	MGM	2		Flakes				
100	ST-7	10-20	MGM	1		Flake				
101	ST-8	0-10	MGM	6		Flakes				
102	ST-8	10-20	FGM	3		Flakes				
103	ST-8	10-20	MGM	3		Flakes				
104	ST-8	20-30	MGM	1	10.5	Utilized Flake	whole	5.1	2.2	1.1
105	ST-9	0-10	MGM	6		Flakes				
106	ST-9	10-20	FGM	1		Flake				

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
107	ST-9	20-30	MGM	4		Flakes				
108	ST-10	20-30	MGM	2		Flakes				
109	ST-11	0-10	FGM	1		Flake				
110	ST-11	10-20	MGM	2		Flakes				
111	ST-11	20-30	MGM	2		Flakes				
112	ST-13	0-10	FGM	1		Flake				
113	ST-13	0-10	MGM	1		Flake				
114	ST-13	10-20	MGM	1		Flake				
115	ST-14	10-20	MGM	1		Debitage				
116	ST-14	10-20	MGM	1		Flake				
117	ST-14	20-30	MGM	2		Flakes				
118	ST-15	0-10	MGM	1		Flake				
119	ST-15	20-30	MGM	1		Flake				
120	TU-1	10-20	FGM	17		Flakes				

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
121	TU-1	10-20	MGM	119		Flakes				
122	TU-1	20-30	FGM	1		Debitage				
123	TU-1	20-30	FGM	9		Flakes				
124	TU-1	20-30	MGM	1	11.8	Biface	whole, stage 3	5.6	2.5	0.8
125	TU-1	20-30	MGM	1	89.5	Core Tool	whole	6.7	3.5	3.3
126	TU-1	20-30	MGM	1	38.5	Utilized Debitage	whole	4.6	3.5	1.7
127	TU-1	20-30	MGM	1	8.3	Utilized Flake	whole	3.7	2.2	1
128	TU-1	20-30	MGM	3		Debitage				
129	TU-1	20-30	MGM	44		Flakes				
130	TU-1	20-30	MGM		63.2	FAR				
131	TU-1	20-30	Quartz	1		Flake				
132	TU-1	20-30	*Ostrea* sp.		0.1	Marine Shell				
133	TU-1	10-20	Chert	2		Flakes				
134	TU-1	10-20	FGM	1	23.3	Utilized Debitage	whole	6	2.6	1.6

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
135	TU-1	10-20	MGM	1	230.6	Core Tool	whole	10.3	8.5	2.1
136	TU-1	10-20	MGM	1	8.3	Hammerstone	fragment, unidentifiable	4.9	2.1	1.1
137	TU-1	10-20	MGM	7		Debitage				
138	TU-1	10-20	Quartz	1		Flake				
139	TU-1	0-10	FGM	21		Flakes				
140	TU-1	0-10	MGM	1	26.1	Retouched Flake	fragment	5.3	3.1	1.6
141	TU-1	0-10	MGM	1	24.8	Retouched Flake	whole	4.9	3.4	1.7
142	TU-1	0-10	MGM	1	4.2	Graver	whole	3.1	2.5	0.6
143	TU-1	0-10	MGM	1	4.3	Utilized Flake	whole	2.7	2.5	0.8
144	TU-1	0-10	MGM	10		Debitage				
145	TU-1	0-10	MGM	102		Flakes				
146	TU-1	0-10	Quartz	2		Flakes				
147	TU-1	0-10	MGM		58.6	FAR				

Artifact Catalog
Site SDI-10,298

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
1	S-1	surface	MGM	1		Debitage				
2	S-3	surface	MGM	1	74.3	Hammerstone	fragment, unidentifiable	7.3	4.9	2
3	S-4	surface	MGM	1		Flake				
4	S-5	surface	MGM	1		Flake				
5	S-6	surface	MGM	1		Flake				
6	S-7	surface	FGM	1		Flake				
7	S-8	surface	MGM	1		Debitage				
8	S-9	surface	MGM	1		Flake				
9	S-10	surface	MGM	2		Flakes				
10	S-11	surface	FGM	1		Flake				
11	S-11	surface	MGM	1		Flake				
12	S-12	surface	MGM	1		Flake				
13	S-13	surface	MGM	1		Flake				

Artifact Catalog
Site SDI-10,298

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
14	S-14	surface	MGM	1		Debitage				
15	S-14	surface	MGM	1		Flake				
16	S-15	surface	MGM	2		Flakes				
17	S-16	surface	MGM	1		Flake				
18	S-17	surface	MGM	1		Debitage				
19	S-18	surface	MGM	1		Flake				
20	S-19	surface	MGM	1		Debitage				
21	S-19	surface	MGM	1		Flake				
22	S-20	surface	MGM	1		Flake				
23	S-21	surface	MGM	1		Flake				
24	S-22	surface	MGM	1		Flake				
25	S-23	surface	MGM	1		Flake				
26	S-24	surface	MGM	1		Flake				

Artifact Catalog
Site SDI-10,298

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
27	S-25	surface	MGM	1		Flake				
28	S-26	surface	MGM	1		Flake				
29	S-27	surface	MGM	1		Flake				
30	S-28	surface	MGM	1		Flake				
31	S-29	surface	MGM	1		Flake				
32	S-30	surface	FGM	1	5.7	Utilized Flake	fragment	2.9	2.7	0.5
33	S-31	surface	FGM	1		Flake				
34	S-32	surface	MGM	1		Flake				
35	S-33	surface	MGM	1		Flake				
36	S-34	surface	MGM	2		Flakes				
37	S-35	surface	MGM	1		Flake				
38	S-36	surface	MGM	1		Flake				
39	S-39	surface	MGM	1	27.9	Utilized Flake	whole	5.1	3.6	1.7

Artifact Catalog
Site SDI-10,298

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
40	ST-2	0-10	MGM	1		Debitage				
41	ST-2	0-10	MGM	4		Flakes				
42	ST-2	10-20	MGM	1		Debitage				
43	ST-2	10-20	MGM	4		Flakes				
44	ST-2	20-30	MGM	2		Debitage				
45	ST-2	20-30	MGM	7		Flakes				
46	ST-2	20-30	Unidentifiable		< 0.1	Marine Shell				
47	ST-2	20-30	Bone		< 0.1	Bone				
48	ST-2	30-40	MGM	2		Debitage				
49	ST-2	30-40	MGM	4		Flakes				
50	ST-3	10-20	MGM	1		Flake				
51	ST-4	0-10	MGM	7		Flakes				
52	ST-4	0-10	Bone		< 0.1	Bone				

Artifact Catalog
Site SDI-10,298

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
53	ST-4	10-20	FGM	3		Flakes				
54	ST-4	10-20	MGM	6		Flakes				
55	ST-4	10-20	*Modiolus* sp.		< 0.1	Marine Shell				
56	ST-4	10-20	*Mytilus* sp.		0.4	Marine Shell				
57	ST-4	10-20	Bone		0.1	Bone				
58	ST-4	20-30	MGM	6		Flakes				
59	ST-4	20-30	*Mytilus* sp.		0.1	Marine Shell				
60	ST-4	20-30	Bone		< 0.1	Bone				
61	ST-4	30-40	MGM	3		Flakes				
62	ST-4	30-40	*Chione* sp.		< 0.1	Marine Shell				
63	ST-4	30-40	*Laevicardium* sp.		0.3	Marine Shell				
64	ST-5	0-10	MGM	5		Flakes				
65	ST-5	10-20	FGM	1		Flake				

Artifact Catalog
Site SDI-10,298

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
66	ST-5	10-20	MGM	6		Flakes				
67	ST-5	10-20	*Mytilus* sp.		0.2	Marine Shell				
68	ST-5	20-30	MGM	1		Debitage				
69	ST-1	0-10	Quartz	1		Flake				
70	ST-1	10-20	Bone		0.1	Bone				
71	ST-1	20-30	MGM	1		Flake				
72	TU-1	0-10	FGM	2		Flakes				
73	TU-1	0-10	MGM	1	567.1	Hammerstone	whole, single edge, made from mano fragment	12.3	8.5	3.9
74	TU-1	0-10	MGM	1	38	Retouched Debitage	fragment	5.1	3.2	2.3
75	TU-1	0-10	MGM	27		Flakes				
76	TU-1	0-10	MGM		471.3	FAR				
77	TU-1	0-10	*Chione* sp.		< 0.1	Marine Shell				

Artifact Catalog
Site SDI-10,298

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
78	TU-1	0-10	*Tagelus* sp.		< 0.1	Marine Shell				
79	TU-1	0-10	Bone		0.3	Otolith				
80	TU-1	10-20	FGM	1		Debitage				
81	TU-1	10-20	FGM	1		Flake				
82	TU-1	10-20	MGM	2		Debitage				
83	TU-1	10-20	MGM	13		Flakes				
84	TU-1	10-20	*Chione* sp.		0.1	Marine Shell				
85	TU-1	20-30	MGM	4		Debitage				
86	TU-1	20-30	MGM	26		Flakes				
87	TU-1	20-30	*Mytilus* sp.		< 0.1	Marine Shell				

Artifact Catalog
Site SDI-11,793

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
1	S-1		MGM	1		Core				
2	ST-2	0-10	MGM	2		Flakes				

Artifact Catalog
Site SDI-17,431

Cat. No.	Location	Depth (cm.)	Material	Quantity	Weight (grams)	Artifact Type	Description	Measurements (in centimeters)		
								Dim1	Dim2	Dim3
1	S-1	surface	MGM	2		Flakes				
2	S-2	surface	MGM	2		Flakes				
3	S-3	surface	MGM	1		Flake				
4	S-4	surface	MGM	2		Flakes				
5	S-5	surface	MGM	2		Flakes				
6	S-6	surface	MGM	1	67.2	Utilized Debitage	whole	5.2	5.1	2.3
7	S-6	surface	MGM	1		Flake				

Faunal Catalog
Site SDI-10,298

Provenience	Level	Cat. #	Specimen#	Class	Taxon	Element	Side	Portion	NISP	%	Fusion	Cult. Mod	Heat Evidence	Nat. Mod.	Weight	Count	Comment
STP 2	20-30	47	1	Indet.	Indet.	Indet.	I	Indet.	4	I	I	Indet.	N	N	<0.1	4	Bone dust
STP 4	0-10	52	1	Fish	Small-Medium	Indet.	I	Fragment	1	I	I	Indet.	D	N	<0.1	1	Thin, flat, triangular, and translucent fragment fingernail sized
STP 4	10-20	57	1	Fish	Small-Medium	Vertebra	A	Body	1	90	I	Indet.	D	N	<0.1	1	Broken vertebral spines both dorsally and ventrally, either caudal or precaudal?
STP 4	10-20	57	2	Fish	Small-Medium	Indet.	I	Fragment	3	I	I	Indet.	N	N	<0.1	3	
STP 4	20-30	60	1	Fish	Small-Medium	Precaudal Vertebra	A	Complete	1	90	I	Indet.	D	N	<0.1	1	
STP 4	20-30	60	2	Fish	Small-Medium	Indet.	I	Fragment	2	I	I	Indet.	N	N	<0.1	2	
STP 1	10-20	70	1	Fish	Small-Medium	Indet.	I	Fragment	4	I	I	Indet.	D	N	0.1	4	
TU 1	0-10	79	1	Fish	Small-Medium	Otolith	I	Complete	1	I	I	Indet.	D	N	0.3	1	

APPENDIX F

NAHC Sacred Lands File Search Results

Brian F. Smith and Associates, Inc.
Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

February 13, 2014

For: Mr. Dave Singleton, Program Analyst
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, California 95814

From: Tracy A Stropes, M.A., RPA
Brian F. Smith and Associates
14010 Poway Rd. Suite A
Poway, CA 92064

Re: Request for a Sacred Lands File records search for the Otay Hills Quarry Project, San Diego, California.

I am writing to request a record search of the Sacred Lands File and a list of appropriate Native American contacts for The Otay Hills Quarry Project: The location of this project is within the County of San Diego, California. Specifically, this project is situated within sections 29-32 of the USGS 7.5-minute *Otay Mesa,* California topographic map, Township 18 South, Range 1 East. A copy of the project map, with the project area depicted thereon, has been included for your records.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
Phone: 858-484-0915
Email: tstropes@bfsa-ca.com

Attachments:
USGS 7.5 minute *Otay Mesa,* California topographic map with project area delineated.

Sacred Lands File & Native American Contacts List Request
NATIVE AMERICAN HERITAGE COMMISSION

915 Capitol Mall, RM 364 Sacramento, CA 95814 (916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: The Otay Hills Quarry Project

County: San Diego

USGS Quadrangle Name: *Otay Mesa*

Township: 18S Range: 1 East Sections: 29-32

Company/Firm/Agency: Brian F. Smith & Associates

Contact Person: Tracy A. Stropes, RPA

Street Address: 14010 Poway Road, Suite A

City: Poway Zip: 92064

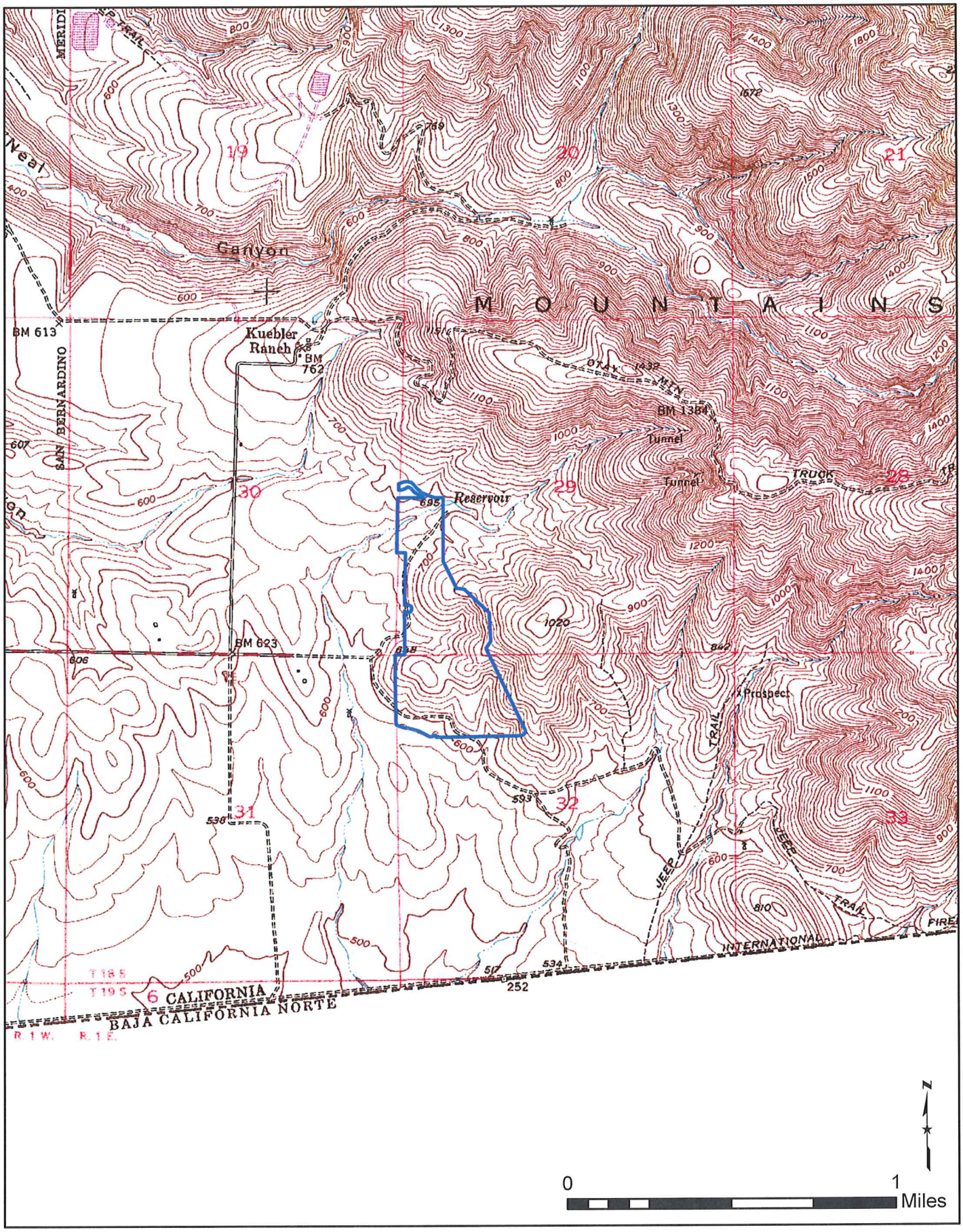
Phone: 858-484-0915

Fax: 858-679-9896

Email: tstropes@bfsa-ca.com

Project Description:

The Otay Hills Quarry Project is a cultural survey and test project within the southern portion of the County of San Diego. Specifically, this project is situated within sections 29-32 of the USGS 7.5-minute *Otay Mesa,* California topographic map, Township 18 South, Range 1 East. A copy of the project map, with the project area depicted thereon, has been included for your records.



SLF Search Location Map
The Otay Hills Quarry Project
USGS Otay Mesa 7.5-Minute Quadrangle

vSTATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916) 373-3715
Fax (916) 373-5471
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

February 14, 2014

Mr. Tracy A. Stropes, M.A., RPA, Senior Project Archaeologist
Brian F. Smith and Associates, Inc.
10410 Poway Road, Suite A
Poway, CA 92064

Sent by FAX to: 858-679-9896
No. of Pages: 4

RE: Sacred Lands File Search and Native American Contacts list for the **"Otay Hills Quarry Project;"** located near the U.S. – Mexico Border in southwestern San Diego County, California

Dear Mr. Stropes:

A record search of the NAHC Sacred Lands File **failed to indicate** the presence of Native American traditional cultural places in the project site(s), that were submitted and defined by the USGS coordinates configuring the 'Area(s) of Potential Effect' or APE(s). Note also that the absence of archaeological and/or Native American cultural resources does not preclude their existence at the subsurface level and this area is known to local tribes to be culturally sensitive.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the Court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

Attached is a list of Native American tribes, Native American individuals or organizations that may have knowledge of cultural resources in or near the project area (APE). As part of the consultation process the NAHC recommends that local government and project developers contact the tribal governments and individuals in order to determine the proposed action on any cultural places/sacred sites. If a response from those listed is not received in two weeks of notification, the NAHC requests that a follow-up telephone call be made to ensure the project information has been received.

California Government Code Section 65040.12(e) defines "environmental justice" to provide "fair treatment of People...with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations and policies" and Executive Order B-10-11 requires consultation with Native American tribes their elected officials and other representatives of tribal governments to provide meaningful input into

Native American Contacts
San Diego County California
February 14, 2014

Jamul Indian Village
Raymond Hunter, Chairperson
P.O. Box 612 Diegueno/Kumeyaay
Jamul , CA 91935
jamulrez@sctdv.net
(619) 669-4785
(619) 669-48178 - Fax

Kumeyaay Cultural Repatriation Committee
Steve Banegas, Spokesperson
1095 Barona Road Diegueno/Kumeyaay
Lakeside , CA 92040
sbenegas50@gmail.com
(619) 742-5587
(619) 443-0681 FAX

Mesa Grande Band of Mission Indians
Mark Romero, Chairperson
P.O Box 270 Diegueno
Santa Ysabel, CA 92070
mesagrandeband@msn.com
(760) 782-3818
(760) 782-9092 Fax

Viejas Band of Kumeyaay Indians
ATTN: Julie Hagen, cultural Resources
P.O. Box 908 Diegueno/Kumeyaay
Alpine , CA 91903
jhagen@viejas-nsn.gov
(619) 445-3810
(619) 445-5337

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas
P.O. Box 775 Diegueno -
Pine Valley , CA 91962
(619) 709-4207

San Pasqual Band of Indians
Kristie Orosco, Environmental Coordinator
P.O. Box 365 Diegueno
Valley Center, CA 92082
(760) 749-3200
council@sanpasqualtribe.org
(760) 749-3876 Fax

Inaja Band of Mission Indians
Rebecca Osuna, Chairman
2005 S. Escondido Blvd. Diegueno
Escondido , CA 92025
(760) 737-7628
(760) 747-8568 Fax

Ewiiaapaayp Tribal Office
Will Micklin, Executive Director
4054 Willows Road Diegueno/Kumeyaay
Alpine , CA 91901
wmicklin@leaningrock.net
(619) 445-6315 - voice
(619) 445-9126 - fax

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 Otay Mesa Quarry Project; located in soutwestern San Diego County, California, near the U.S. - Mexico International Boundary for which a Sacred Lands file search and native American Contacts list were requested.

Native American Contacts
San Diego County California
February 14, 2014

Ipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507 Diegueno/Kumeyaay
Santa Ysabel, CA 92070
cjlinton73@aol.com
(760) 803-5694
cjlinton73@aol.com

Kumeyaay Diegueno Land Conservancy
Mr. Kim Bactad, Executive Director
2 Kwaaypaay Court Diegueno/Kumeyaay
El Cajon , CA 91919
(619) 445-0238 - FAX
(619) 659-1008 - Office
kimbactad@gmail.com

Inter-Tribal Cultural Resource Protection Council
Frank Brown, Coordinator
240 Brown Road Diegueno/Kumeyaay
Alpine , CA 91901
frbrown@viejas-nsn.gov
(619) 884-6437

Kumeyaay Cultural Repatriation Committee
Bernice Paipa, Vice Spokesperson
P.O. 937 Diegueno/Kumeyaay
Boulevard , CA 91905
(KCRC is a Coalituon of 12
Kumeyaay Governments)

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 Otay Mesa Quarry Project; located in southwestern San Diego County, California, near the U.S. - Mexico International Boundary for which a Sacred Lands file search and native American Contacts list were requested.