

## **C.4 CULTURAL RESOURCES**

---

This chapter provides an update on cultural resources from that presented in the Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) for the California-Oregon Transmission Project and the Los Banos-Gates Transmission Project (TANC/WAPA, 1988). The environmental setting of the Proposed Project area has not significantly changed since the publication of the FEIS/EIR with respect to the cultural resources of the region, although additional cultural sites have been identified. This chapter includes a general description of the cultural resources in the project area including the prehistoric, ethnographic, and historical setting of the project area; laws and regulations relevant to cultural resources; and a description of identified cultural resources in the Proposed Project Corridor. An updated discussion of potential impacts is presented, as well as five comprehensive mitigation measures. In addition, Appendix 5 presents a detailed description of the prehistoric, ethnographic, and historical setting of the project area, which was originally published in the 1988 FEIS/EIR.

The methodology used for this analysis is similar to that used in the 1988 FEIS/EIR. Three impacts are identified in this SEIR: inadvertent impact to known cultural resources; discovery of previously unrecorded cultural resources; and impact to parks, Wilderness Study Areas (WSA), and recreational areas that may contain cultural resources. The mitigation measures from the 1988 FEIS/EIR have been incorporated into new mitigation measures because those from the previous document did not provide sufficient detail by today's standards, and they lacked enforcement procedures.

The Eastern Corridor Alternative would result in fewer impacts to cultural resources because it has a comparatively lower occurrence of and potential for resources. The Proposed Western Corridor and its Alternative Segments are more sensitive than the Eastern Corridor Alternative with regard to cultural resources because they include a greater number of recorded sites and favorable terrain for encountering additional unrecorded sites.

### **C.4.1 ENVIRONMENTAL BASELINE**

This following is a summary of the regional overview originally published in the 1986 Draft EIS/EIR. A more detailed regional overview can be found in Appendix 5.

#### **C.4.1.1 Prehistoric Setting**

The prehistory of the San Joaquin Valley may have its origins in late Pleistocene and early Holocene sites dating from perhaps as early as 12,000 years ago. The Farmington Complex sites in San Joaquin and Stanislaus Counties (Riddell, 1949; Treganza, 1952) and the Tranquillity Site<sup>1</sup> in Fresno County (Hewes, 1946) are believed to be some of the earliest examples of human activity within the Central Valley area. The Fluted Point Cultural Tradition (or Big Game Hunting Tradition) in the San Joaquin Valley is represented by the Witt Site and other Tulare Lake shoreline finds which date from approximately 11,000 years ago (Riddell and Olson, 1969). Sizeable prehistoric populations first

---

<sup>1</sup> Assigned CA-Fre-48/P-10-85.

appeared in the San Joaquin Valley with the Western Pluvial Lake Tradition (WPLT), which extended from approximately 11,000 to 7,000 years ago. This period saw the emergence of a cultural tradition, which was adapted to the wetlands environments of Tulare and Buena Vista Lakes. Following the WPLT in Central California, various regionalized cultural traditions and sequences emerged throughout the San Joaquin Valley, Sierra Foothills, and Coast Range areas.

The prehistory of the western edge of the San Joaquin Valley and the lower eastern slopes of the Diablo Range was first explored by archaeological investigations associated with the San Luis, Los Banos, and Little Panoche Projects. During the early 1960s and 1970s, archaeological surveys and excavations were conducted at these three reservoir locations (Treganza, 1960; Olsen and Payen, 1968, 1969, 1983; Pritchard, 1966, 1983), and those studies have established the cultural and temporal prehistory for the study area. Those studies are discussed in further detail in Appendix 5.

### ***Potential for Prehistoric Resources***

Prehistoric archaeological resources tend to be located on benches and terraced areas adjacent to major drainages and springs. Some isolated rock shelter and bedrock mortar sites have been located relatively far from water; however, the majority of known sites tend to cluster around potable water sources. Archaeological resources include occupation sites, rock shelters, surface lithic scatters, bedrock milling stations, and stone quarries.

The Proposed Project Corridor has a comparatively higher occurrence of and potential for archaeological (as well as ethnographic and historic) resources. A higher degree of sensitivity of an area implies a greater potential for the presence of resources that may qualify as National Register of Historic Places sites. Environmental factors conducive to the presence of these resources are:

- Terraced areas adjacent to drainages
- Spring locations
- Potential rock shelter locations
- Potential lithic source

The Eastern Corridor Alternative has a comparatively lower occurrence of and potential for cultural resources. Environmental factors that diminish the potential presence of resources are:

- Few terraced areas adjacent to drainages
- Lack of spring locations
- Lack of potential rock shelter locations
- Lack of potential lithic sources
- Heavy agricultural use, which implies the destruction of previously favorable settings, as well as resources that might have qualified as National Register of Historic Places sites.

A comparative analysis of these factors led to the conclusion that the Western Corridor is more likely than the Eastern Corridor Alternative to have prehistoric resources because it has a greater number of recorded sites and favorable terrain.

#### **C.4.1.2 Ethnographic/Native American Setting**

Prior to the coming of Euro-Americans, the entire San Joaquin Valley was the homeland of many different Yokuts tribes. Their territory extended from the summit of the Diablo Range in the west to the upper reaches of the Sierra Foothills in the east, from the Tehachapi Mountains in the south to a point midway between the Calaveras and Mokelumne Rivers in the north (Wallace, 1978; Latta 1977).

The Los Banos-Gates Project study area passes through the ethnographically identified territories of the Northern Valley Yokuts and the Southern Valley Yokuts. The northern part of the project area was within the Kahwathwah tribal area (Kroeber, 1925; Latta, 1977), which extended south to at least Little Panoche Creek and possibly to Cantua Creek. The southern part of the project area was within the Tachi tribal area (Kroeber, 1925; Latta, 1977; Wallace, 1978). Anthropological sources suggest that Yokuts settlement and subsistence practices were oriented to major watercourses. Little ethnographic information on Yokuts technology is available; however, archaeological evidence of Yokuts technology and way of life, beginning with their first encounter with the Spanish in the late 1700s, is explained in Appendix 5.

#### ***Potential for Ethnographic/Native American Resources***

Anthropological sources indicate that four known ethnographic resources are located in the vicinity of the Western Corridor. The Kahwathwah village of “Hahnomah” (Latta, 1977) is located at the San Luis Reservoir and is included in the San Luis Gonzaga Archaeological District which is on the National Register of Historic Places. The Tachi village of “Udjiull” (Kroeber, 1925) or “Udgeu” (Latta, 1977) is located on Los Gatos Creek and “Golon” (Kroeber, 1925) or “Holon” (Latta, 1977) is located at the town of Huron. An unidentified Yokuts village<sup>2</sup> is referenced (Latta, 1977) for the Cantua Creek-Salt Creek area, with no additional details available. None of these resources are within the Eastern Corridor Alternative boundaries.

Along with the archival research, Native American consultation was conducted for the 1986 Draft EIS/EIR to assess the potential for resources in the project area. The Native American Heritage Commission in Sacramento provided a contact list for Merced and Fresno Counties. Organizations and individuals were consulted with the following objectives:

- Identify Native American cultural resources within the project area
- Identify Native American concerns and objectives in dealing with project-related culturally sensitive sites and locations, including archaeological sites.

---

<sup>2</sup> Assigned CA-Fre-85/P-10-85.

Other than the four previously discussed village sites, no additional resources were identified as a result of these consultations. There was, however, a general consensus that cemeteries, as well as sacred and religious sites, are the most sensitive resources that could be encountered within the project area. Some recorded archaeological sites will also be culturally sensitive for Native Americans. Resource management considerations for such sites will require addressing issues from both a research and Native American culture perspective.

Additional site types that are likely to occur within the project area include late period prehistoric/protohistoric village locations and ethnobotanical gathering areas. The anthropological literature (Kroeber, 1925; Latta, 1977; Wallace, 1978) suggests that similar site distribution patterns and resource potentials exist for ethnographic resources as do for prehistoric archaeological sites. That is, these types of resources will most likely occur on terraced areas adjacent to drainages and springs. The potential for encountering resources of this nature is greater for the Proposed Western Corridor than for the Eastern Corridor Alternative.

#### **C.4.1.3 Historical Setting**

The project area has historically been a region physically isolated from the population and transportation centers of California. Before the arrival of the railroad in the late 19<sup>th</sup> century, and adequate roads in the early 20<sup>th</sup> century, this isolation was a key factor in the project area's historical evolution. Equally important natural factors were the rough and dry character of the region. Much of it is hilly or steep and almost all of it is characterized by a harsh hot and dry climate for most of the year. Finally, the exploitable economic resources of this region were lacking during most of the nineteenth century, although oil production began to be important in the southern section of the Western Corridor in the early 1900s. The history of this region is discussed in further detail in Appendix 5.

#### ***Potential for Historic Resources***

Today the project area is characterized by diversified agriculture, ranching, oil and gas extraction, and recreation at locations such as Los Banos Creek Recreation Area. The Cantua Creek site of the Joaquin Murrieta headquarters is the only California State Historical Landmark (Number 344) within the study area. Early wooden oil rigs and features were located in the Coalinga and Gujarral Oil Fields, and 19<sup>th</sup> century ranch features, structures, and historic archaeological deposits could be located in the vicinity of any of the drainages that the project corridor will cross. In this regard, the Domengine Ranch in the Big Blue Hills area and the Pleasant Valley Ranch in the Los Gatos Creek area are examples of potential historic resource locations. These historic resources sensitivities are greater for the Western Corridor than for the Eastern Corridor Alternative.

#### **C.4.1.4 Cultural Resources Identified in the Proposed and Alternative Corridors**

This section describes cultural resources identified in the proposed and alternative corridors. Additional information about these cultural resources is available in the Cultural Resources Technical Report and Appendix 5.

#### C.4.1.4.1 *Proposed Project*

No recorded cultural resources have been identified in the Proposed Segments 1, 3, or 7. The recorded resources in Segments 2, 4, and 5 are described below.

##### *Segment 2*

Two prehistoric and two historic sites are recorded in Segment 2:

- **CA-Mer-278/P-24-368** is very near Western Corridor (Proposed) Segment 2 and is also within the Western Corridor Alternative Segment 2A. The site, a prehistoric milling station, is on a terrace west of Ortigalita Creek and northeast of the confluence of Ortigalita and Piedra Azul Creeks and west of a local ranch road. This site, recorded during the previous inventory conducted for the Los Banos-Gates Transmission Project, has six sandstone outcrops with a total of 12 mortars. No artifacts, features, or midden were in association (Smith and Slater, 1986a; Chavez et al., 1986). CA-Mer-278/P-24-368 was later relocated and “cupule petroglyphs” adjacent to two additional outcrops were observed along with 30+ widely dispersed chert flakes, a small fragment of burnt bone, and a fractured stream cobble. At the time, impacts to the site included a dirt road through the site and extensive cattle grazing (Steidl et al., 1992; Hines et al., 1992). The site was evaluated as not “likely to yield any information that will address important research questions about the regional archaeology. This site is therefore not considered significant, and is not eligible for the National Register of Historic Places” (Hines et al., 1992).
- **CA-Mer-279/P-24-369** is in Proposed Segment 2 and adjacent to Western Corridor Alternative Segment 2A. It is east of the confluence of Ortigalita and Piedra Azul creeks on a west-facing slope at the east edge of a ranch road along Ortigalita Creek and northwest of CA-Mer-278/P-24-368. This milling station was recorded as two slightly eroded sandstone outcroppings within a 5 x 5 meter (16 x 16 feet) area with a single mortar cup on each during the previous survey conducted for the Los Banos-Gates Transmission Project. No artifacts, features, or midden were observed in association at the time. Based on the information available for the site, it appears that it could be eligible for the California Register under criterion 4 which is that this resource has the potential to yield information about the history of California. The criterion for the California Register is discussed in Section C.4.2.2.
- **CA-Mer-331H/P-24-420** is located at about the centerline of Proposed Segment 2. This historic site is composed of three depressions, a house depression, an outhouse depression 6.7 meters (22 feet) northwest of the house, and a possible stable depression located 128 meters (420 feet) north of the house. Two brick fragments with mortar adhering, but no trash, etc. were observed. To date, site disturbance appears to have been minimal, limited to some wash erosion. Research indicates that site and related features are within the project's corridor and include Lugea's house, garden, corral, and stables. CA-Mer-331H, the Jose Lugea Site, was evaluated by Hines et al. (1992) as eligible for the National Register of Historic Places. Specific National Register of Historic Places criteria were not stated.
- **P-24-621**, Los Banos Creek, as mapped by the CHRIS/CCIC crosses Eastern Corridor Alternative Segment 2 and by extension crosses Proposed Segment 2 and Western Corridor Alternative Segment 2A. Los Banos Creek has been a State Point of Historical Interest since 1967 and is on the *California Inventory of Historic Resources* under the theme of Exploration/Settlement (CAL/OHP, 1976). Los Banos Creek was named for the pools or baths near its source, called *Los Banos del Padre Arroyo*, named for Padre Felipe Arroyo de la Cuesta who was at Mission San Juan Bautista from 1808 to 1833.

##### *Segment 4*

One prehistoric site is recorded in Segment 4:

- **CA-Fre-129/P-10-129**, a prehistoric site, is situated in Proposed Segment 4 between Panoche Road on the left bank of a branch of Little Panoche Creek near a spring. At the time of recordation, the site was described as a temporary campsite where one possible house-pit and a pestle fragment were observed within

an area of 24 x 21 meters (80 x 70 feet; Elsasser, 1957; Olsen and Payen, 1968). CA-Fre-129 appears to have been a later prehistoric temporary camp or village site with an associated cemetery (Moratto, 1984). A radiocarbon date of 185 B.P. or less than A.D. 1765 and the artifacts and burial complex suggest that the site was occupied between about A.D. 1500-1600 to about A.D. 1820. The site includes the cultural complex known as the Gonzaga Complex, ca. A.D. 300 to 1000 (Late Period Phase I) and Panoche Complex, ca. A.D. 1500 to 1850 (Late Period Phase II)<sup>3</sup> (Olsen and Payen, 1968; Olsen and Payen, 1969; Moratto, 1984).

In addition, two prehistoric roads crossing portions of the Proposed Segment 4 consist of:

- **Road** - (USBLM, 1858-1880; USGS Laguna Seca Ranch, Calif.)
- **Road to San Joaquin** - appears to correspond to present-day Little Panoche Road [also crossed by Alternative Segment 4A] (USBLM, 1858-1880; USGS Laguna Seca Ranch, Calif.).

### **Segment 5**

Four recorded resources occur in Segment 5:

- **CA-Fre-46/P-10-46**, a lithic scatter, is near the periphery of Proposed Segment 5 on a terrace on the south and west bank of Panoche Creek. Several dirt roads cross the site and the areas surrounding the site have been bulldozed (Hewes and Massey, 1939a; Smith, 1986a; Chavez et al., 1986). No additional information is available. The site has not been evaluated.
- **CA-Fre-85/P-10-85**, an "Indian Village site," is located in Proposed Segment 5 at "the old ranch house in Tumey Gulch." F.F. Latta, at the time the site was recorded in 1950, was unsure of the exact location of the site. No additional information is available. Note this site does not correspond to the locations of villages reviewed by Latta (1977) in his *Handbook of Yokuts Indians*.
- **CA-Fre-1997/P-10-1997** is a prehistoric lithic scatter located north of Panoche Creek within 1,420 feet of the centerline of Proposed Segment 5. Although the Proposed Project Corridor is only 2,000 feet wide, suggesting that this site is adjacent to and not within the Proposed Project Corridor, additional resources were observed northwest of the other cultural materials suggesting the site "may extend a good deal further to the west." The site has been subject to erosion and cattle grazing (Smith, 1986b; Chavez et al., 1986). No additional information is available. The site has not been evaluated.
- A portion of the **East Coalinga Extension Oil Field** is situated in Proposed Segments 5 and 6. This economic/industrial feature is part of the intensive oil resource development of the study area that occurred in the early 1900s.

The 19th century roads crossing portions of Proposed Segment 5 consist of:

- "Road to Little Panoche" - about 0.35 miles to B. Durand's Cabin (USBLM, 1854-1881; USGS, Chounet Ranch, Calif.)
- "Main Panoche Road" (USBLM, 1854-1881; USGS, Chounet Ranch, Calif.)
- Unamed road - between "Main Panoche Road" and "Little Panoche Road from Big Panoche to Cantua" (USBLM, 1854-1881; USGS, Chounet Ranch, Calif.)
- "Road to Pedro's Place" - Pedro's Place was situated west of the Western Corridor (USBLM, 1879-1880; USGS, Domengine Ranch, Calif.)
- "Road to Pozachenia" (USBLM, 1879-1880; USGS, Domengine Ranch, Calif.)

---

<sup>3</sup> After the Sacramento-San Joaquin Delta region Central California Taxonomic System (CCTS).

- Road – leads to "Old Stone Cabin" located about 0.20 miles southwest of the road (USBLM, 1879-1880; USGS, Domengine Ranch, Calif.)
- "Main Road from Panoche to Cantua" (USBLM, 1853-1881; USGS, Lillis Ranch, Calif.).
- "Road to Barago's Sheep Camp" - also shown as "Road to Berry's Sheep Camp" (USBLM 1855-1881; USGS Lillis Ranch, Calif.)

### **Segment 6**

Two historic resources are recorded in Proposed Segment 6, the historic oil fields (as described above) and the following:

- The former **Southern Pacific Railroad** track alignment is crossed by Proposed Segment 6 and Western Corridor Alternative Segments 6A and 6B, as well as Eastern Corridor Alternative Segment 6. A portion of this alignment has been formally recorded west of the Los Banos-Gates Project as site CA-Fre-3093H/P-10-3199 (USGS, Coalinga and Gujarral Hills, Calif.). This site consists of approximately three miles of the former Southern Pacific Railroad track alignment west of the project. The rails and ties have been removed from the recorded portion of the railroad grade. Railroad beds and their associated components consist of the roadway and its ballast, cross ties, tieplates, rails, rail joints, and rail anchors (Hatoff et al., 1995). The integrity of the railbed is low due to the periodic replacement and upgrading of the roadbed and tracks (Hatoff et al., 1995). However, the alignment would likely be eligible for the National Register and California Register under criterion 3a in the National Register or criteria 1 under the California Register. The criteria for both the National Register and the California Register are discussed in Section C.4.2.

#### **C.4.1.4.2 Western Corridor Alternative Segments**

The following cultural resources have been identified in the Western Corridor Alternative Segments.

### **Segment 2A**

Three prehistoric sites and two historic sites are recorded in Segment 2A:

- **CA-Mer-278/P-24-368** is a prehistoric milling station (see description under Segment 2 above).
- **CA-Mer-279/P-24-369** is a milling station (see description under Segment 2 above).
- **CA-Mer-335/P-24-424** is in Western Corridor Alternative Segment 2A along the west stream terrace of Ortigalita Creek and south of Piedra Azul Creek. This site, a limited prehistoric multiple activity site estimated as 162 meters long (230 feet) northeast-southwest and 40 meters wide (59 feet) east-west, is situated about 400 meters (1312 feet) southwest of CA-Mer-278/P-24-368 and CA-Mer-279/P-24-36. The absence of definable midden and formal tools was interpreted as evidence that the site was not a habitation site. The site has been impacted by a dirt road through the site as well as erosion and cattle grazing. CA-Mer-335 has been evaluated as "...unlikely to yield any significant information concerning the prehistory of the region" and was evaluated as "does not meet criterion d and is not considered eligible for the National Register" (Haisten et al., 1992a-b; Hines et al., 1992).
- **P-24-621**, Los Banos Creek, is a State Point of Historical Interest (see description under Segment 2 above).
- **Ortigalita School** was formerly present within Western Corridor Alternative Segment 2A on the north side of Ortigalita Creek and a north-south trending road in 1908-1911. The school is in the former *Rancho Panoche de San Juan y Las Carrisalitos*. By the early 1940s, the school was no longer in existence (USGS, Panoche, Calif., 1908-1911; USGS, Ortigalita Peak, Calif., 1943).

### ***Segment 6A***

This segment includes one historic resource, the **Southern Pacific Railroad**, the track alignment for the former railroad (see description under Segment 6 above).

### ***Segment 6B***

Alternative Segment 6B includes two historic resources:

- **Southern Pacific Railroad**, the track alignment for the former railroad (see description under Segment 6 above). Part of this alignment has been formally recorded west of the Los Banos-Gates Project as site CA-Fre-3093H/P-10-3199 (see description under Segment 6 above).
- The **Road to San Joaquin** appears to correspond to present-day Little Panoche Road (see description under Segment 4 above).

#### **C.4.1.4.3 Eastern Corridor Alternative**

No recorded cultural resources have been identified in the Eastern Corridor Alternative Segment 1. The recorded resources in Segments 2, 3, 4, 5, and 6 are described below.

### ***Segment 2***

Three prehistoric sites and one historic site are recorded in Segment 2:

- **CA-Mer-25/P-24-126**, a prehistoric site, has been recorded within Eastern Corridor Alternative (ECA) Segment 2 west of the existing transmission lines on or on the side of a detention dam at the far eastern end of the Los Banos Creek Reservoir. The site has been inundated by the reservoir. Prior to recordation the site had been impacted by a corral and partly by a road. A reported 1964 site report by W. Olsen is not on file at the CCIC. No additional information is available (Olsen, 1964; Pope and Pope, 1973). This site would have been within the “Los Banos Archaeological District” (see CA-Mer-68 below for additional information).
- **CA-Mer-68/P-24-2** is partly within the eastern side of ECA Segment 2 in the Los Banos State Recreation Area. This prehistoric site consists of a large habitation site on a terrace on the south side of Los Banos Creek as it flows into the San Joaquin River. The site was one of 107 visited and mapped during a reconnaissance of the Central San Joaquin Valley and placed within the Los Banos region (Hewes, 1941). Thirteen (13) auger test units were completed at CA-Mer-68 in 1990. Past and continuing impacts to the site include stream erosion, cattle grazing, gravel mining, picnic area construction and use, horse corrals and equestrian use, fencing and power service, and road and firebreak construction. These impacts appear to have been responsible for the absence of isolates within the APE (USGS, Ortigalita Peak NW, Calif. 1984 [note Borrow Pit]; Hewes and Massey, 1939b; Pritchard, 1966 in Mikkelsen and Hildebrandt, 1990; CAL/DPR 1992; Mikkelsen et al., 1990; Scott et al., 1993; Scott, 1994). Site CA-Mer-68 has not been formally determined eligible for either the California or National Registers. However, it was evaluated in 1990 as eligible for the National Register and within a potential “Los Banos Archaeological District” composed of 33 prehistoric sites of which 27 were evaluated as eligible.
- The majority of prehistoric site **CA-Mer-302/P-24-392** is situated in ECA Segment 2 north of the existing transmission lines on a tributary of Billie Wright Creek. The site was relocated by Peak & Associates, Inc.

<sup>5</sup> With the exception of CA-Mer-68, these sites are not located in the Area of Potential Effects (APE). Six were evaluated as not eligible and 15 require additional information for evaluation. CA-Mer-3, the Menjoulet site, appears to have been a tribelet center with a 23 meter diameter housepit, the largest known housepit in California (Pritchard 1970; Moratto 1984:190-191).



in 1992. No additional information is available (Napton 1990/CCIC-645; Napton et al. 1990; Peak & Associates, Inc. 1992/CCIC-1976). The site has not been evaluated.

- **P-24-621**, Los Banos Creek, is a State Point of Historical Interest (see description under Proposed Segment 2 above).

### ***Segment 3***

Segment 3 of the Eastern Corridor Alternative includes two recorded historic resources:

- **CA-Mer-303H/P-24-393**, a historic era trash dump, is located on the periphery of ECA Segment 3 on the southwest side of I-5 on the northern edge of a wash of the Ortigalita Creek drainage. CA-Mer-303H was evaluated as "does not appear to meet NRHP eligibility criteria" by both Hines et al. (1992) and by Romano et al. (1993). The latter noted that the integrity of the site was deemed poor due to cattle grazing, cultivation, and bioturbation, and that the site was not associated with a known historic event, context, or person and lacked structural features. Due to the lack of integrity, the site cannot address research questions of ethnicity, economic status, or gender; nor can they illustrate consumer choice, trade patterns, or lifestyle. Furthermore, the site may not meet the 50-year age criterion.
- **CA-Mer-328H/P-24-417**, a surface scatter of historical debris, is located within ECA Segment 3 southwest of I-5 and adjacent to an intermittent drainage. Grazing appears to have impacted the site and the construction of a reservoir appears to have removed or displaced part of the artifact scatter (Bowyer et al. 1992). CA-Mer-328H was not initially reviewed by Moratto et al. (1990) as part of the PGT-PG&E Pipeline Expansion Project. However, the site was later reviewed by Canaday et al. (1992) who noted that the integrity of CA-Mer-328H may have been slightly impaired from agricultural activities but that the sparse artifact scatter did not appear to be sufficient to establish associations with historical themes or persons important to the region (e.g., National Register criteria a and b, California Register criteria 1 and 2). He additionally noted that the lack of features or buried component indicate that the site cannot contribute data useful to address important archaeological research questions (National Register criteria d, California Register criteria 4) and therefore, no further management was recommended. The criteria for both the National Register and the California Register are discussed in Section C.4.2.

### ***Segment 4***

Two potentially historic resources occur along Segment 4 of the Eastern Corridor Alternative:

- The California Aqueduct enters the Eastern Corridor Alternative (USGS, Charleston School, Calif. in Merced County) and crosses under the existing transmission lines (from east to west) (USGS, Laguna Seca Ranch, Calif.). The canal crosses again under the existing transmission lines (west to east) and leaves the corridor in Fresno County. This engineering feature provides water for municipal, industrial, and agricultural users, but has not been formally recorded in the project corridor although two points on the canal in San Joaquin County have been formally recorded as P-39-90 (USGS, Tracy, Calif., 1981).

The California Aqueduct is less than 50 years of age and is currently evaluated as not eligible for the National Register of Historic Places. The portion of the California Aqueduct between the O'Neill Forebay, which is west of Los Banos, and Kettleman City, which is southeast of the Gates Substation, was constructed between 1963 and 1968. The Aqueduct is important to the economy and society of California for "these irrigation canals have allowed the West Side region to develop into a highly diversified agricultural region mainly characterized by large farms" (Chavez et al., 1986). The Aqueduct has been evaluated as not of "exceptional historical significance" which is required of any historic property under 50 years to be evaluated as eligible for the National Register. It appears likely that the system will become eligible for the National Register upon reaching or near reaching 50 years of age (Author Unknown, 1996; Hatoff et al., 1995). Criteria for the California Register, which are discussed in Section C.4.2.2 below, are similar to the National Register, but lack a stated minimum age requirement. It is possible that the California Aqueduct is eligible for the

California Register under criterion 1, which is that the California Aqueduct is a part of the local and regional history.

- Another resource along ECA Segment 4 is a "**Wagon Road**" (USBLM, 1854-1880; USGS, Hammonds Ranch, Calif.).

### ***Segment 5***

Four 19th century road segments that cross Segment 5 of the Eastern Corridor Alternative consist of:

- "Road from Panoche to Cantua" (USBLM, 1853-1880; USGS Levis, Calif.; USGS, Lillis Ranch, Calif.).
- Road - along the north side of Cantua Creek (USBLM, 1853-1855; USGS, Tres Picos Farms, Calif.)
- Road - appears to start/stop at south bank of Cantua Creek (USBLM, 1853-1855; USGS, Tres Picos Farms, Calif.)
- Road (USBLM, 1854-1855; USGS, Domengine Ranch, Calif.).

### ***Segment 6***

Two historic resources are recorded in Segment 6:

- The former **Southern Pacific Railroad** track alignment is crossed by ECA Segment 6, as well as the Proposed Segment 6 and Western Corridor Alternative Segments 6A and 6B. Part of this alignment has been formally recorded west of the Los Banos-Gates Project as site CA-Fre-3093H/P-10-3199 [see Proposed Segment 6 above for additional information].
- Two historic roads, "**Wagon Road**" and "**Trail**," formerly present along the north side of the Southern Pacific railroad tracks meet/bifurcate ECA Segment 6. (USBLM, 1853-1855; USGS, Guijarral Hills, Calif.)

## **C.4.2 APPLICABLE REGULATIONS, PLANS, AND STANDARDS**

### **C.4.2.1 Federal**

This document has been undertaken to meet compliance requirements for cultural resources in accordance with the California Environmental Quality Act (CEQA). However, this effort also requires evaluations of historic properties within the Area of Potential Effects for inclusion on both the National Register of Historic Places and the California Register of Historical Resources.

Federal projects including those requiring a federal license or using federal funding require compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (16 U.S.C., Section 470f) and the implementing regulations 36 CFR 800. Section 106 (16 USC 470f) of the NHPA requires federal agencies, prior to implementing an undertaking to identify cultural resources eligible for inclusion or listed on the National Register of Historic Places (NRHP) within the proposed Permit Area, to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Office (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing on the NRHP.

Eligibility criteria for the National Register of Historic Places (NRHP) require that a resource:

- 1) Is at least 50 years old unless of exceptional historical significance;
- 2) Retains integrity of location, design, setting, materials, workmanship, feeling, and association;
- 3) Has one or all of the following characteristics associated:
  - a. with events that have made a significant contribution to the broad patterns of our history;
  - b. with the lives of persons significant in our past;
  - c. embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction;
  - d. have yielded, or may be likely to yield, information important in prehistory or history.

#### **C.4.2.2 State**

##### ***Historical Resources***

The California Environmental Quality Act (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 California Register of Historical Resources (CRHR) is presumed to be historically or culturally significant.

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, or not deemed significant in a historical resource survey may nonetheless be historically significant (Section 21084.1; see Section 21098.1).

A historical resource may be listed in the CRHR if it meets one or more of the following criteria:

- 1) It 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) It is associated with the lives of persons important to local, California or national history;
- 3) It 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;
- 4) It has yielded or has the potential to yield information important in the prehistory or history of the local area, California or the nation.

Automatic listings include properties listed in the National Register of Historic Places, determined eligible for the National Register either by the Keeper of the National Register or through a consensus determination on a project review, or State Historical Landmarks from number 770 onward. In addition, Points of Interest nominated from January 1998 onward will be jointly listed as Points and in the California Register

### ***Archaeological Resources***

CEQA requires a Lead Agency to identify and examine environmental effects that may result in significant adverse impacts. Where a project may adversely affect a unique archaeological resource, Section 21083.2 requires the Lead Agency to treat that effect as a significant environmental impact and prepare an 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 impact. Sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of a project's environmental analysis. Either of these benchmarks may indicate that a project may have a potential adverse effect on archaeological resources.

Public Resources Code 21083.2 (g) defines a unique archaeological resource as “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.”

Section 21084.1 requires treatment of any substantial adverse change in the significance of a historical resource listed in, or eligible to be listed in, the CRHR as a significant effect on the environment. The definition of "historical resource" includes archaeological resources listed in or formally determined eligible for listing in the CRHR and by reference, the NRHP, California Historical Landmarks, Points of Historical Interest, and local registers.

Public Resources Code Sections 5020.1 and 5024.1 provide the following definitions:

- *Historic district* means a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.
- *Historical landmark* means any historical resource that is registered as a state historical landmark pursuant to Section 5021.
- *Historical resource* includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic agricultural, educational, social, political, military, or cultural annals of California.
- *Local register of historic resources* means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.
- *Substantial adverse change* means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.

A resource identified as significant in a historical resource survey may be listed in the CRHR if the survey meets all of the following criteria:

- The survey has been or will be included in the State Historic Resources Inventory.
- The survey and the survey documentation were prepared in accordance with Office of Historic Preservation procedures and requirements.
- The resource is evaluated and determined by the Office of Historic Preservation to have a significance rating of Category 1 to 5 on Department of Parks and Recreation Form 523.
- If the survey is five or more years old at the time of its nomination for inclusion in the CRHR, the survey is updated to identify historical resources that have become eligible or ineligible due to changed circumstances or further documentation and those that have been demolished or altered in a manner that substantially diminishes the significance of the resource.

### **C.4.2.3 Other Laws and Regulations**

Other 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 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.

## **C.4.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED PROJECT**

### **C.4.3.1 Introduction**

The general *Area of Potential Effects* (APE) for Archaeology consists of the transmission line corridor and areas required to construct the line. These include:

- Installation of new tower bases of 100 x 100 feet (0.23 acre) with placement at average intervals of 1,200 feet.
- Conductor tensioning sites of 200 x 200 feet (0.9 acre) within the ROW at intervals of 3-miles in hilly terrain and 5-miles in flat terrain.
- Conductor splicing areas of 20 x 50 feet (0.02 acre) within the ROW at 2-mile intervals.
- Construction yards of 500 x 500 feet (5.7 acre) at Los Banos, Panoche (MP 45), and Gates Substations.
- Location of Work Camps of 300 x 300 feet (2.0 acres) at Mercy Springs (MP 25) and Highway 198 (MP W72) consisting of one or two 8-man sleeping trailers, kitchen and dining facilities, and restrooms.
- Roads to access to each tower location will be required during construction (generally 10 to 14 feet wide with 20 feet turns). Existing roads, with necessary repair, will be used where possible. Only spur roads to tower locations would need to be constructed.

A maintenance program would also be established to ensure continued reliable service of the transmission system including inspection of the transmission line structures, access roads, and ROWs either by air or, if necessary, by foot or vehicle, one to three times per year. Emergency repairs would be made if the transmission line were damaged and required immediate attention. Maintenance crews of fewer than 10 persons would use tools, trucks, assist trucks, aerial lift trucks, cranes, and other equipment necessary for repairing and maintaining insulators, conductors, structures, and access roads.

The APE for the Proposed Western Corridor will be developed based on several requirements including the separation required to minimize interference between 500 kV and 230 kV transmission lines (i.e., a minimum of 130 feet) and other factors including conductor type, span length, tower staggering, and so on. For purposes of this report, a 0.25-mile (1,320 feet) corridor centered on the probable alignment as mapped by PG&E was used for the cultural resources review.

#### **C.4.3.2 Definition And Use Of Significance Criteria**

The thresholds of significance for cultural resource impacts for the project are defined as situations where construction or operation of the project could:

- Result in damage to, the disruption of, or adversely affect a property that is listed in the California Register of Historical Resources (CRHR) or a local register of historic resources as per Section 5020.1 of the Public Resources Code
- Cause damage to, disrupt, or adversely affect an important prehistoric or historic archaeological resource such that its integrity could be compromised or eligibility for future listing on the CRHR diminished
- Cause damage to or diminish the significance of an important historic resource such that its integrity could be compromised or eligibility for future listing on the CRHR diminish.

Significant prehistoric cultural resources are defined as human burials, features, or other clusterings of finds made, modified, or used by Native American peoples in the past. The prehistoric and protohistoric indicators of prior cultural occupation by Native Americans include artifacts and human bone, as well as soil discoloration, shell, animal bone, sandstone cobbles, ashy areas, and baked or vitrified clays. Prehistoric materials may include:

- Human bone - either isolated or intact burials.
- Habitation (occupation or ceremonial structures as interpreted from rock rings/features, distinct ground depressions, differences in compaction (e.g., house floors).
- Artifacts including chipped stone objects such as projectile points and bifaces; groundstone artifacts such as manos, metates, mortars, pestles, grinding stones, pitted hammerstones; and, shell and bone artifacts including ornaments and beads.
- Various features and samples including hearths (fire-cracked rock; baked and vitrified clay), caches, faunal and shellfish remains (which permit dietary reconstruction), distinctive changes in soil stratigraphy indicative of prehistoric activities.
- Isolated artifacts.

Historic cultural materials may include finds from the late 19<sup>th</sup> through early 20<sup>th</sup> centuries. Objects and features associated with the Historic Period can include:

- Structural remains or portions of foundations (bricks, cobbles/boulders, stacked field stone, postholes, etc.).
- Trash pits, privies, wells and associated artifacts.
- Isolated artifacts or isolated clusters of manufactured artifacts (e.g., glass bottles, metal cans, manufactured wood items, etc.).
- Human remains.

In addition, cultural materials including both artifacts and structures that can be attributed to Hispanic, Asian and other ethnic or racial groups are potentially significant. Such features or clusters of artifacts and samples include remains of structures, trash pits, and privies.

**C.4.3.3 Mitigation Measures From 1988 FEIR/EIS**

Table C.4-1 presents the cultural resource impacts identified in the 1988 FEIS/EIR, and then compares the impacts to those identified in this SEIR. Impacts and mitigation measures are described in detail in Section C.4.3.4.

**Table C.4-1 Summary of Impacts: 1988 FEIS/EIR\* and SEIR**

Final EIS/EIR Impact	Significance	SEIR Impact	Significance
Disturbance or destruction of cultural resources	Less than significant after mitigation	<p><b>Impact 4-1:</b> Inadvertently impact previously identified cultural resources during construction</p> <p><b>Impact 4-2:</b> Discover previously unrecorded cultural resources during construction.</p> <p><b>Impact 4-3:</b> Project construction could affect parks, Wilderness Study Area (WSA), and recreational areas that may contain cultural resources.</p>	Less than significant after mitigation

\* Impacts from 1988 FEIS/EIR are from Table 2-B, Summary of Significant Environmental Impacts, Applicable Mitigation Measures, and Mitigation Effectiveness for Los Banos-Gates.

Table C.4-2 lists the mitigation measures that were proposed in the FEIS/EIR (TANC/WAPA, 1988) for protection of cultural resources for the minimization of impacts from the Proposed Project, and shows how those measures are addressed in this document. These mitigation measures have been modified to add specificity and appropriate enforcement provisions.

**Table C.4-2 Mitigation Measures from 1988 FEIS/EIR**

Measure from 1988 FEIS/EIR	Disposition in this SEIR
Conduct preconstruction field surveys to locate and record cultural and paleontological resources within the project right-of-way and, in particular, resources that are situated at proposed facilities and roadway locations.	Incorporated into Mitigation Measure <b>C-1</b>
Avoid sensitive resources by locating construction activities in non-sensitive locations. Consultation with cultural and paleontological resource professionals during the siting of the transmission line will facilitate mitigation through avoidance.	Incorporated into Mitigation Measure <b>C-2</b>
Conduct cultural resources data recovery programs, through surface collection and excavation, at significant resource sites where adverse impacts cannot be otherwise mitigated.	Incorporated into Mitigation Measure <b>C-3</b>
Consult with Native Americans concerning Native American resources that cannot be mitigated through avoidance, in order to seek mutually acceptable solutions to minimize project on significant resources.	Incorporated into Mitigation Measure <b>C-4</b>
Assess resources for value through consultation with Native American State Historic Preservation Officers, other agencies and recognized professionals.	Incorporated into Mitigation Measure <b>C-5</b>
If significant resources are present and avoidance is not possible, data recovery will be performed.	Incorporated into Mitigation Measures <b>C-1, C-2, and C-5</b>

#### **C.4.3.4 General Project Impacts And Mitigation Measures**

Ground-disturbing construction activities associated with transmission line tower and substation construction have the highest potential to directly impact cultural resources in the project area by disturbing both surface and subsurface soils. Impacts could include excavation associated with transmission line structure placement and anchors; grading for access roads; structure assembly areas; structure erection; and, any other activities associated with placing the transmission line in service. Conductor stringing and reconductoring have a low to moderate potential to affect cultural resources depending on the technique used (e.g., truck, helicopter, etc.).

Subsurface and surface disturbance could result in the loss of integrity of cultural deposits, loss of information, and the alteration of a site setting. Potential indirect impacts, primarily vandalism, could result from increased access to and use of the general area during both construction and operation. There is also the potential for inadvertent discoveries of buried archaeological materials during construction.

No impacts to cultural resources are anticipated during regular operation including inspection and general maintenance. Heavy repair operations including tower, insulator and conductor replacement could result in subsurface and surface impacts.

The following general impacts are evaluated in this section:

- **Impact 41.** Construction operations could inadvertently affect known cultural resources within or adjacent to the proposed or alternative corridors.
- **Impact 4-2.** Previously unrecorded cultural resources could be discovered during ground disturbing construction operations. Construction operations in areas of native soil, especially in the near vicinity of flowing and intermittent water sources and former lagoons/marshy areas, could result in the inadvertent exposure of significant buried prehistoric or historic cultural materials.
- **Impact 43.** Project construction could affect parks, Wilderness Study Areas (WSA), and recreational areas that may contain cultural resources.



The following mitigation measures are recommended for protection of cultural resources. These measures are general because at the time of printing this Draft SEIR, PG&E has not identified a specific route (and tower locations) for its Proposed Project. However, implementation of these measures should ensure that impacts to cultural resources are less than significant (**Class II**).

***Mitigation Measure for all Cultural Resources Impacts***

**C-1** PG&E shall develop and implement a *Cultural Resources Management Plan* (CRMP) for the project covering pre-construction, construction and post-construction activities. PG&E shall submit the CRMP to the CPUC at least 30 days prior to construction for review and approval. The CRMP shall include procedures for pre-construction field survey, designation and avoidance of cultural resources areas, significance evaluation including potential testing and possible data recovery prior to construction, archaeological monitoring during construction, treatment of the unexpected discovery of cultural resources (including Native American burials), and treatment of significant sites that may be exposed during all phases of the project. The CRMP shall detail the qualifications of the Project Archaeologist, reporting requirements by the Project Archaeologist; designate a location for the curation of cultural materials collected during the project; and, specify that archaeologists and other discipline specialists meet any Professional Qualifications Standards mandated by the California Office of Historic Preservation (OHP).

The CRMP shall include requirements detailing that prior to construction or ground-disturbing activities, PG&E shall (1) complete cultural resources training for all construction personnel; and, (2) insure that any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend training so they are aware of the potential for inadvertently exposing buried archaeological deposits.

The CRMP shall include the requirement for and definition of a background briefing for supervisory construction personnel describing the potential for exposing cultural resources, the location of any potential Environmentally Sensitive Areas (ESA) and anticipated procedures to treat unexpected discoveries. Construction personnel shall be trained regarding the recognition of possible buried prehistoric and historic resources during construction. PG&E shall inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials including Native American burials.

Wherever a tower, access road, equipment, etc. must be placed or accessed within 100 feet of a recorded, reported or known archaeological site eligible or potentially eligible for the CRHR, the site will be flagged on the ground as an Environmentally Sensitive Area (ESA). Construction equipment would then be directed away from the ESA, and construction personnel would be directed to avoid entering the ESA.

Upon discovery of potential buried cultural materials, work in the immediate area of the find shall be halted and PG&E's archaeologist notified. Once the find has been identified, PG&E's archaeologist will make the necessary plans for treatment of the find(s) and for the evaluation and mitigation of impacts if the finds are found to be important according to CEQA.

***Mitigation Measures for Impact 4-1, Impacts to Known Cultural Resources***

- C-2** PG&E shall conduct pre-construction field surveys to locate and record cultural resources within the project right-of-way and related construction facilities and roadways. PG&E shall submit the results from the pre-construction survey to the CPUC at least 30 days prior to construction. If resources are found, they shall be formally recorded and/or updates shall be filed for previously recorded sites according to the procedures defined in the Cultural Resources Management Plan (see Mitigation Measure C-1). All resources shall be evaluated in accordance with California Register of Historical Resources criteria.
- C-3** PG&E shall avoid known significant or potentially significant cultural resources in/adjacent to the project corridor. They shall consult with cultural resource professionals (approved by the CPUC) during the siting of the transmission line to avoid cultural resources where possible. If avoidance is not possible, specific procedures shall be followed to minimize resource impact or to record resources that cannot be avoided; these procedures shall be identified and reported in the Cultural Resources Management Plan (see Mitigation Measure C-1).

***Mitigation Measure for Impact 4-2, Discovery of Previously Unknown Resources***

- C-4** PG&E shall consult with interested Native Americans to identify areas or features of significant or potentially significant Native American concern, and shall develop procedures (to be documented in the CRMP, Mitigation Measure C-1) for documentation of or preservation of resources that cannot be avoided. Documentation of consultation and issues discussed shall be provided to the CPUC, at least 30 days prior to construction.

***Mitigation Measure for Impact 4-3, Impacts on Cultural Resources in Parks and Recreation Areas***

- C-5** PG&E shall consult with and implement any site-specific cultural resources requirements mandated by the CPUC, State Office of Historic Preservation, and within the jurisdiction of other agencies (e.g., Bureau of Reclamation, Bureau of Land Management (BLM), the California Department of Parks and Recreation (CAL/DPR). Documentation of consultation and issues discussed shall be provided to the CPUC, at least 30 days prior to construction. Areas and parks that may be affected are the following:
- California Aqueduct (owned by the Bureau of Reclamation and managed by the California Department of Water Resources (DWR))
  - Little Panoche Reservoir (jointly managed by the DWR and California Department of Fish and Game)
  - Panoche Hills Wilderness Study Area (WSA) (BLM)
  - San Luis Reservoir State Recreation Area (CAL/DPR)
  - Los Banos Creek Recreation Area (CAL/DPR)

**C.4.3.5 Cultural Resources in the Proposed 500 kV Transmission Line Corridor**

This section defines the impacts and mitigation measures for the Proposed Project Corridor; the resources listed here are described in Section C.4.1.4.

***Segment 1***

No formally recorded sites or other known cultural resources were identified within this segment. Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should be implemented to ensure that any resources discovered during construction are appropriately protected. These measures would ensure that the impacts to cultural resources would be less than significant (**Class II**).

***Segment 2***

Four formally recorded sites were identified in this segment:

- CA-Mer-278/P-24-368
- CA-Mer-279/P-24-369
- CA-Mer-331H/P-24-420
- P-24-621 (no trinomial, a State Point of Historical Interest).

However, with the implementation of Mitigation Measure **C-3**, the impact on these sites will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

***Segment 3***

No formally recorded sites or other known cultural resources were identified within this segment. Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should be implemented to ensure that any resources discovered during construction are appropriately protected. These measures would ensure that the impacts to cultural resources would be less than significant (**Class II**).

***Segment 4***

One formally recorded site, **CA-Fre-129/P-10-129**, and two mapped 19th century roads were identified at this segment. With the implementation of Mitigation Measure **C-3**, the potential impact on these resources will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

***Segment 5***

Three formally recorded sites and a historic area were identified in or near this segment:

- CA-Fre-46/P-10-46
- CA-Fre-85/P-10-85
- CA-Fre-1997/P-10-1997
- A portion of the East Coalinga Extension Oil Field (part in Segment 6) is present along with nine 19th century roads.

With the implementation of Mitigation Measure **C-3**, the potential impact on these resources will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

### ***Segment 6***

This segment has the Southern Pacific Railroad formally recorded west of the project (CA-Fre-3093H/P-10-3199). Part of the East Coalinga Extension Oil Field (see Segment 5 above), and two 19th Century roads/trails are also present. However, with the implementation of Mitigation Measure **C-3**, the potential impact on these resources will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

### ***Segment 7***

No formally recorded sites or other known cultural resources were identified within this segment. Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should be implemented to ensure that any resources discovered during construction are appropriately protected. These measures would ensure that the impacts to cultural resources would be less than significant (**Class II**).

#### **C.4.3.6 Proposed Substation Modifications**

No formally recorded sites or other known cultural resources were identified within the Los Banos Substation and Gates Substation facility footprints. Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should be implemented to ensure that any resources discovered during construction are appropriately protected. These measures would ensure that the impacts to cultural resources would be less than significant (**Class II**).

#### **C.4.3.7 Proposed Changes South of Gates Substation**

No details on this segment are available, as this area was not mapped, searched, or reviewed for this report. However, based on PG&E's statement that existing towers are expected to be used if reconductoring is required, there should be no impacts to cultural resources. However, if ground disturbance is required, implementation of Mitigation Measures **C-1 through C-5** would ensure that impacts would be less than significant (**Class II**).

### **C.4.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR WESTERN CORRIDOR ALTERNATIVE SEGMENTS**

Four Alternative Segments were evaluated along the Western Corridor: Segment 2A (which could replace Proposed Segment 2), Segment 4A (which could replace Proposed Segment 4), and Segments 6A and 6B (which could replace Proposed Segment 6). The potential impacts of each segment are discussed below.

#### C.4.4.1 Segment 2A

Four recorded sites were identified in or near this segment:

- CA-Mer-278/P-24-368
- CA-Mer-279/P-24-369
- CA-Mer-335/P-24-424
- P-24-621 (no trinomial, a State Point of Historical Interest).

In addition, former Ortigalita School is situated in the segment. The implementation of Mitigation Measure **C-3** would reduce potential project impacts on these resources to less than significant levels (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

#### C.4.4.2 Segment 4A

No formally recorded sites or other known cultural resources were identified within this segment. Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should be implemented to ensure that any resources discovered during construction are appropriately protected. These measures would ensure that the impacts to cultural resources would be less than significant (**Class II**).

#### C.4.4.3 Segment 6A

Segment includes a portion of the Southern Pacific Railroad formally recorded west of the project (CA-Fre-3093H/P-10-3199). However, with the implementation of Mitigation Measure **C-3**, the potential impact on these resources will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

#### C.4.4.4 Segment 6B

Segment includes a portion of the Southern Pacific Railroad formally recorded west of the project (CA-Fre-3093H/P-10-3199) and one 19<sup>th</sup> century road. Also, the **Road to San Joaquin** appears to correspond to present-day Little Panoche Road (also crossed by Segment 4). However, with the implementation of Mitigation Measure **C-3**, the potential impact on these resources will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

### C.4.5 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR THE EASTERN CORRIDOR ALTERNATIVE

#### C.4.5.1 Segment 1

No formally recorded sites or other known cultural resources were identified within this segment. Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should be implemented to ensure that any resources

discovered during construction are appropriately protected. These measures would ensure that the impacts to cultural resources would be less than significant (**Class II**).

#### **C.4.5.2 Segment 2**

Four formally recorded sites were identified in this segment:

- CA-Mer-25/P-24-126
- CA-Mer-68/P-24-2
- CA-Mer-302/P-24-392
- P-24-621 (no trinomial, a State Point of Historical Interest)

However, with the implementation of Mitigation Measure **C-3**, the potential impact on these resources will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**). No other reported or cultural resources have been identified in this segment.

#### **C.4.5.3 Segment 3**

Two formally recorded sites were identified in this segment:

- CA-Mer-303H/P-24-393
- CA-Mer-328H/P-24-417.

However, with the implementation of Mitigation Measure **C-3**, the potential impact on these resources will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

#### **C.4.5.4 Segment 4**

This segment has a portion of the California Aqueduct formally recorded at two points as P-39-90 in San Joaquin County and a 19th century road. A portion of the **California Aqueduct**, part of the State Water Project (SWP) system, is situated in the Eastern Corridor Alternative in both Merced and Fresno Counties. However, with the implementation of Mitigation Measure **C-3**, the potential impact on these resources will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

#### **C.4.5.5 Segment 5**

This segment has no formally recorded sites. Four 19<sup>th</sup> century roads are present. Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should be implemented to ensure that any resources discovered during construction are appropriately protected. These measures would ensure that the impacts to cultural resources would be less than significant (**Class II**).

#### **C.4.5.6 Segment 6**

This segment contains the Southern Pacific Railroad, recorded as CA-Fre-3093H/P-10-3199, west of the project, and a 19<sup>th</sup> century Wagon Road and Trail. However, with the implementation of Mitigation Measure **C-3**, the potential impact on these resources will be less than significant (**Class II**). Mitigation Measures **C-1**, **C-2**, **C-4**, and **C-5** should also be implemented to protect resources discovered during construction (**Class II**).

#### **C.4.6 MITIGATION MONITORING, COMPLIANCE, AND REPORTING TABLE**

Mitigation Measures **C-1 through C-5**, presented in Table C.4-3, Mitigation Monitoring Program, are recommended to reduce the potential impacts of the project or an alternative to less than significant levels (**Class II**). These mitigation measures incorporate the measures from the 1988 FEIS/EIR (TANC/WAPA) for protection of cultural resources prior to and during construction.

**Table C.4-3 Mitigation Monitoring Program**

Impact	Mitigation Measure	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
<b>Proposed Project, Alternatives, and Project Variants</b>						
<p><b>4-2:</b> Previously unrecorded cultural resources could be discovered during ground disturbing construction operations. (Class II)</p>	<p><b>C-1:</b> PG&amp;E shall develop and implement a <i>Cultural Resources Management Plan</i> (CRMP) for the project covering pre-construction, construction and post-construction activities. PG&amp;E shall submit the CRMP to the CPUC at least 30 days prior to construction for review and approval. The CRMP shall include procedures for pre-construction field survey, designation and avoidance of cultural resources areas, significance evaluation including potential testing and possible data recovery prior to construction, archaeological monitoring during construction, treatment of the unexpected discovery of cultural resources (including Native American burials), and treatment of significant sites that may be exposed during all phases of the project. The CRMP shall detail the qualifications of the Project Archaeologist, reporting requirements by the Project Archaeologist; designate a location for the curation of cultural materials collected during the project; and, specify that archaeologists and other discipline specialists meet any Professional Qualifications Standards mandated by the California Office of Historic Preservation (OHP).</p> <p>The CRMP shall include requirements detailing that prior to construction or ground-disturbing activities, PG&amp;E shall (1) complete cultural resources training for all construction personnel; and, (2) insure that any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend training so they are aware of the potential for inadvertently exposing buried archaeological deposits.</p> <p>The CRMP shall include the requirement for and definition of a background briefing for supervisory construction personnel describing the potential for exposing cultural resources, the location of any potential Environmentally Sensitive Areas (ESA) and anticipated procedures to treat unexpected discoveries. Construction personnel shall be trained regarding the recognition of possible buried prehistoric and historic resources during construction. PG&amp;E shall inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials including Native American burials.</p> <p>Wherever a tower, access road, equipment, etc. must be placed or accessed within 100 feet of a recorded, reported or known archaeological site eligible or potentially eligible for the CRHR, the site will be flagged on the ground as an Environmentally Sensitive Area (ESA). Construction equipment would then be directed away from the ESA, and construction personnel would be directed to avoid entering the ESA..</p> <p>Upon discovery of potential buried cultural materials, work in the immediate area of the find shall be halted and PG&amp;E's archaeologist notified. Once the find has been identified, PG&amp;E's archaeologist will make the necessary plans for treatment of the find(s) and for the evaluation and mitigation of impacts if the finds are found to be important according to CEQA.</p>	<p>At all locations along approved corridor</p>	<p>CPUC to verify that site has been avoided                      CPUC to verify that ESA has been established.                      CPUC to review and approve <i>Treatment Plan</i>.                      CPUC to verify that PG&amp;E's archaeologist is implementing procedures and requirements mandated in <i>Treatment Plan</i> in accordance with parameters and schedules.</p>	<p>Recorded, reported and known cultural resources within, near and adjacent to construction are not damaged or destroyed during construction.</p>	<p>CPUC, relevant jurisdictional agencies</p>	<p>Develop plan before construction; implement during construction</p>



Impact	Mitigation Measure	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
<p><b>4-1:</b> Inadvertent impacts to recorded, reported, and known cultural resources. (Class II)</p>	<p><b>C-2:</b> PG&amp;E shall conduct pre-construction field surveys to locate and record cultural resources within the project right-of-way and related construction facilities and roadways. PG&amp;E shall submit the results from the pre-construction survey to the CPUC at least 30 days prior to construction. If resources are found, they shall be formally recorded and/or updates shall be filed for previously recorded sites according to the procedures defined in the Cultural Resources Management Plan (see Mitigation Measure C-1). All resources shall be evaluated in accordance with California Register of Historical Resources criteria.</p>	<p>At all locations along approved corridor</p>	<p>Consult with cultural resource professionals during the siting of the transmission line to facilitate mitigation through avoidance.</p>	<p>Cultural resources within, near and adjacent to construction are not damaged or destroyed during construction. Cultural resources are not destroyed during construction; inadvertent discoveries are evaluated and treated in accordance with <i>CRMP</i> parameters (See C-1)</p>	<p>CPUC, relevant jurisdictional agencies</p>	<p>Prior to construction</p>
	<p><b>C-3:</b> PG&amp;E shall avoid known significant or potentially significant cultural resources in/adjacent to the project corridor. They shall consult with cultural resource professionals (approved by the CPUC) during the siting of the transmission line to avoid cultural resources where possible. If avoidance is not possible, specific procedures shall be followed to minimize resource impact or to record resources that cannot be avoided; these procedures shall be identified and reported in the Cultural Resources Management Plan (see Mitigation Measure C-1).</p>	<p>At all locations along approved corridor</p>	<p>Consult with cultural resource professionals during the siting of the transmission line to facilitate mitigation through avoidance.</p>	<p>Cultural resources within, near and adjacent to construction are not damaged or destroyed during construction. Cultural resources are not destroyed during construction; inadvertent discoveries are evaluated and treated in accordance with <i>CRMP</i> parameters (See C-1)</p>	<p>CPUC, relevant jurisdictional agencies</p>	<p>During construction and operations, if applicable</p>
<p><b>4-2:</b> Previously unrecorded cultural resources could be discovered during ground disturbing construction operations. (Class II)</p>	<p><b>C-4:</b> PG&amp;E shall consult with interested Native Americans to identify areas or features of significant or potentially significant Native American concern, and shall develop procedures (to be documented in the CRMP, Mitigation Measure C-1) for documentation of or preservation of resources that cannot be avoided. Documentation of consultation and issues discussed shall be provided to the CPUC, at least 30 days prior to construction.</p>	<p>At all locations along approved corridor</p>	<p>CPUC to verify that Native Americans have been consulted regarding cultural resources requirements.</p>	<p>Cultural resources are not destroyed during subsurface construction and are treated in accordance with Native American cultural resource requirements</p>	<p>CPUC, relevant jurisdictional agencies</p>	<p>Before construction and during construction</p>

Impact	Mitigation Measure	Location	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
<p><b>4-3:</b> Portions of the project will pass through, cross or are adjacent to recognized parks, Wilderness Study Area (WSA), and recreational areas that may contain cultural resources. <b>(Class II)</b></p>	<p><b>C-5:</b> PG&amp;E shall consult with and implement any site-specific cultural resources requirements mandated by the CPUC, State Office of Historic Preservation, and within the jurisdiction of other agencies (e.g., Bureau of Reclamation, Bureau of Land Management (BLM), the California Department of Parks and Recreation (CAL/DPR). Documentation of consultation and issues discussed shall be provided to the CPUC, at least 30 days prior to construction. Areas and parks that may be affected are the following:</p> <ul style="list-style-type: none"> <li>• California Aqueduct (owned by the Bureau of Reclamation and managed by the California Department of Water Resources (DWR))</li> <li>• Little Panoche Reservoir (jointly managed by the DWR and California Department of Fish and Game)</li> <li>• Panoche Hills Wilderness Study Area (WSA) (BLM)</li> <li>• San Luis Reservoir State Recreation Area (CAL/DPR)</li> <li>• Los Banos Creek Recreation Area (CAL/DPR)</li> </ul>	<p>California Aqueduct                      Little Panoche Reservoir                      Panoche Hills Wilderness Study Area                      San Luis Reservoir State Recreation Area                      Los Banos Creek Recreation Area</p>	<p>CPUC to verify that DWR, CDFG, BLM, and CAL/DPR have been consulted regarding cultural resources requirements within parks, preserves, and recreational areas.</p>	<p>Cultural resources are not destroyed during subsurface construction and are treated in accordance with DWR, CDFG, BLM, and CAL/DPR cultural resource requirements</p>	<p>CPUC, DWR, CDFG, BLM, and CAL/DPR</p>	<p>Before construction and during construction</p>

**C.4.7 REFERENCES**

- Bowyer, G. et al. 1992. Archaeological Site Form, CA-Mer-328H (Temporary Number PEP 12-10; Primary Number P24-417). On file, CHRIS/CCIC, CSU Stanislaus, Turlock.
- California Department of Parks and Recreation, Office of Historic Preservation (CDPR/OHP). 1992. California Points of Historical Interest [with updates]. May 1, 1992.
- \_\_\_\_\_. 1976. California Inventory of Historic Resources. Resources Agency, Department of Parks and Recreation, Sacramento.
- Canaday, Timothy, Michael Ostrogorsky, and Margaret Hess (Barry Price, ed.). 1992. Archaeological Survey of Right-of-Way Corridor and Extra Work Spaces Construction Spread 5B, California. PGT-PG&E Pipeline Expansion Project, California. MS on file, CCIC-1846, CHRIS/CCIC, CSU Stanislaus, Turlock and FR-320, CHRIS/SSJVIC, CSU Bakersfield.
- Chavez, David, Laurence H. Shoup, and Arthur E. Staebler. 1986. Cultural and Paleontological Resources Evaluation for the Los Banos-Gates Transmission Project, Merced and Fresno Counties, California. MS on file, CCIC-592, CHRIS/CCIC, CSU Stanislaus, Turlock and FR-328, CHRIS/SSJVIC, CSU Bakersfield. [more comprehensive than 1986b]. Appendix K. Cultural and Paleontological Resources Technical Report. In Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) California-Oregon Transmission Project and the Los Banos-Gates Transmission Project by TANC/WAPA. November. DOE/EIS - 0128. SCH # 8504914.
- Elsasser, Albert B. 1957. Archaeological Site Form, CA-Fre-129 (Primary Number P-10-129). On file, CHRIS/SSJVIC, CSU Bakersfield.
- Haisten, Heather, Betty River, Bruce Steidl, and Jim Woodward. 1992a-b. Archaeological Site Form, CA-Mer-335 (Temporary Number ORT-4; Primary Number P-24-424). On file, CHRIS/CCIC, CSU Stanislaus, Turlock. [two slightly different forms dated September 25, 1992].
- Hatoff, Brian, Barb Voss, Sharon Waechter, and Stephen Wee. 1995. Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project. MS on file, FR-135, CHRIS/SSJVIC, CSU Bakersfield.
- Hewes, G.W. 1946. Early Man in California and the Tranquillity Site [CA-Fre-48/P-10-8]. *American Antiquity* 11(4):209-215. (cited by Chavez et al. 1986).
- \_\_\_\_\_. 1941. Reconnaissance of the Central San Joaquin Valley. *American Antiquity* 7(2):123-133.
- GWH – WCM [sic; Hewes, Gordon W. and W.C. Massey]. 1939a. Archaeological Site Form, CA-Fre-46 (Temporary Number J 38, 80 (Hewes); Primary Number P-10-46). On file, CHRIS/SSJVIC, CSU Bakersfield.
- \_\_\_\_\_. 1939b. Archaeological Site Form, CA-Mer-68 (Primary Number P-24-2). On file, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Hines, Philip, Eloise Barter, Daniel A. Bell, Luz Gray, Heather Haisten, and Betty Rivers. 1992. A Cultural Resource Inventory and Assessment of the Ortigalita Alternative Reservoir Site, Merced County, California. MS on file, CCIC-1839, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Kroeber, A.L. 1925. Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78. Government Printing Office, Washington, D.C.

- Latta, Frank F. 1977. Handbook of Yokuts Indians (Second Edition, revised and enlarged). Bear State Books, Santa Cruz. MS on file, FR-1577, CHRIS/SSJVIC, CSU Bakersfield.
- Mikkelsen, Patricia, William Hildebrandt, Steven Wee, and John Berg. 1990. Archaeological Inventory and Evaluation for the Proposed Los Banos Grandes Reservoir, Merced County, California. MS on file, CCIC-620, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Mikkelsen, Patricia, et al. [sic] 1990. Archaeological Site Form Supplement, CA-Mer-68 (Temporary Number GWH 68, J 26; Primary Number P-24-2). On file, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Moratto, M.J. 1984. California Archaeology. Academic Press, New York.
- Napton, L. Kyle. 1990. A Cultural Resource Sensitivity Study of the Highway 152 Planning Area, 6333 Acres in Merced County, California. MS on file, CCIC-645, CHRIS/CCIC, CSU Stanislaus, Turlock. (see also CCIC-1976 by Peak & Associates 1992).
- Napton, L., B. Church, and E.A. Greathouse. 1990. Archaeological Site Form, CA-Mer-302 (Temporary Site: Crest Hills; Primary Number P-24-392). On file, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Olsen, W. 1964. Archaeological Site Form, CA-Mer-25 (Temporary Number Mer S105; Primary Number P-24-126). On file, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Olsen, William H. and Louis A. Payen. 1983. Excavations at CA-Mer-130: A Late Prehistoric Site in Pacheco Pass. In Papers on Merced County Prehistory. California Department of Parks and Recreation, Archaeological Resources Section Reports 21:1-85, Sacramento. (cited by Chavez et al. 1986).
- \_\_\_\_\_. 1969. Archaeology of the Grayson Site, Merced County, California [4-Mer-S94]. California Department of Parks and Recreation, Archaeological Resources Section Report 12, Sacramento.
- \_\_\_\_\_. 1968. Archeology of the Little Panoche Reservoir Fresno County, California [CA-Fre-128, CA-Fre-129, and "Salt Canyon" site]. C DPR Archaeological Report 11. MS on file, FR-1133, CHRIS/SSJVIC, CSU Bakersfield.
- Peak & Associates, Inc. 1992. Addendum Report on the Cultural Resources within the Villages of Laguna San Luis Project Area, Merced County, California. MS on file, CCIC-1976, CHRIS/CCIC, CSU Stanislaus, Turlock. (see also CCCI-645 by Napton 1990).
- Pritchard, William E. 1983. Archaeological Testing of Three Kahwathwah Yokuts Dwelling Structures at the San Luis Forebay Site (CA-Mer-119), Merced County, California. In Papers on Merced County Prehistory. California Department of Parks and Recreation, Archaeological Resources Section Reports 21:86-103, Sacramento. (cited by Chavez et al. 1986).
- \_\_\_\_\_. 1966. The Archaeology of Lower Los Banos Creek. M.A. thesis, California State University, Sacramento (as cited by Mikkelsen and Hildebrandt 1990/CCIC-620). California Department of Parks and Recreation, Cultural Resources Section, Sacramento (as cited by Chavez et al. 1986).
- Pope, J. and R. Pope. 1973. Archaeological Site Form [Supplement], CA-Mer-25 (Temporary Number Mer S105; Primary Number P-24-126). On file, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Riddell, F.A. 1949. Appraisal of the Archaeological Resources of Farmington Reservoir, Littlejohns Creek, San Joaquin and Stanislaus Counties, California. Smithsonian Institution River Basin Surveys, Pacific Coast Area. Washington, D.C. (cited by Chavez et al. 1986).

- Riddell, F.A. and W.H. Olsen. 1969. An Early Man Site in the San Joaquin Valley, California. *American Antiquity* 34(2):121-130. (cited by Chavez et al. 1986).
- Romano, Melinda and various others - Barry A. Price, Richard M. Pettigrew, Michael Ostrogorsky, Susan K. Goldberg, Judith A. Willig, Lous Ann Speulda, Pat Mikkelsen and Melinda C. Romano (eds.). 1993. Archaeological Testing and Evaluation Report 1991 Field Season and Historic Properties Treatment Plan for 1992 Field Season. PGT-PG&E Pipeline Expansion Project Idaho, Washington, Oregon, and California. Vol. II.D: Descriptive Reports and Data Compendia, California and Vol. II.D California Appendices. MS on file, CCIC-2370, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Scott, David J. 1994. Archaeological Assessment of Site CA-Mer-68 Merced County, California. MS on file, CCIC-2263, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Scott, David J., Gwyn Alcock, Robert Bock, and Robin Tidmore. 1993. Archaeological Site Form Supplement, CA-Mer-68 (Temporary Number GWH 68, J 26; Primary Number P-24-2). On file, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Smith, Michael. 1986a. Archaeological Site Form, CA-Fre-46 (Primary Number P-10-46).
- \_\_\_\_\_. 1986b. Archaeological Site Form, CA-Fre-1997 (Primary Number P-10-1997). Forms on file, CHRIS/SSJVIC, CSU Bakersfield.
- Smith, Michael and Bill Slater. 1986a. Archaeological Site Form, CA-Mer-278 (Temporary Number LB-G2; Primary Number P-24-368).
- \_\_\_\_\_. 1986b. Archaeological Site Form, CA-Mer-279 (Temporary Number LB-G3; Primary Number P-24-369). Forms on file, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Steidl, Bruce, Betty Rivers, and Jim Woodward. 1992. Archaeological Site Form Update, CA-Mer-278 (Temporary Number LB-G2; Primary Number P-24-368). On file, CHRIS/CCIC, CSU Stanislaus, Turlock.
- Treganza, A.E. 1952. Archaeological Investigations in the Farmington Reservoir Area, Stanislaus County, California. University of California Archaeological Survey Reports, 14:1-28. Berkeley. (cited by Chavez et al. 1986).
- Treganza, A.E. 1960. Archaeological Investigations in the San Luis Reservoir Area, Merced County, California. California Department of Parks and Recreation, Cultural Resources Section, Sacramento. (cited by Chavez et al. 1986).
- Transmission Agency of Northern California and Western Power Administration (TANC/WAPA). 1988. Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) California-Oregon Transmission Project and the Los Banos-Gates Transmission Project. January. DOE/EIS - 0128. SCH # 8504914.
- \_\_\_\_\_. 1986. Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the California-Oregon Transmission Project and the Los Banos-Gates Transmission Project. Vol. 2B: Los Banos-Gates Supporting Environmental Report. November. DOE/EIS - 0128. SCH # 8504914.
- United States Department of the Interior, Bureau of Land Management (BLM) [GLO or General Land Office].
- Township No. 15 South, Range No. 12 East, Mount Diablo Meridian.  
1854-1881 Survey Plat.
- Township No. 15 South, Range No. 13 East, Mount Diablo Meridian.

- 1853-1855 Survey Plat.  
Township No. 16 South, Range No. 12 East, Mount Diablo Meridian.
- 1858-1880 Survey Plat.  
Township No. 18 South, Range No. 15 East, Mount Diablo Meridian.
- 1879-1880 Survey Plat.  
Township No. 19 South, Range No. 15 East, Mount Diablo Meridian.
- 1855-1881 Survey Plat.
- United States Department of Interior, Geological Survey (USGS). Historic USGS Topographic quadrangle maps. 15 minute series. United States Geological Survey, Menlo Park.<sup>7</sup>
- 1943 Ortigalita Peak, Calif. (surveyed in 1919-1920 and 1940-1941).
- 1908-1911 Panoche, Calif. (surveyed in 1908-1911).
- USGS Topographic quadrangle maps, 7.5 minute series. United States Geological Survey, Menlo Park.
- 1971 Charleston School, Calif. (1956, photorevised 1971).
- 1971 Chounet Ranch, Calif. (1956, photorevised 1971).
- 1979 Coalinga, Calif. (1956, photorevised 1979).
- 1979 Domengine Ranch, Calif. (1956, photorevised 1979)
- 1971 Gujarral Hills, Calif. (1956, photorevised 1971).
- 1984 Hammonds Ranch, Calif. (1956, photorevised 1984).
- 1971 Laguna Seca Ranch, Calif. (1956, photorevised 1971).
- 1984 Levis, Calif. (1956, photorevised 1984).
- 1978 Lillis Ranch, Calif. (1956, photorevised 1971, 1978 photoinspected).
- 1969 Ortigalita Peak, Calif.
- 1984 Ortigalita Peak NW, Calif. (1969, photorevised 1984)
- 1981 Tracy, Calif.
- 1976 Tres Picos Farms, Calif. (1956, photorevised 1971, photoinspected 1976).
- Wallace, William J. 1978. Northern Valley Yokuts. In California, edited by R. F. Heizer, Volume 8. Handbook of North American Indians, W.G. Sturtevant, general editor, pp. 462-470.
- \_\_\_\_\_. 1978. Southern Valley Yokuts. In California, edited by R. F. Heizer, Volume 8. Handbook of North American Indians, W.G. Sturtevant, general editor, pp. 448-461. Smithsonian Institution, Washington, D.C.

### Abbreviations

- ca. about  
illeg. illegible date

<sup>7</sup> Arranged in alphabetical order. Including United States Department of Interior, Geological Survey (USGS), U.S. Army Corps of Engineers (USCOE) War Department (War Dept), and United States Department of Interior, Geological Survey (USGS), U.S. Army Corps of Engineers (USCOE), War Department.

- n.d. no date  
v.d. various dates  
N.P. no publisher noted  
n.p. no place of publisher noted

**Abbreviated Phrases**

CHRIS/CCIC, CSU Stanislaus is used for material on file at the California Historical Resources Information System, Central California Information Center, California State University, Stanislaus located in Turlock. This CHRIS is responsible for Merced County.

CHRIS/SSJVIC, CSU Bakersfield is used for material on file at the California Historical Resources Information System, Southern San Joaquin Valley Information Center, California State University located in Bakersfield. This CHRIS is responsible for Fresno County.