

8.3 Cultural Resources

8.3.1 Introduction

The Eastshore Energy Center (Eastshore) will be a nominal 115.5-megawatt (MW) intermediate/peaking load facility operating up to 4,000 hours per year using natural gas-fired reciprocating engine technology. The Eastshore facility will be located at 25101 Clawiter Road in the City of Hayward, Alameda County, California, on a 6.22 acre parcel owned by Eastshore Energy, LLC, the project owner. Major features of the Eastshore project include the following:

- Demolition of the existing site building, foundations and paved surface,
- Grading of site and installation of new foundations, piping and utility connections,
- Fourteen (14) nominal 8.4 MW (gross) Wartsila model 20V34SG natural gas-fired reciprocating engine – generator sets,
- Fourteen (14) state-of-the-art air pollution control systems representing Best Available Control Technology (BACT), one system per each of the 14 engines, consisting of a selective catalytic reduction (SCR) unit for oxides of nitrogen (NO_x) control and an oxidation catalyst unit for carbon monoxide (CO) and precursor organic compounds (POC) control,
- Fourteen (14) approximately 70-foot tall stacks, each with a separate continuous emissions monitoring system (CEMS),
- Acoustically-engineered main building enclosing all 14 engines,
- Closed loop cooling system consisting of multiple fan-cooled radiator assemblies outside of the main engine building,
- Two 10,000 gallon (each) aqueous (19% by weight) ammonia storage tanks and handling system serving the SCR units,
- One raw water storage tank, approximately 35,000 gallons,
- One nominal 225-kW diesel-fired emergency black start generator,
- One (1) either electric or 7.15 MMBtu/hr natural gas-fired heater (BAAQMD exempt), used for heating of the natural gas fuel to the reciprocating engines,
- Miscellaneous ancillary equipment,
- Pre-existing onsite water and wastewater service interconnections,
- Onsite 115 kV switchyard including switchgear and step-up voltage transformers,
- Approximately 1.1-mile 115 kV single-circuit transmission line interconnecting to PG&E's Eastshore Substation,
- Approximately 200-foot offsite natural gas line connection to PG&E Line 153,

- Chain-link security fencing enclosing the facility with a secured entrance on Clawiter Road, and
- 4.65-acre temporary construction laydown and parking area located immediately across Clawiter Road from the Eastshore site.

The main plant site is currently occupied by a large (102,000 square foot) industrial building that was used for metal stamping operations from 1998 until the facility closed in 2005. Prior to that time, the site had been used from 1964 to 1998 for the manufacture of epoxy-coated concrete tubes. Before the site's development in the mid 1960s, the site was a mixture of agricultural and unused land with no residential structures (TRC, 2005). The existing building covers the majority of the subject site, with the remainder covered with paved parking and roadway access or landscaped areas along the eastern and southern boundaries.

The construction laydown area is located on the northern portion of the Berkeley Farms property. This portion of the property is currently cleared but it is unpaved and undeveloped. The portions immediately adjacent to the southern boundary of the laydown area are currently used for temporary storage of truck trailers associated with Berkeley Farms operations. The proposed electrical corridor will follow existing roadway rights-of-way through urban areas. The proposed approximate 200-foot gas interconnection will be accomplished using a jack-and-bore technique to undercross Clawiter Road and an existing Union Pacific (UP) Railroad line, and connect to PG&E's Line 153 located in the eastern right-of-way shoulder of Clawiter Road. The potable water supply and sanitary sewer pipeline connection already exist on the Eastshore site.

This subsection determines whether cultural resources are present and could be affected adversely by the Eastshore project. The significance of any potentially affected resource is assessed, and measures are proposed to mitigate potential adverse project effects. This study was conducted by Clint Helton, M.A., RPA, a Cultural Resource Specialist who meets the qualifications for Principal Investigator stated in the Secretary of the Interior's standards and guidelines for archaeology and historic preservation (USNPS, 1983).

This subsection is consistent with state regulatory requirements for cultural resources pursuant to the California Environmental Quality Act (CEQA). The study scope was developed in consultation with the California Energy Commission's cultural resources staff and complies with *Instructions to the California Energy Commission Staff for the Review of and Information Requirements for an Application for Certification* (CEC, 1992) and *Rules of Practice and Procedure & Power Plant Site Certification Regulations* (CEC, 2000).

Cultural resources include prehistoric and historic archaeological sites,¹ districts and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events, or sites of traditional/cultural importance to various groups.²

¹ Site: "The location of a significant event, a prehistoric or historic occupation or activity, or a building or structure...where the location itself possesses historic, cultural, or archeological value." (USNPS-IRD 1991:15).

² The federal definitions of cultural resource, historic property or historic resource, traditional use area, and sacred resources (as defined in NHPA, ARPA, NAGPRA) are reviewed in this chapter and are typically applied to non-federal projects.

A cultural resource may be defined as a phenomenon associated with prehistory, historical events or individuals or extant cultural systems. These include archaeological sites, districts, and objects; standing historic structures,

Subsection 8.3.2 discusses the laws, ordinances, regulations, and standards (LORS) applicable to the protection of cultural resources. Subsection 8.3.3 describes the cultural resources environment that might be affected by Eastshore. Subsection 8.3.4 discusses the environmental analysis of construction of the proposed development. Subsection 8.3.5 determines whether there are any cumulative effects from the project, and Subsection 8.3.6 presents mitigation measures that will be implemented to avoid construction impacts. Subsection 8.3.7 lists the agencies involved and agency contacts, and Subsection 8.3.8 discusses permits and the permitting schedule. Subsection 8.3.9 lists reference materials used in preparing this section.

Appendix 8.3A provides copies of agency consultation letters. Appendix 8.3B provides the resume for Clint Helton. Appendix 8.3C provides a complete copy of the CHRIS literature search data. Figure 8.3-1 depicts the ethnographic distribution in the project area per CEC Data Adequacy requirements.

Eastshore is subject to CEC and CEQA regulatory requirements. The project does not require review under federal regulations such as the National Environmental Policy Act (NEPA) and the Archaeological and Historic Preservation Act (AHPA) of 1974 (16 USC 469), among others, because it is not a federal undertaking (federally permitted or funded).

8.3.2 Laws, Ordinances, Regulations, and Standards

A summary of applicable laws, ordinances, regulations, and standards (LORS) is provided in Table 8.3-1.

TABLE 8.3-1
Applicable Cultural Resource Laws, Ordinances, Regulations, and Standards

Law, Ordinance, Regulation, or Standard	Applicability	Project Conformity?
California Environmental Quality Act Guidelines	Project construction may encounter archaeological and/or historical resources	Yes; Section 8.3.6
Health and Safety Code Section 7050.5	Construction may encounter Native American graves; coroner calls NAHC	Yes; Section 8.3.6
Public Resources Code Section 5097.98	Construction may encounter Native American graves; NAHC assigns Most Likely Descendant	Yes; Section 8.3.6
Public Resources Code Section 5097.5/5097.9	Would apply only if some project land were acquired by the state (currently no state land)	Yes
Alameda County General Plan	Project construction may encounter archaeological and/or historical resources	Yes

districts, and objects; locations of important historic events; and places, objects and living or non-living things that are important to the practice and continuity of traditional cultures. Cultural resources may involve historic properties, traditional use areas, and sacred resource areas.

Historic property or historic resource means any prehistoric district, site building, structure, or object included in, or eligible for, inclusion in the National Register of Historic Places, or California Register of Historical Resources, and therefore considered a historical resource under CEQA. The definition also includes artifacts, records and remains that are related to such a district, site, building, structure, or object.

Traditional use area refers to an area or landscape identified by a cultural group to be necessary for the perpetuation of the traditional culture. The concept can include areas for the collection of food and non-food resources, occupation sites, and ceremonial and/or sacred areas.

Sacred resources apply to traditional sites, places, or objects that Native American tribes or groups, or their members, perceive as having religious significance.

City of Hayward	Would apply only if historically or architecturally significant structures were affected by the project	Yes
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8.3.2.1 State of California Statutes

CEQA requires a review to determine if a project will have a significant effect on archaeological sites or a property of historic or cultural significance to a community or ethnic group eligible for inclusion in the California Register of Historical Resources (CRHR) (CEQA Guidelines). CEQA equates a substantial adverse change in the significance of a historical resource with a significant effect on the environment (Section 21084.1 of the Public Resources Code) and defines substantial adverse change as demolition, destruction, relocation, or alteration that would impair historical significance (Section 5020.1). Section 21084.1 stipulates that any resource listed in, or eligible for listing in, the CRHR³ is presumed to be historically or culturally significant.⁴

Resources listed in a local historic register or deemed significant in a historical resource survey (as provided under Section 5024.1g) are presumed historically or culturally significant unless the preponderance of evidence demonstrates they are not.

A resource that is not listed in or determined to be eligible for listing in the CRHR, is not included in a local register of historic resources, nor deemed significant in a historical resource survey, may nonetheless be historically significant (Section 21084.1; see Section 21098.1).

CEQA requires a Lead Agency to identify and examine environmental effects that may result in significant adverse effects. Where a project may adversely affect a unique archaeological resource,⁵ Section 21083.2 requires the Lead Agency to treat that effect as a significant environmental effect and prepare an Environmental Impact Review (EIR). When an archaeological resource is listed in or is eligible to be listed in the CRHR, Section 21084.1 requires that any substantial adverse effect to that resource be considered a significant environmental effect. Sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of a project's

³ The CRHR is a listing of "...those properties which are to be protected from substantial adverse change." Any resource eligible for listing in the California Register is considered to be a historical resource under CEQA.

⁴ A historical resource may be listed in the CRHR if it meets one or more of the following criteria: "(1) is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; (2) is associated with the lives of persons important to local, California or national history; (3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or (4) has yielded or has the potential to yield information important in prehistory or history (...of the local area, California or the nation)" (Public Resources Code §5024.1, Title 14 CCR, Section 4852). Automatic CRHR listings include NRHP listed and determined eligible historic properties (either by the Keeper of the NRHP or through a consensus determination on a project review); State Historical Landmarks from number 770 onward; and Points of Historical Interest nominated from January 1998 onward. Landmarks prior to 770 and Points of Historical Interest may be listed through an action of the State Historical Resources Commission.

⁵ Public Resources Code 21083.2 (g) defines a unique archaeological resource to be: An archaeological artifact, object, or site, about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: (1) contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information; (2) has a special and particular quality such as being the oldest of its type or the best available example of its type; or (3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

environmental analysis. Either of these benchmarks may indicate that a project may have a potential adverse effect on archaeological resources.

Other state-level requirements for cultural resources management appear in the California Public Resources Code Chapter 1.7, Section 5097.5 (Archaeological, Paleontological, and Historical Sites), and Chapter 1.75, beginning at Section 5097.9 (Native American Historical, Cultural, and Sacred Sites) for lands owned by the state or a state agency.

The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code and Sections 5097.94 and 5097.98 of the Public Resources Code, and falls within the jurisdiction of the Native American Heritage Commission (NAHC).

If human remains are discovered, the Alameda County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the Coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native American so they can inspect the burial site and make recommendations for treatment or disposal.

8.3.2.2 Local Policies

Although the CEC has pre-emptive authority over local laws, it typically requires compliance with local LORS, plans, and policies.

8.3.2.2.1 Alameda County. The East Alameda County General Plan (Alameda County, 1994) contains a goal to protect cultural resources from development. Policies include preservation and identification of significant archaeological and historical resources and planning development to avoid cultural resources. Procedures for protection of archaeological sites include requiring records searches and surveys and halting construction if archaeological sites are found. Renovation or relocation are considered appropriate measures for preservation of historic structures. Proposed demolition of historic structures must be reviewed by qualified professionals.

8.3.2.2.2 City of Hayward. The City of Hayward has an ordinance for the "protection, enhancement, perpetuation, and use of structures and districts of historical and architectural significance." The City maintains a List of Historically and Architecturally Significant Buildings.

8.3.3 Affected Environment

In California, cultural resources extend back in time for at least 11,500 years. Written historical sources tell the story of the past 200 years. Archaeologists have reconstructed general trends of prehistory.

8.3.3.1 Prehistoric Background

This section discusses general trends in California prehistory. Section 8.3.1.2 discusses the history of archaeological research in west-central California. Section 8.3.1.3 presents the results of archival research and archaeological field surveys conducted for this project.

The general trend throughout California prehistory was the increase in population density over time, coupled with greater sedentism and the use of a greater diversity of food resources. Chartkoff and Chartkoff (1984) identified three major periods of prehistory observed throughout California: Pre Archaic, Archaic, and Pacific. These patterns are roughly correlated with the Paleoindian, Archaic, and Emergent periods, developed by Fredrickson (1994) for west-central California. As Chartkoff and Chartkoff observe, culture change occurred in different ways and at different times throughout California. These changes nevertheless followed a broad pattern, outlined below.

8.3.3.1.1 Pre-Archaic Period (Prior to 11,000 years before present [BP]). Evidence throughout California and the western United States generally suggests that Pre-Archaic (or Paleoindian) populations were small and their subsistence economies included the capture of big game such as now-extinct large Pleistocene mammals including mammoth and mastodon. Recent research in the Great Basin, which offers better preservation of Pre-Archaic sites than does California, indicates that the economies of the Pre-Archaic peoples of the far western United States were based on a wide-ranging hunting and gathering strategy, dependent to a large extent on local lake-marsh habitats (Willig, 1988).

Large, fluted lanceolate projectile points known as Clovis points, which are the most widely recognized markers for this time period, have been found in the Clear Lake locality at the Borax Lake Site to the north of the project area (Meighan and Haynes, 1970), the Tulare Lake Basin to the south (Wallace and Riddell, 1988), and sporadically elsewhere in California. There are no known Pre-Archaic sites from the Bay area.

8.3.3.1.2 Early to Middle Archaic Period (11,000-6,000 years BP). During the Early and Middle Archaic periods, northern California prehistoric cultures, as elsewhere, began to put less emphasis on large game hunting. Subsistence economies probably diversified somewhat, and Archaic-era people may have begun to use certain ecological zones, such as the coast littoral, more intensively than before. Advances in technology, such as the advent of milling stones, indicate that new food processing methods became important during the Archaic period, enabling more efficient use of certain plant foods including grains and plants with hard seeds. A model of early Holocene adaptation devised for the eastern Great Basin (Price and Johnston, 1988) may be applicable to California. According to this model, this was a period of gradual warming and drying that supported a specialized economy based largely on marsh, lake, and stream resources. It supported higher population densities and a greater degree of sedentism than the Pre-Archaic period.

The earliest Archaic sites from west-central California are from the Los Vaqueros Reservoir area in eastern Contra Costa County, where two sites have recently produced artifact assemblages and human burials dated between 9,870 and 6,600 years before present (BP). Prior to the Los Vaqueros excavations, Early to Middle Archaic deposits in the Bay-Delta areas were limited to isolated human burials. No sites dating to these periods have been found in the immediate project vicinity. However, the lack of sites from these periods may reflect the alluvial environment as well as the extensive urban development that may have destroyed or covered sites. It is possible that as yet undiscovered Early and/or Middle Archaic sites lie deeply buried or beneath existing paved and landscaped surfaces in the project area.

8.3.3.1.3 Late Archaic Period (6,000-4,000 years BP). One important technological advance during the Late Archaic was the discovery of a process for removing the tannins from acorns, which made it possible to exploit this abundant and nutritious, though labor intensive, resource (Chartkoff and Chartkoff, 1984). Prehistoric trade networks also began to diversify and develop during the Late Archaic, bringing raw materials and finished goods from one region to another. Resource exploitation during this period, as well as during the Early and Middle Archaic, was generally seasonal. Bands moved between established locations within a clearly defined and defended territory, scheduling the harvest of particular resources according to the time of their availability. Aggregations of food resources, such as occurred at the shores of a large body of water or along a major fish-producing river, allowed for larger aggregations of people, at least seasonally. Dispersed resources, such as large and small mammalian game during the winter, meant dispersal across the landscape into small family groups for more efficient food harvesting. The spear thrower (atl-atl) may have been introduced or increased in importance during this period, accounting for the change in projectile point styles from the Western Stemmed series to the Pinto and Humbolt series, which are generally stemmed or have indented bases, or both. There was also an increase in the importance of seed grinding (Price and Johnston 1988).

It appears that the shell mound sites along San Francisco Bay were first occupied during the Late Archaic. Shell mound sites excavated in the Coyote Hills area contain Late Archaic components. Most of these sites have produced intact human burials and a great variety of artifacts, a reflection of the diverse subsistence practices. Acorns and other nut and berry crops appear to have been the primary plant resources targeted during this period. At sites along the Bay, the abundant remains of marine animals, including shellfish, fish, and mammals, reflect the occupants' early adaptation to the marine and bayshore estuarine environment. Obsidian from the North Coast Ranges and eastern Sierra also appears at these sites, reflecting the early existence of extensive trade networks.

8.3.3.1.4 Early and Middle Pacific Periods (4,000-1,500 years BP). According to Chartkoff and Chartkoff (1984), the beginning of the Pacific Period is marked by the advent of acorn meal as the most important staple food resource for most California Indians. Increasing population densities throughout the period made it desirable and necessary for California populations to produce more food from available land and to seek more dependable food supplies. The increasing use of food processing techniques, such as seed grinding and acorn leaching, developed during the Archaic, allowed for the exploitation of more dependable food resources. Increasing use of previously neglected ecological zones may also have been part of this trend.

In the Bay area, Early and Middle Pacific sites are typically composed of well-developed midden deposits with human burials and residential features, representing long-term permanent villages. During this period, archaeological evidence indicates an increase in the use of the estuarine and marine zones and fully developed exploitation of these areas. Site assemblages are characterized by a well-developed bone tool and ornament industry; shell beads, ornaments, and pendants; and both unshaped and well-shaped mortars and pestles. Stone tools are manufactured of both locally available chert and imported obsidian. The predominant projectile point type is the shouldered lanceolate form, although side-notched and stemmed points and large lanceolate-shaped bifaces also occur. Burials are typically in a flexed position.

8.3.3.1.5 Late and Final Pacific Period (1,500 years BP-Historic Era). A.D. 500 (1,500 years BP) is a cultural watershed throughout California. Sometime near this date, the bow and arrow replaced the spear thrower and dart as the hunting tool and weapon of choice. The most useful markers for this period tend to be the small projectile points used as arrow tips. The date of bow and arrow introduction is a point of some controversy, but most authors place it between A.D. 500 and 600. Others believe bows and arrows were introduced as early as A.D. 250 (750 years BP; Hughes, 1986) or as late as A.D. 700 (1,300 years BP; Bennyhoff and others, 1982).

During the Final Pacific Period, populations became increasingly sedentary and dependent on stored staple foods. Staple foods were stored for the winter in permanent settlements with populations as high as 1,000 persons. At the same time, there is evidence of continued diversification of the resource base. By the Final Pacific Period, every available ecological niche was exploited, at least on a seasonal basis. There was full exploitation of the marine/estuarine zone and further development of long distance trade networks and more complex social and political systems.

Late and Final Pacific period sites are generally well-developed midden deposits, some with surface components. The midden deposits contain both cremated and intact human burials and residential features, including house floors, reflecting the increasingly sedentary populations. Bedrock mortar milling stations were first established in the Bay area around 1,300 years ago. Although portable mortars and pestles continued to be used, smaller specimens were preferred. Changes in the size of ground stone tools reflect the dramatic increase in the use of small-seeded plant resources. Olivella and clamshell disc beads, frequently found in burials, appear to have been manufactured at Bay Area sites. Small unmodified obsidian pebbles and large flake blanks were imported almost exclusively from the Napa Valley. There is evidence that, during this period, inhabitants of the Bay area had well-established trade relations with the Yurok, the Maidu, the Miwok, and several other interior groups. This period has its end in the late 18th century with the arrival of Euroamericans in the project area.

8.3.3.2 Archaeology and Archaeological Sensitivity of the Project Area

Upland areas near watercourses were favored locations for prehistoric occupation. In the San Francisco Bay Area, the Bay margins are also high sensitivity areas for archaeological resources, due to their proximity to fish and shellfish resources in the Bay. Before historic times, the project site was most likely located at the boundary between dry land and tidal marshland. The evidence for this is that the boundary of the Hispanic-era land grant rancho San Lorenzo runs very near the project site's southern boundary. Examination of Hispanic era land grant rancho boundaries confirms that they generally ran up to, but not beyond, the dry land-marshland boundary. The project area is of high sensitivity for prehistoric archaeological deposits, because this boundary area was a frequent site for villages and temporary camps.

Mt. Eden Creek is located within one-quarter mile of the Eastshore Substation. From such a spot, the prehistoric occupants were able to exploit a variety of ecological niches on the alluvial plain and foothills and to take advantage of marine resources. Along the shores of San Francisco Bay, including the project area, occupation was intermittent and sparse prior to around 5,000 to 7,000 years ago. In addition, evidence for occupation prior to 7,000 years

ago was hidden by rising sea levels or buried under sediments caused by natural and man-made Bay marshland infilling along estuary margins.

The first formal archaeological study in the San Francisco Bay area was conducted by Max Uhle, who, in 1902, excavated a trench into a shell mound site on the eastern shore of the Bay at Emeryville (CA-Ala 309). At that time, it was assumed that prehistoric California Indian culture had been primitive and unchanging. Although Uhle found stratigraphic differences in mortuary patterns and artifactural assemblages, other scholars largely ignored the evidence of social complexity and maintained the assumption that no meaningful changes took place during California's prehistory (Uhle, 1907; Kroeber, 1925).

Nels Nelson was the first person to carry out formal archaeological research in the Bay area. He surveyed the prehistoric shell mounds of the Bay area and identified more than 400 mounds around the Bay. Some of the largest Nelson sites included Uhle's Emeryville mound (1,000 by 300 feet and 32 feet deep), the Stege mounds (240 by 160 feet and 350 by 250 feet), and the Ellis Landing mound (460 by 245 feet and more than 30 feet deep). Unfortunately, Nelson did not formally record or accurately map these sites and their approximate locations have been inferred from site remnants, topographic indications, and other lines of evidence.

Nelson and other early researchers in the Bay area believed that there were no important breaks in the cultural record of the Bay area and no important cultural changes during the area's prehistory. Although Nelson found differences in shellfish species between upper and lower portions of the Ellis Landing mound, which he excavated, he attributed these differences to environmental causes (changes in the environment led to changes in the abundance of different shellfish species). More recent research in the project area and archaeological excavations, largely conducted to mitigate the impacts of various construction projects, has disproven the theory that prehistoric culture was static in the project area. Instead, we know that a series of prehistoric cultural developments occurred, as outlined above.

8.3.3.3 Ethnographic Background

The project site is situated within the historical Chochenyo territory of the Costanoan Indians. The term "Costanoan" is derived from "Costanos", the Spanish word for "coast people". The term refers to a language family found throughout a large area that included the eastern perimeter of the San Francisco Bay and San Francisco Peninsula, or from the Carquinez Straits down to the southern margin of the Bay, and up to the Golden Gate. The Costanoan language family included eight distinct languages, Chochenyo among them. These eight languages have been described as "as different from one another as Spanish is from French" (Levy, 1978). All eight Costanoan languages also belong to the Penutian language stock. Penutian languages were spoken throughout north-central California by a number of aboriginal groups, including the Wintu, Maidu, Miwok, and Yokuts. Linguistic evidence suggests that Costanoan speakers occupied the Bay area by 1,500 years ago.

In 1971, Bay area descendants of the Costanoans organized as the Ohlone Nation ("Ohlone" is probably being derived from the Miwok word meaning "people of the west"). Therefore, it is correct to speak of the Costanoans when reviewing the ethnographic background of these people and to speak of the Ohlone when referring to their current status as a nation. The

Ohlone Nation received title to the cemetery where their ancestors who died at Mission San Jose are buried. However, no official governmental recognition has ever been given to the Costanoans.

Figure 8.3-1 shows the approximate location of aboriginal territories in the project area at a scale of 1 :24,000. The Chochenyo or East Bay Costanoans occupied the Eastshore of San Francisco Bay, between Richmond and Mission San Jose, and as far east as the Livermore Valley. The project area is at the southern extent of historical Chochenyo territory. To the south, the Tamyen or Santa Clara Costanoan territory extended around the south end of the Bay and into the lower Santa Clara Valley. It is possible that the southern part of the project area was also within Tamyen territory. In 1770, Chochenyo and Tamyen speakers each numbered approximately 1,200.

In addition to, and overlapping the larger ethnic groups based on linguistic distinction, the Costanoan-speaking people lived in approximately 50 separate and politically autonomous tribelets that comprised the basic unit of Costanoan political organization. Each tribelet had one or more permanent villages and any number of smaller camps. The village served as a political, social, and ceremonial center in which the tribelet congregated during the winter and from which members of the tribelet launched foraging parties to temporary camps in the warmer months. Surplus food was stored in the larger villages. The name of the tribelet was often the name of its principal village. The average number of persons in a tribelet was approximately 200 (Levy, 1978). The position of tribal chief was inherited patrilineally, usually from father to son, although a woman could also hold the position. The chief had extensive responsibilities, including acting as the leader of a council of elders who were responsible for advising the community.

Ethnographic data pertaining to the Ohlone is incomplete at best. The first Euroamericans to record contact with the Ohlone were Fathers Fages and Crespi, who in 1772 traveled up the east side of San Francisco Bay to the Carquinez Straits and then turned south through the Walnut Creek, San Ramon, and Livermore valleys. Fages and Crespi noted "numerous villages of very gentle and peaceful heathen, many of them of fair complexion" (Cook, 1957).

During the next decade, the establishment of Mexican missions at San Francisco, Santa Clara, and San Jose had profound and irrevocable effects upon the Indian population. The missions also resulted in a co-mingling of peoples of different linguistic and cultural backgrounds and a blurring of cultural identities. In addition to the Costanoans, Northern Valley Yokuts, Plains Miwok, Lake Miwok, Coast Miwok, and Patwin were all brought to Mission San Jose (Levy, 1978). By 1834, when the missions were secularized, the effects of disease, military reprisals, and the recruitment of Indians as Christian converts had all but obliterated Ohlone culture. The subsequent arrival of Anglo populations further hastened the cultural extinction.

Ethnographic information available for the Ohlone comes primarily from accounts of early explorers, from mission records, and from a few ethnographers who, in the early and middle years of the 20th century, were able to work with the few remaining native informants (e.g., Kroeber, 1925; Harrington, 1942; Merriam, 1967). These lines of evidence indicate that the Costanoans were hunter-gatherers and that fish and shellfish were an important part of the coastal Ohlone diet. Clams, mussels, steelhead, sturgeon, salmon, and lampreys were all eaten. The Ohlone probably fished with harpoons, nets, and twined

basketry traps. Fish poisoning with soaproot was reportedly a common practice. The Ohlone also reportedly used a variety of techniques to hunt large and small mammals, including deer, elk, antelope, bears, mountain lions, sea lions, whales, dogs, wildcats, rabbits, gophers, squirrels, mice, moles, woodrats, raccoons, and skunks. Sinew-backed bows and arrows with a cane shaft and blunt bone or stone tip were used for larger animals, and deadfall snares were used for large and smaller game. Sea animals may have been clubbed from tule balsas or from the banks of tidal sloughs. Communal rabbit drives were sometimes held. Migratory waterfowl and birds also had a prominent place in the Ohlone diet, and waterfowl were particularly important. Canada geese, snow geese, ducks, and coots (mudhen) were hunted using decoys made from a bird carcass stuffed with grass. Hawks, doves, and quail were also hunted and eaten.

The acorn was undoubtedly the most important of the plant foods gathered. Acorns were ground to a meal using stone mortars and pestles, then leached through an open-weave basket to remove the tannins. The leached acorn mush was consumed immediately or formed into cakes, which were dried and stored. Acorns came predominantly from the valley oaks, coast live oaks, and interior live oaks. Black oak acorns, less common in the project area, were preferred and may have been obtained in trade with people in the hills to the east where the black oak is more common. Alternatively, the Oroyson may have had reciprocal food-gathering privileges with neighboring tribelets that allowed them to get their own black oak acorns (Banks and Fredrickson, 1977). Buckeyes were processed in a similar manner to acorns but were considered an inferior food. The Ohlone also gathered and made use of laurel nuts, hazelnuts, and an assortment of wild roots, bulbs, fruits, nuts, and seeds.

Plant and animal resources were also used for medicinal, ornamental, and other functional uses (e-g., baskets, shelters, and tools). Resources that were available on a seasonal basis may have influenced prehistoric occupation patterns. For example, acorns are available in October and November, hard seeds can be harvested from May to September, and certain shellfish in California are not edible from May through October. During various seasons, foraging parties left the tribelet villages to engage in fishing, hunting, and the collection of plants within the tribelet's territory and to engage in trade outside this territory.

The main trading partners with the Costanoans were the Plains Miwok, Sierra Miwok, and Yokuts. The Costanoans supplied the Yokuts with mussels, abalone shell, and dried abalone; they supplied the Sierra Miwok with olivella shell; they supplied the Plains Miwok with bows; and they supplied all of these groups with salt (Davis, 1961, in Levy, 1978). (The Plains Miwok word for salt is actually borrowed from a Costanoan language.) In exchange, the Costanoans received pinyon nuts from the Yokuts and may have received clamshell disk beads from the Miwok. The Costanoans also fought wars, most often over disputed territories, with other Costanoan tribelets and with the Esselen, Salinan, and Northern Valley Yokuts (Levy, 1978).

The Costanoans lived in thatched domed structures with rectangular doorways and a center hearth. The Costanoans also constructed domed assembly houses and circular or oval fenced dance enclosures, both of which were located in the center of the village, surrounded by dwellings. Sweathouses, used by adult men and women, were built into pits excavated out of the banks of streams near the village. The Costanoans generally buried their dead

within the village. Bodies were flexed in a variety of positions, including seated, and faced in various directions.

As noted above, the hunting and gathering lifeway of the Ohlone was interrupted by the arrival of Euroamericans, who brought disease (including a 1833 malarial epidemic and a 1837 smallpox epidemic, which killed a large percentage of Costanoans), dislocation (as most surviving Costanoans were brought to the Spanish missions), and cultural atrophy (as the Costanoans were Christianized and traditional lifeways no longer practiced at the missions). Mexicans and Americans took over much of the Costanoan lands during the 1830s and 1840s, securing land grants and claims to natural resources within these territories. Following secularization of the missions in 1834, many Costanoans served as ranch hands to the Mexicans and Americans who had taken their land.

8.3.3.4 Historic Background

Recorded history in the project area begins with early Spanish exploration in the area, the arrival of missionaries, and the establishment of Mission San Jose approximately 10 miles inland (east) from the project site. This was followed by secularization of the missions and division of lands in the project vicinity into a number of large ranchos, the development of an agricultural land use pattern, and the expansion of shipping during the Hispanic Period continuing into the American Period. The agricultural land use pattern was eventually replaced with the arrival of rail transport and subsequent rapid urban expansion. Urban expansion included the formation and incorporation of cities, such as Hayward, San Leandro, Fremont, Newark, and Union City, as well as the growth of large-scale industries such as salt production.

Documented historic-era resources in the project area are associated chiefly with the various industries that developed here from the mid-1800s to the mid-1900s. The industrial history of the project area can be divided into several historic themes: agriculture and ranching, the landings and shipping industry, railroads and other transportation-related industries, and the salt production industry.

8.3.3.4.1 Hispanic Period. The earliest historic records for the project area are the accounts of Spaniards who explored the Bay area, beginning in the late 1700s. The hills to the southeast of the project area were identified as the site for one of the 13 missions established in California. "La Mission del Gloriosísimo Patriarca San Jose" (subsequently referred to as "Mission San Jose") was dedicated by Friar Ferrnín Lasuan on June 11, 1797, at the site of what had been a Costanoan village, "Oroysom". A large area surrounding the mission and extending westward to the coast, including the mission itself, the mission potrero (pasturelands), and the mission embarcadero (landing) were part of the Mission San Jose lands. From 1806 to 1833, Mission San Jose became the most prosperous and second largest (in terms of population) of the California missions. Father Duran served at the Mission San Jose and administered his office as president of all of the California missions during this time. The Costanoan Indians who had preceded the Spanish explorers and missionaries in the project were forced into the missions, along with Indians from interior California.

Following the independence of Mexico from Spain and the secularization of the Spanish missions in 1834, most of the land in the project area was parceled out by Mexican governors as large land grants, or "ranchos", primarily, but not exclusively, to "Californios"

(second generation, native-born descendants of early soldiers and civil servants under Spanish and then Mexican rule). "Rancho San Lorenzo" was granted to Francisco Soto and Guillermo Castro. It included present day Castro Valley, Hayward and part of San Lorenzo.

In addition to ranching, Californios continued the trade in salt and hides in the project area. During this time, most of the Mission Indians were either hired on as ranch hands or were relocated to one of the reservations located far to the east or north.

8.3.3.4.2 American Period. The Californios were followed by a new wave of immigrants who came to California and the project area in the mid-1800s, following reports of gold discoveries. The project area was not a particularly active mining area (although there was some mining in the hills to the east), but it was active in supplying the mines in the Sierra Nevada Mountains further east with food, hardware, and clothing. In addition, San Francisco provided a good market for agricultural commodities, such as vegetables and grains, and the project area saw a growth in agriculture and ranching beginning in the mid-1800s. Joel Russell staked a claim on what he believed to be open range and marshland in 1853. When his claim was disputed by Guillermo Castro, agent for the Soto San Lorenzito Rancho (the western half of the Rancho San Lorenzo granted to Francisco Soto), the U.S. Land Commissioners held against Russell in 1856, and he purchased the land he had squatted on. He sold off much of this property, retaining 320 acres between Mt. Eden and what later became Hayward's Landing. Mt. Eden soon emerged as a center of the salt industry.

Salt making is an early East Bay industry with a long history. The first commercial salt operation in Alameda County began in 1854, when John Johnson constructed levees around tidal pools to evaporate water. Early salt making was mostly a small, family-run business. Many of these businesses used Chinese labor. The Oliver Salt Company, later purchased by Leslie Salt in 1931, consolidated most of the small works in 1927. These salt works continued in production until 1992, when the land and tidal marshes came under the East Bay Regional Park District as the Hayward Regional Shoreline. Currently, efforts are being made to restore natural tidal flow to the former evaporation ponds.

In the 19th century, the land that is now Hayward became part of Rancho San Lorenzo, a large area of land granted by the Mexican government to Guillermo Castro (1810 - c. 1870) in 1840. Hayward is named for William Hayward, a worker from a New England shoe factory who came to California in 1849 during the California gold rush. Hayward grew steadily throughout the late 19th century, with an economy based on agriculture and tourism. The 1940s and the Second World War brought an economic and population boom to the area, as factories opened to manufacture war material. Many of the workers stayed after the end of the war.

8.3.3.4.3 Electrical Distribution System. Electrical power plants began to be constructed in the late 1880s. Long distance transmission was pioneered in California in 1891, with a 14-mile-long line constructed for a hydroelectric facility in San Bernardino County. In the 1890s, a PG&E predecessor constructed a 22-mile-long electrical transmission line between the Folsom hydroelectric plant and downtown Sacramento. This was one of the earliest long-distance transmission lines. By the 1920s, electrical power companies had constructed a number of long-distance lines, a number of these to transmit hydroelectric power from the Sierra Nevada mountains to major population centers in the central Valley and on the

California coast. Most early transmission lines were steel truss structures based on the design of the steel windmill for the oil industry. The electrical service industry coalesced around private, regulated monopolies like PG&E, and a few municipal utility districts.

The electrical transmission line nearest the Eastshore Project runs between the Grant and Eastshore Substations. Further south, this line connects eventually to the Newark Substation, which was first constructed in the 1920s. The Eastshore Substation was recently (within the past year) replaced on an adjacent lot. This Grant to Eastshore 115-kV transmission line appears on 1939 aerial photographs.

8.3.3.4.4 Historic Archaeological and Historic Site Sensitivity. Sensitivity for historic resources and historic archaeological resources in the project area is low. Early historic uses of the area included salt processing and the Bay Area salt industry had its beginnings near the project area. Most of the salt works in the immediate area, however, have been long abandoned and are in a poor state of preservation. None of these are particularly near any proposed project facilities. The Hayward Area Recreation Department has acquired title to some abandoned salt ponds near the Bay shore, 1½ to 2 miles from the project site, and has plans to preserve or interpret some early salt processing features. Some historic archaeological deposits were recorded south of the Eastshore Substation, south of Arden Road. These included sites with Chinese ceramics possibly associated with salt pond development or salt production; however, they are not near project facilities. Historic archaeological deposits are less likely to be present near project features, including the transmission line.

8.3.3.5 Resources Inventory

The Eastshore project site and linear facilities were subject to 100 percent (or complete) archeological resources inventory by CH2M HILL. This inventory is based on both archive/background research and surface pedestrian reconnaissance survey. The results of the resource inventory are presented in the subsections below. For the purposes of this analysis, the Area of Potential Effect (APE) is defined as the immediate project site and corridors extending 50 feet to either side of the electrical transmission, and other linear utility centerlines.

8.3.3.5.1 Archival Research. CH2M HILL commissioned a detailed record search by staff of the California Historical Resources Information System (CHRIS) Northwest Information Center (Sonoma State University) for the Eastshore project (File Nos. 05-1253) using a definition of a 0.5-mile buffer zone around the project site and at least 0.25-mile buffer around linear facilities as the “project area.”

According to information available in the CHRIS files, there have been 16 previous cultural resource surveys conducted within the “project area.” Within or adjacent to this CH2M HILL–defined “project area” is one recorded cultural resource.

There are no historic properties listed in, or determined eligible for listing in, the National Register of Historic Places (NRHP) within 0.5 mile of the plant site and 0.25 mile of project linear features.

Of the 16 previous studies conducted within the “project area”, one investigation report was provided by CHRIS. With the exception of the short segment of transmission line south of SR 92, all of the land on which the Eastshore project facilities are located has been

inventoried previously for cultural resources, also with negative results. Arranged in ascending order as cataloged by CHRIS, the reports listed in Table 8.3-2 were reviewed for information pertinent to the Eastshore project. Table 8.3-3 describes each site and more detailed site descriptions follow below.

TABLE 8.3-2
Authors (Dates) and CHRIS Catalog Number for Cultural Resource Investigation Reports

Chavez (1979) – NIC – S-001479	Krase (1996) – NIC – S-023200
Sawyer et al (1978) – NIC – S-001743	Knudson (2000) – NIC – S-023240
Ananian (1985) – NIC – S-009768	Baker (2001) – NIC – S-024379
Bard (1993) – NIC – S-014888	Rosenthal (2001) – NIC – S-024593
Dobkin and Anderson (1994) – NIC – S-016214	Losee (2002) – NIC – S-026077
Guedon (1993) – NIC – S-017774	Billat (2000) – NIC – S-027768
Hope et al (1996) – NIC – S-018903	Pastron and Brown (2001) – NIC – S-029510
Ballard et al (2000) – NIC – S-022725	Baxter (2006) – NIC – S-031419

TABLE 8.3-3
Summary of Sites within 0.5 Mile of the Project Area of Potential Effects

Site	Description	NRHP/CRHR Status	Effect
19-002269	Eastshore-Grant Transmission Line	Not Eligible	None

APE = Area of Potential Effects

Site 19-002269. This site is a transmission line originally constructed by PG&E in 1921 and 1922. Today the towers in the project area are part of a line connecting the Grant Substation to the larger Newark Substation, in Fremont, through the Eastshore Substation. A cultural resources site record is included in Appendix 8.3-C.

The transmission towers are not significant from an architectural, historical, or engineering standpoint. Though there is a relative lack of historical research on transmission towers and their architectural and historical significance, a recent consulting report on this topic makes it clear that "the specific elements of the transmission tower had largely evolved into a modern form" by the 1920s (Mikesell, 2000). This form was a structural engineering descendent of the windmill, radio communication, and bridge support towers that were developed in the late 19th and early 20th centuries. Towers very similar to these are located throughout California and elsewhere, some of very recent construction.

These transmission towers also do not have associations with significant historical events involving the development of the electrical infrastructure system in the region, and do not warrant preservation or mitigation because there is no adverse effect of replacing several of the towers with towers of new design. The key historical events in the history of electrical infrastructure development took place in between 1890 and 1910 (Mikesell, 2000). These included the first long-distance electrical transmission (from hydroelectric generators) step-

up, step-down transmission, alternating current, three-phase transmission, and improved transformer design. The transmission towers are not eligible for listing on the California Register of Historic Places or National Register of Historic Places and there will be no significant impacts requiring mitigation.

8.3.3.5.2 Field Survey.

Site Conditions. Cultural resources surveys of the proposed power plant location and appurtenant linear facilities were conducted on July 25, 2006. The surveyed area is in a heavily commercial and industrial area. The main plant site is currently occupied by a large (102,000 square foot) vacant industrial building that covers the majority of the site, with the remainder covered with paved parking and roadway access or landscaped areas along the eastern and southern boundaries.

The electrical corridor will follow existing roadway rights-of-way through urban areas. The potable water supply and sanitary sewer pipeline connection already exist on the Eastshore site.

No natural (undisturbed) ground or vegetation was visible within the power plant site, or linear utility routes. The area with some visibility (though heavily disturbed) was primarily within the Berkeley Farms temporary construction laydown and parking area, though the area has been heavily graded and is covered in low weeds.

A qualified archaeologist (Clint Helton, RPA) conducted an archaeological survey of the entire APE of the proposed power plant site and project linears. Very little ground or vegetation was visible. No historic or prehistoric resources were observed during the survey.

Along the linear transmission line corridor a pedestrian survey by the archaeologist revealed no known archaeological or architectural resources.

Given the amount of previous ground disturbance in the area for buildings, utilities, and other infrastructure, it seems likely that any resources in the area would have been disturbed or destroyed. The archaeological sensitivity of the power plant location and linear facility routes are considered very low.

Architectural Reconnaissance Methods. Historic buildings and structures older than 45 years are potentially significant historic resources in the project area. A drive-by architectural reconnaissance was conducted to determine whether potentially significant historic architecture is located within the APE, and, if so, whether the project would significantly affect the structures. Special attention was given to building sites appearing on historic USGS maps, and structures that were associated with the salt industry, or historic farm buildings of significant architecture that might be located at the project site or immediately adjacent to it. No such buildings or structures are located near the project site. The project site and linear features are all located in a previously developed industrial area. Structures in the area are mostly industrial and commercial buildings built within the past 30 years.

The large warehouse (102,000 square foot) building that covers the majority of the plant site was constructed in 1964 and does not qualify as a historic architectural resource.

Plant Site. The main plant site is currently occupied by a large (102,000 square foot) industrial building that was used for metal stamping operations from 1998 until the facility closed in 2005. Prior to that time, the site had been used from 1964 to 1998 for the manufacture of epoxy-coated concrete tubes. Before the site's development in the mid-1960s, the site was a mixture of agricultural and unused land with no residential structures (TRC, 2005). The existing building covers the majority of the subject site, with the remainder covered with paved parking and roadway access or landscaped areas along the eastern and southern boundaries. Since the building was constructed in 1964, it does not qualify as a historic architectural resource.

For completeness, a pedestrian archaeological survey was conducted over all parts of the property that were accessible (not covered by structures) using 30-meter parallel transects. No ground visibility exists at the site because it is covered with asphalt. No prehistoric or historic cultural remains were observed.

Laydown and Construction Parking. The construction laydown area is located on a 4.65-acre parcel portion of Berkeley Farms just southeast from the project site across Clawiter Road. This portion of the property is currently cleared and most of the area is unpaved and undeveloped. This area is covered in low weeds and has been heavily graded. The portions immediately adjacent to the southern boundary of the proposed laydown area are currently used for temporary storage of truck trailers associated with Berkeley Farms operations.

For completeness, a pedestrian archaeological survey was conducted over all parts of the proposed laydown and parking locations that were accessible (not covered by structures) using 30-meter parallel transects. Little ground visibility exists because the area is covered with weeds. No prehistoric or historic cultural remains were observed.

Gas Line. A short natural gas interconnection under Clawiter and the UP rail corridor would be required to tie-in to the PG&E gas line paralleling Clawiter.

The line will be installed entirely within disturbed areas including existing asphalt and concrete. The entire route on both sides is heavily developed and disturbed from previous construction, and the entire route is paved in asphalt and concrete.

Transmission Line. A single alignment is being considered for the overhead electrical power line connection to the PG&E Eastshore Substation which is located approximately 0.83-mile south-southeast from the Eastshore site.

The proposed route runs south along the east side of Clawiter Road for approximately 3,400 feet before an approximate 200-foot overcrossing of State Route (SR) 92 and then continues east along Eden Landing Road, south along Production Avenue east along Investment Boulevard and south between existing buildings for approximately an additional 1,900 feet into the Eastshore Substation. This route would likely require a replacement of PG&E's existing 12 kV distribution transmission poles to accommodate the existing 12 kV line and the new 115 kV Eastshore transmission line. The alignment is located within heavily developed areas with little to no surface visibility.

CH2M HILL performed a cultural resources reconnaissance survey of the transmission line route to inspect the alignment. The alignment is within a heavily developed commercial area. Both the east and west sides of the road rights-of-way were visually examined to

obtain a sense of the age and type of existing standing structures that border the roadway. Ground disturbance was extensive for both routes from construction of industrial and commercial buildings, as well as existing transmission lines, towers, sidewalks, and other utilities.

None of the structures that border the alignment will be impacted by installation of the transmission line. Should the project scope/limits be expanded to include them, inventory and evaluation of their historical significance would be conducted. The route from the plant site to the PG&E Eastshore substation is entirely paved.

Disturbance from construction of the transmission line will be temporary and will be limited to the installation of the transmission towers that carry the lines. Construction activity for the installation of the 10 to 12 115 kV towers that will be located entirely within existing disturbed rights-of-way along city streets. No known archaeological sites or architectural resources will be impacted by construction or operation of the transmission line. Should the project scope/limits be expanded to include impacts to any of the structures along the route, inventory and evaluation of their historical significance would be necessary.

Potable Water and Sanitary Sewer Lines. Eastshore has almost no consumptive water use other than potable water and minimal circulating water makeup. Potable water and sanitary sewer connections are available on the site.

8.3.3.5.3 Native American Consultation. CH2M HILL contacted the Native American Heritage Commission (NAHC) by letter on June 28, 2006, to request information about traditional cultural properties such as cemeteries and sacred places in the project area. The NAHC responded on August 3, 2006 with a list of Native Americans interested in consulting on development projects. Each of these individuals/groups were contacted by letter on August 16, 2006 (see Appendix 8.3A). No responses have been received and no concerns have been expressed to-date. The NAHC record search of the Sacred Lands file failed to indicate the presence of Native American cultural resources in the immediate project area. The record search conducted at the Northwest Information Center of CHRIS for CH2M HILL also failed to indicate the presence of Native American traditional cultural properties.

8.3.4 Environmental Analysis

This subsection describes the environmental analysis of the proposed Eastshore construction. CH2M HILL conducted a complete survey of the project area.

CH2M HILL conducted archival research; reviewed all cultural resource investigation reports provided by the Northwest Information Center within the Eastshore project area; contacted all other interested agencies, Native American groups, and historic societies; and conducted a complete field investigation. As a result of all these efforts, CH2M HILL did not detect within the project area any significant prehistoric or historic archaeological remains. There are no historic architectural resources anticipated within, or immediately adjacent to, the plant site. No impacts on cultural resources are expected to occur at the plant site.

The gas line, sanitary sewer and potable water lines, and transmission line will be constructed entirely within previously disturbed areas, and entirely within the existing disturbed city streets. Further, both the CHRIS literature search and CH2M HILL's survey failed to identify significant archaeological sites. There are no historic architectural resources

within 0.5 mile of the plant site and 0.25 mile of project linear features. No impacts to any architectural resources are expected to occur from construction and operation of the Eastshore project.

8.3.5 Cumulative Effects

Because the Eastshore project would not affect known significant cultural resources, it would not likely cause significant cumulative impacts. If construction were to encounter a large, stratified, buried prehistoric archaeological site or discrete filled-in historic period features, the possibility of cumulative impacts would arise because such sites might be highly significant, and in the past many have been destroyed or damaged by agricultural activity and/or commercial/industrial/residential development in the project vicinity. However, given the relative low level of impact to such a site that the Eastshore project would cause, it is also possible, but unlikely that proposed project activities would lead to significant cumulative impacts. The potential impact will depend on the extent of any discovered archaeological deposits. Any potential impact to an unknown site would be minimized by a stop-work procedure if a site were uncovered allowing time for proper survey and mitigation of the site to occur (see below). No impacts on architectural resources are expected to occur.

8.3.6 Mitigation Measures

Although significant archaeological and historic archeological sites were not found during the project field survey, it is possible that subsurface construction could encounter buried archaeological remains. For this reason, the project proponent proposes to implement measures to mitigate any potential adverse impacts that could occur if there were an inadvertent discovery of buried cultural or historically significant resources. These measures include: (1) designation of a cultural resources specialist (CRS) to be on-call to investigate any cultural or historically significant resource finds made during construction; (2) implementation of a construction worker training program; (3) monitoring during initial clearing of the power plant site and excavation at the plant site; (4) procedures for halting construction in the event that there is an inadvertent discovery of archaeological deposits or human remains; (5) procedures for evaluating an inadvertent archaeological or historically significant discovery; and (6) procedures to mitigate adverse impacts on any inadvertent archaeological or historic discovery determined significant.

8.3.6.1 Designated Cultural Resources Specialist

The project owner will retain a designated CRS who will be available during the entire construction period to inspect and evaluate any finds of buried archaeological or historically significant resources that might occur during construction. If there is a discovery of archaeological remains during construction, the CRS, in conjunction with the construction superintendent and environmental compliance manager, will make certain that all construction activity stops in the immediate vicinity of the find until the find can be evaluated. The CRS will, within 24 hours of the discovery, inspect the find and evaluate its potential significance, in consultation with CEC staff and the CEC compliance project manager (CPM). The CRS will, within 48 hours after the inspection, make a recommendation as to the significance of the find and any measures that would mitigate adverse impacts of construction on a significant find.

The CRS will meet the minimum qualifications for Principal Investigator on federal projects under the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. The CRS will be qualified, in addition to site detection, to evaluate the significance of the deposits, consult with regulatory agencies, and plan site evaluation and mitigation activities.

8.3.6.2 Construction Worker Sensitivity Training

The project owner will prepare a construction worker sensitivity training program to ensure implementation of procedures to follow in the event that cultural or historically significant resources are discovered during construction. This training will be provided to each construction worker as part of their environmental, health, and safety training. The training will include photographs of various types of historic and prehistoric artifacts and will describe the specific steps that will be taken in the event of an unanticipated discovery of cultural material, including human remains. It will explain the importance of, and legal basis for, the protection of significant archaeological resources. The training will also be presented in the form of a written brochure.

8.3.6.3 Monitoring

The project owner will retain a qualified archaeologist to monitor excavations at the plant site. If archaeological or historically significant material is observed by the monitoring archaeologist, ground-disturbing activity will be halted in the vicinity of the find so that its significance (CRHR eligibility) can be determined; such determination will be made within 3 days of the initial observation. If evaluated as significant, proposed mitigation measures (avoidance or data recovery) will be developed within 7 days of the initial observation in consultation with the CEC.

8.3.6.4 Emergency Discovery

If the archaeological monitor, construction staff, or others identify archaeological or historically significant resources during construction, they will immediately notify the CRS and the site superintendent, who will halt construction in the immediate vicinity of the find, if necessary. The archaeological monitor or CRS will use flagging tape, rope, or some other means as necessary to delineate the area of the find within which construction will halt. This area will include the excavation trench from which the archaeological finds came as well as any piles of dirt or rock spoil from that area. Construction will not take place within the delineated find area until the CRS, in consultation with the CEC staff and CEC CPM, can inspect and evaluate the find. Such inspection and evaluation will occur within 3 days of the identification.

8.3.6.5 Site Recording and Evaluation

The CRS will follow accepted professional standards in recording any find and will submit the standard Department of Parks and Recreation historic site form (Form DPR 523) and locational information to the Northwest Information Center of the California Historic Resources Information System.

If the CRS determines that the find is not significant, and the CEC CPM concurs, construction will proceed without further delay. If the CRS determines that further

information is needed to determine whether the find is significant, the designated CRS will prepare a plan and a timetable for evaluating the find, in consultation with the CEC.

8.3.6.6 Mitigation Planning

If the CRS, CEC staff, and CPM determine that the find is significant, the CRS will prepare and carry out a mitigation plan in accordance with state guidelines. This plan will emphasize the avoidance, if possible, of significant archaeological resources. If avoidance is not possible, recovery of a sample of the deposit from which archaeologists can define scientific data to address archaeological or historically significant research questions will be considered an effective mitigation measure for damage to or destruction of the deposit.

The mitigation program, if necessary, will be carried out as soon as possible to avoid construction delays. Construction will resume at the site as soon as the field data collection phase of any data recovery efforts is completed. The CRS will verify the completion of field data collection by letter to the project owner and the CPM so that the project owner and the CPM can authorize resuming construction.

8.3.6.7 Curation

The CRS will arrange for curation of archaeological or historically significant materials collected during an archaeological data recovery mitigation program. Curation will be at a qualified curation facility meeting the standards of the California Office of Historic Preservation. The CRS will submit field notes, stratigraphic drawings, and other materials developed as part of the data recovery/mitigation program to the curation facility along with the archaeological collection, in accordance with the mitigation plan.

8.3.6.8 Report of Findings

If a data recovery program is planned and implemented during construction, the CRS will prepare a detailed scientific report summarizing results of the excavations to recover data from an archaeological or historically significant site as a mitigation measure. This report will describe the site soils and stratigraphy, describe and analyze artifacts and other materials recovered, and draw scientific conclusions regarding the results of the excavations. This report will be submitted to the curation facility with the collection.

8.3.6.9 Inadvertent Discovery of Human Burials

If human remains are found during construction, project officials are required by the California Health and Safety Code (Section 7050.5) to contact the County Coroner. If the Coroner determines that the find is Native American, he/she must contact the NAHC. The NAHC, as required by the Public Resources Code (Section 5097.98) determines and notifies the Most Likely Descendant with a request to inspect the burial and make recommendations for treatment or disposal.

8.3.7 Involved Agencies and Agency Contacts

Table 8.3-4 lists the state agencies involved in cultural resources management for the project and a contact person at each agency. These agencies include the NAHC and, for federal lands, the Office of Historic Preservation.

TABLE 8.3-4
Agency Contacts

Issue	Contact	Title	Telephone
Native American traditional cultural properties	Debbie Treadway NAHC	Associate governmental program analyst	(916) 653-4082
Federal agency NHPA Section 106 compliance	Milford Wayne Donaldson Office of Historic Preservation	State historic preservation officer	(916) 653-6624

8.3.8 Permits Required and Schedule

Other than certification by the CEC, no state, federal, or local permits are required by the project for the management of cultural resources. Consultation with the State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation (ACHP) would be required under Section 106 of the National Historic Preservation Act if, for example, as the result of a later project change, the project were to become a federal undertaking and significant cultural resources were likely to be affected by the project. No such project change is anticipated or foreseen.

8.3.9 References

Alameda County. 1994. *East Alameda County General Plan*.

Banks, P., and D. A. Fredrickson. 1977. Page 9 of a report thought to be from: *An archeological investigation of twelve parcels in the Upper San Ramon Creek watershed scheduled for channel improvements, Contra Costa County, California*. Contra Costa County Public Works.

Bennyhoff, J. A., V. Bente, M. Hilderman-Smith, and T. Jones. 1982. *Emigrant Summit Trail: Archaeological Investigation and Historic Research of the Trail from Caples Lake to Maiden's Grave*. Eldorado National Forest, Placerville.

California Energy Commission (CEC). 2000. *Rules of Practice and Procedure & Power Plant Site Certification*. Sacramento, CA.

_____. 1992. *Instructions to the California Energy Commission Staff for the Review of and Information Requirements for an Application for Certification*. Energy Facilities Siting and Environmental Protection Division. Sacramento, CA.

Chartkoff, Joseph L. and Kerry K. Chartkoff. 1984. *The Archaeology of California*. Stanford University Press. Stanford, CA.

Cook, S.F. 1957. *The aboriginal population of Alameda and Contra Costa counties, California*. *Anthropological Records*, 16, 131-156.

Davis, James T. 1961 *Trade Routes and Economic Exchange among the Indians of California*. University of California Archaeological Survey Reports No. 54. Berkeley.

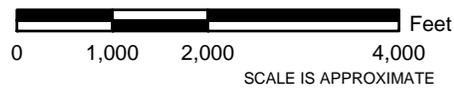
Fredrickson, D.A. 1994. Central California archaeology: The concepts of pattern and aspect. In: *Toward a new taxonomic framework to central California archaeology*. *Essays by James*

- A. Bennyhoff and David A. Fredrickson. Contributions of the University of California Number 52. Archaeological Research Facility. Berkeley, CA.
- Harrington, J.P. 1942. *Culture Element Distributions, XIX: Central California Coast*. University of California Anthropological Records 7(1): 1-46. Berkeley.
- Hughes, Richard E. 1986. *Diachronic Variability in Obsidian Procurement Patterns in Northeastern California and Southcentral Oregon*. University of California Publications in Anthropology 17, Berkeley, California.
- Kroeber, A.L. 1925. *Handbook of the Indians of California*. Smithsonian Institution, Bureau of American Ethnology Bulletin 78. (Reprinted by Dover, NY, 1976).
- Levy, R. 1978. Costanoan. In: *Handbook of North American Indians*. Robert F. Heizer (ed.). Smithsonian Institution. Washington, D.C.
- Meighan, Clement W., and C.V. Haynes, Jr. 1970. *The Borax Lake Site Revisited*. Science 167(3922):1213-1221.
- Merriam, C.H. 1967. *Ethnological notes on California Indian Tribes*. Compiled & Edited by R.F. Heizer. Reports of the University of California Archaeological Survey, No. 68, Parts II & III. Pp 167-448.
- Mikesell, S. 2000. Inventory and evaluation of Mocassin-Newark transmission towers, owned by the City and County of San Francisco. Prepared by JRP Historical Consulting Services. Prepared for Calpine c* Power, Pleasanton, CA.
- Moratto, M.J. 1984. *California archaeology*. Academic Press. San Diego, CA.
- Price, B.A. and S.E. Johnston. 1988. A model of Late Pleistocene and Early Holocene adaptation in eastern Nevada. In: *Early human occupation in far western North America: The Clovis- Archaic interface*, edited by J.A. Willig, C.M. Aikens, and J.L. Fagan, pp. 231-250. Nevada State Museum Anthropological Papers 2 1.
- TRC. 2005. *Phase I Environmental Site Assessment, Former Trend Technologies Metal Finishing Facility, 25101 Clawiter Road, Hayward, California*. Prepared for Black Hills Energy, Inc., October 20.
- Uhle, M. 1907. *The Emeryville Shellmound*. University of California Publications in American Archaeology and Ethnology 7:1-106. Berkeley.
- United States Department of the Interior, National Register of Historic Places, National Park Service (USNPS). 1983. "Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation." *Federal Register*. 44716-68, Washington, D.C.
- Wallace, W.J. and F. Riddell. 1988. Prehistoric background of Tulare Lake, California. In: *Early human occupation in far western North America: The Clovis-Archaic interface*, edited by J.A. Willig, C.M. Aikens, and J.L. Fagan, pp. 87- 102. Nevada State Museum Anthropological Papers 21.
- Willig, J.A. and C.M. Aikens. 1988. The Clovis-Archaic interface in far western North America. In: *Early human occupation in far western North America: The Clovis Archaic*

interface, edited by J.A. Willig, C.M. Aikens, and J.L. Fagan, pp. 1-40. Nevada State Museum Anthropological Papers 21.



- LEGEND**
- Site Location
 - Transmission Line



**FIGURE 8.3-1
COSTANOAN TERRITORY
COVERS ENTIRE AREA
DEPICTED**
EASTSHORE ENERGY CENTER
HAYWARD, CALIFORNIA