

**DESABLA-CENTERVILLE HYDROELECTRIC PROJECT  
FERC PROJECT No. 803**

**DRAFT  
HISTORIC PROPERTIES MANAGEMENT PLAN**

**(Volume I)**

**PREPARED BY:**

**PACIFIC GAS AND ELECTRIC COMPANY**

**February 2008**

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## **ACKNOWLEDGEMENTS**

Pacific Gas and Electric Company would like to acknowledge the contributions made by the Mechoopda Indian Tribe of the Chico Rancheria, the Greenville Rancheria, the U.S. Forest Service, and the Bureau of Land Management. Their assistance during the relicensing process and during the implementation of the cultural resources study plans was greatly appreciated and was essential in order to prepare this Draft Historic Properties Management Plan. It is this spirit of cooperation that will assure the successful completion of a final document and its future implementation.

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## EXECUTIVE SUMMARY

This Historic Properties Management Plan (HPMP) is prepared to comply with the conditions of a new license for Pacific Gas and Electric Company's (PG&E's) DeSabra Centerville Hydroelectric Project, FERC No. 803 (Project), when issued by the Federal Energy Regulatory Commission (FERC), and with the anticipated "*Programmatic Agreement Among the Federal Energy Regulatory Commission, and the California State Historic Preservation Officer for Managing Historic Properties That May Be Affected by a License Issuing to Pacific Gas and Electric Company for the Continued Operation of the DeSabra Centerville Hydroelectric Power Project in Butte County, California*" (PA). The purpose of the HPMP is to manage historic properties located within the Project Area of Potential Effects (APE).

The HPMP follows the FERC's "*Guidelines for Preparing Cultural Resources Sections of Exhibit E*" and utilizes the joint document prepared by the FERC and the Advisory Council on Historic Preservation (ACHP) entitled "*Draft Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Project License Applicant*" (September 21, 1999). The HPMP was prepared in consultation with:

- The California State Historic Preservation Officer (SHPO);
- Lassen National Forests (LNF);
- Bureau of Land Management;
- The Greenville Rancheria; and
- The Mechoopda Indian Tribe of the Chico Rancheria.

The HPMP prescribes specific activities and processes to manage historic properties within the APE. This plan includes the following topics that will guide the Licensee in applying both general and site-specific treatment measures:

- Confidentiality;
- General and site-specific treatment measures designed to address ongoing and future effects to historic properties that may be a result of the Project's operation and maintenance;
- A process of consultation with appropriate state and federal agencies, and participating Tribes;
- A plan for public interpretation and education;
- Procedures for inadvertent discoveries;
- Procedures for emergency situations;
- A plan for the treatment of human remains; and
- A process for HPMP review and revision (as necessary).

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## DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS

TERM	DEFINITION
ACHP	Advisory Council on Historic Preservation
AIRFA	American Indian Religious Freedom Act of 1978 (AIRFA; Public Law [PL] 95-341; 42 USC
APE	Area of Potential Effects – “The geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist” (36 CFR § 800.16(d).
Archaeological Site	An archaeological “site” is defined as an area that contains five or more unformed or formed artifacts per square meter, or an isolated find that may be eligible for the National Register of Historic Places (NRHP) on its own merit.
ARPA	Archaeological Resources Protection Act of 1979 (ARPA; 16 USC 470aa-mm)
CEQA	California Environmental Quality Act of 1970 (CEQA; California Public Resources Code [PRC] 21000) and State CEQA Guidelines (CCR 15000)
Consultation	The process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process” (36 CFR 800.16[f]).
Cultural Resources	(1) Licensee definition (used in this HPMP): all archaeological, historic and Traditional Cultural Properties regardless of National Register of Historic Place eligibility; (2) Tribal definition recognizes that all of the land and its resources are important to the culture of indigenous people.
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
Ground disturbing work	“Ground disturbing work” is defined as any work that has a reasonable potential to expose subsurface cultural materials or

<b>TERM</b>	<b>DEFINITION</b>
	cause an impact to the archaeological context of cultural materials.
Historic Property	Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria. The term "eligible for inclusion in the National Register" includes both properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties that meet the National Register criteria (36 CFR 800.16[10]).
HPMP	Historic Properties Management Plan
I&E Plan	Information and Education Plan
Isolated Find	Less than five unformed artifacts per square meter, isolated formed tools, isolated historic items, etc.
Licensee	Holder of the DeSabra-Centerville Hydroelectric Project License, Pacific Gas and Electric Company
LNF	Lassen National Forest
NAGPRA	Native American Graves Protection and Repatriation Act of 1990 (NAGPRA; PL 101-601; 25 USC 3001)
NAHC	California Native American Heritage Commission
NFSL	National Forest System Lands
NHPA	National Historic Preservation Act of 1966 (NHPA, 16 USC 470) and it's implementing regulations found at 36 CFR 60 and 36 CFR 800
NOI	Notice of Intent
NRHP	National Register of Historic Places
O&M	Operation and Maintenance



<b>TERM</b>	<b>DEFINITION</b>
OHV	Off Highway Vehicle
PA	Programmatic Agreement
PAD	Pre-Application Document
PG&E	Pacific Gas and Electric Company
Participating Tribes	Greenville Rancheria and the Mechoopda Indian Tribe of the Chico Rancheria
PNF	Plumas National Forest
Programmatic Agreement	A document that records the terms and conditions agreed upon to resolve the potential adverse effects of a Federal agency program, complex undertaking, or other situations (36 CFR 800.16[t]). For the DeSabra Centerville Project, this agreement is between FERC and the SHPO to comply with Section 106 of the Historic Properties Preservation Act
Project	The DeSabra Centerville Project (FERC No. 803)
Project Area	Zone of potential, reasonably direct Project impacts. Typically extends 0 to 100 feet out from the FERC Project Boundary. It also includes the following stream reaches which the Project directly impacts: Butte Creek from Butte Creek Diversion Dam down to, but not including, the non-Project Parrott-Phelan Diversion Dam and the WBFR from Round Valley Reservoir down to, but not including, the non-Project Miocene Diversion.
Project Vicinity	The area extending to about five miles from the Project Boundary..
PSEA	Pacific Service Employees' Association
Qualified Tribal Cultural Monitor	<ul style="list-style-type: none"> <li>a. Must be a member or an authorized representative of the one of the Participating Tribes;</li> <li>b. Must have completed all training requirements of the Tribe;</li> <li>c. Must have completed the Licensee's Cultural Monitor Training Program within two years prior to any monitoring work; and</li> <li>d. Must have demonstrated monitoring skills.</li> </ul>
Reasonable potential	"Reasonable potential for impact" is defined as: (a) ground

<b>TERM</b>	<b>DEFINITION</b>
for impact	disturbing work within 30 meters of any identified site eligible for the NRHP, (b) ground disturbing work within 30 meters of any identified site that has not been evaluated for eligibility for the NRHP, or (c) ground disturbing work in any area that has not been previously surveyed by a qualified archaeologist.
Section 106 of the National Historic Preservation Act	Federal regulation that requires the consideration of project effects on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. Section 106 also specifies that the Advisory Council on Historic Preservation (ACHP) be afforded a reasonable opportunity to comment with regard to the undertaking.
SHPO	State Historic Preservation Officer (California)
TCP	Traditional Cultural Property
USDA	United States Department of Agriculture
USFS	United States Forest Service

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<b>Appendix D</b>	Record of Section 106 Consultation

## **VOLUME II (Confidential)**

- Section A.** Confidential Site Location Maps
- Section B.** Confidential Archaeological Site Records
- Section C.** Confidential Tribal Monitoring Logs



## SECTION 1.0

# Introduction

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The DeSabra-Centerville Hydroelectric Project, FERC No. 803 (Project) is located in the foothills of the Sierra Nevada mountain range about 25 miles east of Chico, California. The Project diverts the natural flow of water from Butte Creek and West Branch Feather River (WBFR) into canals that carry the water for use in three hydroelectric powerhouses. Once water is run through the powerhouses, it is ultimately released to Butte Creek. During the summer, the natural flow of the WBFR is augmented by water releases from Round Valley and Philbrook reservoirs. Project diversions from the WBFR, both natural flow and water releases from storage, have provided additional flow to Butte Creek for over 100 years. One of the beneficiaries of this additional flow has been the aquatic community in Butte Creek, including Central Valley spring-run Chinook salmon and steelhead.

### 1.1 General Project Description

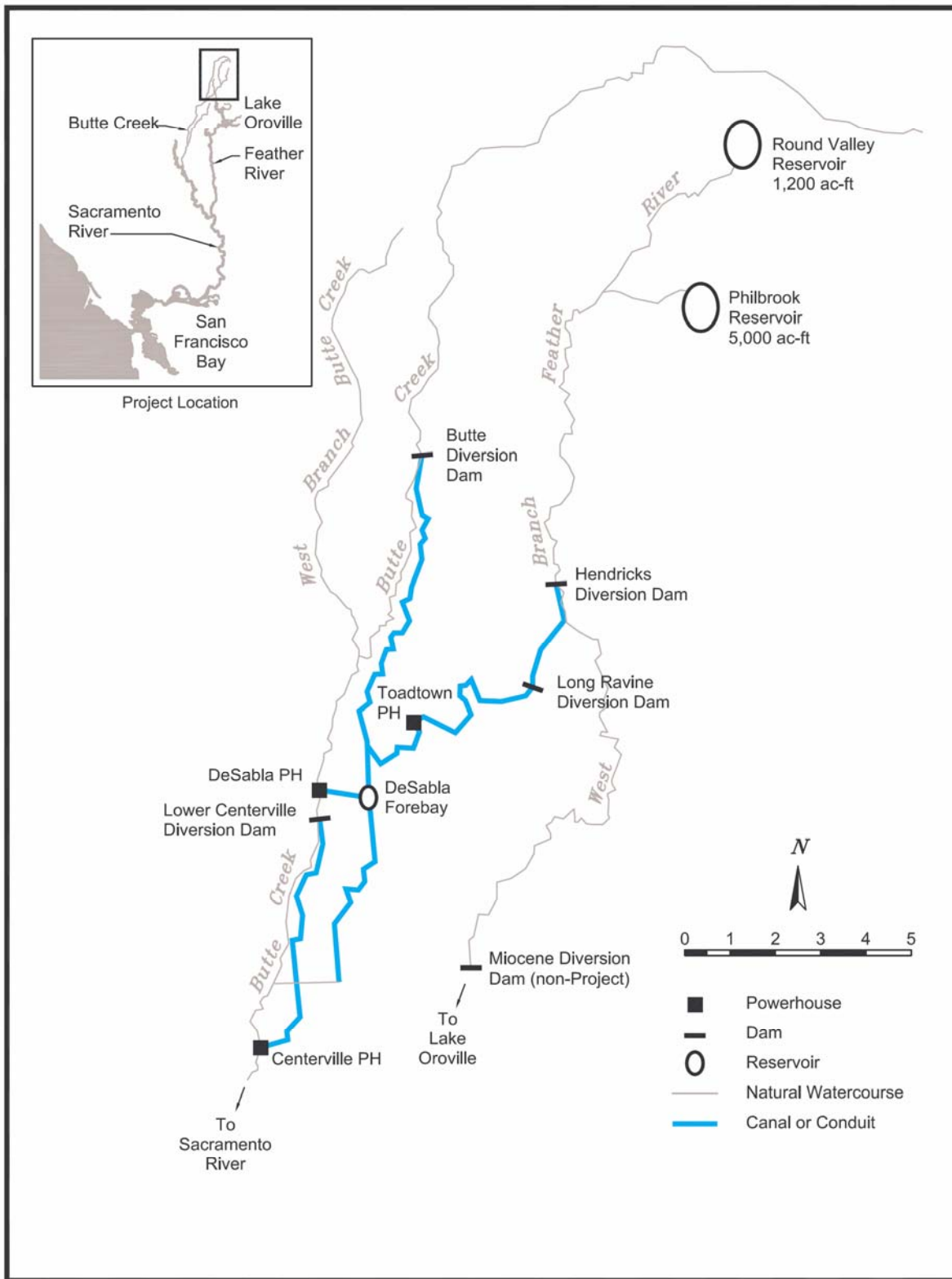
The Project is divided into three developments: Toadtown, DeSabra, and Centerville. The physical elements of each development are described below generally following the flow of water through each development. The Toadtown development diverts water from the WBFR, the DeSabra development diverts water from upper Butte Creek as well as using the outflow of the Toadtown development, and the Centerville development diverts the flow of Butte Creek downstream of the DeSabra development (Figure 1.1-1).

#### 1.1.1 Toadtown Development

The Toadtown development is located primarily on the WBFR, which drains a watershed ranging in elevation from approximately 7,000 feet to approximately 3,200 feet at the Hendricks Diversion Dam (Licensee's diversion point). Philbrook and Round Valley reservoirs are used to store winter runoff, which is then used to supplement summer flows in the WBFR. These reservoirs have a combined storage capacity of 6,200 acre-feet.

##### 1.1.1.1 Round Valley Dam and Reservoir.

Round Valley Reservoir (also known as Snag Lake; Figures 1.1.1-1 and 1.1.1-2) is near the head of the WBFR, at the upper end of the Project Area. Round Valley Reservoir has a maximum depth of about 25 feet, holds approximately 1,200 acre-feet with a spillway elevation of 5,651.1 feet, and is more than 12 stream miles above Hendricks Diversion Dam. The dam has a simple overflow spillway and has no gates or flashboards. The reservoir is drained each summer, and then filled with fall and winter rains. The dam has a simple overflow spillway and has no gates or flashboards. The spillway is on the south side of the dam. Curved stone retaining walls lead into the spillway, which is approximately 16 feet wide. Parts of the original fieldstone walls have been replaced with concrete.



**Figure 1.1-1.** Schematic of Project Diversions, Conveyances, and Powerhouses.

Built in 1877, the Round Valley Dam is located at the headwaters of the West Branch Feather River. It is an earthen dam approximately 29 feet high, with a crest 850 feet long and 8 feet wide. Both the upstream and downstream slopes are 2.5 horizontal to 1 vertical. Although built for mining or other uses prior to PG&E's inception, it was one of the original features acquired by PG&E for the DeSabra-Centerville Project. In 1932 seepage from the dam was noticed. In 1940 the company constructed weirs on the downstream face of the dam to monitor this leakage. In 1965 the dam was repaired and renovated, including removing trees that had grown on the dam, renovating the embankment by replacing it with "proper compacted fill, thus removing all roots and stumps" from the top 15 feet of the dam. In addition the gate stem pedestal and the downstream toe drain were replaced (PG&E 1965). In 1990, the California Department of Water Resources, Division of Safety of Dams, stated that the dam needed rehabilitation; this entailed a "combination of a filter blanket with subsurface drains to control seepage and prevent long-term erosion" (Palmer 1994).

#### 1.1.1.2 Philbrook Dam and Reservoir.

Philbrook Dam and Reservoir (Figures 1.1.1-3 and 1.1.1-4) near the head of Philbrook Creek, a tributary to WBFR, and are located about 20 miles northeast of Paradise, California. Philbrook Reservoir has a maximum depth of about 60 feet, holds approximately 5,000 acre-feet with a normal maximum water surface elevation of 5,552.5 feet and is more than 10 stream miles from the Hendricks Diversion Dam.

Philbrook Dam is formed by two adjacent, compacted earthfill dams, constructed in 1926. The main dam is on Philbrook Creek. About 170 feet southwest of the main dam, in a topographic saddle, is a small auxiliary dam. The main earthfill dam is about 87 feet high and 850 feet long; the auxiliary dam is about 24 feet high and 470 feet long. The upstream slopes are partially covered with placed rock riprap, which extends from the crest at elevation 5,556.4 feet down 24 feet to elevation 5,532.4 feet. In 1971, a rockfill berm was added to the main dam downstream slope for stability and seepage control purposes (PG&E 1996). The auxiliary dam is about 24 feet high and 170 feet long. Basalt riprap covers both slopes.

Philbrook Reservoir has a single outlet conduit, located under the main dam near the maximum section. This is a 33-inch-diameter riveted steel pipe, measuring 460 feet long. The intake, located a short distance upstream from the dam, is submerged.

A fieldstone retaining wall constructed behind the outlet structure is approximately 12 feet long and 8 feet wide. Corrugated metal covers the original board and batten siding. A door is on the dam end; the outlet is on the opposite end. The gabled roof is also clad with corrugated metal. A stone-lined drain is located near the outlet structure. The stone wall behind the drain is about 12 feet long and 3 feet high. The water forms a pool in front of the wall. A metal mesh walkway over the pool begins a path that leads to the gate set on the creek; another path branches off at the top of the steps and leads to the dam tender's camp.

#### 1.1.1.3 Philbrook Spillways.

Southwest of the auxiliary dam are two spillways. The original spillway has removable flashboards. It is 29.67 feet wide and has five flashboard bays. Flashboards up to 5.1 feet high are installed on the crest, which is at elevation 5,547.4 feet. A PG&E survey marker is set on the wall near the auxiliary dam. A metal mesh walkway crosses the original spillway to the new spillway which was and is located 50 feet southwest of the first spillway. It has a single, manually operated, radial gate (10.75 feet high by 14.75 feet wide). The crest of the gated section is at elevation 5,542.7 feet. The poured concrete walls are between 8 and 9 feet high at the corners and 15 feet high in the center. The spillway is designed with an ogee curve on the reservoir side. The spillway is concrete; the channel is connected to a native soil waterway. Steps on the downstream side of the dam lead to the outlet structure. The spillways discharge into the same channel, which joins Philbrook Creek about 2,200 feet downstream from the dams. They have a maximum discharge capacity at zero freeboard of about 4,100 cubic feet per second (cfs).

PG&E is now in the process of evaluating alternatives to stabilize the channel below the Philbrook spillways to address erosion and sediment transport issues. The channel, an unlined channel connecting the twin concrete-lined spillways of Philbrook Reservoir with the mainstem channel of Philbrook Creek, is located on National Forest System Land (NFSL) outside of the FERC Project Boundary. PG&E is consulting with FERC and appropriate agencies regarding the alternatives and expects to substantially complete needed remediation work before a new license is issued for the Project. PG&E will file with FERC revised Exhibit F drawings and G maps with FERC, as needed, when the channel modification is complete.

#### 1.1.1.4 Hendricks Diversion Dam and Canal.

Hendricks Diversion Dam (Figure 1.1.1-5) is located on the WBFR about 12 miles below Round Valley Dam. Hendricks Diversion Dam is a concrete gravity dam approximately 15 feet high with an overflow spillway section 98 feet wide and has a crest elevation of 3,256 feet. Hendricks Diversion Dam diverts this water to the Hendricks and Toadtown canals. It is a log crib rock-filled dam, now covered in concrete, 100 feet long with concrete abutments. It was constructed in the early 1900s; in 1915 a fish wheel was installed northeast side of the dam. The intake was on the southwest side.

Because of extensive flooding, this dam has been repaired several times. In the 1930s a wood crib apron was added to protect against erosion. In 1940 the original intake was replaced, although it was left in place and concreted shut. The new intake, which is still in use, was located further to the southwest of the dam. Two storms in 1986 and 1989 damaged the northeast abutment and the crib apron. Later in 1989 PG&E decided to replace the dam and fish ladder (Kohne 1989). In the end, the wood crib apron was overlaid with concrete.

Hendricks Canal (Figure 1.1.1-6) originates at the Hendricks Diversion Dam and is 8.66 miles long and composed mostly of earthen ditch with several flume and tunnel sections. Hendricks Canal carries up to 125 cfs. The Hendricks Canal travels to the Toadtown Powerhouse, where it joins the Toadtown Canal (PG&E 1995). A 1919 PG&E inventory stated that it was built between 1871 and 1906, was 103,473 feet long, with a capacity of 30 cfs (Shoup 1997:13).

When it became part of the DeSabra-Centerville system, the Hendricks canal was about 20 miles long and brought water from the West Fork of the Feather River through the Toadtown Ditch, which connected to the Butte Creek Canal about 1.5 miles above the DeSabra Forebay (Rice 1910:10). PG&E enlarged the canal; by 1930, it was 19.60 miles long with a capacity of 125 cubic feet per second (Shoup 1997:15). In 1953, a tunnel was constructed on the Hendricks Canal, after which 12 miles of the canal was abandoned.

Flow in Hendricks Canal is supplemented by feeder diversions on four streams: Long Ravine, Cunningham Ravine, and Little West Fork, and Little Butte Creek. A short section of Long Ravine is used for water conveyance, connecting two portions of Hendricks Canal. The Long Ravine Diversion Dam, located at the Long Ravine feeder diversion, has also historically been known as the Hendricks Diversion Dam.

#### 1.1.1.5 Toadtown Powerhouse.

Toadtown Powerhouse (Figures 1.1.1-7 and 1.1.1-8) was built in 1986 on Little Butte Creek. The Hendricks Canal carries water to the powerhouse and then into the Toadtown Canal, eventually reaching the DeSabra Forebay via the Butte Creek Canal. Toadtown Powerhouse is fed by water from Hendricks Canal through a welded steel penstock. The powerhouse is located 8.66 miles downstream of Hendricks Diversion Dam. There is no storage reservoir associated with the powerhouse. Toadtown Powerhouse is a reinforced concrete building approximately 28 feet by 44 feet, housing one turbine-generator unit. The main floor is at elevation 2,825.0 feet. The unit is a Francis turbine and has a normal maximum gross head of 185 feet, a rated flow of 134 cfs, with a normal operating capacity of 1.5 MW. A 1,500 foot-long 12 kV tap line follows the Project access road and connects the project to the Licensee's distribution system.



**Figure 1.1.1-1.** Round Valley Reservoir



**Figure 1.1.1-2.** Round Valley Reservoir



**Figure 1.1.1-3.** Philbrook Reservoir with Dock



**Figure 1.1.1-4.** Philbrook Reservoir



**Figure 1.1.1-5.** Hendricks Head Dam



**Figure 1.1.1-6.** Hendricks Canal



**Figure 1.1.1-7.** Toadtown Powerhouse Aerial View



**Figure 1.1.1-8.** Toadtown Powerhouse Ground View

## 1.1.2 DeSabra Development

The majority of the DeSabra development is located on Butte Creek. The Butte Creek basin ranges in elevation from 7,100 feet to 550 feet at Centerville Powerhouse. Water is first diverted from Butte Creek at the Butte Diversion Dam, where up to 91 cfs enter Butte Canal.

The DeSabra development consists of Butte Creek Diversion Dam and Canal, Toadtown Canal, DeSabra Forebay, and DeSabra Powerhouse.

#### 1.1.2.1 Butte Creek Diversion Dam and Canal.

Water is diverted from Butte Creek at the Butte Creek Diversion Dam (Figure 1.1.2-1), a concrete arch dam approximately 50 feet high, into the Butte Canal. The dam has an overflow spillway at an elevation of 2,884 feet. The diversion dam structure was built in 1916 to replace a log crib dam at the same location. It is 110 feet long, 45 feet high, 4 feet thick at the top and 8 feet thick at the bottom. The poured concrete intake is located on the right side of the dam. A sliding gate controls the 5 by 6 foot arched opening, which connects to a short tunnel under a knoll. The water travels through the tunnel and into the Butte Creek Canal. Residual water flows back into Butte Creek. A steep concrete stairway, no longer used, begins at the east side of the dam and ends close to the top of the knoll. The stairs were originally connected to a walkway that led to the intake and to the top of the knoll

The 11.4-mile Butte Creek Canal (Figure 1.1.2-2) has a capacity of approximately 91 cfs. The canal consists of sections of earthen berm, gunite, tunnels, a siphon, and flume. Approximately 0.7 mile above DeSabra Forebay, Butte Canal and Toadtown Canal join. At this juncture, canal capacity increases to 191 cfs.

The Butte Creek Canal transports water south to the DeSabra Forebay. The canal is typically about 8 feet wide at the base, with slightly slanted or vertical walls about 5 feet high. Most of the canal banks have been lined with gunite. The berm is constructed of earth; wood cribbing reinforces the bank under the berm in several places. A siphon was constructed at Mile 6 in the 1980s. Sections of plywood cover the canal in one area subject to landslides. The upper part of Butte Creek Canal travels through difficult topography that demanded numerous flumes and one tunnel when constructed. The lower section of the canal is in more open country with fewer ravines. After its confluence with the Toadtown Canal, it becomes wider, is unlined, and travels along Paradise Road. In this area, the canal banks are used for recreational activities such as jogging and dog walking.

The canal was constructed between 1871 and 1904 (Shoup 1997:13). When Eugene de Sabla first purchased the Butte Canal in 1902, he stated that the ditch was in “comparatively good shape” but the flumes were “practically worthless” (Rice 1910:9). The 1919 PG&E inventory stated that Butte Creek Canal was 61,492 feet long, and had a capacity of 80 cubic feet per second. By 1930 the canal was 11.65 miles, with a capacity of 260 cubic feet per second (Shoup 1997:15).

A 1951 survey of the canal found it in “good shape” from the head dam to Camp 2, but needing cleaning and repairs below that around flume footings and the berm. The 1951 report also remarked on the number of trees that had fallen over the ditch and needed to be removed; these were probably from the winter storm in 1950 (Machen 1951).

The canal has a history of failures caused by landslides and mudslides. Ice, trees, or mud can block the canal, causing overtopping or side failure; therefore eight overflow structures were

constructed along the canal. When such failures occur, these features automatically discharge excess water down ravines or draws to drain the canal system (PG&E 1995).

#### 1.1.2.2 Toadtown Canal.

Toadtown Canal (Figure 1.1.2-3) begins at the tailrace of Toadtown Powerhouse. It is principally an earthen canal with a capacity of 125 cfs. Toadtown Canal joins Butte Canal approximately 0.7 mile above DeSabra Forebay. The total length of the Toadtown Canal is about 2.4 miles.

A 1919 PG&E inventory stated that it was constructed between 1871 and 1903, was 12,822 feet long and had a capacity of 80–125 cubic feet per second (Shoup 1997:13). By 1930 the canal was 2.44 miles with a capacity of 125 cubic feet per second (Shoup 1997:15).

The canal is typically about 8 feet wide at the base, with slightly slanted or vertical walls about 5 feet high. Most of the canal is gunited on both banks. There is one spillway on the canal. The most notable feature of the canal is the park benches located along its length, indicative of its use as a recreational feature.

#### 1.1.2.3 DeSabra Forebay and Dam.

DeSabra Forebay (Figures 1.1.2-4 and 1.1.2-5) is formed by an earthen embankment approximately 50 feet high and 250 feet thick at the base, with a width of 100 feet at the crest. A spillway canal leading to a small ravine is located just north of the dam. The spillway elevation is 2,755 feet. However, PG&E manages the inflow to DeSabra Forebay to avoid spill, and spill rarely occurs. DeSabra Forebay has an original capacity of 188 acre-feet; however, sedimentation has reduced this capacity significantly. The forebay has a surface area of approximately 15 acres at full capacity. DeSabra Forebay is a regulating facility for DeSabra Powerhouse; however, the powerhouse and associated intake is float-controlled and the forebay fluctuates minimally during normal operations (typically less than 0.2 foot).

Constructed in 1903 and originally referred to as Slater's Dam, the DeSabra Dam is approximately 900 feet long and 80 feet high. The spillway is on the west side of the dam. Refurbished in the early 1960s, it winds along the west side of DeSabra Forebay before turning south, and connecting to a natural drainage. When the new DeSabra Powerhouse was built in the early 1960s, the original intake was reconstructed as the drain for the Upper Centerville Canal, and a new intake was constructed. From the intake the water flows into the penstocks and thence to DeSabra Powerhouse. Because the dam is situated close to Camp 1 and Paradise Road, it is a popular spot for fishermen. This location gave impetus to its development as a recreational facility. In the 1920s, the Pacific Service Employees' Association (PSEA) developed a camp for PG&E employees on its northwest bank.

#### 1.1.2.4 DeSabra Powerhouse.

The original DeSabra Powerhouse (Figure 1.1.2-6) was built in 1903 and demolished in 1961. In conjunction with the new powerhouse, new penstocks and intake were also installed. DeSabra Powerhouse is a reinforced-concrete structure with a control building approximately 26.5 feet by



41 feet, with one turbine-generator unit. The main floor is at elevation 1,222.5 feet. The turbine unit is a 25,000 hp Pelton horizontal turbine with a normal maximum gross head of 1,530 feet and a nameplate flow of 191 cfs. A 0.25-mile-long transmission tap line connects the powerhouse to the 60 kV Oro Fino Tap Line.



**Figure 1.1.2-1.** Butte Creek Diversion Dam



**Figure 1.1.2-2.** Butte Creek Canal



**Figure 1.1.2-3.** Toadtown Canal



**Figure 1.1.2-4.** DeSabla Forebay



**Figure 1.1.2-5.** DeSabla Forebay



**Figure 1.1.2-6.** DeSabla Powerhouse

### **1.1.3 Centerville Development**

The Centerville Development consists of the Upper Centerville Canal, the Lower Centerville Diversion Dam and Canal, and the Centerville Powerhouse.

#### **1.1.3.1 Upper Centerville Canal.**

The Upper Centerville Canal originates at DeSabra Forebay and historically was used as an alternate route to direct water to Centerville Powerhouse when DeSabra Powerhouse was out of service. The Upper Centerville Canal ends at Helltown Ravine, where water can be released and then captured where Helltown Ravine crosses Lower Centerville Canal. The Upper Centerville Canal has not been used to carry water for power generation for many years and currently carries only a few cfs for local water users.

The Upper Centerville Canal was built in 1871 as part of the Cherokee Mining Company's attempt to bring water from Butte Creek to its mining site. The 1902 official deed described it as "a small branch leading to Helltown" (quoted in Shoup 1997:8). After PG&E bought the canal from the Cherokee Mining Company, it was enlarged in 1903–1904 to provide extra water to both the Lower Centerville Canal, through a natural ravine, or to Hupp's Canal and then to Lime Saddle Power Plant, also through a natural water source (Shoup 1997:9). As described in 1919, the canal was 27,920 feet long; 2220 feet of that length was a natural water course. The canal capacity was 55 cubic feet per second (Shoup 1997:14). By 1930 the canal was 5.29 miles, with the same capacity as in 1919 (Shoup 1997:15).

Because it was never the main source of water for any of the power plants in the system, the Upper Centerville Canal was never extensively lined with gunite nor were many water control features installed. It is narrower and shallower than the other canals.

#### **1.1.3.2 Lower Centerville Diversion Dam and Canal.**

The Lower Centerville Diversion Dam (LCDD; Figure 1.1.3-1) is located on Butte Creek just below the DeSabra Powerhouse and diverts up to approximately 183 cfs from Butte Creek into the Lower Centerville Canal. The LCDD is a concrete arch structure built in 1907-1908 as part of an upgrade of the original Centerville system. Set amidst large boulders in Butte Creek, the dam is 90 feet long, 12 feet high, 12 feet wide at the base and 3 feet wide at the crest. The sand and gravel for the concrete were taken from Butte Creek. The poured concrete intake structure, originally regulated by wood gates, is on the right side of the dam. Two sets of stairs lead from the canal to the top of the intake structure. Water travels through the intake into the Lower Centerville Canal. The gauging station that measures the water flow is located along the canal downstream of the dam.

Lower Centerville Canal is approximately 8 miles long and is composed of earthen canal and several flume sections and has a capacity of 180 to 190 cfs. Flows in Lower Centerville Canal historically have been supplemented by three feeder diversions on Oro Fino Ravine, Emma Ravine, and Coal Claim Ravine. Use of these feeders has been discontinued.

This canal begins at the Centerville Diversion Dam and travels to the Centerville Powerhouse. A 1919 PG&E inventory stated that the canal was built between 1875 and 1907. It was 43,886 feet long, with a capacity of 192 cubic feet per second (Shoup 1997:13). By 1930, it was 8.31 miles long with the same capacity as in 1919 (Shoup 1997:15). The canal is typically about 8 feet wide at the base, with slightly slanted or vertical walls about 5 feet high. The canal has gunited walls along much of its length and also has L-walls. The outer berm is constructed of earth. Near Mile 7, the berm had eroded away, leaving the gunited wall without any support. There are nine overflow structures along the canal (PG&E 1995). Flumes cross the ravines along the canal route.

Centerville Canal ends at a 27-foot by 37-foot concrete header box, which feeds water to riveted steel penstocks and a spillway. The penstocks feed two Centerville Powerhouse generating units. The spillway is used in the event a generator at Centerville Powerhouse “trips” off line and during periods when only one of the two Centerville Powerhouse generating units is operating.

#### 1.1.3.3 Centerville Powerhouse.

Centerville Powerhouse (Figure 1.1.3-2) is a concrete reinforced stone building approximately 32 feet by 109 feet with two turbine-generator units. The main floor is at elevation 475.0 feet. Unit 1 is a 9,700 hp horizontal Francis turbine and Unit 2 is a 1,500 hp horizontal Pelton turbine. Unit 1 is connected to a 5,500 kW synchronous generator and Unit 2 is connected to a 900 kW inductor-type generator. The combined two units have a normal maximum gross head of 590 feet, a nameplate flow of 183 cfs, and a total normal operating capacity of 6.4 MW. A single 6,000 kVa transformer steps up voltage to 60,000 volts and power is delivered to the interconnected system at the adjacent Centerville switchyard.

Built in 1899 in the California Industrial style with Greek Revival elements, the powerhouse was refurbished by PG&E in 1907 and 1908 by raising its concrete walls to accommodate a new turbine and crane (Van Bueren 1985: 29). The structure has a rectangular footprint and the front façade faces west. The foundation and floor is poured concrete set in two-foot square blocks. The tapered walls are also concrete; a metal truss supports the gabled roof capped with a monitor-styled ventilator. Metal columns support the traveling crane and delineate six interior bays, each approximately 18 feet long. Pendant lights are attached to the columns.

The pattern of fenestration consists of a double-door asymmetrical entry and paired and single four-over-four light, double-hung windows with a decorative arched lintel of double rowlocks. Single windows are set in the front façade, and double windows on the south gable end, with a fixed four-light window set above them. Such a lintel also caps the entry. The gabled roof and ventilator are clad with corrugated metal. A wood-framed corrugated metal addition is located on the north gable end of the structure. Paired four-over-four light, double-hung windows are on the front façade of the addition. A canted double door is on the northwest corner.

The powerhouse was automated in 1959 and routine maintenance is required to keep the equipment in working order. However, there have been no major changes to the interior or exterior of the building.

A condition assessment was conducted in 2005 to assess the existing condition and future requirements needed to retain the generating facility and to assist PG&E in evaluating rebuilding, refurbishment, and decommissioning alternatives. Given the age of the Centerville Powerhouse, the condition assessment noted that while maintenance activities can keep the facilities and equipment operating for a limited time, the probability of critical equipment failure without refurbishment or replacement will continue to increase. Also, since the facility was constructed many years ago, a portion of the facilities and equipment will need to be refurbished or replaced to meet today's industry standards for hydro facilities.



**Figure 1.1.3-1.** Lower Centerville Diversion



**Figure 1.1.3-2.** Centerville Powerhouse

#### **1.1.4 Proposed Project Facilities and Changes**

PG&E proposes to continue operating the Project for the next 50 years with no change to Project generation facilities or features other than adoption of the resource management measures proposed in this application, deletion of five stream diversions that have not been used for over 10 years, and an anticipated rebuild or refurbishment of Centerville Powerhouse.

Proposed changes to the DeSabra-Centerville FERC Project Boundary include deletion of five feeder diversions since use of these feeders has been discontinued. These feeder diversions include: Oro Fino Ravine, Emma Ravine, and Coal Claim Ravine feeders on the Lower Centerville Canal; Stevens Creek feeder on the Butte Canal; and Little Butte Creek feeder on the Hendricks Canal. These feeder diversions are identified on the appropriate maps of Exhibit G (see maps Exhibit G-5, G-7, G-10, and G-11).

#### **1.2 HPMP Scope and Purpose**

This Historic Properties Management Plan (HPMP) is prepared to comply with the conditions of a new license for Pacific Gas and Electric Company's (PG&E's) DeSabra Centerville Hydroelectric Project, FERC No. 803, (Project), when issued by the Federal Energy Regulatory Commission (FERC). The FERC may choose to enter into a Programmatic Agreement (PA)

with the California State Historic Preservation Officer and others (at their discretion) for managing historic properties that may be affected by a license issuing to PG&E for continued operation of the Project.

The purpose of the HPMP is to prescribe specific actions and processes to manage historic properties within the Project Area of Potential Effects (APE). It is intended to serve as a guide for the Licensee's operating personnel when performing necessary operation and maintenance (O&M) activities and to prescribe site treatments designed to address ongoing and future effects to historic properties. The HPMP also describes a process of consultation with appropriate state and federal agencies, as well as with Native Americans who may have interests in historic properties within the APE. "Consultation" is defined as, "the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process" (36 CFR 800.16[f]). A summary of consultation undertaken to date is provided in Appendix D.

In preparing this HPMP, PG&E identified specific goals related to cultural resources and O&M activities. The goals of the HPMP are to:

- a. Ensure consistency with existing federal and state laws and regulations;
- b. Strive for the preservation and protection of historic properties;
- c. Address ongoing and potential future Project-related effects on historic properties through avoidance, monitoring, stabilization, data recovery, and other management and/or treatment measures;
- d. Enhance the awareness of cultural resource values through public interpretation and public education;
- e. Implement cost-effective measures for the management of historic properties while considering the needs of the Project and other public interests and resource areas (e.g., recreational opportunities, water quality, aquatic and terrestrial resources, aesthetics); and
- f. Facilitate regular communication and coordination with other agencies and participating Tribes regarding the management of historic properties associated with the Project.

### **1.2.1 Project Area of Potential Effects**

According to federal regulations, an undertaking's Area of Potential Effects (APE), is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist" (36 CFR § 800.16[d]). In general, the FERC Project Area encompasses all lands necessary for the operation of the Project and includes an area of 0 to 100 feet from the Project features.

On October 4, 2004, the PG&E filed its Pre-Application Document (PAD) and Notice of Intent (NOI) to relicense the Project. Copies of this report were also submitted to the USFS, participating Tribes, and the SHPO. The PAD contained (1) all existing, relevant and reasonably available information about the Project and resources within the Project Vicinity, (2) resource issues identified during PAD development, and (3) preliminary study plans to address

cultural resources information needs: an archaeological study, a study to identify potential Traditional Cultural Properties (TCPs), and a study to identify historic Project system features. Additionally, the PAD contained maps of a proposed Project APE; this APE was limited to the FERC license boundary.

Subsequent consultation with the participating tribes and agencies led to an expansion of the Project APE to include additional lands outside of the FERC license boundary that could be impacted by Project operations, maintenance, and recreation activities. In particular, the APE was expanded to include public lands between Philbrook Reservoir and adjacent roads, and public lands along the West Branch of the Feather River between Round Valley Reservoir and Philbrook Creek. Additionally, several project-related access roads not contained within the FERC license boundary were also added to the APE. Access to some private lands was not granted by property-owners.

On May 12, 2005, PG&E requested the SHPO's concurrence with the revised Project APE in accordance with 36 CFR 800.4(a)(1). On June 16, 2005, the SHPO responded acknowledging PG&E's additions to the APE from the prior version. In their letter, the SHPO commented that the APE "should be applied consistently regardless of ownership and that the entirety of the West Branch of the Feather River should be included in the APE". Additionally, the SHPO requested clarification regarding how the PG&E would address the potential for cultural resources on lands where survey was not possible due to private property owner's concerns. On July 18, 2005, the PG&E filed responses to these comments with the FERC.

On July 18, 2005, PG&E filed revised study plans with the FERC based on additional participant comments received. On August 17, 2005, the FERC issued a Study Plan Determination for the Project in accordance with the ILP and approved PG&E's three revised cultural resources study plans: Study 6.3.8-1 Archeological and Historic-Era Properties, Study 6.3.8-2 Traditional Cultural Properties, and Study 6.3.8-3 Historic Project Feature Assessment. In doing so, the revised Area of Potential Effects as defined by PG&E was also approved.

Large portions of the APE are located on National Forest System lands (NFSL) that are administered by either the Lassen or Plumas National Forests. Additionally, lands that are administered by the Bureau of Land Management (BLM) are also located within the APE. Where there is a possibility that USFS or BLM lands may be directly or indirectly affected by measures in this HPMP, it will be necessary for the Licensee to consult with these agencies. These agencies do not need to be consulted when the Licensee's actions will not cause either a direct or indirect effect to federal lands. This requirement to consult with these agencies is abbreviated throughout the HPMP with the wording "Forest Service and/or BLM, as appropriate," to stipulate that the proper unit of the USFS and/or BLM will be contacted by the Licensee, but only when federal lands may be affected.

The APE boundaries are shown in Appendix A. Should additional Project-related activities be proposed or found to take place outside of this area in the future, or if Project-related activities may result in direct or indirect effects to cultural resources outside of this area, the APE will be revised to include these new areas and additional studies undertaken as necessary.

### **1.3 Regulatory Context**

Under the Federal Power Act of 1920 (16 USC 79[a]-825[r]), FERC is responsible for the issuance of hydroelectric licenses to private utilities. Prior to issuing new licenses, FERC must comply with federal and state laws including the laws that govern the issuance of new hydroelectric licenses found at 18 CFR 4.

Specific to cultural resources, the National Historic Preservation Act (NHPA) of 1966 established by the Advisory Council on Historic Preservation (ACHP); authorized the Secretary of the Interior to maintain the National Register of Historic Places (NRHP); directed the Secretary to approve state historic preservation programs that provide for a State Historic Preservation Officer (SHPO); established a National Historic Preservation Fund program; and codified the National Historic Landmarks program.

Section 106 of the NHPA, and its implementing regulations found at 36 CFR 800, require that federal agencies take into account the effects of their actions on properties that may be eligible for or listed on the NRHP, and afford the ACHP a reasonable opportunity to comment. To determine if an undertaking could affect NRHP-eligible properties, all cultural sites (including archeological, historical, traditional cultural and architectural properties) that could be impacted by the undertaking must be inventoried and evaluated for inclusion in the NRHP as necessary.

If there would be an adverse impact on historic properties, a Historic Properties Management Plan (HPMP) may be prepared to avoid or mitigate effects. For FERC hydroelectric relicensings, consultation with the ACHP, SHPO, federal land management agencies, affected Indian tribes, and where tribal lands are present, Tribal Historic Preservation Officers, must be undertaken during development of the HPMP.

PG&E requested, and FERC designated PG&E, to be the non-Federal representative for informal consultation under 36 CFR 800.4(c)(4). On FERC's behalf, PG&E has consulted with federal land management agencies (BLM, USFS), participating Indian tribes (Greenville Rancheria, Mechoopda Indian Tribe of the Chico Rancheria), and the SHPO regarding the APE, and Project study plans in accordance with 36 CFR 800.4.

Other regulations specific to cultural resources and/or historic properties include the following:

- a. American Indian Religious Freedom Act of 1978 (AIRFA; Public Law [PL] 95-341; 42 USC)
- b. Antiquities Act of 1906 (16 USC 431-433)
- c. Archaeological Resources Protection Act of 1979 (ARPA; 16 USC 470aa-mm)
- d. Cal NAGPRA (currently in development)
- e. California Environmental Quality Act of 1970 (CEQA; California Public Resources Code [PRC] 21000) and State CEQA Guidelines (CCR 15000)
- f. California Health and Safety Code (Section 7050)
- g. California Public Resources Code (Section 5097)

- h. Executive Order 11593 of 1971, Protection and Enhancement of the Cultural Environment
- i. Executive Order 13007 of 1996, Indian Sacred Sites
- j. Executive Order 13175 of 2000, Consultation and Coordination with Indian Tribal Governments
- k. Historic Sites Act of 1935 (16 USC 461–467)
- l. Native American Graves Protection and Repatriation Act of 1990 (NAGPRA; PL 101-601; 25 USC 3001)
- m. National Environmental Policy Act of 1969 (42 USC 4231)

Some of these regulations apply solely to federally-managed lands.

#### **1.4 Confidentiality**

Many people are interested in cultural history. For the most part, this interest does not result in damage to sensitive historic properties. However, there are those who use information regarding historic properties for their own benefit and seek out these non-renewable resources in order to collect artifacts and vandalize sites.

Several state and federal regulations have therefore been passed to protect the confidentiality of historic properties. These regulations include Section 304 of the National Historic Preservation Act of 1966 (16 USC 4702-3), Section 9 of the Archaeological Resources Protection Act of 1979 (ARPA; for Federal lands), and Article 9, section 15120(d) of the California Environmental Quality Act of 1970 (CEQA). These regulations allow for restrictions on confidential site location information and other information that could result in damage to historic properties.

All confidential historic properties location maps and other information contained within the HPMP are provided in confidential Volume II. To the best of PG&E's ability, Volume I of this HPMP has been prepared in such a way that the specific location of sensitive cultural resource sites is not disclosed. However, the Licensee must share the confidential Volume II of the HPMP with appropriate agencies and participating Tribes. Additionally, various Licensee employees and consultants who may be responsible for implementation of the HPMP will require access to certain confidential information on an as-needed basis.

The Licensee's Cultural Resources Specialists will be the "keepers" of Volume II. During implementation of the HPMP and over the license term, these personnel will provide only the necessary information to others who require it for Project-related purposes. Excluding the California Historic Resources Information System housed at California State University, Chico, the Licensee will not provide Volume II of the HPMP to any other organization or individual without first obtaining approval from the Tribe, USFS, SHPO, and FERC.



## **1.5 HPMP Development and Implementation**

### **1.5.1 HPMP Development**

PG&E proposed historic properties management measures for the Project were included in PG&E's October 2007 Application for New License (license application or FLA). However, these measures and all pertinent cultural resources information were separated into various sections of the application. In the transmittal letter for the FLA, PG&E stated that a draft Historic Properties Management Plan (HPMP) would be filed with FERC by February 15, 2008, and that all cultural resources information contained within the FLA would be extracted and placed into a stand-alone document. While there was only a short period of time between the filing of the FLA and the deadline for submittal of a draft HPMP, PG&E prepared an initial draft HPMP in December of 2007. The contents of this plan were taken directly from the FLA with Traditional Cultural Properties study results to date included upon their completion. The initial draft HPMP was transmitted to the Lassen National Forest, the Bureau of Land Management, the Mechoopda Indian Tribe of the Chico Rancheria, the Greenville Rancheria, and the California State Historic Preservation Officer for review and comment in accordance with 36 CFR 800.4. A 30-day review period was provided, with comments due on February 8, 2008.

Three consultation meetings were held:

January 28, 2008	Office of Historic Preservation (SHPO)
February 1, 2008	Lassen National Forest, Bureau of Land Management, Mechoopda Indian Tribe Chico Rancheria
February 5, 2008	Lassen National Forest, Greenville Rancheria

Written comments were received by the February 8 due date from the USFS, BLM, and Greenville Rancheria (see Appendix D, Record of Consultation). No comments were received by February 8 from the SHPO or Mechoopda Indian Tribe of the Chico Rancheria, although the Mechoopda phoned on the due date requesting permission to submit their comments by the afternoon of February 11 (no comments were received). All comments from the meetings and from written correspondence were addressed to the best of PG&E's ability;

PG&E understands that the time available between filing of the FLA and the issuance of the current draft HPMP has not been adequate for full Section 106 consultation. PG&E proposes to further develop and finalize the Historic Properties Management Plan in consultation with the State Historic Preservation Officer (SHPO), USFS, BLM and participating Tribes following new license issuance as discussed in Measure 33 (Section 8.1) of the FLA.

### **1.5.2 HPMP Implementation**

The Licensee will be required to implement this HPMP in compliance with specific Articles of a new Project license. It is anticipated that implementation of the measures specified herein would begin immediately or within one year (as described below) upon FERC approval of the final HPMP and after license issuance. In the interim, PG&E will continue to take into account the

effects of Project activities upon historic properties within the APE, as required under Section 106 of the NHPA.

Some HPMP measures for specific historic properties may require site specific engineering to design and implement site protections. Such designs should involve consultation with, the participating Tribes, the BLM, and the USFS as appropriate. If disagreement regarding implementation of management strategies or treatment occurs between the consulting parties, resolution of the disagreement will take place in accordance with federal regulations or in compliance with the terms of FERC's expected Programmatic Agreement..

#### 1.5.2.1 General Treatment Measures (Section 4)

Initiation of all general treatment measures contained in Section 4, General Treatment Measures, will begin immediately following FERC approval of the final HPMP.

#### 1.5.2.2 Site-Specific Treatment Measures (Section 5)

Initiation of all site-specific treatment measures contained within Section 5, Site Specific Treatment Measures, will begin within one year of FERC approval of the final HPMP and will be completed within three years of HPMP approval.

### **1.6 Measuring Effectiveness**

This HPMP is designed to substantially reduce Project effects to historic properties. However, the HPMP may require the periodic assessment of information regarding management effectiveness. The Licensee's Cultural Resources Specialist(s) or their designee(s) will have a pivotal role in collecting information by which to initiate planning, consultation, and implementation of any additional treatment or other management measures. Annual reporting of monitoring activities is a mechanism for such assessment and decision-making. An annual report that compiles and summarizes information gathered during monitoring conducted during the year will be prepared and submitted by the Licensee to the SHPO, the participating Tribes, USFS (LNF and PNF), BLM, and FERC by March 15 of every year. If impacts are identified during monitoring activities, the annual report will disclose those impacts, assess whether those impacts may have effects on historic properties in consultation with the appropriate parties, and recommend further action, if necessary.

If impacts are identified between annual reports that pose immediate threats to historic properties, the Licensee will follow the measures outlined in Section 4.9, Inadvertent Discoveries or Section 4.10, Emergency Situations. Should the SHPO so request, or at the Licensee's discretion, previously unevaluated archeological properties will be evaluated in consultation with the participating Tribes and the USFS and BLM, if appropriate. If the Licensee, USFS, and BLM, as appropriate, recommend that a property does not meet the NRHP criteria, and the SHPO agrees, no further consideration of the property is required.

## SECTION 2.0

# Project Cultural Setting

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This section provides a description of the prehistoric, ethnographic, and historic contexts of the DeSabra-Centerville Project Area. These contexts are used in Section 3 to address National Register of Historic Places (NRHP) eligibility of identified resources. The Bureau of Land Management (January 23, 2008) has requested that additional background research be undertaken in order to more fully develop the prehistoric and historic background of the Project area. PG&E is currently evaluating this request.

### 2.1 Prehistoric Context

A brief overview of the Project's cultural history provides an understanding of past lifeways in the Project Area. The archaeological overview discusses previous investigations that have defined the temporal-cultural divisions of prehistoric occupation in the area. A historic context is provided with specific details about historic-era activities in the Project Area. Understanding the cultural history is critical to interpreting the significance of prehistoric and historic-era sites with regard to their roles in local, state, and/or regional trends or patterns, and ultimately their eligibility for listing on the NRHP.

Geographically, the Project is located near the juncture of the northern Sierra Nevada and the southern Cascade Range. Until recently, archaeological investigations within the Project Area were few and the area's prehistory poorly understood, relying heavily on the temporal-cultural sequences developed in neighboring locations. Recent studies, as discussed below (cf Bevill et al. 2005; Dougherty 2005; Moore 2002, 2005), reveal details about prehistoric human occupation in the Project Area and surrounding vicinity. Most of these sites have been characterized by traits defined within the Eastern Sierra Front sequence for the northern Sierra Nevada. To a lesser degree, some local sites also have been investigated in terms of the southern Cascade cultural sequences. Both cultural-temporal sequences are discussed below.

#### 2.1.1 Northern Sierra Nevada

Development of the prehistoric chronology for the Eastern Sierra Front began more than 50 years ago when R. F. Heizer and A.B. Elsasser (1953) defined the Martis Complex and the Kings Beach Complex from investigations in the Lake Tahoe area (Moratto 1999:82). They suggested that the Martis Complex, identified from surface remains at site CA-PLA-5 in the Martis Valley, dated from 4000 to 2000 years ago, and defined the complex based on the dominate use of basalt over other lithic sources, the use of manos and metates, large, crudely shaped projectile points; atlatl weights, bowl mortars and cylindrical pestles, and abundant flake scrapers. They further suggested that the Martis Complex cultural assemblage revealed the exploitation of floral and faunal resources. Conversely, the Kings Beach Complex was defined by Heizer and Elsasser (1953) by the abundance of non-basalt lithic sources, primarily obsidian and chert, the use of small projectile points with the inferred use of the bow and arrow, and the use of bedrock mortars (BRMs). They dated the Kings Beach Complex to after A.D. 1000, suggesting that it extended to the time of historic contact and the ethnographic culture of the Washoe Indians. They further argued that the

cultural remains of the Kings Beach Complex demonstrated reliance on fishing, plant gathering and harvesting, and to a lesser amount, hunting (Moratto 1999:82).

Archaeological investigations throughout the 1960s and 1970s (e.g., Elsasser 1960; Elston 1971; Payen and Olsen 1969) expanded on Heizer and Elsasser’s work. Elsasser (1960:19) identified seven phases of occupation that extended throughout the Holocene, demonstrating the longest cultural sequence identified for the Sierra Nevada and its importance in correlating with the paleoenvironmental record (Moratto 1999:82). Following Elsasser’s work, Elston (Elston 1971; Elston et al. 1994; IMR 1995) sought to determine the relationship between the Martis Complex, the Kings Beach Complex, and the ethnographic Washoe, eventually proposing a revised and expanded cultural sequence (Moratto 1999:82), as shown in Table 2.1.1-1.

**Table 2.1.1-1. Prehistoric Chronology of the Eastern Sierra Front.**

Adaptive Strategy	Phase	Age (Years B.P.)	Diagnostic Artifacts
Late Archaic	Late Kings Beach	150-700	Desert Series Points
	Early Kings Beach	700-1,300	Rosegate and Gunther Series points, seed hullers, M1a (Olivella) shell beads
Middle Archaic	Late Martis	1,300-3,000	Martis Corner-notched, Elko Corner-notched, and Elko Eared points
	Early Martis	3,000-5,000	Martis Contracting Stem and Steamboat points
Early Archaic	Spooner	5,000-8,000	Unknown
Pre-Archaic	Tahoe Reach	10,000-8,000	Great Basin Stemmed Series points
	Washoe Lake	>10,000	Fluted points

(After IMR 1995: Table 2).

The earliest phase of this sequence, the Washoe Lake Phase, has a projected date of between 11,500 and 10,000 B.P. Moratto (1999:83). It is characterized only by large, fluted projectile points, suggesting a small, highly mobile population. The Tahoe Reach Phase provides a regional comparison with the Western Stemmed Complex of the Great Basin, dating from 10,000 and 8000 to 7500 B.P. This phase is defined by large, stemmed, edge-ground, isolated, basalt projectile points. IMR (1995:14-15) suggests this may indicate a highly mobile people or, as Moratto (1999:83) suggests, an initial occupation of the area following Sierran glacial retreats. The Spooner Phase, extending from about 7000 to 4000 B.P., represents an interval of prehistory that is poorly understood because it lacks clear, distinct, diagnostic evidence. Moratto (1999:84) suggests this is due either to a paucity of time-sensitive remains or to low human population, and notes that “Elston

et al. (1994) suggested that the temporal range of the still hypothetical Spooner Phase be revised to coincide with our lack of archaeological knowledge between 8000-5000 B.P. (IMR 1995:15).”

Elston et al. (1994) divided the Martis Complex into Early Martis (5000-3000 B.P.) and Late Martis (3000-1300 B.P.), corresponding to the Middle Archaic adaptive strategy of the Great Basin when the archaeological record demonstrates a dramatic increase in human activity (Moratto 1999:84). Early Martis sites are defined by Martis Split Stem, Martis Contracting Stem, and Steamboat Leaf Shaped projectile points manufactured primarily of basalt. Late Martis sites are characterized by Martis and Elko Corner-notched and Elko Eared projectile points.

Paleoenvironmental evidence indicates the Lake Tahoe area suffered severe droughts around 1000-900 years ago and 600-500 years ago, which appear to have given rise to the Late Archaic adaptive strategies evident in the Kings Beach Phases. The Early Kings Beach Phase (1300-700 B.P.) represents the beginning of this era, as evinced by the use of the bow and arrow, increased use of chert toolstone, smaller tools, shallow bedrock mortars, possible reduction in house size, and the introduction of flat, stone hullers for cracking nuts (Moratto 1999:85). Projectile point styles are represented by the Rosegate and Gunther series, and winter base camps appear in previously unoccupied locations or in areas previously reserved as field camps. Elston (1971) suggested that the Early Kings Beach Phase provides evidence of the early Washoe. The Late Kings Beach Phase (ca. A.D. 1250-historic contact) is defined by temporary or seasonal camps ascribed to the late prehistoric Washoe (Moratto 1999:85). These camps provide evidence of hunting and fishing by small groups and are defined by Desert Series projectile points, chert cores, small, flaked chert tools, and some millstones.

Moratto (1999:86) suggests that comparisons between the neighboring Great Basin and Tahoe Reach projectile point styles demonstrates the long term influence of Great Basin culture on the Tahoe Basin and that, with the exception of the Late Kings Beach Phase, the cultural sequence of the Sierran Front reflects adaptations to the eastern front and high country throughout the early and middle Holocene. Human adaptive strategies during these times were strongly connected to, and influenced by, paleoenvironmental conditions (Elston et al. 1977).

### **2.1.2 Southern Cascade Range**

Based on excavations in the early 1950s at Kingsley Cave (CA-TEH-1) and Payne Cave (CA-TEH-193) in Tehama County, Baumhoff (1955; 1957) made the initial attempt to develop a temporal-cultural sequence for the southern Cascade Range. He divided the sequence into the Kingsley (pre-ethnographic Yana) and Mill Creek (ethnographic Yana) complexes.

The Kingsley Complex was generally defined by the equal use of basalt and obsidian toolstone. Projectile points included large, crude, side-notched or square-stemmed projectile points. Thumbnail scrapers, manos, metates, hopper mortars, pestles, bone artifacts and oblong Haliotis ornaments, and flexed burials with rock cairns rounded out the assemblage (Bevill et al. 2005:18). The Kingsley Complex was believed to correlate to the Martis Complex (Heizer and Elsasser 1953).

The Mill Creek Complex was defined by the dominance of obsidian and chert over basalt toolstone. Projectile points included Desert Side-notched; small, deeply serrated corner-notched, and tapering stem projectile points. Manos, metates, hopper mortars, pestles, clamshell disk beads, and flexed burials further defined this complex. Bevill et al. (2005:18) note that the Mill Creek Complex also includes a proto-historic component distinguished by Euro-American artifacts.

Following Baumhoff's work, field schools from the University of California, Davis and California State University, Sacramento conducted numerous investigations that provided an abundance of data and lead to the expansion of Baumhoff's two-part sequence (Bevill et al. 2005:18). Using this data, Johnson (n.d.) proposed a five phase temporal sequence comprised of the Deadman, Kingsley, Dye Creek, Mill Creek, and Ethnographic Yana complexes (Hamusek 1996:17).

Johnson's Deadman Complex (1500 B.C.-500 B.C.) includes the dominant use of basalt over obsidian and chert. Projectile points include side-notched varieties; large, unifacially-flaked leaf-shaped forms, and large stemmed points. Ground stone is limited to manos and metates. Shell artifacts include disk-shaped *Haliotis* shell beads, large triangular pendants, and scoop *Olivella* shell beads (Bevill et al. 2005:19). Refinement of the Kingsley Complex (500 B.C.-A.D. 500) shows a reliance on basalt for the manufacture of projectile points. Point styles include large, stemmed and corner-notched specimens. During this time, shaped, rectangular manos; slab metates, hopper mortars, flat-ended pestles, and spatulate bone tools were used (Bevill et al. 2005:19). Shell artifacts are represented by scoop *Olivella* shell beads and flat *Haliotis* disk beads. The use of multi-family structures, tightly-flexed burials, and some graves with rock cairns, appear at this time.

The Dye Creek Complex (A.D. 500 - A.D. 1500) is defined by medium-to-large size serrated projectile points, as well as other types morphologically similar to Columbia Plateau corner-notched and Gunther Barbed series styles (Bevill et al. 2005:19; Hamusek 2006:18). This complex is differentiated from earlier ones in that obsidian is the predominant toolstone of choice. Other time markers include rectangular and barrel shaped *Olivella* shell beads, circular *Haliotis* ornaments, perforated freshwater clamshell ornaments, deer ulna bone artifacts, slab metates, manos, hopper mortars, flat-ended pestles, and tightly-flexed burials.

The Mill Creek Complex (A.D. 1500 - A.D. 1845) includes the continued use of obsidian over other toolstone; Southern Cascade serrated, small triangular, and Desert Side-notched series projectile points; and hopper mortars, flat-ended pestles, slab metates, and manos. The presence of shell beads and ornaments decreases during this time, but included medium-sized clamshell disk beads, *Glycymeris* shell beads, and magnesite cylinders. Twined basketry appears for the first time, rock ring features were constructed, and the use of single-family dwellings and earth-covered ceremonial or communal structures appear (Bevill et al. 2005:19).

The Proto-Historic-Ethnographic Yana Complex (A.D. 1845 to A.D. 1911) is assigned to the period of time during which the Yana lived in the foothill canyons to escape extermination by Euro-Americans (Bevill et al. 2005:20). As a result, the material culture from this era is a mixture of both Native American and Euro-American items. Obsidian remained the preferred

toolstone. Projectile points include Southern Cascade serrated, Desert Side-notched, and small triangular specimens. Hopper mortars, flat-ended pestles, slab metates, and manos were still used. Assemblages from this time also includes pine nut beads, whole *Haliotis* shells, clam shell disk beads; whole, spire-lopped *Olivella* shell beads, and *Glycymeris* and *Dentalia* shell beads, in addition to magnesite cylinders, wooden tubular pipes, twined basketry, tule skirts, and various other items made from plants and animal skins. Items characteristic of Euro-American influence include glass trade beads, metal, buttons, needles, nails, and cloth (Bevill et al. 2005:20). Structures were either single-family or larger communal or ceremonial structures. Pitted boulder petroglyphs enter the assemblage as well.

### **2.1.3 Recent Archaeological Investigations in the Project Vicinity**

Recent investigations by LNF in the immediate and surrounding Project Area have begun to shed light on local prehistoric temporal-cultural sequences. Moore (2002) conducted test excavations at CA-BUT-601, a temporary camp and basalt quarry he classified as a Martis site based on the recovery of Elko and Martis series projectile points, obsidian hydration data, the dominate use of basalt toolstone, and an artifact assemblage comparable to other Martis sites identified in the area. Subsequent test excavations by Moore (2005) revealed three periods of occupation at prehistoric site CA-BUT-723, the earliest representing Martis adaptive patterns. The two later periods were dated to post A.D. 800 and the historic-era. Importantly, Moore's work not only sought to refine the local cultural sequence, specifically with regards to the Martis Complex, but also to explore and define the use of local basalt sources by the prehistoric inhabitants. Through the same chemical analysis used to source obsidian, the locations of local quarries and other basalt sources are being identified.

Dougherty (Dougherty and Compas 2003) evaluated prehistoric artifact collections recovered by LNF from six archaeological sites in the Project vicinity. He compared the collections to the cultural sequence for the southern Cascades. He concluded that there was insufficient data to interpret the sites, but overall, the sites appeared to date from the Middle to early Late Archaic, with little evidence to support a Late Archaic occupation. He based his analysis on projectile point styles and identified an apparent conflict in the data when he attempted to cross-date the sites using the projectile point typologies with obsidian hydration data. The results of other investigations in the Project vicinity (cf Bevill et al. 2005; Moore 2002, 2005) have relied more on the northern Sierra cultural sequence, with some comparisons to the southern Cascade sequence. The conflict encountered by Dougherty may reflect occupation by northern Sierra groups at his study sites rather than people of the southern Cascade.

Bevill et al. (2005) completed test excavations at seven archaeological sites near the Project Area. They compared the recovered materials to the cultural sequences of both the northern Sierra Nevada and southern Cascade. Although their analysis includes discussions of artifacts associated with both cultural sequences, their overall study relies most heavily on the northern Sierra sequence. Chronological placement of the sites was determined by radiocarbon dating, projectile point typologies, obsidian hydration analysis, and other time-sensitive artifacts. They identified wide stem projectile points at two sites, representing Middle Archaic Period occupations; evidence for Late Martis Phase (3000 – 1300 B.P.) occupation at six sites containing Martis, Elko, and Southern Cascade Side-notched series projectile points; and Rosegate, Gunther, and Southern Cascade Corner-notched forms representing the Early Kings

Beach Phase at two sites. Bevill et al. (2005) did not encounter Late Kings Beach Phase cultural materials. Similar to Moore (2002, 2005), Bevill et al. (2005) also submitted basalt samples for sourcing, which identified local basalt quarries as the source of basalt at these sites. Moreover, two of the sites proved to be the basalt quarries from where site materials were obtained.

## **2.2 Ethnographic Context**

### **2.2.1 Previous Research**

Various attempts were made by early anthropologists to document the aboriginal culture of the Northern Maidu, beginning as early as the 1870s and covering several generations and more than 100 years. Early ethnographic fieldwork conducted by Stephen Powers in 1871-72, Roland Dixon (1899-1905), C. Hart Merriam (1902-06), and A.L. Kroeber (1907-1923) provide the foundation for our understanding of Maidu traditions. Dixon, an academically-trained anthropologist, published *The Northern Maidu* (1905) that covers virtually every aspect of Maidu lifeways including territory and history, material culture, art, social organization, festivals, mythology, and religion, as well as customs relating to birth, puberty, marriage and death. Additionally, Dixon provided an extensive and valuable record of ethnobotanical information on the Maidu.

C. Hart Merriam, trained as a physician and naturalist, gathered ethnographic, ethnobotanical, and linguistic information on the northern Maidu between 1902 and 1906. The majority of Merriam's work was never published, and the notes and materials from his Maidu fieldwork are archived at the Bancroft Library, University of California, Berkeley. Another valuable data set on early Maidu demographics was recorded in 1905-06 by Agent C. E. Kelsey of the California Indian Association. Kelsey was given the task of collecting an informal census of California Indians living outside of reservations, providing statistics on population, location and names of Maidu families that, by the early twentieth century, were relatively few in number and widely scattered.

A.L. Kroeber and his graduate students gathered extensive information on California Indians for several monographs culminating in the comprehensive *Handbook of the Indians of California* published in 1925. Under Kroeber's direction Erminie W. Voegelin interviewed a number of Maidu for her *Culture Element Distributions: XX Northeast California* (1942), which included comparative ethnographic data for 15 northeastern California tribes from three and a half months of fieldwork in 1936. Early researchers also worked with Koncow (Foothill) and Mechoopda (Valley) Maidu elders who, in the 1860s, were forcibly relocated to Round Valley Reservation (Mendocino County; no relation to Round Valley Reservoir). While supervising the work of the Methodist Mission at Round Valley between 1925 and 1931, Leon Loofbourow documented traditional Maidu stories, and in 1926 Helen Heffron Roberts visited Round Valley and gathered information on annual Maidu dances, prayers, and other ceremonies. Their data were later published by ethnographer Dorothy Hill (Hill 1980). Arden King, a student of Kroeber, conducted interviews with Maidu informants in 1941 that record a variety of customs, religious events and genealogy among the Northeastern or Mountain Maidu (King 1941).



Beginning in the 1950s, ethnographers labored to document a changed way of life among the remaining Maidu, working with the now-elderly children and grandchildren of nineteenth century informants. William Shipley began work in 1954 to learn and document the Maidu language. With consultant Lena Thomas Benner, Shipley reconstituted Dixon's Maidu language texts from the original recordings and published *Maidu Texts and Dictionary* (1963). In 1962 and 1963, James Whitfield Duncan III conducted an in-depth ethnobotanical study with a number of Maidu individuals. Duncan's study encapsulated traditional plant use among three major groups of the Maidu. His Master's thesis, *Maidu Ethnobotany* (1963) included both scientific and Indian names for the plants with descriptions of their uses. Between the 1950s and the 1970s, Francis Riddell conducted extensive archaeological and ethnographic research on the lifeways of the Maidu. Riddell also interviewed a large number of Indians in the area with a focus on ethnogeography, much of which is housed in the California State Archives. Riddell provided one of the most complete syntheses of the Maidu in the chapter "Maidu and Koncow" in the *Handbook of North American Indians, Volume 8, California* (1978).

Dorothy Hill, a skilled ethnographer, and her students at Butte College (Durham) conducted extensive fieldwork to produce a *Collection of Maidu Indian Folklore of Northern California* (Hill 1969), containing myths from Northwestern, Northeastern, and Southern Maidu. Hill worked to preserve Maidu knowledge of plants and fauna by publishing *Maidu Use of Native Flora and Fauna* gathered from a variety of published sources and interviews with Maidu in the 1960s and 1970s (Hill 1972). Hill also published the most comprehensive history written for any one Maidu group, *The Indians of Chico Rancheria* (Hill 1978).

In 1977, Maidu elder Marie Potts published her memoir *Northern Maidu* (1977), a valuable resource offering Potts' personal insight and experience growing up as a Maidu, and one of the first native Californian ethnographic documents published from an autobiographical perspective.

### **2.2.2 General Ethnographic Information**

The Maidu family of languages is classified as California Penutian and can be distinguished into at least three groups that include the Northwestern (Koncow and Mechoopda Maidu), Northeastern (Mountain or Greenville Maidu) and Southern (Nisenan) (Riddell 1978). The Mountain Maidu occupied the high mountain meadows from Lassen Peak east to Susanville, south to Quincy, and west to Bucks Lake and the Humbug Valley. Koncow and Mechoopda territory encompassed portions of the Feather River, Butte and Chico Creek watersheds, and part of the northern Sacramento Valley, including all or most of the current project area. Within each major division existed a number of subdivisions, tribelets and language dialects corresponding to specific locales and communities.

The Maidu lived in village communities that formed the basis of their geography and political organization prior to Euroamerican contact. Each community was an autonomous political unit comprised of several family-based villages, one of which contained a headman or chief. Village size varied widely from a single lodge or family house to twenty or more. In the foothills, settlements were situated along ridges above watercourses and on small flats on the crest of a ridge or part way down the canyon side. Each village community owned its territory in common, including hunting and fishing grounds appropriately proportioned to support its population.

Villages contained various types of structures, including conical living houses built of bent poles clad with thatch and earth, a semi-subterranean men's house or sweathouse, and brush-covered summer ramadas. The headman's village was typically the location of a large dance-house or community structure where religious ceremonies and social events were held. (Dixon 1905).

The Maidu occupied their permanent villages through the winter months and camped throughout the foothills and mountain areas during seasonal hunting and gathering cycles. Their hunting and fishing areas were well connected to each other with trails, and members of village communities rarely needed to venture outside of their "owned" territories, few of which encompassed a radius of more than 20 miles. For items that they were unable to procure within their territories, the Maidu relied on trade with neighboring Maidu communities and groups in adjacent regions such as the Yana, Nomlaki, Wintu, Patwin, and Nisenan. Trade secured shell beads, pine nuts, and salmon in return for arrows, bows, deer hides and several types of food (Riddell 1978).

#### 2.2.2.1 Geographic Locations of Wintertime Villages and Summertime Hunting Grounds.

Wintertime village locations during the ethnographic period have been estimated from a combination of the ethnographic and ethnohistoric work of Francis Riddell (1978: 370-373) and Milliken et. all (2007). Riddell used both ethnographic literature and first hand interviews to locate territories and villages. Randy Milliken, making extensive use of ethnographic materials, has delineated a number of 'Ethnographic Mapping Units' that represent possible 'tribelet' territories associated with specific village communities. Both Riddell's and Milliken's work rely heavily on the earlier work of Kroeber, Mirriam, Dixon, and Hill discussed above.

Milliken's analysis of the area was conducted as part of the California Department of Transportation's District 3 district wide ethnographic study (Milliken et all 2007). Milliken used a four step analytic technique to create the regional mapping units. The technique starts by mapping in the probable core of each region using well document village sites with known locations (this included the Northwestern Maidu region along the Feather River). Then villages without precise location information are interpolated on to the map based on their relationship to villages with known locations. Third, distinct vicinities comparable in size to known triblet-sized regions were delineated around these villages as mapping units. The fourth step was to divide up the remaining land around the established regional units and infer boundaries based on general geographical features known to have often been used as boundary markers. Milliken delineated these hypothetical territories of triblets in an effort to break away from the notion of 'language as tribe'. However, Milliken explicitly warns these regions should not be considered documented regions; they are instead based on a system of very educated guesses. (Milliken et all 2007)

The DeSabra-Centerville FERC Project lies with in the 'Magalia', or 'Nemseu', and 'Uplands: Northwest Maidu' Ethnographic Mapping Units as defined and delineated by Randy Milliken (2007). The 'Magalia' region represents an area in which semi-permanent wintertime villages would have been located. The 'Uplands: Northwest Maidu' region is considered the summertime hunting territory of the Northwestern Maidu, the camps located here where seasonal and temporary.

The Magalia or Nemseu region includes Centerville at its southern border, Stirling City along its northeastern border, and has Mud Creek as its western boundary. Based on ethnographic literature (Milliken et al 2007, Riddell 1978: 371) three ‘Magalia’ or ‘Nemseu’ region villages were within, or in very close proximity, to the FERC boundary:

- ‘*Nemsewi*’, near historic Centerville
- ‘*Nem’-sǎ-wà*’, near historic Helltown
- ‘*Nim-sewi*’, in the vicinity of DeSabra

However there is a discrepancy in the Ethnographic literature concerning *Nem’-sǎ-wà*’ and *Nemsewi*. Riddell (1978:370-371) considered these as two separate villages recorded as Items 31 and 32, respectively, on his map of Maidu/Konkow territory. While Milliken considers them to be the same village, with slightly different spellings, recorded in two locations by different ethnographers. This single village was placed near Helltown by Mirriam and near Centerville by Kroeber (Milliken et al 2007). However no discussion is made of the similarity of the village ‘*Nim-sewi*’ to ‘*Nemsewi*’. *Nim-sewi* was recorded and mapped by Kroeber as being in the DeSabra vicinity (Milliken et al 2007). Finally, ‘*Nem’-sǎ-wà*’ was also located by Merriam’s respondent, Jack Frango, as being in the vicinity of Forest Ranch and Helltown (Milliken et al 2007).

There are a number of possible explanations for this conflicting information on the locations and names given for these villages. Some of the ethnographic respondents consulted were not actually from this region and may not have known the exact location of certain villages. For example Mirriam’s respondent Jake Frango was a Mechoopda from Chico (Milliken et al 2007). Another possible problem was Mirriam’s lack of training in established orthographic and transcription practices, which led to non-standard transcriptions of place names.

There are also a few Maidu culture based answers to this confusion. The first is that village communities, that are organizations of several adjacent and affiliated villages, seemed to have no other designation than the name of the village in which the headman lived (Milliken et al 2007). This could have led to several closely associated villages, as part of a specific village community, being referred to by the same name – especially by people from other communities. *Nim-sewi*, *Nem’-sǎ-wà*’, *Nemsewi*, and other similar names could all be variants of one name for the village community. A Mechoopda respondent consulted during this project indicated this possibility. While touring the Helltown area the respondent was asked about the *Nimshew* (this spelling, which is found in current road and place names will be used here for simplicity’s sake). He responded “that’s what we (the Mechoopda) called the people up here.”

The respondent also provided another possible explanation for why there were so many different locations given for villages with the same or similar names. The respondent stated it was because his people had moved around a lot. That they hadn’t lived like people do today in fixed locations, but instead would relocate to accommodate hunting, gathering, and other

needs. Also, that sometimes villages would be relocated and renamed if members of the community split off. The respondent thought there had been four or five villages in the area around Butte Creek.

For a conservative approach each of the three locations give should be considered possible village sites. The variance in placement and names can be considered either recording mistakes, or sign of mobility and variable naming practices. At this point there is not enough physical evidence to pinpoint the exact location of any of these villages, so it is safest to consider each of these locations as potential village sites. Though it is possible that some descendents of the Nimshew tribelet still live in the area, it is unknown at this point if there are any specific locations significant to the continuation of traditional practices.

There were six other villages located in the ‘Magalia’ or ‘Nemseu’ region, but not within, or in close proximity, to the DeSabra-Centerville FERC boundary.

- Yum-mut-to
- Ti’kus-se
- Yauko
- O’dawi
- Otaki
- Tsulumsewi.

Yum-mut-to was located on Butte Creek and was considered by Merriam to be under the influence of the Mechoopda. The village of Ti’kus-se (Item 33, Riddell 1978:371) was located on the Little Butte Creek by Merriam’s informant Jack Frango in the vicinity of present day Magalia (Milliken et all 2007). The other four villages where located along the ridge between the Little and Big Chico Creeks. Yauko was first vaguely located by Dixon (1905:124) along the Little Chico creek, than relocated by Kroeber (1925:394) to the Little and Big Chico divide, and finally back to Dixon’s location on the Little Chico or on the ridge between the Big and Little Chico by Riddell (1978:371). O’dawi was located by Kroeber (1932) in the vicinity of the historic “10 Mile House”, while the location of Otaki is based on Dixon’s placement of it near the historic “14 Mile House. Kroeber placed Tsulumsewi further up this ridge and along Highway 32 near the present Forest Ranch area (Note: this is where the ‘other’ Nem’-sǎ-wà was located by Mirriam)(Milliken et all 2007).

The other ‘Ethnographic Mapping Unit’ of interest is the ‘Upland: Northwestern Maidu’. The areas around Hendricks Head Dam (along with possibly the northern end of Hendricks Tunnel), Philbrook reservoir, and Round Valley reservoir (or Snag Lake) all lay within this area (Milliken et all 2007). These Upland areas were used in the summer, primarily for hunting (Milliken et all 2007). During the summer season Northwestern Maidu would journey up into the mountain areas east of their wintertime territory to hunt. At these summer camps temporary open roofed structures were built to house three of four families and for use as ceremonial centers (Riddell 1978:373). Both from interviews with members of the Mechoopda tribe and from ethnographic

literature it seems likely that this area would have had distinct territories associated with specific village communities (Riddell 1978).

However, the ‘Uplands: Northwest Maidu’ region is little more than an estimated territory (see the discussion above on how these areas were determined). None of the territory within the Northwestern Maidu Uplands has been associated with specific tribelets. Though a respondent for the current study (personal communication 2007) stated that he did not know who had historically used this area, he guessed by members of Greenville Rancheria, or by members of the Konkow tribelet. He explicitly stated that the Mechoopda had not traditionally used this upland area. Another possibility, based on proximity, is the area around Philbrook Reservoir, Round Valley Reservoir and the Hendricks dam and tunnel could have been the summertime territory of the Nimshew. However, there is no direct evidence for Nimshew control of this area.

In addition, it is likely that summertime territories would be open to members from other village communities, especially extended family members, and even to members of communities from other language group territories (Yana language family speakers for example). However, extra-village community individuals entering another group’s territory did not generally hunt for themselves according to one respondent. Instead these individuals would be treated like guests and have their needs provided for by members of the village community that controlled the territory. Two respondents mentioned that there had been family ties not only between various Northwestern Maidu bands, but also with the Yahi Band of the Yana. One respondent flatly rejected the idea that the Maidu and the Yana had been enemies. Instead, they said interactions between peoples from these two groups had generally been friendly, especially because of these been family ties. Another respondent also mentioned that the Yahi had hunted as far south as Centerville, though it was not clear if this was an welcomed incursion into Nimshew Maidu territory or not.

The statements of two of the respondents seem in sharp contrast to ethnographic literature that depicts the Northern Maidu and the Yana as enemies (Johnson 1978:363). However flexible territorial boundaries between relatively mobile peoples seem plausible. Though occasional hostilities may have arisen (Riddell 1978: 379, Johnson 1978:363) it is possible family ties, personal interactions, and other relations created an underlying bond. In any case, the paucity of historically recorded ethnographic and ethnohistoric information concerning the ‘Nimshew’ tribelet of the Northwestern Maidu makes it difficult to contextualize, support, or contest modern statements about group interactions within the Butte Creek area. This leaves open the possibility that Yana speakers may have interests in this area, even if based on only short-term seasonal visits.

In summery, the exact summertime territorial boundaries of, and within, the Uplands: Northwestern Maidu are unclear. This is true both of internal Maidu territories and of the boundaries between the ‘Magalia’ or ‘Nimseu’ (‘Nimshew’) Maidu and the Yahi Yana summer upland territories; there may never have been solid boundaries in a modern sense. While village communities may have staked a claim to a certain area, other groups may have had use of it over the course of seasons and years. This leaves the possibility for overlapping, and equally legitimate, interests on the part several Native American groups and organizations within the ‘Upland’ area around Philbrook and Round Valley Reservoirs.

#### 2.2.2.2 Subsistence.

Annual cycles of gathering, hunting, and fishing were maintained to procure a wide variety of resources for subsistence and material needs. Plant gathering was one of the most important aspects of Maidu subsistence, and was usually done by women with the exception of fall acorn gathering that was done communally (Shipley 1991). Many types of seeds were collected and winnowed in seed baskets, and fruits and berries including manzanita (*Arctostaphylos pungens*), strawberry (*Fragaria* sp.), thimble berry (*Rubus glaucifolius*), service berry (*Amerlanchier pallida*), elderberry (*Sambucus glauca*), and gooseberry (*Ribes occidentale*) were harvested (Dixon 1905). Plant products were processed using both portable and bedrock mortars, and dried for storage in baskets and granaries. Acorns, which were plentiful and stored well, were the staple food on which the Maidu lived during winter months. Though many acorn varieties were recognized and used, the Maidu preferred black oak (*Quercus kelloggii*), the canyon or golden oak (*Q. chrysolepis*), and the interior live oak (*Q. wislizenii*) (Dixon 1905). Leached, dried and pounded acorn meal was reconstituted with water and made into griddlecakes or baked as bread. Nuts of the foothill pine (*Pinus sabiniana*) were collected and ground into flour, while the shells were used for beads (Riddell 1978). Other food sources included yellow jacket larvae, angleworms, locusts, grasshoppers and crickets (Riddell 1978).

Fishing and hunting were largely conducted by men, and village communities relied on the taking of elk and deer during the winter months. These activities necessitated the production of bows and arrows, knives, spears and hooks, and nets and snares (Riddell 1978; Shipley 1991). Bows were commonly made from sinew-baked yew with a fore-shaft of mock orange or cluster rose, while the quivers were made from animal skin (Kroeber 1925). Knives and arrowheads were made from obsidian from the north and local flint (chert) and basalt-like stones (Dixon 1905). Nets and snares were made using a variety of plant materials such as milkweed and wild hemp.

According to Shipley (1991), the only animals not hunted by the Maidu were grizzly bears, wolves, coyotes and dogs. Animal products, including flesh, skins, horns, bones, and hooves were used for shelter, clothing, tools and medicine as well as food (Riddell 1978). Salmon were caught using large seine nets or salmon-gigs made from bone or antler. Spearing occurred in weirs across eastern tributaries of the Sacramento River. Salmon were dried on poles and once dry, pounded into a powder, stored and eaten dry (Dixon 1905).

#### 2.2.2.3 Basketry.

Basketry was a critical component of gathering, processing, and sorting subsistence materials. The Koncow made both coiled and twined baskets such as hopper baskets, winnowing baskets, seed beaters, large burden baskets, and smaller burden baskets. Baskets were made from a variety of plants, predominately willow (*Salix* spp.), redbud (*Cercis occidentalis*), bear grass (*Xerophyllum tenax*), common brake (*Pteridium aquilinum*), maidenhair fern (*Adiantum pedatum*), hazel shoots (*Corylus corunta*) and the ponderosa pine (*Pinus ponderosa*) (Dixon 1905; Riddell 1978). The Maidu recognized hundreds of species of plants that were used for subsistence, material, and medicinal purposes. Most parts of the plants were used including the roots, stems, leaves and seeds.

#### 2.2.2.4 Religion and Ceremony.

The religion or spiritual beliefs of the Maidu were most fully represented in their mythology, shamanistic practices and ceremonies. Myths are an effective means of transmitting information and knowledge orally between generations. Myths provide clues to Maidu beliefs about the environment and cosmogony, and many myths comment on places, events, and landscapes of importance that may still have relevance to the present. Researchers such as Roland Dixon (1905), Dorothy Hill (1969) and William Shipley (1991) recorded traditional Maidu myths. Myths and stories were “told” during winter ceremonies and festivals typically held in community dance houses and collectively referred to as Kuksu ceremonies (Riddell 1978). Instrumental music and song were also an important component of these events. Dances involved animal spirit impersonations and included the Waima or Duck dance, Grizzly Bear dance, and the Hesi. Large ceremonial dances such as the Hesi, which signified a years passing, were performed in dance houses and followed by periods of feasting, games and gambling (Riddell 1978). Another type of ceremony was also held in village cemeteries to display and ritually burn baskets and material goods associated with deceased relatives. These mourning ceremonies were performed annually for five years following a death (Hill 1978)

#### 2.2.3 Post-Contact Maidu History

Contact between the Maidu and Euroamericans began in the early 1800s when Spanish explorer Gabriel Moraga entered Maidu territory in 1808 on a scouting expedition to locate potential sites and native populations for missionization. In 1811, Padre Arbella was exploring the Sacramento and San Joaquin Valleys and encountered a group of Konkow Maidu (Dixon 1905). Over the next 40 years, increasingly frequent forays into Maidu territory were made by explorers, fur trappers, and early settlers.

In 1833, an epidemic of malaria (or smallpox) occurred in the Sacramento Valley with drastic consequences for the entire Maidu population, which has been estimated between 9,000 and upwards of 20,000 for the pre-contact period (Cook 1955, Kroeber 1925). The epidemic wiped out entire villages, resulting in a dramatic population reduction between 1833 and 1846 (Cook 1955). In 1848-49, the discovery of gold in California led to a second swift change. The tremendous influx of miners and settlers into the northern Sacramento Valley and foothills brought not only additional disease to the Maidu, but displacement and starvation resulting from the collapse of their resource base. As gold miners quickly lined the creeks and water courses, the Maidu were forced to flee their villages and simply had no place to go. Within a decade, the oak and pine forests were cut for lumber, game animals disappeared, and settler’s cattle grazed the Maidu’s hunting and gathering territories. Conflicts between white settlers and the dwindling native population arose as Maidu were reduced to poaching livestock for food. Collectively these pressures permanently altered their aboriginal political and social organization and made traditional subsistence difficult or impossible. In order to survive, the Maidu took menial jobs at mines or on settler’s farms, often working for food and basic necessities in place of wages (Hill 1978).

As a result of increasing conflict between American settlers and California Indians, many authorities tried to negotiate treaties to remove the Indians. During 1850-1851, in an attempt to

deal with the ‘Indian problem’ in California, three federal treaty commissioners appointed by President Millard Fillmore entered into 18 treaties with various leaders of the California Indian tribes. The treaties were agreements to set aside an area of land for reservations that totaled 8.5 million acres along with educational and economic aid in return for government title to their traditional territory. Konkow and Nisenan Maidu signed treaties with Dr. Wozencraft at Camp Union on July 18, 1851 and Mechoopda Maidu at Bidwell’s Ranch on August 1, 1851 (Heizer 1972). In 1852 the U.S. Senate did not ratify these treaties because of objections from the California legislature and others who had concerns about giving away land that may have agricultural or gold-bearing potential. Conditions worsened in 1855 and again in 1863 when groups of Konkow, Mechoopda and Greenville Maidu were forcibly relocated to Nome Lackie Reservation in Tehema County or to Nome Cult (Round Valley) Reservation in Mendocino County. Conditions on the reservations were poor and provided little opportunity for self-sufficiency. Those who left the reservations and tried to return to their homelands encountered new settlers and continued hostility.

### **2.3 Historic Context**

Euro-American pioneers first began to settle in the Project vicinity in the 1840s. Influences of the Euro-American lifestyle and technological ventures forever altered the Project landscape as ranching, mining, lumber, transportation, hydroelectric power, turpentine production, organized forestry, and recreation were introduced. Such interests continued for extensive periods of time, with some still actively pursued today. The commodities and benefits gained from these activities are both physically and economically diverse. Nevertheless, they all share one common denominator—to a great extent, most of these pursuits depend on the waters of Butte Creek, the West Branch Feather River, and their various tributaries, as discussed below.

Before miners began flooding into California in the late 1840s, settlers trickled into the state earlier in the decade while it was still a province of Mexico. At the time, the Mexican government encouraged immigration as a way to settle the then remote regions of the Central Valley and Sierra Nevada foothills. In 1841, John Bidwell and John Bartleson led the first pioneer drive to California (Nunis 1998). As part of its policy to develop the hinterlands of California, the Mexican authorities granted large tracts of land to émigrés from the United States or Europe. In 1844, William Dickey and Edward Farwell acquired a grant that included the Butte Creek drainage; five years later, Bidwell purchased this land and incorporated it into his extensive Rancho del Arroyo Chico (CSUC 1998:135). At the time, ranching was California’s dominant industry, and it is possible that the cattlemen used the study area as pasture during the spring and summer months.

The available archival sources do not indicate any Euro-American settlement in the study area before 1848, the year gold was discovered at Sutter’s Mill. However, once the news of gold reached the outside world, the formerly peaceful canyons were filled with the clang of the miner’s pick. Bidwell’s mining endeavors apparently did not make use of the waterways in the project Area, although he did find rich deposits on the South Fork of the Feather River at Bidwell’s Bar (Holiday 1999:68). However, others ventured up Butte Creek and the West Branch Feather River, and by early 1853 several communities had been established around the study area, including Helltown, Centerville, Toadtown, Lovelock, Coutolenc, Magalia



(Dogtown), and Powellton. Additionally, the Humbug Summit Road also was built in 1853 and extended from Oroville through Dogtown and Inskip to Honey Lake to provide easy access through the Sierra Nevada to the gold fields of California and Idaho (Bevill et al. 2003:102; Moore 2005:9).

Mining methods quickly evolved to increase the yield of gold from stream beds. The pan was replaced by the rocker, which in turn was supplanted by the Long Tom and the sluice box. The surrounding conifer forests provided the building materials for these wooden troughs, and in short time a milling industry had emerged to service the needs of the miners and their budding towns. As many as 14 sawmills were operating in Butte Creek Canyon in the 1860s and 1870s, including John Hupp's mill located at the north end of Lake DeSabra (Maniery et al. 1985:3-18). In 1874, the Sierra Lumber Company built a 33-mile flume down Chico Creek Canyon to deliver lumber to Chico (CSUC 1998:136).

Flumes, as well as earthen canals, were constructed in the study area. Initially, their purpose was to convey water to mining operations. However, many of these features were later obtained for hydroelectric generation and incorporated into the DeSabra-Centerville hydroelectric system. The need for greater volumes of water grew as hydraulic mining became more prevalent. Three main canal systems that comprise the water conveyance network in Butte Creek Canyon were built between the 1850s and 1870: the Hendricks Canal, which carries water from the West Branch Feather River to Butte Creek; the Centerville Canal, which combines the Hupp and Bostwick canals; and the Cherokee Ditch, which later become known as the Butte Creek Canal (Maniery et al. 1985; PAS 1988). In 1877 the Cherokee Mining Company dammed the West Branch Feather River to create a small reservoir in Round Valley (Butler 1962). Stage stops, including Centerville, Powellton, Nimshew, and Lovelock, grew quickly to support the miners, ranchers, and homesteaders flooding the region. By the 1880s, the river courses throughout the Project vicinity and beyond were choked by the gravel and other by-products of hydraulic mining, and gold was becoming scarce. Small operations at Toadtown, Lovelock, and Centerville continued through the 1890s (Maniery et al. 1985). However, the 1893 Caminetti Act and subsequent litigation eventually brought an end to hydraulic mining.

The Centerville and DeSabra powerhouses were completed in 1900 and 1903, respectively; before the end of the decade, the Hendricks, Butte Creek, and Centerville canals had been co-opted to convey water to these plants. The lumber industry continued as an important part of the local economy. In 1903 the Diamond Match Company built a steam-powered mill in Stirling City to process the harvest from the company's large timber holdings. The mill was linked to Chico by the Butte County Railroad.

In addition to the canals, flumes, and other conduits used to transport water from one place to another, water management using the storage of run-off also became important. As the demand for water increased, additional reservoirs were constructed to ensure that a constant flow of water was available from season to season and year to year. In 1926, the Philbrook Dam and Reservoir were constructed to increase the output of the Centerville and DeSabra powerhouses. A dam had been built previously on Philbrook Creek in 1908 but failed the following year (Colby and McDonald 2005:76). The Project Area has also grown popular with valley residents. Aside from impounding water for hydroelectric purposes, Philbrook Reservoir and Round Valley

Reservoir (Snag Lake) have become favorite recreational areas for the residents of the Upper Sacramento Valley. PG&E began leasing lots to the public around Philbrook Reservoir possibly as early as the 1930s, with the height of private construction and use by the 1940s to 1950s (Colby and McDonald 2005:76).

For a short period of time during the 1860s, the Dogtown area was tapped for its turpentine resources in support of the Civil War. Pitch from Ponderosa pines was extracted and processed and the resulting turpentine used by the navy's ships. At the war's end, turpentine continued to be produced locally for the production of bitters (Moore 2005:9).

The massive depletion of timber resources in the west during the late nineteenth century goaded Congress to pass legislation to reduce timber exploitation. In response, the state created the California State Board of Forestry in 1885 to address education and research for proper timber management (Godfrey 2005:21). In 1891, Congress approved the Forest Reserve Act (Section 24 of the General Revisions Act) which gave the U.S. President the power to establish forest reserves. Lassen Forest was established 1905.

The following discussions provide details of local history as they relate specifically to these trends. An overview of hydroelectric development and use in the APE is provided below. A detailed history of the Project's development is included in Section 2.3.8 above (Historic Context: Hydroelectric Generation).

### **2.3.1 Ranching**

Although trappers from the Hudson's Bay Company were hunting along the rivers of Butte County by 1829 (Chavez 1980:11), ranching appears to be the first Euro-American activity to occur with any consistency within the Project Area. Following the age-old pastoralist cycle, sheep and cattle would graze in the lowlands during the spring. As the vernal growth began drying-up under the Central Valley summer sun, the animals were herded to the foothills and highlands where grasses were still plentiful. With the arrival of fall, herds and flocks were led back to the valley where they spent the winter. A map of Bidwell's Rancho de Arroyo Chico, although far from precise, suggests that the study area lay in the eastern part of this vast land holding, and it is certainly possible that his predominantly Native American labor force drove cattle up Butte Creek Canyon and along the West Branch Feather River.

The gold rush and the resulting increase in California's population pulled at every corner of the region's economy, including the ranching industry. The demand for beef sent the price of cattle soaring from \$2 per head in pre-boom times to as high as \$300 in 1849 (Holiday 1999:167-169). Even in 1853, cattle remained an expensive commodity, selling for between \$20 and \$50 per head. In the Project Area, the development of roads not only improved access to the mines but also facilitated the stockmen's annual trek up and down the Butte County highlands. Photographs of Magalia show an immense flock of sheep crowding along Neal Road on its way to summer pastures (Colby and McDonald 2005:17, 28). The road followed the path laid out by Samuel Neal in the 1850s to move cattle throughout the year (Estep 1969:35). The town of Powellton, established by R. P. Powel in 1853, sat at the junction of the roads from Oroville and Chico; it was an important stage stop. Thousands of head of livestock, some from as far north as

Modoc County or southern Oregon, passed through the town each spring and fall (Chavez 1980:15; Miller 1969).

In a 1973 interview, local resident Ralph Hupp, born in 1889, recalled his experiences of driving cattle along Humbug Road:

When I was a boy, they used to bring the cattle by every year. [The rancher] had barns and a place there—corrals to put his cattle in overnight on his way [to the high county] so they wouldn't be out in the open—so they could keep track of them [Hupp 1973:8].

Interestingly, Hupp added that rangeland covered much of the area around Inskip, which was heavily forested at the time of the interview. He explained that the rancher follows a cycle of burning off vegetation in October to encourage thick growth in the spring, which is browsed on by the cattle.

The namesake of Philbrook Valley, Alonzo Philbrook, may have begun grazing his cattle in the area as early as 1857. Christopher Lynch established a summer camp there in 1877, with ranching continuing in the Philbrook drainage into the twentieth century (Colby and McDonald 2005:76; Jones 1984). Grazing has also been allowed in the Lassen National Forest since its inception:

Grazing is the oldest and best-established use of national forest areas. Until the 1920s, grazing fees were the largest source of income from all national forest system lands. Stockmen were a potent political force in the West and exerted their power whenever the USFS threatened to raise grazing fees or cut back on overgrazing [Roth 1995:9].

### **2.3.2 Mining**

Located at the northernmost part of the Mother Lode, the diggings around the Project vicinity were not exceptional in terms of the volume of gold extracted, particularly compared with Bidwell's Bar or the other claims farther south. Nevertheless, by 1859 over 70 mines in the Paradise-Magalia area alone had yielded at least \$50 million in gold (Chavez 1980:12). It is also notable that the first large gold nugget in California—"The Dogtown Nugget" which weighed 54 pounds—was found near Magalia (Dogtown) in 1859; California Historical Landmark No. 771 marks the site of this discovery on Willard Claim, located northeast of the town on the West Branch Feather River (Colby and McDonald 2005:10).

The popular icon of the Gold Rush has been the solitary 49er with his pan and pick, but in fact most gold mining ventures were cooperative efforts requiring technical know-how, construction of elaborate flumes and other structures, and, in some cases, considerable financial capital. In the early part of the gold boom, claims were staked along existing water courses. In one sense, water from the river was the necessary agent that separated the tailings from the precious ore, yet on the other hand, the same water ran between the miner and gold-bearing stream bed below.

Looking at the rushing, tumbling waters flowing from the Sierra Nevada, peering into the deep green pools of quiet water below granite boulders, many of them imagined the gold that must have washed down through thousands of years to accumulate in submerged

deposits... And all of it still untouched, waiting for those with the cunning and the will to accept the river's challenge [Holiday 1999:144].

The “challenge” here referred to diverting the flow of the river into a wooden flume so that the river bed would be exposed and mined to its fullest extent. Although the Bon Ami Mine, located on Butte Creek about 4 miles upstream from the DeSabra Powerhouse, was worked in 1897 or 1898, it was similar to earlier operations from the 1850s. In the spring when the river level was still high, the miner began constructing the flume measuring several hundred feet; a dam channeled the creek into the flume, which flared out at the head to facilitate the inflow of water (Butler 1969:5-7). With the arrival of summer, the creek subsided leaving the stream bed dry. A water wheel was installed to run pumps for clearing the remaining stream pools and power derricks for lifting gravel and moving boulders. In these cases, the miners had only a few months to extract the gold from the bed, since the first heavy rains of September usually raised the river level and washed away the flume and other machinery. In other cases, like the McLaughlin Golden Feather claim along the Feather River, the prospectors built more permanent structures to divert the flow of water throughout the year, although such projects required a larger capital investment and were more costly to operate.

In due time, miners realized that gold lay not only in existing stream beds but in ancient channels as well. The Sierra Nevada is a relatively young range prone to eruptions and other mountain building events. Albright (1992:5) explains that mud and “subsequent lava flows covered the ancient river and stream channels...[where] the majority of the gold was found.” The Project vicinity is cross-cut by several of these ancient river courses. Located near the DeSabra plant, the Indian Springs mine (CA-BUT-965-H) lies near the confluence of the Emma and Indian Springs channels; while farther downstream, the Oro Fino Mine sits at the junction of the Emma and Nugget channels (Albright 1992:8). The dominant course in the region is the Magalia Channel, a 15 mile corridor that passes through or near the towns of Centerville, Magalia, and Stirling City (State of California 1949).

To access the gold-laden sediments, the miners again relied on the power of water to blast away the overlying basalt layer. Hydraulic mining began along Paradise Ridge in 1852, and many claims in the study vicinity are associated with this type of mining (Albright 1992). The method involved the transportation of water far from its source and in sufficient volume to create the pressure needed to operate the monitor nozzles, which were capable of washing away an entire hillside. During the initial stages of the gold rush, the appropriation of water rights was similar to documenting a mining claim. One simply filed a claim for a specified amount of water with the county recorder in Oroville; his right to draw from the designated water course was maintained through continual use (PAS 1988:28).

In 1854, W. C. Hendricks and others posted a claim on Little Butte Creek (Butler 1962:3-5). Fifteen years later, he filed another claim on the West Branch Feather River with the intent to channel water from both courses to his mining operations at Morris Ravine. The Hendricks Ditch began at its head gate, Meacham's Dam, on the West Branch Feather River. Through a series of ditches, flumes, pipes, and natural stream courses, the water was delivered some 35 miles to Hendrick's diggings located about 3 miles north of Oroville (State of California 1949). In some segments that traversed steep ravines, the rocky slope of the mountain combined with a

stone wall to form the sides of the ditch's channel (McDonald 1995:18). In 1871, while still under construction, the canal was considered "the largest ditch in the State," measuring 6 feet wide at its base, 8 feet wide at the crest, and 2 feet deep (Butler 1962:4). Built between 1870 and 1872, its construction employed approximately 400 men, who were stationed at three camps: Camp No. 1 was in a small valley 2 miles below Magalia; Camp No. 2 was 4.5 miles above Magalia; a third group was equipped with movable equipment to change location as needed. The upper portion of the canal—from its head on the West Branch Feather River to the junction with Butte Creek Canal—is still in use and was connected with the smaller Toadtown Canal when PG&E acquired the water rights and is still in use; the lower reaches of the Hendricks Ditch have been abandoned.

Sometime in the 1850s, another mining canal commenced bringing water from a point on Butte Creek downstream to Helltown. This ditch—referred to as the "Moss & Co. Ditch" on a 1867 GLO map—was the initial leg of what would become the Centerville Canal (Maniery et al. 1985:3-22). The water rights passed to several owners, including the Bostwick Gold Mining Company and John Hupp, who operated the Red Gravel Mining Company near the town of Centerville (Maniery et al. 1985; PAS 1988). In the late 1890s, the Butte County Electric Power and Lighting Company eventually acquired the ditch to supply the water for its Centerville plant. PG&E later expanded the system, which currently consists of the Upper and Lower Centerville canals.

The Cherokee Mining Company tapped the waters of both Butte Creek and the West Branch Feather River. In 1873, the company acquired the rights to the Dewey and Miners ditches, which diverted water from the West Branch just below Round Valley (Butler 1962; State Mining Bureau 1904). The two canals were combined above Inskip and channeled southward to the mining claims. In 1877 the company built a reservoir (Snag Lake) in Round Valley, which could store up to 880 acre feet (Butler 1962). Another ditch begins at its head on Butte Creek, near its confluence with Inskip Creek, and flows southward along the east shoulder of Butte Creek Canyon. This latter canal came to be called the Butte Creek Canal, which feeds water to the DeSabra Powerhouse.

In referring to the powerful effects of hydraulic mining, Hupp once quipped that "[I] do not care a damn whether the claim pays or not; it is fun to watch the huge boulders leap from their beds and go rolling, tumbling, crashing down into the ravine below (Colby and McDonald 2005:62)." In fact its environmental impacts were devastating to the agricultural communities downstream. Hydraulic mining effectively ended with the 1893 Caminetti Act, which prohibited the disposal of mining tailings into river courses. Other methods continued, including dredge mining, which employed barges with large buckets to scoop gravel, extract gold, and return it to the stream (CSUC 1998:140). Shafts also were sunk into the ground to locate and mine the gold-bearing ore. Victor Poumarat owned a quartz mine near Toadtown. The property—which included a ball mill, hoist works and shaft—was purchased by Joseph Richards and later by the Toadtown Mining Company.

### 2.3.3 Lumber

The California lumber industry arose as a direct result of the demands for building materials created by the gold rush. The Sierra Nevada forests stocked a seemingly inexhaustible quantity of timber, but it took several years until supply could eventually catch up with demand. In 1853, lumber sold for \$650 per thousand board feet, an exorbitant price compared with the rest of the county (Holiday 1999:163).

Built in 1853, the Folck Mill on Little Butte Creek near Magalia (Dogtown) was one of the first mills in the Project vicinity (Colby 1999:21). The 1862 Official Map of Butte County depicts five mills—the Doe's, Kinson's, Hupp's, Taggards, and Lovelock's—in or around the south part of the study area. Maniery et al. (1985:3-18) noted that 14 saw mills operated in Butte Canyon Creek in the 1860s and 1870s.

As mentioned above, John Hupp mined gold in the region, but he was first and foremost a lumber man. Hupp initially set up his saw mill near Mosquito Creek, 2 miles south of the Lovelock Store as shown on the 1862 county map. He acquired a property along Humbug Road near the Forks of Butte in 1859 and, sometime afterward, relocated his business there. As described by Colby and McDonald (2005), the Hupp homestead was a community unto itself.

The complex included a boardinghouse for the workmen, a bar, a store from which all manner of supplies were sold, and for nearly three years, 1909–1911, a post office. Gardens and orchards produced much of the food, and dairy cows provided the milk and cream. Mrs. Hupp had her own section of the house to which she could retire with her children from the noisy crowd of workmen [Colby and McDonald 2005:62].

A map of the Hupp property (circa 1890) in Maniery et al. (1985) bears out this complex, which also included a lumber car track with turntable, corrals, an alfalfa field, and a granary. In addition, the Cherokee Ditch (the Butte Creek Canal) flowed just west of the Hupp property.

In both indirect and obvious ways, the steam engine was also associated with the growth of the lumber industry in the Project Area. In the 1860s, the federal government granted to the Central Pacific Railroad (later consolidated as the Southern Pacific Railroad) alternating sections of land as an incentive for the completion of the transcontinental railroad (McDonald 1999:3). These tracts were later purchased by lumber concerns. In the early days of the gold rush, timber was hauled via teams of oxen and cut manually by whipsaw. In 1863, Hupp set up the first steam-powered mill in the area (Miller 1969:86). Steam-driven saws greatly increased the output of board produced by the mills, and in time the new engines were applied in almost every operational aspect of the lumber industry.

In 1903 the Diamond Match Company completed construction of a sawmill in what shortly became Stirling City. A contemporary article described the state-of-the-art facility as “the largest and best equipped saw-mill plant in California” (Adams 1912:408). The unloading, cutting, and movement of timber within the mill was accomplished by an integrated system of pulleys, conveyor belts, and saws—all powered by steam from five large boilers. The Butte County Railroad, which began operations in 1904, was established explicitly for the purpose of

hauling cut lumber from the mill to the planning and finishing plant in Chico. The 30-mile line offered passenger service between Stirling City and Chico with stops at Paradise, Magalia, and other towns in between; in 1907, it was purchased by the Southern Pacific Railroad (Chavez 1980; Maniery et al. 1985).

The Diamond Match Company additionally relied on steam engines to harvest and transport trees from their more than 160,000 acres of timberland (Colby and McDonald 2005:77). In the forest, a tree would be felled, tied with a steel cable, and pulled to a central point via a steam donkey. The logs would then be directly loaded onto a rail car or, if located on a high ridge, sent down a lumber chute to the loading area. The company maintained a standard-gauge logging rail system that extended from the Stirling Mill to tracts as far north as Deer Creek (Colby and McDonald 2005:102). In 1927, the company built a double incline rail line through Butte Creek Canyon, which crossed the stream about 1 mile northwest of Powellton. One of the main features of the Diamond Match operations was its mobility. The concept of a portable mill was not a new one, as Hupp's sawmill was equipped to move from place to place, but the company fully expanded on this capability. In addition to their equipment, bunkhouses, offices, and other buildings could be readily loaded onto cars and railed to the distribution points in the company's logging network; the base of each structure was fitted with skids so it could be dragged to more remote locations by a steam donkey engine (Colby and McDonald 2005:80).

The use of logging railroads continued until 1953 when transportation by truck, which began in 1939, became a more affordable alternative (Colby and McDonald 2005). Some of the company railroad grades were converted to truck roads. The plant itself closed in 1956. The old Butte County Railroad was dismantled in the 1970s, and portions of this grade were incorporated into the Skyway.

#### **2.3.4 Transportation**

Early explorers used Native American trails and unblazed routes to traverse the Sierra Nevada and Cascade Range. However, it was the Gold Rush that attracted the first large numbers of travelers into the Project Area. Humbug Summit Road, in the northern portion of the Project, was constructed in 1853 to lure prospectors traveling the Immigrant Trail to the gold fields of Oroville (Moore 2005:9). In 1858, the road was in turn used by prospectors on their way from California to Idaho to try their luck in the gold fields there. Improvements were made to the Humbug Route after the National Wagon Road Act of 1857 was approved and its funds appropriated.

#### **2.3.5 Forest Management**

Named for Mount Lassen, the Lassen Peak Forest Reserve was proclaimed in 1905 and renamed in 1908 as the Lassen National Forest. (Godfrey 2005:64, 88). It originally encompassed 897,115 acres compared with the 1.2 million acres managed by LNF today. In March of 1933, President Franklin D. Roosevelt pitched to Congress the idea of a Civilian Conservation Corps (CCC) that would provide work within the forests for unemployed men suffering the demises of the Great Depression. Ten days later, Congress approved a bill to create the CCC, initially called the Emergency Conservation Work (Godfrey 2005:239). A total of 165 CCC camps were

selected throughout California forests, but were reduced to 135 in 1933 due to a shortage of men. Lassen National Forest was selected as one of the camp sites. The CCC provided labor for water development, range, and other forest projects. In the 1940s, after the CCC camps had been abandoned, the same camps were reestablished throughout California forests to house conscientious objectors of World War II who had been assigned to “non-combative” service on the forests (Godfrey 2005:318). Additionally, camps also were established on Lassen and other California forests in 1934 as part of a new USFS program to encourage tree reproduction, improve growing conditions, and ultimately increase timber sales (Godfrey 2005:260-261).

### **2.3.6 Turpentine Production**

In 1860 South Carolina seceded from the Union, sparking the American Civil War. Prior to that time, South Carolina had supplied the turpentine used by navy ships (Compas 2003:10; Moore 2005:9). After the state’s secession, Dogtown Ridge became the heart of the turpentine industry in California (Compas 2003:10). When the war ended, local turpentine was used in the production of bitters. In 1900, a man named Bob Foster oversaw the local turpentine production. His venture was headquartered in Coon Hollow (Moore 1999: 2; 2005:9). Additional information regarding turpentine production in the Project vicinity is currently being obtained from the Bureau of Land Management.

### **2.3.7 Recreation**

During the days of the gold rush, travelers to the study area had no trouble finding accommodations. Hotels, saloons, and general merchandise stores could be found in Magalia (Dogtown), Powellton, Lovelock, Coutelenc, and other towns in the vicinity (McDonald 1995). The Hooper Hotel in Centerville not only put up guests for the night but also served as the community meeting place (Butte County Historical Society 1994). In the high county, there were rest stops along Humbug Road, such as the Inskip Inn and the Chaparral House.

Since the first decade of the twentieth century, the northern portions of the study area—from Inskip to Round Valley Reservoir—have been under the jurisdiction of the Lassen National Forest. Among other objectives, the USFS has sought to promote hiking, fishing, and other recreational activities.

PG&E began leasing lots around Philbrook Reservoir possibly as early as the 1930s. The high point for construction of private cabins occurred between the 1940s and 1950s. Similar to other PG&E reservoirs, the area developed into a popular vacation spot for local and Central Valley residents (Colby and McDonald 2005:76). A compilation of interviews from long-time vacationers at Philbrook Reservoir recounts the different kinds of recreational activities, including fishing, camping, boating, water and snow skiing, and horseback riding (Joyce 1984).

### **2.3.8 Hydroelectric Generation**

The National Forests have historically managed a myriad of natural resources, including water power. In 1930, LNF and several other California forests were considered important hydroelectric power locations with at least three federal operating licenses in place under the



1920 Water Power Act (Godfrey 2005:24). By 1931, hydroelectric systems on these forests were generating 72 percent of California's energy, and 18 percent of the energy generated throughout the United States. A detailed discussion of the historic context of the DeSabra Centerville Hydroelectric System is provided here in order to evaluate the NRHP eligibility of the hydroelectric system in Section 3.2.

#### 2.3.8.1 Introduction.

In 1991 the Edison Electric Institute founded the Task Force on Cultural Resource Management to deal with issues arising from FERC relicensing of hydroelectric facilities and the need to assess them for historic significance. As part of this effort, Duncan Hay, PhD., wrote *Hydroelectric Development in the United States, 1880–1940*, to be used as a general historical background and context for significance evaluation. This context divides early hydroelectric development into three broad time periods. The first is the pioneering period between 1880 and 1895, characterized by:

a simple union of waterpower and electricity with comparatively little integration of the two technologies. Niagara Falls, and some of its contemporaries, demonstrated the economic viability of hydroelectric development coupled with long distance power transmission, established standards for the industry, and, most importantly, highlighted the fact that hydroelectricity demanded significant changes in hardware and attitudes toward the use of falling water in conjunction with electrical distribution [Hay 1991:xi].

The second time period, that of rapid change, between 1895 and 1915:

saw a number of modifications in waterwheel design, setting and accessories—technologies that had previously plateaued around the 1880s. Similarly, development of stream sites that had heretofore been too remote to harness economically, led to introduction of new dam designs and techniques of water management. Electrical equipment was still in a developmental stage throughout the industry as a whole [Hay 1991:xi].

The beginnings of standardization occurred from 1915 to the 1930s, during which time:

waterpower equipment had been successfully adapted to the specific needs of alternators, and vice versa; a genre of powerhouse architecture had been established. Although more hydroelectric plants were being built than ever before (or since), one could argue that in many sections of the country, they all looked pretty much the same [Hay 1991:xii].

While there was “considerable . . . overlap” between the periods (Hay 1991:xii), this sequence aptly describes hydroelectric development in California and the history of the DeSabra-Centerville Hydroelectric System. Even during the time of standardization, however, there were new ideas and technologies in the world of hydroelectricity. Power plants were constructed on a larger scale, and there was a trend towards mechanization and automation of systems that had been built originally for manual operation. The refinement of hydroelectric system components continues.

### 2.3.8.2 Waterpower in the West.

The 1848 discovery of gold in northern California was the impetus for a large influx of Americans from eastern states to the gold fields. The early placer mines soon panned out, and gold mining became an industrial enterprise with the evolution of large-scale hydraulic mining. Miners, many of whom had migrated from eastern water powered cities, developed unique methods of harnessing the region's comparatively scarce stream flow. Extensive systems of ditches and flumes consolidated water, sometimes from entirely different watersheds, feeding it to pipelines, and from there to nozzles appropriately named "giants" operating under several hundred feet of head that washed gold-bearing sand and gravel from hillsides [Hay 1991:4].

In 1884 the Sawyer decision ended large-scale hydraulic mining. However, many of the ditches and flumes built for the mining industry were reused in the burgeoning field of hydroelectricity. Early developers of hydroelectric power plants purchased the ditches and water rights to supply water to power plant sites. Furthermore, the parallel development of long-distance electrical transmission lines allowed such plants to be erected miles from cities that demanded electricity. This Western regional style of hydroelectric development was characterized by "extremely high heads, remote powerhouse locations, and sophisticated point-to-point transmission" (Hay 1991:28). The facilities of Pacific Gas and Electric Company reflect these characteristics.

### 2.3.8.3 Genesis of Pacific Gas and Electric Company.

John Martin and Eugene de Sabla were entrepreneurs who chanced on hydroelectric development in its infancy. Together they constructed three power plants in Yuba and Nevada counties. In 1900 they incorporated as Bay Counties Power Company. Further consolidation in central and northern California led to the creation of Pacific Gas and Electric Company (PG&E) in 1905. Within a decade, further mergers and acquisitions made PG&E one of the five largest utilities in the country and by far the largest single producer of hydroelectric power" (Hay 1991:108).

The Butte County Electric Power and Lighting Company incorporated in 1898; its goal was inexpensive local production of electric power. The company purchased the abandoned Bostwick Gold Mining Company ditch and flume, which was constructed in 1887 (Maniery et al. 1985:3). The Hupp mining canal was also acquired (Colman Museum 2007). The Centerville Powerhouse was constructed in 1899, sending electricity to the city of Chico, 15 miles away, and to the Oroville gold-dredging operations, a distance of 32 miles. In 1901 the Chico line was extended 40 miles to Colusa, and a connecting line was constructed from the powerhouse to meet the Chico-Colusa line (Colman Museum 2007).

In 1902, DeSabra was searching for a location for a new power plant in Butte County. After his initial choice proved too expensive to purchase, he decided on the current DeSabra location. In that year he purchased the Centerville Powerhouse system and the dams, pipeline, and ditches of the Cherokee Mine, which included Butte Creek, Dewey, Miners, Inskip and other small ditches (Jackson et al. 1985:141–142). DeSabra organized the Valley Counties Power Company to oversee the project (Coleman 1952:149). While locating the site of the new powerhouse, de Sabla and his associates noticed that:

from the top of the hill he could just about see the in-take of the Centerville Ditch on Butte Creek. He therefore realized that the water of the Cherokee system could be used over again by the Centerville system, thereby increasing very much the value of the property of the company” (Rice 1910:9).

DeSabra built a reservoir, penstocks, and powerhouse, and used the water carried by the old Cherokee ditches to generate power in his new hydroelectric system (Jackson et al. 1985:141). All of the work was carried out simultaneously: building the road to the power plant site, enlarging the canals, rebuilding flumes, and refurbishing the Centerville Powerhouse (Rice 1910:9).

Construction of the DeSabra Powerhouse was “notable for the technical problems it presented and the group of young engineers who solved them” (Coleman 1952:150). These three were the same engineers who later worked on refurbishing the Centerville Powerhouse, namely Frank G. Baum, James H. Wise, and Josiah P. Jollyman. A Stanford University graduate, Baum solved problems regarding uniting in “synchronous operation the scattered generating plants of the partly developed system, problems of long-distance transmission and insulation, high voltage, and substation equipment” (Coleman 1952:151). Wise was a civil and hydraulic engineer. Jollyman “contributed much to the progressive interconnection of the P. G. and E. system of generating plants and transmission lines into a single integrated network” (Coleman 1952:152). When the DeSabra Powerhouse was placed in commission the “high head—the 1,531-foot fall of water—was in itself a step above previous records that called for the best of hydraulic engineering skill to ensure safe operation” (Coleman 1952:150).

In 1905, the company, now officially Pacific Gas and Electric Company, continued to expand its hydroelectric capacities, and also added steam-generated power plants. By 1912 it operated in 32 California counties and “supplied 204 cities, towns and villages containing two-thirds of the entire population of the state” (Maujer 1912:720).

#### 2.3.8.4 1906-1933: Rapid Changes in the DeSabra Centerville Hydroelectric System.

In the immediate years after the formation of PG&E, the company took stock of its holdings, describing and evaluating the components of the hydroelectric systems in order to recommend any needed upgrades. While the basic elements of the DeSabra-Centerville system - powerhouses, ditches, and transmission lines—were in working order, PG&E sought to enlarge its capacity and increase its efficiency. Work first progressed on the Centerville part of the system.

In 1908 James Wise summarized the changes made in the Centerville subsystem. Before the installation of the Francis turbine, the refurbishing included:

bringing of various parts of the irregular floor to a uniform level, raising the concrete walls 5 feet, replacing the wooden roof with steel trusses and corrugated iron, placing steel columns and girders the entire length of the building and furnishing a hand operated crane of 60,000 pounds capacity” (Wise 1908).

The Francis turbine and Stanley generator were the main pieces of hydraulic and electrical equipment installed in the powerhouse. The two penstocks were 36 and 42 inches in diameter. The header box or forebay was built for \$5,774.67. Other construction included a blacksmith shop, warehouse, and access roads.

The installation of the Francis turbine attracted the interest of those in the field of electrical engineering. In 1908 James Wise wrote articles about the project for *Engineering News* and *Journal of Electricity, Power, and Gas*. This journal had published an article on the subject the previous year, stating that the project “deserves a remarkable place in the history of hydraulic turbine engineering, as never before has a Francis wheel been designed for the extremely high head of 550 feet” (quoted in Maniery 1993:3). Any sand or debris in the water, or uneven flow, could cause problems with the turbine at such high head. Therefore, in conjunction with the turbine installation, cleansing features such as sand boxes a settling basin, and flow-control waste gates were constructed along the Lower Centerville Canal.

In 1919 the Centerville Powerhouse staff included a foreman, lineman, machinist, and three shifts of plant operators (Maniery et al. 1985:3-27). Two operators worked together: the first operator took “readings on the dials half hourly and regulates the speed of the machines” while the second operator kept “the power house in running order” (Milliken 1982 [1912]:16).

Replacement of the log head dam was another upgrade of the old mining ditch system. The new Centerville Canal diversion dam used monolithic concrete; sand and gravel for the concrete were taken from Butte Creek. The new dam was 12 feet high and 90 feet long.

The Lower Centerville Canal was rebuilt and enlarged in 1906 and 1907. This entailed widening and deepening the canal and squaring off the ditch corners, providing a waterway 8.38 miles long with 8,103 feet of flume and 98 feet of tunnel. The grade was 1.26 feet per thousand feet, the capacity 187 second-feet. Work crews used the leftover rock and earth from this procedure to add height and width to the berm. After the work was completed several landslides occurred along its length. In 1908, an engineering survey concluded that because of the location of the ditch in an area of “loose broken shale” the only way to preclude further slide damage was the construction of a closed conduit, which was not considered to be economically feasible (Duryea 1908). It was thought that after a few years the number of slides would lessen but that there could always be trouble on the ditch during the winter.

In 1910, the main conveyance components of the DeSabra division were the Butte Creek Canal, approximately 12 miles long, leading from the point of diversion on Butte Creek to the DeSabra Reservoir, and the Hendricks Canal, 22 miles long, leading from a point on the West Branch about 3 miles north of Stirling City and conducting water by way of the Lovelock Tunnel and the Toadtown Canal to the Butte Canal, the confluence being about 3,000 feet above the DeSabra Reservoir.

The Round Valley Reservoir was used for storage and at that time could impound about 40,000,000 cubic feet. The Miners, Dewey, and Inskip ditches were used to conduct water from this storage facility to the Toadtown Canal, then ultimately to the DeSabra Forebay. The penstocks were two 30-inch pipelines, each a little over 6,000 feet long, which extended from the

forebay to the DeSabra Powerhouse, developing a static head of 1,531 feet (Wise 1910:14). At that time the DeSabra system had the highest head of any of the PG&E hydroelectric systems.

Wise's 1910 report recommended cleaning out the 21,000-foot-long Miners Ditch and abandoning the Dewey Ditch in favor of the Miners Ditch. Not only did the Dewey Ditch leak badly, but the Miners Ditch was at a lower elevation, had a larger catchment area, and traversed a "better [geological] formation" (Wise 1910:27). Wise considered the Butte Creek Canal "one of the best ditches owned" by the company. He recommended enlarging its capacity from 77 to 110 second feet, which would entail replacing the flumes with larger ones. Wise also recommended replacing the log crib head dam with a concrete diversion dam (Wise 1910:27–28). The total cost for upgrading the Butte Creek Canal was \$72,540, which did not include the cost of new dam construction.

In 1916, PG&E followed Wise's advice and replaced the log crib head dam for Butte Creek Canal with a concrete dam. The new dam was a cyclopean concrete arch 110 feet long and 45 feet high. The dam was 4 feet thick at the top and 8 feet thick at the bottom (Department of Water Resources 1930). It diverted the water from the creek into a tunnel that led to the canal. On the opposite side of the tunnel the residual water was returned to Butte Creek.

In Wise's 1910 report, several potential storage reservoir locations were explored, one of which was a location near Philbrook. Once owned by the Oro Electric Corporation, the original dam had been destroyed the winter after its completion in 1908. After its destruction, the site was abandoned (*Pacific Service Magazine* 1928:121). PG&E purchased the site in 1917.

The Philbrook Dam was planned as a rolled fill type of earthen dam. It was anticipated that 5,040 acre feet of water could be impounded in this storage facility, generating an increased power output at DeSabra and Centerville of 6,236,000 kilowatt hours annually. The construction of the dam was approved on June 15, 1926 (PG&E 1926). Kaiser Paving Company, owned by Henry J. Kaiser (who later was instrumental in the construction of Hoover and Grand Coulee dams), was hired to build the dam. Philbrook Dam and Reservoir were the last parts of the system to be installed.

Once the necessary elements were constructed and in good working order, PG&E focused on the efficient operation of the system. Because they were subject to the whims of nature more so than other features, the canals were the system component that required the greatest amount of maintenance. Tenders had a daily routine of walking and observing the condition of the canals, sometimes doing minor cleaning and repairs, to monitor and regulate the flow of water. Ditch tenders also were responsible for minor repairs on flumes and bridges, maintenance of the camps, salvaging material after a fire, and telephone and electric line maintenance (DeSabra Division 1929–1931). In the late teens and early 1920s:

Workmen carried their blankets to the jobs on various ditches. There was usually a bunkhouse or cabin where they could throw their blankets on a bunk with a mattress of pine needles or hay. At these ditch camps the ditch tender's wife would do the cooking for the crew. The men were paid twenty-five cents an hour for a ten-hour day, and they

paid seventy-five cents for board. Cecil [Lambert] thought it was good pay—and maybe it was as there wasn't anywhere to spend it up on the ditches [Butler 1974:4].

Lambert would periodically quit, but DeSabra Superintendent Ike Adams, described by Lambert as “a pretty good ole guy,” would talk him into returning to work (Butler 1974:4).

In addition to the daily maintenance, the canals had an annual spring cleaning which usually lasted two to three weeks. In addition, each spring the canal gauges were checked, and the losses from leaks were calculated. In 1944, between Mile 1 and Mile 5 Butte Creek Canal lost four second-feet per mile, and a total of 33 percent of the water for the entire length of the canal.

Winter maintenance often included cleaning up after snowstorms. In 1916 the DeSabra Reservoir accumulated 105 inches of snow, with 134 inches at the heads of the Butte Creek and Hendricks canals.

Our upper ditches run through a heavily timbered country, and as the snow was wet and heavy it played havoc with the timber, likewise our ditches. As an example of what a heavy snowfall will do to timber, on our Butte ditch in a distance of eleven miles no less than 170 trees fell across and in the ditch, the size of the trees running from six inches up to five feet in diameter.

The men deserve a great deal of credit in trying to keep “Pacific Service” continuous. Frequently, they were at work forty-eight hours at a stretch, wet to the skin the greater part of the time and very often missing their noon meal; but they stood fast and made no complaint (*Pacific Service Magazine* 1916:357–358).

As part of the mining operations the ditches had been unlined and the flumes had been made of wood. Efficient management of the canals necessitated the use of durable, permanent canal materials. As the wood flumes rotted, causing the canals to leak and become unstable, they were replaced by metal, used both for the supporting framework and the half-barrel flumes. Although the construction material changed, the design did not. It also became apparent that canals lined with concrete resulted in more freeboard. Concrete-lined canals could mean a “savings of 60 per cent in maintenance costs over earth sections” and reduce “seepage losses to less than one-third of those in clay” (Weber 1922:436). Between 1910 and 1920, PG&E lined some of the inner and outer canal walls with rock. As this procedure continued in areas in which a ready supply of such rock was available, the company also began applying gunite to a greater percentage of the canals.

Construction of tunnels along the canals also lowered maintenance costs. While the original ditches had followed the contours of the buttes in the area, tunnels through these hills reduced the length of canal subject to deterioration from exposure to the elements. In 1927, the Slate

Ravine Tunnel on the Lower Centerville Canal was built. It was 1,400 feet long, 9 feet wide on the bottom, 6 feet wide at the top, 7 feet high, and not lined with concrete (PG&E 1927).

### 2.3.8.5 1933-1960: Standardization of the DeSabra Centerville Hydroelectric System.

In 1933, the Dewey, Miners, and Inskip ditches were decommissioned. Since then the DeSabra-Centerville canal system “has operated in its present configuration” (Jackson et al. 1985:212). Canals continued to be maintained, and durable materials replaced impermanent ones in order to keep repair and maintenance costs down.

There were three main methods of canal repair and upgrade: replacing wood flumes with metal flumes, replacing flumes with concrete L walls, and guniting the canal walls. Hay notes “A variety of semicircular sheet metal flume sections and fastening systems were patented and marketed on the basis of their smooth hydraulic characteristics and the speed with which they could be erected” (1991:55–56). This type of metal flume became a standard feature in the evolution of more permanent canal materials. In the three decades between 1930 and 1960, there was a steady progressive use of standardized materials and design in hydroelectric power plant system use and maintenance.

In 1937, part of the 4/3<sup>1</sup> wooden flume on the Lower Centerville Canal was replaced with metal flume. However, “it was found advantageous to replace the two ends (totaling 89 feet) of flume #4/3 with sections of ‘L’ wall instead of metal flume” (PG&E 1937a). Form lumber was purchased locally. Cement and reinforcing steel were shipped from Chico. Aggregate came from the Cherokee gravel pits. Materials were transported by road, then hauled to the canal berm and transported to the job sites along the canal. In the 1930s, canal cars on lightweight tracks hauled repair materials to the specific areas (PG&E 1937b). The wood was floated down the canal from the head dam. The work crew stayed at Camp 1. It took approximately three weeks to complete the project.

Guniting protected the canal banks from erosion and leaking. In 1946, 2,733 feet of the outer bank of the Lower Centerville Canal was coated with guniting. The first step in the process was sloping the canal bank; then a layer of wire mesh was laid along the bank, after which the guniting was applied.

Standard practice was followed in guniting the outer bank of the Centerville Canal. The guniting was mixed at the stockpile near the 7/7 flume (old numbering) in a 7 cu ft mixer. The dry guniting was hauled via canal cars drawn by Cletracs to the concreter situated on the canal berm. The guniting was moved ahead along the berm as the work progressed. The air for the concreter was transferred from the compressor at the mixing platform to the gun via 2-inch iron pipe laid along the berm. The water for guniting was pumped from water allowed to collect behind earth dams in the canal [PG&E 1945].

In this manner, a crew of 23 men placed 24,308 square feet of guniting along the canal. Sloping the bank, guniting, and site clean up took 12 days. Some automated equipment also was installed. Adjustable siphon spillways protected the canals from washouts during storms under the eight hour per day working schedules for ditch patrolmen, and to reduce overtime expense. An estimated saving of \$1000 per year is expected from these installations [four siphon spillways along the Lower Centerville Canal] as well as increased safety for the canal (PG&E 1948a).

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<sup>1</sup> Individual components along the canals were numbered: 4/3 flume was the third feature in Mile 4.

Access roads were needed to bring in construction and repair materials for the canals. The most notable of these roads was DeSabra Powerhouse Road, a very steep road that was difficult and costly to construct. For the 1946 repairs described above, an access road was built to the northern part of the Lower Centerville Canal to bring in materials purchased in Chico and San Francisco and to provide access to the DeSabra-Colgate 60kV transmission line, which was considered “very inaccessible” (PG&E 1946). The road was approximately 2.5 miles long, from a “temporary road on the Barton property and projects by a devious route in a general northerly direction to the #3/2 flume on the Canal” (PG&E 1946). Blasting was required in several locations, and the topography demanded 17 culverts be installed. Because the terrain near the canal was quite steep, the road stopped before reaching the canal, because during such construction the overburden would have gone into the canal (PG&E 1946).

Upgrades at Philbrook Reservoir included a new log boom in 1939 (PG&E 1939). The following year a new, larger spillway was added, mandated because of severe storms in past years. A radial gate, 10 feet 9 inches high and 14 feet 6 inches wide, was installed next to the original spillway. This doubled the capacity of the spillway (PG&E 1940).

The storage reservoirs were periodically drained or dredged. The first noted instance of draining DeSabra Forebay was in 1911. In 1961 approximately 75,000 cubic yards of “silt and sand and miscellaneous deposits” were dredged. The material was deposited on either side of the penstocks or east of the forebay (PG&E 1960:6, 9).

In 1950, two weeks of stormy weather clogged the Butte Creek, Hendricks, and Lower Centerville canals, among others, and downed power lines. The canals had to be dug out by crews working long hours. Once again trees were blown over and into Butte Creek Canal—this time approximately 200 trees hit the canal (*P. G. and E. Progress* 1950a: 1–2). Boats were also used to break the ice on the canals.

Between 1933 and 1960 the configuration of the DeSabra-Centerville Hydroelectric System remained essentially unchanged, although construction materials were gradually shifted to more durable, efficient, and standardized products. PG&E introduced deer safety features such as bridges over canals and escape ramps in the late 1950s (PG&E 1957b). Although there was some installation of automated equipment, it was still a manually operated system: the powerhouses required operators 24 hours a day, and the canals needed constant patrolling. The following description of canals, taken from a 1959 evaluation of the DeSabra system, provides a good assessment of their conditions at the point of transition from a manually operated to a mechanized system (DeSabra Division 1959:413–414):

**Butte Canal:** “Flumes very bad 3 jobs that should be completed. Canal has not had good cleaning for 6 or 7 years. Canal badly choked below flumes causing some to run over.”

**Hendricks Canal:** “Several bad slides should either be cribbed or cleaned out. Canal very dirty. Flumes not too bad. 2 very old ones but plenty of freeboard. Something should be done with the berm above Cunningham Road. Logs could come into the canal.”

**Toadtown Canal:** “Lots of brush and low berms.”



**Lower Centerville Canal:** “Canal should be in very good shape after present outage except for cleaning. Canal only partly cleaned and flumes will probably run heavy with water. Slate Ravine Tunnel in bad shape. Needs to be timbered in places. Collar braces and floor gone”.

In 1959, the condition of the access roads also was evaluated and they too were considered to be in bad shape. Culverts and “lots of gravel” were needed to return them into good condition (DeSabra Division 1959:413–414).

#### 2.3.8.6 Life in the Company Camps.

All of the components of the hydroelectric system required operators and maintenance staff. PG&E established living facilities, called camps, near the powerhouses, along the canals, and near the reservoirs. Some of these camps had originally served as construction camps. The company built rental housing for its personnel, although employees were not required to live in the company housing. For example, Charles Colman, a Centerville operator, continued to live on his family farm (U.S. Census Bureau 1930).

Through the 1920s, construction workers lived at the canal camps during periods of canal repair. However, by 1937 many workers were housed at Camp 1 and transported to the work sites. Construction camps were still maintained in the more distant and remote areas; in 1940 there was a construction camp about 400 feet from the installation of the new radial gate and spillway at Philbrook (PG&E 1940).

Reference to these construction and maintenance camps may be confusing since they were not consecutively numbered. Camp 1, for example, was originally established for construction of the DeSabra Forebay and Powerhouse. Subsequently, maintenance camps established along each canal had the same numbering sequence, so that Lower Centerville Canal, Butte Creek Canal, and Hendricks Canal each had a Camp 1, and so forth.

#### Camp 1 (04-003071-H)

Camp 1 was originally set up as the construction camp for the DeSabra Forebay and Powerhouse. It is located on the south end of Lake DeSabra. The camp contained an office, other work-related buildings, and residences for staff. There was a bunkhouse for unmarried men. The superintendent’s house and the foreman’s house were located across the road from the main camp area.

In the summer of 1904, some of the men occupied tents at the site while working construction. One of these was George W. Lambert, Cecil’s father, who worked as a teamster during the construction of the powerhouse (Butler 1974:1). Lambert later worked as a tender on the Centerville Canal, while his wife was a cook at the DeSabra boardinghouse (Butler 1974:3). In 1920, Ike Adams, the district manager, and his wife lived in a rented house at Camp 1. Other personnel included an accountant, two electricians, the ditch foreman, and four ditch tenders (U.S. Census Bureau 1920). Employees who lived in company housing paid minimal rent. During the Great Depression, Cecil Lambert worked at Camp 1 for \$126 a month, and paid \$5

monthly for a house “right by the dance hall” (Butler 1974:5). Powerhouse operators paid \$10 a month.

The 1952 map of Camp 1 depicts an office, five residences, a boarding house, a dormitory, several garages, a lumber rack, woodshed, and warehouse. These residences were gradually removed as better roads made it feasible for employees to commute to the camp from Paradise and other communities. In 1960 two residences and two smaller buildings “not economical to rehabilitate” were demolished; two other structures were advertised for sale (PG&E 1960).

In 1916, DeSabra district employees at Camp 1 founded the DeSabra Pacific Service Club (currently PSEA) for social events and recreation. Contributions of \$1,000 enabled the group to construct a 40 by 60 foot dance floor and buy a player piano. The inaugural dance was on June 24, 1916, when over 100 couples enjoyed dancing and supper (Kass 1916:89). The following year, a roof over the dance floor transformed it into a hall where biweekly dances were held throughout the summer (Kass 1917:107–108). Two years later, the dances were held weekly, with people attending from Chico and other nearby towns. The dance hall was constructed in such a way that a “constant current of air on the hottest night” breezed through the hall; there was an 8-foot porch on the front and one side, with cedar posts and railings. Live bands provided music until midnight, at which time there was a “brief adjournment for supper” then dancing continued until 3:00 am. (Myrtle 1919:41–43). Residents of the camps also traveled, sometimes on foot, to other communities for dances or baseball games (Butler 1974:6).

At Christmas the single occupants of the boarding house had a communal celebration:

As the majority of the men at DeSabra power house were away from home on Christmas, we tried to make our Christmas seem as homelike as possible. The families of the married men and their relatives visiting them were invited to the Clubhouse, which was decorated as only can be done in the region where holly, ferns and firs are plentiful. Our menu contained everything that goes with a Christmas dinner. After the dinner we had games and music. We had with us for the occasion two singers of unusual talent who helped to cheer the day, and after the day was over one of our members was heard to say that no one had a better Christmas than we (Compton 1921: 266).

#### 2.3.8.6.1 DeSabra Powerhouse Camp (CA-BUT-868-H)

The DeSabra Powerhouse Camp was located along Butte Creek,

that beautiful stream, gushing among mighty boulders. A picturesque suspension bridge extends from the clubhouse across the cañon to the wooded slopes and to winding pathways under sweet-scented foliage” (Rice 1910:12).

On the west side of the canyon were an unknown number of cabins for married couples (Butler 1986:15). There was also a walkway along the east side of the canyon that led to the Centerville Diversion Dam. Remnant bolts are still embedded in the rock.

After the camp was established, Eugene de Sabla purchased a gramophone, “with a large collection of records by such celebrities as Caruso, Sembrich and Schuman-Heink” to be enjoyed

by all the staff (Milliken 1982 [1912]:16). The operators were expected to return from vacations with more records. In 1916, Leslie Edwards, originally at Centerville, became foreman at the DeSabra Powerhouse Camp, residing in the house behind and to the right of the boardinghouse. At this camp he was in charge of installing a new generator. Edwards remained at DeSabra until 1920; in that year he was listed on the census as the powerhouse foreman (U.S. Census Bureau 1920). In addition to Edwards, Leopold Bergerian, who came from France in 1900, lived in the boardinghouse with nine lodgers: four electrical operators, one electrician, one machinist, two laborers, and a Chinese cook (U.S. Census Bureau 1920).

Gardening was a popular avocation. Leo Kass, who worked at DeSabra before and after World War I, came from a family of fruit growers, and he experimented with budding and grafting fruit trees (*P. G. and E. Progress* 1950b:5). He lived in the boarding house in 1920. Also, one of the electricians there:

a Frenchman, Paul Bergereau by name, has turned the precipitous hillside surrounding his cottage across the creek into a veritable wonderland of fruit, flower and vegetable cultivation. He is a typical Frenchman, too, for he walks around in wooden sabots while, like Enoch Arden, he digs with his fingers in the wet [*Pacific Service Magazine* 1919:44].

Other hobbies included panning for gold in the creek and motorcycling up the hill—the 1912 record time was 21 minutes to complete the 5-mile journey (Milliken 1982 [1912]:16–17).

Children went to nearby schools. Those that lived at the DeSabra Powerhouse Camp walked up the hill every day. School was not always held in the winter because of the amount of snow; some children stayed in town to attend school, and returned to the family during vacations (Basset 1978:15).

#### 2.3.8.6.2 Centerville Powerhouse Camp

The Centerville Powerhouse Camp was situated east of the powerhouse In 1910, Levi Spangler lived in a rented house in the Centerville Powerhouse Camp. Charles

Colman, an operator, owned his house. Two other operators were at the camp; two ditch tenders lived along Centerville Road (U.S. Census Bureau 1910).

Spangler, who was the Centerville Powerhouse foreman in 1914, grew fruit trees along Butte Creek in front of the powerhouse. Spangler also caught a trout and kept it in a spring-fed pool at the side of the road:

Naturally Spangler has been forced to the expedient of feeding the trout. He can hold a grasshopper in his fingers from fourteen to sixteen inches above the water and the fish will rise from the water and invariably snatch the insect from his hand. Another trick of the trout is to circle about a person's finger when it is placed in the water and to pinch it in his mouth [*Pacific Service Magazine* 1914:176].

Around 1913 Leslie Edwards, an electrical engineering graduate from Stanford, became an operator at Centerville. As remembered by his daughter:

he and his wife lived in a small house under a digger pine tree. Sometimes a big cone would fall off and make a hole in the roof above the kitchen stove. If it was raining Mom would put an umbrella over the stove while she did her cooking until Dad was able to mend the leak [Phillips 1982:9].

In 1920 Spangler and Colman were still at Centerville. George Adams was the ditch foreman at that time. By 1930 Spangler and his family owned their home. Walter Greenwalt, who had been at Centerville in 1920, also owned his home, as did Colman (U.S. Census Bureau 1920, 1930). George Adams was still the ditch foreman; he lived in a rented house for which he paid \$25 per month.

Some of the one-bedroom cottages were remodeled by enclosing the 12 by 12 sleeping porches into bedrooms, particularly when occupied by families with children (PG&E 1942b). When powerhouse operator Harold Oaks moved from Caribou to Centerville in 1949, there were only three houses at the camp. For him and his family the company built a two-bedroom house, with living room, dining room, kitchen, and a storage area under the house. Front and back porches adorned the house. In the late 1950s the three houses were torn down, and the Oaks house moved to Rock Creek (Kenyon 2006).

#### 2.3.8.6.3 Ditch Tender's Camps

A ditch tender's camp was always at the head dam of a canal. PG&E documentation from 1911 indicates that there were five camps on the Lower Centerville Canal, and four each on Butte Creek and Hendricks canals (Maniery et al. 1985:3-40). Both single men and families lived in these camps. In the winter the tenders "kept snow out of the water flumes in the freezing winter months," while their wives cooked for PG&E crews (Bassett 1978:15).

For the tenders, housing was very basic. Many of the cottages were quite small and spartan, with no indoor plumbing or insulation. They were usually constructed of board and batten, with two rooms—a kitchen, with space for a table, and a combination living and bedroom. The cook stove was in the kitchen, with a heating stove in the living room. Outbuildings were a combined garage/woodshed, although at some camps, there were outbuildings for livestock such as barns and chicken houses. In this respect, the ditch tenders' camps were similar to farmsteads (Hernandez 2007).

#### 2.3.8.6.4 Lower Centerville Canal Camps

There were five camps along the Lower Centerville Canal (LCC). Although the precise locations of these camps are sometimes unclear, Maniery et al. (1985:3-40) and others generally place Camp 1 at the head dam. In 1922, a new two-room house was erected at LCC Camp 1 because the existing house was "beyond repair" (PG&E 1922). This new structure remained until 1948, when it was described as a "two room dilapidated cabin" (PG&E 1948c). In that year, an automatic gate was installed, allowing the ditch tender to relocate to the DeSabra Powerhouse

Camp, where the gate could be operated remotely (PG&E 1948c). No archaeological or architectural remains were encountered at the Centerville Diversion Dam during the 2006 field studies.

The location of Camp 2 is tenuous. Maniery et al. (1985:3-40) list the LCC Camp 2 at Mile 2 on the canal. No architectural or archaeological remains were encountered at this location. Maniery et al. (1985:4-26) indicate that the Hog Ranch camp site (CA-BUT-873-H) is possibly an unofficial ditch tender's camp. Given its location along the canal, CA-BUT-873-H may represent Camp 2. In 1925, because of "considerable work" along the canal requiring a crew of 40, a new building was erected at Camp 2. It was estimated that the extant house was 30 years old and uninhabitable; the current ditch tender was living in the bunkhouse (PG&E 1925). The camp was formally closed in 1944: "Camp No. 2 on the Lower Centerville Canal has not been used for several years and there is no prospect that it will ever be needed in the future" (PG&E 1944). The house was sold and the bunkhouse and chicken house were burned.

Centerville Canal Camp 3 appears to be site 04-003042, located where the LCC and Centerville Canal intersect. A modern residence is currently located on the site and only a random section of rock wall or other fragments of historical debris or features are present in this location.

The LCC Camp 4 buildings near Mile #7 were constructed in 1929, and none were repaired until 1948. At that time "the shingle roof has deteriorated so that it is no longer reliable and the porches are badly in need of repair. The garage and woodshed was built out of second hand lumber and is dilapidated beyond repair" (PG&E 1948b). Repairs included reroofing the cottage:

with 5 v crimp aluminum roofing laid on 1" x 3" strips over the existing shingles, repair front and back porches and exterior siding, replace linoleum and drainboard in kitchen, sand and refinish floors, and paint interior and exterior surfaces. The garage and woodshed will be rebuilt entirely, reusing the metal roofing (PG&E 1948a).

In 1956 heavy rains hit the camp; it was "necessary to install a concrete wall to hold the hill back from covering the yard and to keep it away from the house" (PG&E 1956). No cultural remains were encountered in this location during the 2006 field study.

At LCC Camp 5 was located near the header box. In 1930, Roy Reedy was one of the Centerville ditch tenders. He paid \$20 monthly to rent the house in which he lived with his wife, two sons, and mother-in-law (U.S. Census Bureau 1930). Two buildings, a woodshed, and barn were dismantled in 1945. Salvageable material was used to build a 20 by 20-foot building with a concrete foundation, wood frame, corrugated metal walls and roof, to be used for a combination garage, woodshed and tool room (PG&E 1945). No cultural remains were encountered in this location during the 2006 field study.

#### 2.3.8.6.5 Butte Creek Canal Camps

There were three camps along the Butte Creek Canal (BCC). They were located at the head dam (Camp 1), at Hupp's, south of Clear Creek (Camp 2), and at the north end of the DeSabra Forebay (Camp 3).

### The cottage at Butte Creek Diversion Dam Camp 1 (BCC-1):

is situated on top of a knoll, is extremely vulnerable to the weather. This had made the building costly to maintain and repair. The paint on the wood siding has weathered down to the bare wood. This building, first constructed in 1927, was built on concrete piers and due to weather conditions and snow loads the piers have shifted. They were realigned in 1949 and have again shifted causing the building to sag.

It is proposed to apply asbestos shingle siding for protection against the weather and construct a concrete foundation around the perimeter of the building. It is further proposed to enclose the front porch and relocate the front door away from the weather side, paint the exterior trim and interior [PG&E 1957a].

There was also a bunkhouse at the head dam camp, which was destroyed by fire in 1930 (DeSabra Division 1930:297). No cultural remains were encountered in this location during the 2006 field study.

In the 1970s a full-time ditch tender still lived at Camp 2, south of Clear Creek at Hupp's sawmill and residence (04-003041), within the APE. Archival research did not produce descriptions of the buildings at Butte Creek Canal Camp 2. All of the structures were removed over 25 years ago. The area is now covered with blackberry bushes and ground vegetation. However, a few historic ceramics and glass fragments were observed during the 2006 field study.

Camp 3 is located on the north side of DeSabra Forebay (CA-BUT-3040-H). It is likely a ditch tender's camp; although PAR (1985:4-30) cites it as the PG&E Headquarters' Camp. Archival research indicates that the PG&E headquarters was located at Camp 1 on the south end of Lake DeSabra. Surviving remnants of the DeSabra Forebay camp include a garage and garden. While the PSEA Camp is near the forebay camp (see Section 2.3.8.7 and Section 5.1 [CA-BUT-3070-H] below), they appear to be separate entities.

#### 2.3.8.6.6 Hendricks Canal Camps

There were three camps along the Hendricks Canal (HC). The first (Camp 1) was at the head dam. In 1942, the cottage there was upgraded because the ditch patrolman had recently married, and the house was considered unfit for a family (PG&E 1942a). Upgrades included:

Install 800 feet of water line from spring to house. Provide septic tank, bath, toilet, laundry tray and kitchen sink. Line one bedroom and closet with plywood. Paint corrugated iron roof and a portion of the interior walls and insulate ceiling [PG&E 1942a].

Precise information on the location of Hendricks Canal Camps 2 and 3 has not been forthcoming. In 1937, the abandoned ditch cottage at Hendricks Canal Camp 2 was torn down and a 10 by 12 foot "shelter cabin" was constructed with salvaged lumber (PG&E 1938). At Camp 3, cottage 1905, which measured 28 by 36 feet, was destroyed by fire. A new cottage (#4206) was

constructed in 1941 (PG&E 1941). No cultural remains were encountered during the 2006 field study for any of the three camps along the Hendricks Canal.

#### 2.3.8.6.7 Philbrook Lake Tender's Camp

At Philbrook Reservoir, the lake tender lived in a cabin about one-half mile from the dam (CA-BUT-3068-H). The dwelling had two rooms and a small plywood addition on the south. There was no indoor plumbing. An outdoor eating and cooking area was set up on the north side of the house. Three privies, two of which are sanitary privies, were located away from the house. Paths led from the house, which still exists, to the dam, the gate on the canal/creek, and from the gate to the dam. Using this circular path the lake tender could visit all the components of the dam in one round trip. This structure was recorded as site CA-BUT-3068-H and is discussed in Section 5.1 below. PG&E proposes to remove the structure and will consult with the LNF and SHPO about appropriate treatment measures prior to its removal.

#### 2.3.8.6.8 Pacific Service Employees' Association Camps

In the twentieth century the 40-hour work week, labor-saving devices, the economic success of the middle class, and, above all, the automobile gave rise to a new recreational trend: family camping. By the early 1920s the Pacific Service Employees' Association (PSEA) organized campgrounds on lands along PG&E hydroelectric systems. In 1922, an article in *Pacific Service Magazine* described the recreational camp on the banks of the DeSabra Forebay (CA-BUT-3070-H):

This is an ideal, restful camp, situated at an elevation of 2,800 feet among Butte County's pine-clad mountains. . . . Supplies may be purchased at Chico. The stage driver will take your order on one day and deliver your supplies the next. If desired, meals may be obtained at the private boarding house at fifty cents per plate.

There are many interesting side trips to be taken from DeSabra. Attractive hikes along good trails lead to DeSabra Power House, Centerville Power House, Magalia and the Evening Star Mine. Autos may visit the power houses and also Big Meadows and Lake Almanor.

Excellent fishing is to be found close at hand and there is plenty of small game in the back country. Camp DeSabra affords the following equipment furnished free for your use by your association:

Tents equipped with board floors, single cots with mattresses, cook stove set up outside tent, axe for cutting firewood, broom, washtub and washboard, meat safe and shower bath [Furlong 1922:394].

The article mentioned one other PSEA camp, but did not indicate its location. Both camps provided tents and other camping equipment. The article also mentions other undeveloped campsites for vacationers who could provide their own equipment.

The recreation potential of the Philbrook area was recognized prior to construction. The dam “will create a beautiful little mountain lake that will add to the scenic attractions of a section of the Sierra Nevada territory frequented by campers who enjoy spending their vacations far back in the wilds” (*P. G. and E. Progress* 1926:4). People who had resided in the area that the lake covered leased land from PG&E:

then we leased a lot from PG&E and began to build another cabin. We started the main cabin about 1938 then decided to add on what we call the stone room (Jones 1984:26–27).

Others petitioned PG&E for lots. One man “talked to PG&E about the area on the north shore where our cabin is now and was able to convince them to survey five more lots” (Jones 1984:33). Lots were small, about 100 by 80 feet. Leaseholders had to provide their own water. The first lots were leased possibly as early as the 1930s, with a large number of lease requests in the 1940s and 1950s (Sanford 2006). These homes are set at the east end of the lake on both sides of the road but mainly at the shore. Many shoreline homes have private docks.

The cabins were mainly used in the summer months, but residents came to Philbrook in the winter too. They usually traveled on skis. One family had to dig down to the second-story window on their cabin in order to enter it (Jones 1984:29). The company also developed public campgrounds around Philbrook Reservoir in the 1960s.

#### 2.3.8.7 Since 1960: Mechanization and Automation of the System.

During this period the DeSabra-Centerville system followed the general trend of automation and mechanization throughout industry. As the eight-hour day was instituted for ditch tenders, the company tried to eliminate overtime by automating many of the tasks that previously had been the responsibility of the tenders. With fewer personnel needed, the number of camps was gradually reduced until all were abandoned. Buildings with economic value were sold.

In 1961, PG&E decided to demolish the original powerhouse at DeSabra and construct a new, semi-outdoor type on the same site. New penstocks also were constructed, and the forebay was refurbished: a new outlet was built to serve the new penstock and the original outlet was reconstructed as a reservoir drain and headworks for the Upper Centerville Canal. The spillway also was improved (Department of Water Resources 1961). Both the new DeSabra Powerhouse and the Centerville Powerhouse were semi-automated. Around the clock staff was no longer required; therefore the associated camps were closed.

A series of eight overflows along the Butte Creek Canal in a period of five years during the early 1970s cost the company \$163,000 and the loss of 10,000 MWH of electric generation. In response, an automatic regulating gate with float control was installed at the Clear Creek Diversion along Butte Creek Canal. This consisted of a side spill, a 96 inch by 60 inch radial gate, a 36-inch slide gate, a weir well, and 6-inch and 2-inch piping and valving. . . . A Solenoid operated valve is to be installed in the piping to facilitate the installation at a future date of remote control equipment which can be used to close the radial gate in the event of a canal problem (PG&E 1975:2).



With this gate, the ditch tender did not have to walk 3 miles in stormy weather to manually adjust the gate. Plans for six other such gates were in readiness if this gate performed as anticipated.

Other automated equipment included radio-controlled spill gates that could dewater the canal if there was a downstream problem. Such gates were installed on the Butte Creek Canal in 1982. Three others had previously been installed at 1/4, 3-3/4, 5/1 and 8-1/4 (PG&E 1982).

Additionally, the company installed a Canal Protection System, a series of alarm sites set in stilling wells, using a float mechanism to sense abnormally high or low water levels.

In 1908, it had been considered too expensive to construct closed conduit where the canals traversed areas subject to landslides. However, in 1986, a modern siphon was installed on Butte Creek Canal, eliminating a section of flume located on a very steep grade. Plywood covers other slide-prone areas.

#### 2.3.8.8 The DeSabra Centerville Hydroelectric System Today.

Operation and maintenance of the DeSabra-Centerville Hydroelectric System continues, although now helicopters sometimes are used to bring materials to remote areas. In 1986, the new Toadtown Powerhouse was built. Today many of the canals, particularly in areas close to roads, are used for recreational purposes. People bike, hike, and walk their dogs along the canals. Park benches are located at intervals along the Toadtown Canal. Also, although it is discouraged, some use the canals for inner tubing. Local use of the waters in the canals has been an ongoing problem, as evidenced by a sign on the Lower Centerville Canal that says “The water in this canal is for domestic purposes. Do not bathe or wash clothes in it or in any way contaminate the water”.

One of the main concerns in the system is the status of the Centerville components. As mentioned above, in the early 1980s PG&E contemplated abandoning the Upper Centerville Canal and demolishing the Centerville powerhouse. In 1985, PG&E decided to postpone the proposal to abandon the Upper Centerville Canal (Head 1985). However, plans to replace the powerhouse proceeded, along with plans to upgrade DeSabra Powerhouse and refurbish certain canal segments. As a result, PAR completed an inventory and evaluation of portions of the DeSabra-Centerville system (Maniery et al. 1985). The Centerville Powerhouse was found to be individually eligible for inclusion in the NRHP, as well as being part of a potential district including Lower Centerville Canal and associated ditch tender’s camps. Management recommendations included the conversion of the powerhouse into a museum and recordation of the structure and appurtenant features according to HAER standards.

In 1992 PG&E planned to replace the original Centerville. Because this replacement would adversely affect the National Register property, HAER documentation was completed. The subsequent report (Maniery 1993) documented the Francis Turbine Generation Unit of the powerhouse.

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## SECTION 3.0

# Cultural Resources Investigations

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The objective of the relicensing cultural resources investigations was to assist the FERC with its regulatory compliance requirements under Section 106 of the NHPA by identifying archaeological and historic-era cultural resources, Traditional Cultural Properties, and historic hydroelectric system features that are eligible or potentially eligible for the National Register of Historic Places (NRHP) and documenting all observable Project effects to these properties. For purposes of the study, the term “cultural resources” refers to any prehistoric, historic-era site, feature, or district regardless of its eligibility for listing on the NRHP.

### 3.1 Archival Research

During preparation of the Project Pre-Application Document (PAD) records searches and archival research at various federal, state, and local repositories and agencies in California were undertaken to identify known cultural resources and previously documented cultural resources studies within and adjacent to the Project’s APE. Additional background research was undertaken during preparation of subsequent relicensing documents and during study implementation. The research also served to obtain the background contextual information pertinent to the archaeology, ethnohistory, and history of the Project Area (see Section 2.0, Project Cultural Setting above).

The repositories listed below were consulted in order to develop a better understanding of the prehistoric and historic contexts of the Project Area:

- PG&E DeSabra Division, Rodgers Flat and DeSabra
- PG&E Archives, San Bruno/Brisbane
- Northeast Center of the California Historic Resources Information System (California State University, Chico)
- California State Library, California History Room
- California State Library, Government Publications
- Water Resources Collection Center, University of California, Berkeley
- Bancroft Library, University of California, Berkeley
- Special Collections, Merriam Library, California State University, Chico
- Centerville Museum, Centerville, California
- Gold Nugget Museum, Paradise, California
- Pacific Service Employees’ Association (PSEA), Concord, California
- PSEA Storage Facility, Martinez, California
- National Archives and Record Administration, San Bruno, California
- USFS, Lassen National Forest
- Federal Archives of the California Secretary of State
- Various previous ethnographic record
- Personal records and collections of local independent researchers

### **3.2 National Register of Historic Places Evaluations**

The goal of the archaeological and historic-era study is to determine if continued operation and maintenance of the DeSabra-Centerville Hydroelectric Project as a result of a new license issuance may have an adverse effect on historic properties. Formal and informal evaluations of cultural resources encountered in the APE have been utilized to develop appropriate protection, management, and/or mitigation measures.

A point worth emphasizing is that National Register eligibility of identified resources has been assessed and recommendations have been made, but eligibility has not been *determined*. Instead, professional evaluation recommendations are offered which are subject to concurrence by the FERC, as lead agency responsible for the undertaking, and the State Historic Preservation Officer (SHPO). If the SHPO and the lead agency agree that a property qualifies for the NRHP, it is treated as such for the purposes of Section 106 compliance. The Advisory Council on Historic Preservation (ACHP) is notified after the lead agency, in consultation with the SHPO, has determined whether or not historic properties will be affected and whether adverse effects can be avoided or reduced.

Additionally, if a particular property is located on lands administered by a federal agency (i.e., BLM, USFS), those agencies must be given an opportunity to review the evaluation of that property prior to its submittal to the SHPO for concurrence. Initial NRHP recommendations were provided PG&E's FLA (October 2007). PG&E formally requested SHPO's concurrence on archaeological site NRHP recommendations (letter dated January 9, 2008); no response has been received from the SHPO to date. However, during February 2008 meetings with the USFS and BLM, these agencies expressed concern regarding some of the NRHP recommendations for sites on federal lands. The SHPO has been made aware that federal agency comments on the NRHP recommendations are forthcoming. Any final NRHP determinations will be provided in the final Historic Properties Management Plan.

#### **3.2.1 Criteria for Evaluation**

The National Register eligibility criteria, as described in 36 CFR 60.4, state:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- a. Is associated with events that have made a significant contribution to the broad patterns of our history; or
- b. Is associated with the lives of persons significant in our past; or
- c. 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 represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. Has yielded, or may be likely to yield, information important in prehistory or history.

The NPS (Little et al. 2000) established guidelines for evaluating National Register eligibility. The basic steps in the evaluation process include:

- a. Classifying the property as a district, site, building, structure, or object;
- b. Determining the theme, period, and context within which the property is significant;
- c. Determining which National Register significance criteria are applicable;
- d. Determining whether the property meets any exclusionary considerations; and
- e. Determining whether the property retains integrity (Little et al. 2000:3).

### **3.2.2 Significance**

When a site is found to represent an important historical theme, it is evaluated on how well it exemplifies the theme based on the criteria of significance found in 36 CFR 60.4. A property must meet one of the four specific criteria to qualify as a good representative of a significant historical theme or pattern. It must be associated with important historical events or persons (Criteria A and B); convey important technical, aesthetic, or environmental values (Criterion C); or have potential to provide important scientific or scholarly information (Criterion D).

Associative values are identified within the context of local, regional, and national history. Historic research is required to evaluate significant historic associations under Criteria A, B, and C. Evaluations under Criterion D, which require specification in terms of a prehistoric context and research design. The prehistoric and history of the Project Area is detailed in Section 2 above, and a research design for evaluating historic-era sites is presented in Section 3.3.1.5.2 below. Specific archaeological research domains and key research questions are identified, and the data sources required to investigate those questions specified.

The NPS guidelines specify that “the passage of time is necessary in order to apply the adjective ‘historic’ and to ensure adequate perspective” (Sherfy and Luce 1996:1). NPS recommends that sites or resources must be at least 50 years old to be considered eligible for inclusion on the NRHP. Historical remains less than 50 years old must be of exceptional importance to be deemed significant.

For this project, the significance and National Register eligibility of each historic-era site has been assessed with reference to its known historical associations and the presence, quantity, configuration, and quality of data classes described in Section 3.3.1.5.2. Sites are evaluated by comparing their known or potential data classes with the research domains that could be addressed using those data. The evaluations are based on archival research and field observations.

To operationalize the National Register criteria and make them more applicable to the historic-era sites for the current project, research questions and data requirements outlined below were linked to the archaeological remains at a particular site via a set of detailed standards of assessment. For this project, eight specific standards were considered when appraising the data potentials of a historic-era site:

1. Is the site associated with one of the key historical themes operating within the Project Area?
2. Are there temporally discrete archaeological features or artifacts?
3. Can research domains be applied to this site type?
4. Are the data requirements for the assigned domain(s) present?
5. Can the site be dated?
6. Is the defined period at least 50 years in the past?
7. Does the site have integrity?
8. With the above standards taken into account, does the site have the quantity and variety of artifacts, as well as the association, necessary to meet the Criterion D threshold of data potential?

These standards were used to assess the adequacy of the association of each site and the nature and content of archaeological remains, as well as the site's interpretive potential. The results of the application of these standards guided the judgment for significance under Criterion D.

Generally, sites had to meet all standards to be considered eligible for the NRHP. That is, they had to have a combination of strong historical associations and well-preserved features that contain useful data that allowed meaningful interpretations. Sites whose features lack integrity, or whose association is weak, were judged ineligible. Furthermore, artifact deposits had to have sufficient quantity, variety, and association of artifacts to meet the Criterion D threshold of significant data potential.

### **3.2.3 Integrity**

To be eligible for the National Register, a site must meet the standards of significance *and* possess integrity. To possess integrity, the property must retain the physical characteristics it had in the past so it can convey its associations with historic themes, persons, designs, or technology. Integrity consists of seven separate aspects: location, design, setting, materials, workmanship, feeling, and association (36 CFR 60.4). Setting and location refer to the physical placement of the property and its relation to surrounding natural and cultural features. If these remain unaltered, then the property has integrity. Design refers to the form, structure, and spatial patterning of a property, and reflects cultural, functional, technological, aesthetic, and stylistic concerns. If these are the same as during the period of significance, the property has integrity.

Materials and workmanship are the physical elements making up the property, as well as the skills of the crafters and the quality of work done. The presence or absence of original materials determines the authenticity of the resource, while the workmanship furnishes evidence of the technology and aesthetic principles in use. In archaeological sites and other properties significant for their information potential, the pattern of deposited materials is the critical issue.

Features, artifacts, and relationships between them must remain sufficiently intact to yield the expected information.

Feeling is the quality a historic resource has in evoking the aesthetic or historic sense of a past period of time. To have integrity of feeling, a site's physical characteristics must convey a sense of historical time and place consistent with the site's relevant themes. Association gauges the

connection between a historic property and the events or persons for which it is significant. “A property retains association if it *is* the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer (Little et al. 2000:45).

For archaeological sites, location and setting evince the patterns of cultural behavior in the past. If the property does not contain new elements recently moved to the site, or modern developments or intrusions, then it may be considered to have integrity of location and setting. Integrity of design applies to intrasite patterning. Integrity of materials describes the “completeness or quality of the artifact assemblage and feature preservation” (Hardesty and Little 2000). While workmanship may not be applicable to all resources, integrity of feeling is determined by the ability of the features and setting to convey the historic sense of the property. If the relationship between the site’s content and important research questions is strong, the site has integrity of association. Archaeological remains without such contexts have little information value. Hence, the integrity and significance of archaeological resources are directly interrelated.

Integrity not only refers to a physically intact deposit (i.e., with undisturbed stratigraphy), but also to what James Deetz (1977) has termed “focus.” By focus, Deetz refers to the level of clarity with which archaeological remains can be seen to represent a particular deposit, episode, or event. Archaeological remains that represent several activities, events, or themes that cannot be separated from one another are said to lack focus. Where focus is lacking as the result of disturbance, the phenomenon also lacks integrity (Costello et al. 1996:49).

### **3.3 PG&E’s Relicensing Studies**

FERC’s DeSabra Centerville Hydroelectric Project Study Plan Determination (July 18, 2005) directed PG&E to perform three studies directly related to cultural resources. These are:

- Study 6.3.8-1: Archeological and Historic-Era Properties
- Study 6.3.8-2: Traditional Cultural Properties
- Study 6.3.8-3: Historic Project Feature Assessment

Copies of these three approved study plans are provided in Appendix B.

PG&E began implementation of the three cultural resources study plans on August 7, 2006 when Project lands had dried sufficiently from winter and spring weather. All fieldwork on Federal lands was conducted under a BLM Field Work Authorization and USFS Special Use Permit.

An Initial Study Report (ISR) containing study results to date was submitted to the FERC on September 6, 2006. Copies of this report were also submitted to the resource agencies, participating Tribes, and the SHPO. A Supplemental Initial Study Report (SISR) was submitted to the FERC on January 16, 2007. Copies of this report were also submitted to the resource agencies, participating Tribes, and the SHPO. These reports included the results and status of cultural resources studies to date.

### **3.3.1 Archaeological and Historic-Era Properties (Study 6.3.8-1)**

#### **3.3.1.1 Archival Research.**

Archival research undertaken during the development of the Pre-Application Document showed that at least 39 previous cultural resource investigations had occurred within or adjacent to the Project's APE since the late 1970s; 34 of which were completed for timber harvest sales, land transfers, and Project-specific ground-disturbing activities. Additionally, 29 previously documented cultural resources also were identified, of which 16 were determined to be within the current Project APE. A review of historic properties listed in the National Register of Historic Places (NRHP) identified the Magalia Community Church, Honey Run Covered Bridge, Centerville Schoolhouse, and the Forks of Butte Archeological District within the vicinity of the Project but not within the APE. Likewise, the Dogtown Nugget Discovery Site was also identified within the Project vicinity and not within the APE. It is listed as California Historical Landmark No. 771, and included in the California Register of Historical Resources.

PAR Environmental Services, Inc. (Maniery et al. 1985) conducted cultural resource studies for a previous DeSabra-Centerville hydroelectric system project in which they informally recommended that previously recorded sites CA-SHA-597/H, CA-SHA-871-H, and CA-SHA-873-H were potentially eligible for listing in the NRHP. Likewise, they recommended that sites CA-BUT-872-H, the "Poumeratt Quartz Mine", and CA-BUT-877-H, a historic mining ditch, were ineligible. None of the other archaeological sites had been formally evaluated.

In addition to the formally documented sites, Maniery et al. (1985) also identified 16 other "potential" sites while reviewing maps and other archival materials for the previous DeSabra-Centerville hydroelectric system project. However, the proposed resource locations were outside their limited survey area and, thus, not confirmed, located or documented at that time.

LNF cultural resources staff provided reports documenting archaeological excavations and trace element studies completed on Forest System Lands in the Project vicinity. Four separate NRHP eligibility evaluation projects, documented in five technical reports, focused on 16 prehistoric and historic-era sites within 10 miles or less of Round Valley and Philbrook reservoirs (Bevill et al. 2005; Compas 2003; Dougherty and Compas 2003; and Moore 2002, 2005). Compared to other areas, few cultural studies have occurred in the Project vicinity. Those completed to date have revealed information important to understanding local toolstone procurement and lithic technological processes, settlement and subsistence, and chronological issues. In particular these studies have sought to better clarify the Martis and Kings Beach temporal periods and have highlighted prehistoric use of basalt quarries around the Humbug Summit area just north of the reservoirs, the reliance on local Kelly Mountain obsidian, and the possible trade practice of exchanging basalt for obsidian from northern sources.

Trace element studies have focused on basalt artifacts recovered from sites on Forest System lands (Moore 2006). These ground-breaking studies focus on the identification of basalt sources local to the Project APE. Minimally, the results of these studies will benefit discussions of toolstone procurement and trade practices by prehistoric occupants of the Project Area. The trace element studies thus far have identified basalt sources in the Humbug Summit area,



approximately 4.0 miles northeast of Round Valley Reservoir, as primary procurement locations. These studies further suggest that Humbug Summit basalts occur in sites dating from the Early Archaic through the Emergent Period, although use of this toolstone source occurred primarily during the Middle-Late periods (Moore 2006:np). Chronological indicators used during the trace element studies include Northern side-notched, Kingsley Expanding Stem, Elko, Martis series, Rose Springs series, Gunther series, Desert Side-notched, Sierra Side-notched, and Southern Cascade Serrated projectile points. A discussion of the temporal span during prehistoric occupation in the Project vicinity is provided in Section 2.1 above.

### 3.3.1.2 Fieldwork.

In accordance with Section 106 of the NHPA and its implementing regulations, reasonable measures must be undertaken to identify and document archaeological and historic-era sites within the APE. To accomplish this, PG&E retained Applied Earthworks, Inc. (Æ) to undertake an intensive cultural resources survey of lands within the APE to: examine all accessible lands not previously surveyed; examine lands previously surveyed to less than adequate standards per current professional methods; verify the locations of previously recorded sites; re-record those sites as appropriate; locate and document “potential sites” discussed in Maniery et al.’s (1985) previous survey report that could be in the Project APE; and document all newly discovered sites encountered. This survey was completed between August 7, 2006 and November 5, 2006.

Prior to the start of fieldwork, a Field Work Authorization form was obtained from the BLM to access and conduct survey on BLM lands. Additionally, a Special Use Permit (SUP) was obtained from the USFS to conduct survey and NRHP evaluations on USFS lands. Both permits have since expired and will need renewal should further field studies be required.

Æ’s qualified professional archaeologists employed an intensive survey strategy by walking parallel transects spaced 15-20 meters apart. Areas containing moderately dense vegetation or moderately steep terrain were examined using 20-40-meter transects. All topographical features encountered in moderate areas and considered to be sensitive for cultural resources (i.e., springs, drainages) were thoroughly inspected.

Newly discovered cultural remains were assigned temporary field numbers using a “DC” (DeSabra-Centerville) designation followed by a number (e.g., DC-1, DC-2). Numbers were assigned sequentially as cultural materials were encountered. All items encountered were assigned a number. If a discovery was determined to be noncultural, or to be less than 50 years of age, then the number assigned was retired from the lists of cultural resources. Likewise, if recording demonstrated that multiple sites were portions of the same site, the lowest assigned temporary number was retained and all additional numbers were retired from use. Thus, gaps may be visible in the temporary numbering system listed on the site tables in this section.

Newly discovered and previously recorded prehistoric and historic-era sites were recorded or re-recorded to current United States Department of the Interior, National Park Service (NPS) standards using California Department of Parks and Recreation (DPR) Forms (523 series). A sketch map was drawn to scale for each site, as appropriate, and the site was photographed. A Global Positioning System (GPS) receiver, set to North American Datum (NAD) 83, was used to

accurately obtain location information for the sites documented, unless weather or terrain interfered with obtaining accurate readings. All cultural resources were also hand-plotted onto the appropriate 7.5-minute topographic map, and the map's NAD documented on the site records. All impacts observed at sites were documented on the site records.

Not all lands within the APE were accessible during the survey, due either to steep terrain, lack of landowner permission in private residential areas, or other unsafe conditions (e.g. entering Project tunnels). Areas not surveyed are shown on the APE maps provided in Appendix A and listed in Table 3.3.1.2-1. Should access to these lands become available in the future, survey may be undertaken at that time. Additionally, the USFS has agreed to provide cultural resources information for the unsurveyed areas within the APE on the federal lands identified on Map 5.

**Table 3.3.1.2-1.** Portions of the APE Excluded From Archaeological Survey.

<b>APE Map No.</b>	<b>Locations Not Surveyed</b>	<b>Reason Not Surveyed</b>
1 of 11	Two unsurveyed areas (approximately 1.75 miles) along WBFR and Philbrook Creek	Too steep
2 of 11	Two unsurveyed areas along WBFR (approximately 0.25 mile) and Philbrook Creek (approximately 0.75 mile)	Too steep
2 of 11	Interior of Philbrook Reservoir	Most of reservoir inundated
2 of 11	Approximate 11.5 acre-area on south side of Philbrook Reservoir	Too steep and too much natural tree fall
3 of 11	Hendricks Tunnel	Unsafe
4 of 11	Hendricks and Lovelock tunnels	Unsafe
5 of 11	All portions of the APE on this map are along the WBFR and were not surveyed, approximately 3.5 miles	Too steep
6 of 11	Approximately 4.0 miles of the Butte Creek Canal	Too steep
7 of 11	Approximately 2.0 miles of Butte Creek Canal	Too steep
7 of 11	Lovelock Tunnel, Toadtown penstock, Rapid pipe	Unsafe
7 of 11	Approximately 1.5 acres on LNF	Dense vegetation
7 of 11	DeSabra Forebay	Inundated
8 of 11	Approximately 1.5 acres on LNF	Dense vegetation
8 of 11	DeSabra Forebay	Inundated
8 of 11	Approximately 2.5 miles of the Lower Centerville Canal	Too steep
8 of 11	0.75 mile of Emma Road and a section of the Lower Centerville Canal, between Emma Road and Chimney Rock Tunnel	Restricted landowner access
9 of 11	1.0 mile of Upper Centerville Canal	Dense brush, no private landowners access permission

The majority of lands that could be surveyed were examined using an intensive strategy (15-meter transects). Portions of the Project containing moderately steep slopes or moderate to dense vegetation were examined using a moderate strategy (20-40-meter-wide transects), and other locations of dense brush were surveyed in a cursory fashion using opportunistic transects. Survey at Round Valley Reservoir was delayed until the reservoir was empty and the underlying sediments were dry. As a result, all lands within the reservoir were accessible and examined during the survey. The FERC license requires PG&E to maintain a minimum pool of water in Philbrook Reservoir, which precludes emptying the reservoir and eliminates any opportunity to survey within or below the minimum pool level. As a result, only the exposed upper portions of the reservoir and the adjacent lands outside the reservoir were examined.

### 3.3.1.3 Native American Monitoring.

Qualified tribal monitors were invited to join the archaeology field crew during the survey. Prior to performing the field work, PG&E developed tribal monitoring protocol specific to the Project. The Greenville Rancheria and Mechoopda Tribe reviewed the protocol, which was finalized on September 15, 2005. In accordance with the monitoring protocol, tribal monitors were responsible for assisting the archaeological field supervisor in identifying potentially sensitive areas, reporting daily monitoring results to the tribes, ensuring that the appropriate parties were contacted if human remains were encountered, and completing Daily Field Logs.

In response to PG&E's invitation, the Greenville Rancheria and the Mechoopda Tribe provided qualified monitors during the archaeological field work. As a subcontractor to Æ, the Greenville Rancheria oversaw Tribal monitoring efforts, coordinated field work schedules with the Mechoopda Tribe, monitors, and Æ; and ensured that a monitor was present during each field session. The field crew was assisted by one monitor at a time, with monitors from each Tribe rotating sessions. Copies of the monitors Daily Field Logs were distributed to the Tribes, PG&E, and AE, and are included in Volume II-C of this HPMP

### 3.3.1.4 Survey Results (Summary).

Of the 16 previously recorded prehistoric and historic-era sites identified in the Pre-Application Document, two were determined to lie outside the APE. Site CA-BUT-860 is recorded as a possible prehistoric petroglyph south of the Forks of Butte, along Butte Creek, and was not encountered within the Project APE. The site was not located or re-recorded.

Site P-04-0001325 is the historical Stirling City Ranger Station Office, known commonly as the Stirling City Forest Fire Station. It is a complex of buildings constructed by the USFS and Civilian Conservation Corps in 1937 and 1938, and has been evaluated as eligible to the NRHP (Thornton 1994). This resource is within Stirling City and an approximately 0.25 mile east of the Project APE. The site was not re-recorded.

During the survey, crew members examined sites CA-BUT-1225/H, -1226, -1227, and -1228 by walking 2–5 meter parallel transects across each site and marking all encountered cultural remains with pin flags. This revealed a long, single, continuous stretch of prehistoric and historic-era cultural remains and features rather than four discreet site areas. As a result, the sites

were combined and recorded together as a single site using the lowest site number: CA-BUT-1225/H.

Additionally, CA-BUT-868-H, the original site of the DeSabra Powerhouse, was initially included in the system features evaluation. The field work revealed that no architectural features remain at the site, only archaeological deposits. As a result, the site was included in this study.

Thus, a total of 12 documented sites were relocated in the APE and re-recorded during the survey. Most of the previously recorded sites contain historic-era artifacts and features associated primarily with mining, water conveyance, and hydroelectricity. Two of the previously recorded sites contain prehistoric cultural deposits.

Only three of the 16 “potential” historic-era sites discussed in Maniery et al.’s 1985 report were encountered within the APE. Site numbers for the potential historic-era sites were previously assigned by PAR during their research and are the same as those listed in the PAD. The private landowner of the property encompassing TC-1, a Native American “massacre site” and camp, refused the field crew access. No cultural materials were encountered in the locations given for BCC-1, -2, -3 or CC-1, -2, -3, -5, -6, or -7. Potential site TC-2, a historical homestead above Toadtown, was determined to lie outside the APE.

Sites HC-1 and HC-2 are ditch tenders camps on the Hendricks Canal. Of all the potential sites identified by PAR, these were the only two for which no location information was suggested, other than their association with the canal. Likewise, the 2006 archival research also failed to provide specific location information, thus it is not known if these sites were found during the 2006 survey. However, the first Project camps (e.g., Camp 1) built on ditches and canals were commonly constructed at the features head dams, with other camps numbered sequentially “downstream.” A 1949 Division of Forestry Map for Butte County shows a “ditch camp” near the Hendricks Canal on Little West Fork, south of the Little West Fork feeder. It is not known if this location represents HC-1 or HC-2. However, the Project APE is limited to the canal in this location and no cultural remains were encountered during the field survey. PG&E assumed that evidence of these sites no longer exists or that the location information was not accurate.

Newly discovered sites constitute the majority of cultural resources encountered within the APE. As noted above in the fieldwork methods section (3.3.1.2), newly discovered cultural remains were assigned temporary field numbers using a “DC” (DeSabra-Centerville) designation followed by a number (e.g., DC-1, DC-2) assigned sequentially as each site was discovered.

The field survey resulted in the documentation of 46 archaeological and historic-era sites, distributed between 12 previously recorded sites, 3 locations identified from the initial research as potential sites, and 31 newly discovered sites. Newly documented sites include 4 prehistoric sites, 21 historic-era sites, and 6 sites containing both prehistoric and historic-era remains. (Note: Following completion of the field survey, an additional resource was identified in the vicinity of Philbrook Creek. Additional fieldwork will be necessary in order to determine if this resource is located within the Project APE.) In order to ease implementation of this HPMP, full descriptions of all 46 archaeological and historic era sites (both previously identified and newly recorded), identified impacts, NRHP evaluations and management recommendations are provided together

in Section 5.1 and Table 5.1-1. Locations and records for all archaeological and historic-era sites documented in the APE are provided in Sections A and B of Confidential Volume II of this document.

Four isolated finds also were recorded in the APE. Isolates 04-003072 and 04-003076 contain historic-era cans, 04-003075 includes cast iron stove parts, and 04-003077 is a tall, notched tree stump representative of historic-era logging. All of the isolates were located at Philbrook Reservoir.

### 3.3.1.5 National Register of Historic Places Evaluations.

Of the 46 archaeological sites encountered in the Project APE, four are strictly associated with prehistoric occupation, nine contain both prehistoric and historic-era cultural remains, and 33 represent historic-era activities. These sites represent several themes in the prehistory and history of the American west. Prehistoric use of the Project Area focused on plant, animal, and stone procurement and processing. Historic-era activities included ranching, mining, logging, transportation, USFS land management, development and construction of hydroelectric systems and technology, turpentine production, and recreational use. Cultural contexts for the sites are presented in Section 2.1 and 2.3. Informal evaluations for prehistoric sites and sites with both prehistoric and historic-era cultural remains, and formal evaluations of sites containing only historic-era cultural deposits are provided by site in Section 5.1 below.

#### 3.3.1.5.1 Evaluation of Prehistoric Sites

Whenever possible, NRHP eligibility assessments of prehistoric sites or sites containing prehistoric components were undertaken without ground-disturbing archaeological test excavation. Where non-intrusive evaluation was not possible or where test excavation was opposed by Indian Tribes, unevaluated sites were presumed eligible for the NRHP and only informal recommendations of eligibility have been made. However, PG&E and LNF have identified ongoing Project-related impacts at four previously recorded archaeological sites containing both prehistoric and historic-era cultural remains and features. These four sites were later found to be one continuous scatter of cultural remains and were thus newly recorded as a single resource during relicensing surveys (CA-BUT-1225/H). Inundation of the resource throughout most of the year and annual draw-down of the reservoir may be adversely affecting the site. As a result, the site is currently being formally evaluated for listing on the NRHP. While this work is being completed under the terms of the current Project license, the results of the evaluation are pertinent to the current relicensing and will be addressed in subsequent revisions to the HPMP when they become available. Appropriate management measures will be identified in consultation with the LNF, SHPO, and participating Tribes. Until a final NRHP determination is made, the site remains potentially eligible for listing on the NRHP.

Formal test excavations may also be warranted at other sites if on-going adverse effects are identified that cannot be avoided, eliminated, or removed, and other evaluation techniques are not feasible. The need for archaeological test excavation to complete NRHP eligibility determinations has been, and will be made, on a site-by-site basis in consultation with the appropriate federal and state agencies and Tribes.

### 3.3.1.5.2 Evaluation of Historic-Era Resources

Thirty-two sites within the APE contain only historic-era cultural remains. In accordance with the FERC approved Study Plan 6.8.3-1, these sites are formally evaluated below for their eligibility for listing on the NRHP. Formal evaluations require the development of research topics and questions that are relevant to the cultural history of the area in order to identify a site's significant qualities. These are provided below, followed by the formal evaluations.

All strictly historic-era sites were evaluated during the inventory phase of work, unless additional studies (e.g., subsurface test excavations) were deemed necessary to formally evaluate the sites, in which case the need for additional studies was noted. The historic-era sites were evaluated based on surficial site examination, detailed feature maps, integrity assessments, and other observations documented during the fieldwork in addition to evaluation of the sites relative to the historic context developed during archival research.

The significance and National Register eligibility of each historic-era site was assessed with reference to its known historical associations and the presence, quantity, configuration, and quality of data classes described in Section 3.2 above. Sites were evaluated by comparing their known or potential data classes with the research domains that could be addressed using those data. The evaluations are based on archival research and field observations.

#### 3.3.1.5.2.1 Research Orientation

Archaeological research on historic-era sites requires a broad theoretical perspective and framework for asking questions about the historical and archaeological record, as well as the ability to link these questions to the archaeological data. Without an established research strategy, significance evaluations tend to be *ad hoc* exercises focused on vague or trivial research questions (Hardesty 1986, 1990). Moreover, while most historical archaeological sites in California contain some information, the key to productive archaeology is to assess whether a property is likely to contain important new information.

To create an accurate reconstruction of site history and function, and to understand the processes of development and change occurring, information from published sources, archival documents, oral history, ethnographic sources, and archaeological remains is required. Taken together, these sources assist in the development of an archaeological context that allows researchers to examine the important associations and data potentials of each site (Leone 1988).

A research design outlines the topics or questions that could be asked given the kinds of data that a particular property type is likely to contain and evaluates whether that information can be gained from other sources (Maniery 1995). Such a design has several parts, including a "structure of inquiry" for asking key research questions and an identification of archaeological data requirements for answering each of the key questions. The significance of each resource is then interpreted with reference to the local, state, and national historic context and the potential of each site for meeting the data requirements (Hardesty 1990:43).

As observed by Barker (1990:45), “Historic contexts are the single most important means of developing clear and defensible criteria for evaluating historic archaeological features or the historic properties of which they are a part.” Huston (1990:16) defines a historical context as “an organizational framework that groups information about related historic properties based on a theme, geographic area, and time period.” The NPS (Little et al. 2000:7) states that the three roles that a historic context plays in evaluating historic-era sites include:

1. Defining the character of the historic archaeological site and its role in relation to other contemporary properties;
2. Integrating images developed by historians, archaeologists, and others into a single historic context statement; and
3. Defining the scale at which comparison among similar sites are to be made. Historic archaeological sites can be linked to contexts defined at the local, state, national, and even international scale (Barker 1990:45; National Park Service 1997).

With these requirements in mind, Æ performed detailed archival research for the DeSabra project. The major goals of the archival research were to describe historic development and land-use patterns within the region generally and the study area specifically; identify known and potentially important buildings, structures, or features based on review of relevant literature; identify the types, range, and period of historic properties and features that may be present within the Project Area; and develop a historic context and research questions to enable determination of the significance of historic-era properties within the Project Area.

To accomplish this, Æ examined local and regional histories, historic and modern maps, reports authored by other researchers, and various other documents to determine key historical themes operating within the Project Area, including:

- *Theme A:* Spanish/Mexican era exploration and settlement (1841–1848);
- *Theme B:* The Gold Rush and early placer mining (1848–1854);
- *Theme C:* Hydraulic mining (1854–1884);
- *Theme D:* Rise of the lumber industry (1870–1956)
- *Theme E:* Late nineteenth and early twentieth century lode mining;
- *Theme F:* Hydroelectric development (1900–present);
- *Theme G:* USFS (1900–present);
- *Theme H:* Recreational use (1900–present);
- *Theme I:* The Depression era; and
- *Theme J:* Twentieth century growth and development.

Several research domains crosscut these historical themes and must be considered within the framework of local, regional, national, and international interaction.

Scientific or scholarly research values are judged within the context of a research design that provides the framework for examining variability and change in the archaeological record. This research design for evaluation of historic-era sites begins with an outline of research domains

presently under investigation by historical archaeologists who have recently conducted work on similar sites in the region.

To identify the kinds of information that may be of value for the current study, Æ will focus on four broad research domains: Chronology, Subsistence, Dependency/Self Sufficiency, Industry, and Recreation.

#### 3.3.1.5.2.2 Research Domain “A”: Chronology

Chronology is fundamental to the study of most archaeological sites. The chronology of historic-era sites is often obtained from manufacturer’s marks or technological attributes of artifacts. Maniery (2001) has called for researchers to consider temporal and spatial ordering as a research goal while working in this region. Chronology should be addressed both in intrasite and intersite contexts. Issues to be considered within a site include:

Changes in technology (placer to hard rock mining), economic factors (resurgence in small placer mining operations during the Great Depression [Maniery et al. 1992]) or construction needs (resurgence of [camps] during...separate dam construction episodes) [Maniery 2001:16]

Additionally, specific site types can be ordered chronologically across the region to allow an understanding of industrial migration, changes in recreational use, and expansion of residential populations.

General questions that could be examined in this domain include:

1. Was there seasonal reuse of the site? Was the site occupied by an individual or by a large group? Was there occupation short or long term?
2. Are there multiple deposits that indicate multiple periods of use? Are there functionally discrete areas that indicate different activities within the site?
3. Are there contemporaneous mining and logging camps that can be compared? What was life like in these camps?
4. Are there ethnic groups or gender classes that can be further studied?
5. What is the relationship of the position of similar site types?

#### *Data Requirements:*

- A1. Relatively tight date range
- A2. Temporally discrete archaeological features and artifacts associated with extended or multiple occupations
- A3. Consumer goods with identifiable product names and manufacturers marks



### 3.3.1.5.2.3 Research Domain “B”: Subsistence

Subsistence is also a fundamental component of any human-occupied site. It includes the acquisition, preparation, and consumption of food. Food containers, as well as faunal and floral remains, can provide clues to food acquisition. Tablewares, pots and pans, flatware, and kitchen tools such as sifters and can openers, indicate the culinary needs and habits of the site occupant. It is often discussed in terms of consumer preference, resource availability, ethnic diversity, and communal versus individual food preparation and dining. The wide variety of sites encountered during this project—including single-use dining sites, recreational camps, work camps, and residential family refuse scatters—necessitates considering subsistence in all of those contexts.

1. Is there an evolution in subsistence remains at sites with the same association but dating to different periods?
2. How does the diet of a miner or logger differ from that of a recreational camper?
3. What kinds of food were available at work camps?
4. Is there evidence of ethnic food preferences?

#### *Data Requirements:*

- B1: Temporally discrete archaeological features and artifacts associated with extended or multiple occupations
- B2: Food refuse, including containers, utensils, tableware, botanical remains, and faunal remains with butchering marks
- B3: Consumer goods with identifiable product names and manufacturers marks Personal artifacts specific to particular ages, genders, occupations, social classes, or ethnic groups

### 3.3.1.5.2.4 Research Domain “C”: Industry

Mining and logging have been the primary driving forces of the economy of the DeSabra region. Placer mines were generally seasonal sites, driven by the miner’s capacity for controlling the flow of water. The evolution of hydraulic mining allowed miners to investigate ancient channels located away from running streams. Of course, water was needed to wash away the overlying sediment, so ditches were constructed to bring water to the mines. The lumber industry began as soon as the miners arrived. The first lumber mill opened in Magalia (Dogtown) in 1853. At least 14 saw mills operated in Butte Canyon Creek in the 1860s and 1870s. Many of these incorporated new steam engines to increase output. The Diamond Match Company had 50 years of dominance in the DeSabra area, harvesting, transporting, and milling lumber from more than 160,000 acres of timber.

1. What kind of mining sites are identifiable in the Project Area? What can they tell us about mining technology?
2. Do mine sites contain remnants of early technology as well as technological advances?
3. Do any lumber industry-related sites contain remnants of the technology used by loggers? Do they contain information that is unknown in written or oral histories?

4. Are there contemporaneous mining and logging camps that can be compared? What was life like in these camps? Are there ethnic groups or gender classes that can be further studied?

*Data Requirements:*

- C1: Relatively tight date range
- C2: Temporally discrete archaeological features and artifacts associated with mining or logging technology
- C3: Industry-related machinery, tools, or other technology
- C4: Identifiable historical associations

3.3.1.5.2.5 Research Domain “D”: Recreation

Recreation in the DeSabra area is associated with both Lassen National Forest and vacation cabins that were constructed in the Philbrook Reservoir and DeSabra Forebay areas. Recreational uses in these locations have included hiking, fishing, boating, camping, and winter activities. Sometimes, visitors leave trash dumps that can be associated with recreational users.

1. Is it possible to differentiate trash dumps created by recreational users and those created by loggers or USFS workers?
2. Is there a difference between refuse dumped by campers and that dumped by cabin occupants?
3. Were camp sites revisited by the same individuals over time? Recreational users would have had to bring their own food with them. Is there a change in what these people consumed over time?
4. Can the deposit yield information about differences in gender? Do deposits differ if women or children are present?

*Data Requirements:*

- D1: Relatively tight date range
- D2: Temporally discrete archaeological features and artifacts associated with extended or multiple occupations
- D3: Identifiable historical associations
- D4: Personal artifacts specific to particular ages, genders, occupations, social classes, or ethnic groups.

Details regarding the integrity and significance of historic-era sites in the DeSabra-Centerville Hydroelectric Project are provided by site in Section 5.1 below.

**3.3.2 Traditional Cultural Properties (Study 6.3.8-2)**

Traditional Cultural Properties (TCPs) are a type of historic property that are eligible for inclusion in the National Register because of their association with cultural practices or beliefs of a living community that: 1) are rooted in that community's history; or 2) are important in

maintaining the continuing cultural identity of the community (National Register Bulletin 38, 1998:1). TCPs can also be defined as:

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

#### 3.3.2.1 Archival Research.

Traditional Cultural Properties (TCPs), are defined as those cultural resources that are eligible for inclusion in the NRHP because of their “association with cultural practices or beliefs of a living community that are (a) rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community” [NR Bulletin 38, 1998:1]. In PAR’s prior study referenced in above (Maniery et al. 1985), one potential TCP was identified within or in the immediate vicinity of the Project APE. PAR identified this resource as site “TC-1”, described as a historic Native American “massacre” site and camp. As with the other potential sites identified in PAR’s research, the site’s reported location fell outside their survey area and was not investigated at that time. In addition to TC-1, Kroeber (1925: 394, Plate 37) also provides the names for four village sites that were potentially located within the Project APE: *Yaukü*, *Nim-sewi*, *Otaki*, and *Tsulum-sewi*. As noted in the PAD, information was not available from the records search or archival research to determine if these village sites correlated with any of the previously documented archaeological resources. Additionally, neither the California Native American Heritage Commission (NAHC) nor the tribal representatives were aware of any TCPs or other significant resources within the Project APE, although representatives of the Mechoopda Tribe indicated that traditional plant gathering locations could be present in the Project Area.

#### 3.3.2.2 Pre-Field Consultation.

Introductory letters of consultation were sent by PG&E to the following Maidu groups and individuals in February 2004:

- Mechoopda Indian Tribe of Chico Rancheria, Chico
- Berry Creek Rancheria of Maidu Indians, Oroville
- Enterprise Rancheria of Maidu Indians, Oroville
- Mooretown Rancheria of Maidu Indians, Oroville

- Koncow Valley Band of Maidu, Oroville
- Maidu Advisory Council, Oroville
- Butte Tribal Council, Oroville
- Maidu Nation, Susanville
- Maidu Cultural and Development Group, Greenville
- Joe Marine, Sacramento

In order to protect the confidentiality of any disclosed TCP locations, Study Plan 6.3.8-2 states that such confidential information will only be provided to the appropriate Indian Tribes, federal land management agencies (e.g. USBLM, Forest Service) within the APE, the FERC, and concurrence of report recommendations will be sought from the SHPO. At the instruction in writing to PG&E by the participating Tribes, this information may be disclosed to the California State University, Chico, Historic Resources Information Center.

Additionally, in order to protect confidentiality of disclosed locations of importance to the Mechoopda Indian Tribe of the Chico Rancheria, an agreement concerning the conduct of Native American consultation associated with the TCPs and the ultimate ownership and control of interview materials was negotiated and signed by Mechoopda, Albion Environmental, Inc. (Albion) and Pacific Gas and Electric Company on August 8 and August 15 respectively. The *Confidentiality Agreement Between the Mechoopda Indian Tribe of Chico Rancheria, Albion Environmental, Inc and Pacific Gas and Electric Company*, (Confidentiality Agreement) addresses the final disposition of Mechoopda-related field notes audio and video tapes, photographs and any other products of the ethnographic interview process. A copy of this agreement is provided in Appendix C. Development and negotiation of the Confidentiality Agreement began in November 2006. The agreement bears the signature of individual respondents who chose to participate in the study.

Other participants in the study did not request such confidentiality agreements and the confidentiality of information that was gathered from these participants was handled under the general guidelines referenced within the Study Plan description.

### 3.3.2.3 Methods.

Study 6.3.8-2 was conducted by cultural resources consultants Albion Environmental, Inc. (Albion). Albion's Project staff meets the qualifications for conducting ethnographic work as outlined in National Register Bulletin 38, *Guidelines for Evaluating and Documenting Traditional Cultural Properties* (National Park Service 1990). In addition to federal regulations providing for the identification and treatment of TCPs, PG&E and Albion also considered other applicable professional, State, tribal and local laws, standards and guidelines, and took into account confidentiality concerns raised during the study. Detailed property locational information has been withheld from public disclosure in accordance with Section 304 (16 U.S.C. 4702-3) of the National Historic Preservation Act (as amended), and with the approved Study Plan.

Consultation and any necessary fieldwork and potential TCP documentation was undertaken in accordance with Section 106 of the National Historic Preservation Act as amended, and

considered National Register Bulletin No. 38, *Guidelines for Evaluating and Documenting Identification of Traditional Cultural Properties*. In order to facilitate consultation, PG&E retained a qualified ethnographer with the professional qualifications for ethnography as defined in Appendix II of Bulletin No. 38.

The identification of TCPs began with a review of the literature obtained during the archival research (see Section 2.0 above). Background ethnographic research provides one source to identify potential TCPs, however it is through direct consultation followed by formal ethnographic interviews that TCPs are identified and assessed. In simplest terms, if TCPs are to be determined to be of importance to a community, they by definition must be known to and used by that community.

Ideally, ethnographic interviews to identify potential TCPs are intensive, focused conversations about particular places and associated cultural and historical contexts which are then used to evaluate the importance of those places. Interviews were conducted by Albion both off-site, and whenever possible, within or near the APE. The aim was to identify potential resources “on the ground,” map and otherwise describe the resource, determine the history of use of the property, and understand the significance of the resource to the present day community. The quality of an evaluation is directly related to the quantity and specificity of the ethnographic data, therefore every attempt was made to conduct field interviews in the APE vicinity

Interviews conducted with Tribal elders or other representatives are considered similar to other consultant services, and thus it was appropriate to provide compensation to the Tribal Interviewees for their time spent during the interviews. Such compensation followed the Advisory Council on Historic Preservation’s guidelines regarding these fees (ACHP April 26, 2002).

#### 3.3.2.3.1 Tribal Consultation

The initial phase of the TCP study was consultation with the tribal communities that have maintained a formal interest in the DeSabra Centerville Hydroelectric Project relicensing. As noted, project notification was sent to a broad range of tribes, groups, and individuals with a presumed interest in the traditional resources within the Project APE. Two tribes responded, with a stated interest in the Project. These were the Greenville Rancheria and the Mechoopda Indian Tribe of Chico Rancheria (Mechoopda Tribe). The lack of formal response, did not, however restrict investigators from gathering information from other knowledgeable respondents, not affiliated with either Tribe. The membership rolls of both the Mechoopda Tribe and Greenville Rancheria are predominantly descendants of Maidu (including Konkow Maidu) communities from the region.

Both the Mechoopda and Greenville tribes are recognized as Tribes by the Department of the Interior, and are accorded the various rights and benefits associated with that status. Other tribes in the vicinity, including the Mooretown, Berry Creek, and Enterprise Rancherias are also recognized as Tribes by the federal government. Other groups, including notably the KonKow Band of Maidu Indians, are not recognized as Tribes by the federal government.. In practice, the

TCP study did not limit consultation to members of recognized tribes, and in keeping with the guidelines in Bulletin 38, sought information from all credible sources.

#### 3.3.2.3.1.1 Consultation with the Mechoopda Tribe

In August 2006, consultation with the Mechoopda Tribe began with meetings with the tribal cultural resources representative, followed by a presentation of the TCP Study Plan to the Mechoopda Tribal Council. This resulted in ongoing discussions of potential respondents, and ancillary issues such as data confidentiality, and ownership and rights to information. As mentioned above, an agreement designed to protect the confidentiality and ultimate control of new ethnographic information from Mechoopda Tribe respondents was executed by the Tribe, Albion, and PG&E in August 2007, after approximately one year of discussion, negotiation, and revision.

The Mechoopda Tribe provided assistance in the identification of potential respondents. The Tribe's cultural resource specialist developed a list of interested tribal members, and made initial introductions to these individuals in September of 2007. Albion's Principal Investigator then contacted these individuals to arrange interviews. Ultimately three interviews were conducted with Mechoopda respondents, one off-site and two within the Project vicinity. All provided substantial information about the groups interests in and use (historically and present-day) of places and resources in the Project vicinity. It is not anticipated that additional interviews would contribute substantially to the findings for the Project APE, even though such interviews might provide supplemental information on the occupation and use of the lower portion of the Project vicinity.

#### 3.3.2.3.1.2 Consultation with the Greenville Rancheria

Consultation with the Greenville Rancheria was less formal, consisting of two brief meetings with the Tribe's staff in charge of cultural resource matters. The first meeting resulted in a verbal agreement to provide copies of information gathered from Greenville tribal respondents to the Greenville Tribe (based on the willingness of the respondent), and a list of potential respondents.

Potential respondents provided by the Greenville included one tribal member, a noted basketry material specialist, a non-aligned Maidu individual, and members of the KonKow Band of Maidu. Of these, only the non-aligned Maidu respondent provided specific information about the Project vicinity, while the others were only able to provide general, non-specific information. Albion conducted one off-site and two on-site interviews with this respondent, with substantial results.

#### 3.3.2.3.1.3 Other Potential Respondents

Consultation with the Berry Creek, Enterprise and Mooretown Rancherias, and the KonKow Band began in May and June 2007. Of these, only the representative of the KonKow Band was interviewed, without substantial or significant results. Potential respondents from other groups were never identified despite attempts by the investigators.

#### 3.3.2.3.1.4 A Note on Regional Knowledge About the Project APE and Vicinity

The project APE and the Project vicinity (i.e., the Butte Creek drainage above, below and adjacent to the Project APE) is very well known to local residents, be they Native American, or Euroamerican. The Butte Creek drainage has been prospected, mined, ranched, fished, and generally settled from the time of the Gold Rush and the founding Euroamerican settling of the northern Sierra Nevada. All respondents in this TCP study had some knowledge of the area, had visited the drainage, or had relatives who had worked on or around the Project itself. This same level of knowledge was reflected in conversations with virtually every resident of the area, with whom the investigators had contact. In short, what might seem to be a remote region of California, along a relatively small tributary drainage, is in fact a very well known region. As one tribal representative, remarked, in the course of identifying potential respondents, “there are a lot of people who know every rock and twist and turn in that canyon”.

#### 3.3.2.4 Results to Date.

Archival research, review of records, and primary ethnographic research revealed that the Project APE and its general vicinity was occupied by ancestral Maidu families until at least the middle of the Twentieth century as described below. The area was also used to obtain traditionally important resources and remains a part of the Maidu communities’ concept of traditional homeland. These findings, notwithstanding, the study did not reveal resources that meet the criteria of a potentially NRHP eligible or eligible NRHP Traditional Cultural Property.

##### 3.3.2.4.1 Ethnographic Period Occupation

Pioneer ethnographers working with elderly respondents in the early twentieth century provide the most reliable recorded information on the geographic distribution of settlements in the Project vicinity. C. Hart Merriam, A. L. Kroeber, and later, F. A. Riddell, worked diligently to understand pre-contact Maidu ethnogeography. Three village locations appear to be located within or adjacent to the Project APE. The discussion above addresses the difficulty of attributing geographic specificity to any such named location: the original recorders may not have been able or inclined to determine exact locations, and these early respondents may have been referring to more general names for tribelet areas of occupation, rather than any specific location. Accepting these vagaries, it appears that three villages are known for the Project vicinity:

- *Nem’sa-wa*, located in the vicinity of present day Helltown to the northeast of Centerville;
- *Nemsewi*, located in the vicinity of Centerville; and
- *Nim-wewi*, located in the vicinity of DeSabra.

Each of these locations (or areas) is attributed to the Nimshew tribelet of Maidu.

In addition, a village, *Yum-mut-to*, was said to be located downstream from the Project APE, on Butte Creek. This village was ascribed to the Mechoopda tribelet, presently and historically associated the Chico vicinity.

It is not known if any of these village locations correspond to archaeologically recorded resources in the Project APE. Archaeological evidence for these recent period settlements may be mingled with older deposits. It is also possible that evidence of these village settlements has been disturbed or destroyed by the extensive development of the Butte Creek drainage, (e.g., placer mining, hydroelectric development). None of the study respondents was able to provide information on the location of these villages, with the exception of more recent Maidu family residences in the Helltown area. While these locales, and possible archaeological correlates are ethnographically and historically important, they do not constitute eligible or potentially eligible NRHP Traditional Cultural Properties, in large part because they cannot be positively identified as specific places on the landscape, and do not, as such, occupy a discrete place in the traditional beliefs or practices of the present day Maidu communities.

#### 3.3.2.4.2 Recent Period Occupation

Maidu descendents maintained residence in the Project vicinity well into the middle of the twentieth century. One Mechoopda respondent provided unequivocal information on one family (of Nimshew ancestry) that lived in the Helltown area, to the northeast of Centerville. This respondent remembered that “Aunt Emma [Cooper] lived up in Helltown” presumably with family members, until she was forced by age and infirmity to move to Chico. The respondent was not able to identify the place of the residence(s) other than to point out Helltown Road as the probable location. Based on the respondent’s age, and memory it is likely that Emma Cooper moved to Chico in the late 1950s or early 1960s. The Cooper family is prominent in the census records and other data for the Maidu communities in the region.

Another respondent provided much more general information on the area, indicating that in addition to the Cooper family, members of the Clark and Josephson families also resided in, or possibly just frequented the Butte Creek drainage in recent (twentieth century) times. These families are usually considered members of the Konkow group, with primary residences to the south on the Feather River drainage in the vicinity of Yankee Hill.

#### 3.3.2.4.3 Occasional Use of the Project Vicinity

The project vicinity has been used on an occasional basis in the recent past for fishing. One Mechoopda respondent described family fishing outings, which very much resemble traditional Maidu fishing practices. This respondent described occasional seasonal trips to Butte Creek that lasted for a few days up to a month, to collect a supply of fish from salmonid spawning runs (salmon and steelhead). One such camp, visited in the late 1950s and early 1960s was located in Centerville, along the southeast bank of Butte Creek, just upstream from the present bridge on Centerville Road. The respondent remembered both modern style fishing, and securing fish using traditional methods (e.g., spearing or capturing salmon by hand). The respondent also remembered that the families periodically transported the catch to a relative in Chico for processing. This respondent emphasized the point that the families believed they had the right to



procure subsistence quantities of fish based both on ancestral traditions, and legal authority in the form of existing treaties. The respondent did not remember when these seasonal fishing events ceased, although based on the respondents age and memory, it is likely they did not continue as large, lengthy family events after the late 1950s. This is not to say that the importance of fish and fishing for the present day Maidu has in any way diminished.

Two Mechoopda respondents indicated a strong interest in the condition of the salmonid fishery downstream from the Project APE. Each ascribed what they believed to be an unhealthy fishery to the effects of low water flows, encroachment of riparian plants on the streambed, and the accumulation of debris and silt resulting from these low flows. One respondent described the importance of specific fish holding holes along lower Butte Creek, and the recent reduction in fish populations in these locales. This respondent is actively attempting to establish (or reestablish) what he believes are treaty based fishing rights to lower Butte Creek, Chico Creek, and the Sacramento River, in the name of the Mechoopda Maidu. This respondent cited the importance of the fishery from the fork of Butte and Little Butte Creeks (well downstream of the Project APE) upstream to Centerville. Additionally, two Mechoopda respondents indicated that access to fishing sites they had visited in the past is now denied, due to private development along Butte Creek, downstream from the Project APE, coupled with vigilant enforcement of property boundaries by local residents.

Traditional and modern fishing along Butte Creek, at the downstream end of the Project APE, and especially along the lower reaches of Butte Creek are clearly important to some members of the present day Maidu. The site of recurrent traditional fishing events such as those described above, might be considered a potential Traditional Cultural Property, however these events no longer occur, and have not occurred for several decades. It is possible that with the legal establishment or affirmation of treaty based fishing rights, such traditional practices may themselves maybe reestablished. If this occurs, and fishing were to occur at traditionally used sites, and it was established that the hiatus in traditional fishing was the result of outside, discriminatory forces, the sites might be considered potential Traditional Cultural Properties. However, at present, the time since the last traditional fishing events, and the general paucity of data about the events and their locations (with the exception of the Centerville site), preclude consideration as TCPs.

#### 3.3.2.4.4 Other Traditional Resources in the Project Vicinity and APE

All study respondents visiting the Project vicinity remarked on the presence, even abundance, of traditionally important plant resources, both plants important for basketry and for traditional subsistence. These included acorn bearing oaks (Valley or Water oak, *Quercus lobata*, Interior Live Oak, *Q. wislizeni*, Blue oak, *Q. douglasi*), and, California Black Oak, *Q. kelloggii*), and California Buckeye (*Aesculus californica*), both of which provided the staple base for the traditional Maidu diet, and which respondents remarked are still gathered, process, and enjoyed.

Traditional basketry plants noted in the project vicinity included willows (*Salix spp.*), maidenhair fern (*Adiantum jordanii*), Redbud (*Cercis occidentalis*), and California Black Oak (*Q. kelloggii*). Parts of these plants, including stems, roots, and peeled bark, have multiple uses in the striking traditional basketry of the Maidu. Respondents also referred to the presence of “white

root” (almost certainly *Carex barbarae*) in the sandy stream banks along the lower stretches of Butte Creek, well downstream from the Project APE. Respondents indicated that these “sedge beds” were tended to produce long, straight rhizomes from which uniform fibrous bands could be removed for coilwork basketry. None of these tended sedge beds were observed, and information was not obtained on whether they are currently maintained in the traditional manner.

There can be little doubt that Maidu occupants of the Project vicinity used these plant resources in the past. It is also likely that present day Maidu may occasionally collect these materials from the Butte Creek drainage. The study investigators long experience with accomplished basket makers in the Sierra Nevada indicates that traditional practitioners tend plants in specific locales, so that the plant itself provides the proper material consistently year after year or season after season. Collectors may also take the opportunity to gather materials whenever or wherever they are found. The latter might best be termed occasional and opportunistic gathering, and this is likely the kind of use the Butte Creek drainage experiences, rather than the sustained use seen on parallel drainages or highway corridors (e.g., the documented sustained use areas on Highways 32 to the north and 70 to the south of the Project vicinity). In the absence of sustained traditional tending and gathering at identified sites, no such gathering sites can be considered potential or eligible Traditional Cultural Properties.

### 3.3.2.5 National Register of Historic Places Evaluations

Evaluation of TCPs requires the application of the standard significance criteria for inclusion on the National Register of Historic Places, as well as the specific evaluation criteria applied to TCPs, as specified in NPS Bulletin 38 (National Park Service 1990). Study Plan 6.3.8-2 called for only informal recommendations of National Register of Historic Places eligibility of potential TCPs identified within the Project APE. An informal recommendation of eligibility is a professional observation made by the ethnographer based on information provided by the Tribal Consultants, and an understanding of the level of integrity for any identified locations, that indicate the potential for such locations to meet the criteria for listing on the NRHP. These informal recommendations would be used to develop appropriate protection and/or management measures for identified Project-related impacts.

### 3.3.2.6 Summary of Findings

While many people possess regional and geographically specific knowledge about the Project APE and vicinity, this has not translated into specific information about ongoing traditional uses of places in the Project APE, that is, places that could be Traditional Cultural Properties. For example, Native American respondents know of past Maidu residents in the vicinity, can point to plants along the Creek that are valuable for food, medicine, or art, or can even identify archaeological resources. Non-Maidu area residents, who may have mining claims on Butte Creek, or who may have fished for decades in the Creek’s well-known salmon holes, certainly have an intimate familiarity with the drainage. This is certainly valuable information and has a part in the general evaluation of the history of the Project APE, the evaluation of historic properties, or even the ongoing relationship between the Project and local residents and resource users, but has not resulted in the specific information needed to identify and evaluate Traditional Cultural Properties. Should additional information regarding potential Traditional Cultural

Properties within the APE be identified in the future, the Licensee will consider this information in consultation with participating Tribes, the SHPO, and the USFS and/or BLM as appropriate

While no properties have been identified within the Project APE that meet the definition of a Traditional Cultural Property, the study has resulted in the following pertinent findings:

- The Project vicinity, and in all likelihood the Project APE was occupied in pre-contact and early post contact times by families in the Nimshew tribelet of Maidu.
- Members of the Nimshew tribelet and other Maidu occupied the Project vicinity and possibly the Project APE as recently as the late 1950s.
- The Project APE was the site of episodic traditionally oriented resource procurement, particularly fishing, as recently as the 1960s, and possibly later.
- The Project vicinity and APE contain traditionally important plant resources that were gathered from the Project APE in the past, and are identical to plant resources that are still gathered in the region by Maidu artisans and traditionalists.
- The present-day Maidu communities are interested in maintaining (or reestablishing) access to important traditional resources in the Project vicinity, particularly seasonally present salmonids.

### **3.3.3 Historic Hydroelectric System Features (Study 6.3.8-3)**

According to Section 106 of the NHPA and its implementing regulations, reasonable measures must be taken to identify and document historic properties within the Project APE including historic hydroelectric system features.

#### **3.3.3.1 Archival Research.**

To augment the archival data collected during preparation of the PAD, Æ performed research at the same repositories as those contacted or visited for the Archaeological and Historic-Era Properties, as described in Section 3.1 above. In addition, Æ also consulted the Stirling City Historical Society. The objective of the additional archival research was to identify historical events and persons associated with the development of the Project system; obtain additional information on the construction of or modifications to Project features; and better understand the relationships of various features to the overall development of the DeSabla-Centerville system. Æ obtained reference materials, files, maps, and photographs from the various repositories, which were used in concert with prior NRHP evaluations of Project features to conduct the system evaluation. Æ also interviewed local historians and PG&E's staff to gather specific information about the history and operation of individual Project features. All of the information amassed during the PAD and supplemental research was used to develop the historic context of the system, as detailed in Section 2.3 above.

PG&E's records search and archival research showed that a PAR Environmental completed an inventory and evaluation of portions of the DeSabra-Centerville system (Maniery et al. 1985). The Centerville Powerhouse was judged to be individually eligible for inclusion in the National Register. A Centerville historic district was also proposed, consisting of the powerhouse, Lower Centerville Canal, and associated ditch tenders' camps. Two archaeological sites also were considered NRHP-eligible: the DeSabra Powerhouse Site (CA-BUT-868-H) and the Butte Creek Canal Camp 2 (CA-BUT-871-H). Additionally, a section of the Hendricks Canal that was abandoned after the Hendricks Tunnel was completed in 1953 was also considered eligible (Maniery et al. 1985: 5-1, 5-2). In 1986 the California SHPO concurred that the Centerville Powerhouse and associated penstocks were eligible for the NRHP.

In 1992 PG&E planned to replace the original Centerville Powerhouse. Because this replacement would adversely affect the National Register property, PAR recommended documentation to Historic American Engineering Record (HAER) standards. The subsequent report (Maniery 1993) documented the Francis Turbine Generation Unit of the powerhouse. Fifteen years later, the Centerville Powerhouse is still in operation.

While not included within the Centerville District evaluation, several components of the Project were also evaluated by Maniery et al. (1985), who recommended the DeSabra Powerhouse (CA-BUT-868-H), the Hendricks Canal (CA-BUT-869-H), the Centerville Powerhouse (CA-SHA-870-H), and the Lower Centerville Canal (CA-BUT-876-H) as eligible. Maniery et al. evaluated the Butte Creek Canal (CA-BUT-874-H) and the Toadtown Canal (CA-BUT-875-H) as ineligible, and did not evaluate the other Project features.

Details regarding the criteria for districts, Maniery et al.'s (1985) evaluation, and the current evaluation of the DeSabra-Centerville Hydroelectric Project are provided below.

#### 3.3.3.2 Fieldwork.

An architectural historian who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural and Engineering Documentation conducted field inspections of the Project Area between August 21, 2006, and October 25, 2006.

During the field inventory Æ inspected all Project-related canals, dams, powerhouses, and associated features. Only those features 45 years of age or older were documented and evaluated for the current study. All features were recorded or re-recorded to current NPS standards on California DPR Forms (523 series). Individual elements of the hydroelectric system were photographed in color format, and Project features were located using a Trimble Geo Explorer GEO XH GPS receiver as weather and terrain allowed. The features were compared to historic construction plans and photographs, when available, to help ascertain integrity and, in part, define the relationships between buildings, other Project features, and the APE. The current condition and physical appearance of the features, as well as any evident impacts, were recorded, and maintenance and/or operation activities with the potential to adversely affect NRHP-eligible features were identified.

### 3.3.3.3 Results and National Register of Historic Places Evaluations.

Previous research (discussed above) identified 14 Project features as potentially significant. Seven of these were previously recorded and evaluated by Public Anthropological Research (PAR; Maniery et al. 1985). During the current study, all previously unevaluated features were evaluated for eligibility to the NRHP. In addition, some features previously evaluated as non-hydroelectric resources were re-evaluated within the context of hydroelectric development. For example, mining ditches evaluated for their role in the history and development of mining were reconsidered and evaluated for their role as DeSabra-Centerville water conveyance systems.

NRHP evaluations were carried out in three steps. First, AEC developed a historic context for the entire system (provided in Section 2.3.8 above). The age and historical associations of each feature in the APE were then identified within this context. Second, the integrity of all components was assessed. Finally, the four NRHP significance criteria described in Section 3.2.1 above were applied to each feature of the system as well as the system as a whole.

The basic workings of a hydroelectric generation system were described in *Hydroelectric Development in the United States, 1880–1940* (Hay 1991). Details regarding the principal elements of the DeSabra-Centerville system are described in Section 1.1 above and will not be repeated here. The historic context of these features is discussed in Section 2.3.8 above.

Several other property types are associated with the hydroelectric system, though they are not directly linked to power generation: construction camps and recreation facilities. Table 3.3.3.3-1 also lists associated features that are not part of the generation system (some of these are also discussed in Section 5.1 below as historic archaeological resources). Construction, maintenance, and work camps housed personnel during the initial development and subsequent operation of the system. Recreational camps developed over time as reservoirs and other elements of the system saw use for leisure activities. There are several cabins on SPI lands near the Dewey and Miners ditches. A ditch tender's camp was likely built in the vicinity of the ditches. However, archival research did not reveal the location of any Dewey/Miner ditch tenders' cabins or whether the cabins on SPI lands are associated with the system's ditch tender(s).

Cabins around Philbrook Reservoir are privately owned, and many or all are on lands leased from PG&E. However, documentation indicates that tents were used to house the construction crews for Philbrook Dam (Colby 2001:11) and that the cabins are not associated with PG&E or the hydroelectric system.

The DeSabra-Centerville Hydroelectric Project facilities evaluated herein include the DeSabra and Centerville powerhouses; DeSabra Dam and Forebay; Butte Creek, Hendricks, Toadtown, Lower Centerville, and Upper Centerville head dams and canals; and the Round Valley and Philbrook dams and reservoirs. The Toadtown Powerhouse and DeSabra Powerhouse, while part of the current system, are not evaluated because they were erected in 1986 and 1961 respectively, and have not reached the age threshold to qualify as a historic property. The DeSabra Powerhouse is 46 years old and will need to be evaluated when it turns 50 years of age in 2011. The National Register status of each element of the system is listed in Table 3.3.3.3-1.

**Table 3.3.3.3-1. DeSabra-Centerville Historic Project Features and/or Proposed Historic District Contributors.**

Site No. (CA-BUT-XXX) or Temp No.	Feature	Landowner	Components	Construct Date	Contributing Element of NRHP District	Individually Eligible	Individually Ineligible	Comments
869-H	Hendrick's Canal	SPI	Tunnels, gates, wasteways, flumes, culverts, L-walls, spillways, gauging stations	1871-1906	X	X		Recommended as eligible (PAR 1985) for a 12-mile section of the canal that was replaced by a tunnel and is no longer in use
870-H	Centerville Powerhouse	PG&E	Powerhouse, switchyard, penstocks	1899	X	X		PAR (1985) evaluated the site as eligible under Criteria A and B as part of the Centerville Powerhouse District (1985); SHPO concurred in 1986
874-H	Butte Creek Canal	PG&E, BLM, SPI, Private	tunnels, gates, wasteways, flumes, culverts, L-walls, spillways, gauging stations	1902	X	X		Originally built for mining purposes and recommended ineligible (PAR 1985) as a miner's ditch; as a hydro feature site is evaluated as individually eligible and a contributing element. Potential slide damage may have affected site integrity.
875-H	Toadtown Canal	PG&E, BLM, LNF, Private	L-walls, spillways, flumes, wasteways, gauging stations	1871-1903	X		X	Originally built for mining purposes, it was recommended ineligible (PAR 1985) as a miner's ditch; as a hydro feature site is evaluated as a contributing element.

**Table 3.3.3.3-1 (continued)**

Site No. (CA-BUT-XXX) or Temp No.	Feature	Landowner	Components	Construct Date	Contributing Element of NRHP District	Individually Eligible	Individually Ineligible	Comments
876-H	Lower Centerville Canal	PG&E, BLM, Private	Tunnels, gates, wasteways, flumes, culverts	1875-1907	X	X		Recommended individually eligible as part of the Centerville Powerhouse District (PAR 1985). Site is also a contributing element of the DeSabra-Centerville district.
891-H	Upper Centerville Canal	PG&E, BLM, Private	Canal, gate	1871	X		X	Not individually eligible because it wasn't a key component of the system.
None assigned	Toadtown Powerhouse	Private	Powerhouse,	1986			X	Less than 45 years old.
Pending	Butte Creek Diversion Dam	SPI	Dam	1916	X	X		Excellent representative of the Thin Arch Dam architectural type and method of construction.
Pending	Centerville Diversion Dam	PG&E	Dam	1906-1908	X		X	Though an integral part of the system, dam design and materials are not unique or representative.
Pending	Hendricks Diversion Dam	SPI	Dam, gates, fishwheel	Early 1900s	X		X	Previously evaluated as a wood crib dam rather than the concrete dam associated with the hydroelectric system
04-003074	Round Valley Reservoir	LNF	Reservoir, dam, spillway, gauging stations, and associated features	1877	X		X	Key component of the system but not individually distinctive or representative.

**Table 3.3.3.3-1 (continued)**

Site No. (CA-BUT-XXX) or Temp No.	Feature	Landowner	Components	Construct Date	Contributing Element of NRHP District	Individually Eligible	Individually Ineligible	Comments
04-003073	Philbrook Reservoir	PG&E, NFSL	Reservoir, dam, spillways, lake, and associated features	1926	X		X	Key component of the system but not individually distinctive or representative.
Included within CA-BUT-868-H (see below)	DeSabra Powerhouse	PG&E	Powerhouse, penstocks	1960s			X	Less than 45 years old. However, may become eligible for the NRHP over any new license term.
Pending	DeSabra Forebay and Dam	PG&E	Dam, reservoir, old and new intakes, spillway	1903	X		X	Key component of the system but not individually distinctive or representative.
868-H	Original DeSabra powerhouse site	PG&E	Foundations, pads, trash	1903			X	Buildings and associated archaeological deposits destroyed
871-H	Camp 2: BCC ditch tender's camp	PG&E	Foundations	1902	X	?		Potential for buried archaeological deposits; test excavations required to confirm archaeological data potentials
873-H	Hog Ranch camp, possibly LCC Camp 2	PG&E	Foundations, pads, trash	1930s-1940s	X	?		Potential for buried archaeological deposits; test excavations required to confirm archaeological data potentials
CA-BUT-3040-H	BCC Camp 3, a possible ditch tender's camp	PG&E	Garage, fruit trees, fence, rock lined depression	1920s			X	Buildings and associated debris removed, integrity lost



**Table 3.3.3.3-1 (continued)**

Site No. (CA-BUT-XXX) or Temp No.	Feature	Landowner	Components	Construct Date	Contributing Element of NRHP District	Individually Eligible	Individually Ineligible	Comments
04-003041	Hupp's Sawmill; possibly BCC Camp 2	Private	Trash	1864-1890		?		Unevaluated; further investigations required
04-003042	LCC Camp 3	Private	Rock wall remnant				X	Lacks integrity
CA-BUT-933-H	Dewey Ditch	Private	Ditch	1858		X		No longer part of DeSabra Centerville system
CA-BUT-3068-H	Philbrook Reservoir Lake Tender's Cabin Site	NFSL	Cabin, , other structural remains, trash	1926	X	?		Potential for buried archaeological deposits; test excavations required to confirm archaeological data potentials
CA-BUT-3070-H	PSEA Camp	PG&E	Cabins and other facilities	1920s	X	?		Potential for buried archaeological deposits; test excavations required to confirm archaeological data potentials
04-003071	Camp 1	PG&E	Original bunkhouse and superintendent's house	1900s	X		X	Structures removed or modified

? = Buried deposits may be present. Subsurface testing needed to determine individual eligibility.

For more than 100 years the DeSabra-Centerville Hydroelectric Project has generated power for communities in Butte County, throughout California, and beyond. The original system comprised two powerhouses, Centerville and DeSabra, and the canals and reservoirs that provided the water to power their equipment. In 1926, Philbrook Reservoir was added to the system. In 1933, three of the smaller original canals were taken out of commission. In 1961, the original DeSabra Powerhouse was demolished and a modern one built on the same site. In 1986 a third powerhouse, Toadtown, was constructed. No other major changes in the system have occurred.

### 3.3.3.3.1 DeSabra Centerville Hydroelectric Project: Significance as a District

The NRHP recognizes several categories of historically significant properties: buildings, structures, objects, sites, and districts. A district is the most appropriate category for the DeSabra-Centerville Hydroelectric System because the system is a distinguishable entity with a distinct character and coherence. As defined by the National Park Service:

A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical layout (NPS 1998: 5).

The DeSabra-Centerville system has a significant concentration of powerhouses, canals, reservoirs, camps, and other elements that have been linked in function for more than 100 years and have been directly associated with hydroelectric development since the early 1900s. The buildings, structures, sites, and objects that comprise the historic district are encompassed by but distinguishable from those surrounding it by their age and integrity. All the buildings, structures, and sites that contribute to the historic district date from the 1906-1960 era, are related to the hydroelectric developments of those years, and have reasonably good integrity. Other elements are associated with the system but excluded from the district based on age, integrity, or other aspects that do not include them. The district thus contains spatially discrete significant areas and features separated by others that have been judged to be insignificant.

A prior evaluation of the Centerville portion of the hydroelectric system also concluded that it represented a National Register-eligible district. Van Bueren (1985) concluded that the proposed Centerville Hydroelectric System District was eligible for the NRHP under multiple criteria because of its association with the development of hydroelectric technology in California; its association with individuals instrumental in the development of the technology in the Pacific West; and its potential to yield information important in history. The prior evaluation was limited in scope, focusing exclusively on the Centerville Powerhouse, Centerville Canal, and adjacent properties (including ditch tenders' camps). It did not consider other elements of the system outside that narrowly circumscribed area. The current study has expanded on that initial investigation and evaluation to encompass the entire DeSabra-Centerville system.

The DeSabra-Centerville Hydroelectric District as currently defined in this report qualifies for the NRHP under Criterion A as a hydroelectric system that has made a significant contribution to the development of hydroelectric power in the United States with a period of significance from 1906 to 1960. The Centerville Powerhouse and its associated features:

are the oldest working major hydroelectric power plant in northern California. Its significance in age alone is compounded by its being the first relatively high-head turbine installation on the Pacific Coast, the success of which encouraged further turbine installations throughout California (Van Bueren 1985: 28).

The system garnered national attention during the first decades of the twentieth century for specific accomplishments that contributed to the developing field of hydroelectricity: developing technologies suitable for the long fall of water typical of the Sierran terrain; synchronizing the operation of multiple, scattered generating plants; integrating small independent systems into a single operating system; and transmitting power over long distances. The DeSabra-Centerville system was “notable for the technical problems it presented and the group of young engineers who solved them” (Coleman 1952:150). For example, industry journals of the period reported that installation of the Francis turbine in the Centerville Powerhouse “deserves a remarkable place in the history of hydraulic turbine engineering, as never before has a Francis wheel been designed for the extremely high head of 550 feet” (quoted in Maniery 1993:3). When the DeSabra Powerhouse was placed in commission the “high head—the 1,531-foot fall of water—was in itself a step above previous records that called for the best of hydraulic engineering skill to ensure safe operation” (Coleman 1952:150).

The district qualifies under Criterion B for its association with several individuals who were instrumental in the development of the hydroelectric industry during its infancy. Eugene de Sabla was an enterprising entrepreneur who pioneered the conversion of water conveyance systems initially developed for mining into systems suitable for the generation of electric power. He was the first to conceive of the DeSabra-Centerville project and realized that the two systems that make up the project could be linked hydraulically. He was also instrumental in its financing and implementation. Frank G. Baum, James H. Wise, and Josiah P. Jollyman were engineers who designed the DeSabra and refurbished the Centerville powerhouses and solved numerous technical problems related to power generation and transmission in steep, remote, and inhospitable terrain. A Stanford University graduate, Baum solved problems regarding uniting in “synchronous operation the scattered generating plants of the partly developed system, problems of long-distance transmission and insulation, high voltage, and substation equipment” (Coleman 1952:151). Wise was a civil and hydraulic engineer. Jollyman “contributed much to the progressive interconnection of the P. G. and E. system of generating plants and transmission lines into a single integrated network” (Coleman 1952:152).

The district also meets the requirements of eligibility under Criterion C because it “embodies the distinctive characteristics of a type, period, and method of construction.” The DeSabra-Centerville system is an excellent example of the Western regional style of hydroelectric development characterized by “extremely high heads, remote powerhouse locations, and sophisticated point-to-point transmission” (Hay 1991:28). The Centerville Powerhouse also is architecturally significant as

a reasonably good example of the early California Industrial style with Greek Revival elements in its boxed cornice, tall and narrow windows capped with radiating arched brick lintels, and comparable arched brick door pediments (Van Bueren 1985: 29).

The system also constitutes “a significant and distinguishable entity whose components may lack individual distinction.” By 1933, the configuration of the system was set; although subsequent changes in construction materials and equipment made the system more efficient and required less maintenance, operators and tenders still maintained the system. No major changes were undertaken until 1961.

Finally, the district qualifies for the NRHP under Criterion D because certain archaeological properties within the district have the potential to yield information important to the history of the system, and about the people who built, operated, and maintained it. In particular, questions about the social, cultural, and economic relationships of the system’s builders and operators might be answered through analysis of archaeological remains. This information is not available from documentary or other sources. Sites potentially eligible under Criterion D include CA-BUT-871-H, CA-BUT--873-H, CA-BUT-3056, CA-BUT-3068-H, and CA-BUT-3070-H.

The DeSabra-Centerville Hydroelectric District is of both statewide and national significance. As discussed and documented in detail above, the system is a good representative of an important theme in California history. Key people associated with the DeSabra-Centerville system were important figures in the history of this part of the state and in the development of hydroelectric technology. Since California was the national leader in water power development during the first third of the twentieth century, understanding the history of the district can help in understanding the history of hydroelectric development as a national phenomenon.

#### 3.3.3.3.1.1 DeSabra Centerville Hydroelectric District Boundaries

The boundaries of the DeSabra Centerville Hydroelectric District include all individually eligible and contributing features of the historic district. This includes the Centerville Powerhouse, dams, reservoirs, forebays, and all significant elements of the conveyance system including canals, berms, tunnels, flumes, gates, spillways, cribbing, control and maintenance features, or any other feature that was associated with the operation of the system. Camp sites and access roads that contribute to the system should also be included.

#### 3.3.3.3.1.2 Integrity

Integrity is the ability of a property to convey its historical significance. To possess integrity, a property must retain the physical characteristics it had in the past so it can convey its associations with historic themes, persons, designs, or technology. Integrity consists of seven separate aspects: location, design, setting, materials, workmanship, feeling, and association (36 CFR 60.4). Setting and location refer to the physical placement of the property and its relation to surrounding natural and cultural features. A property retains integrity of location when it remains in the same location that it was in during its period(s) of significance or the place where the historic property was constructed and developed during its period of significance (NPS 1997:44-45).

Design refers to the form, planning, style, structure, and spatial patterning of a property, and reflects cultural, functional, technological, aesthetic, and stylistic concerns. If these are the same as during the period of significance, then the property has integrity (NPS 1997:44).

Materials and workmanship are the physical elements making up the property, as well as the skills of the crafters and the quality of work done. The presence or absence of original materials determines the authenticity of the resource, while the workmanship furnishes evidence of the technology and aesthetic principles in use. In archaeological sites and other properties significant for their information potential, the pattern of deposited materials is the critical issues. Features, artifacts, and relationships between them must remain sufficiently intact to yield the expected information.

Feeling is a property's expression of the aesthetic or historic sense of a past period of time. To have integrity of feeling, a site's physical characteristics must convey a sense of historical time and place consistent with the site's relevant themes. Association gauges the connection between a historic property and the events or persons for which it is significant. "A property retains association if it *is* the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer (NPS 1997:45).

To be eligible for the NRHP, a significant property must not be totally lacking in any one of the seven aspects of integrity. Thus, integrity is not an all or nothing question. Changes may have been made to a property, impairing one aspect of integrity, while other aspects may be fully retained. Integrity, then, is frequently a matter of degree. As Shoup (1998) points out:

While all of these seven integrity attributes are important, integrity of location, design, workmanship, and materials are especially crucial for a historic hydroelectric system. This is true because what is of particular interest in a hydroelectric complex are the technological aspects, the engineering and industrial techniques used to create and transmit electrical power. This is the central theme which makes hydroelectric complexes interesting and historically significant. Lack of integrity of location, materials, or basic design could make a historic hydroelectric system ineligible for the NRHP (Shoup 1998: 214).

Æ's analysis of the integrity of the DeSabra-Centerville Hydroelectric District shows that the integrity of the district is reasonably good, though nowhere near perfect. Each individual aspect of the district's integrity is discussed below.

#### 3.3.3.3.1.3 Location

With the exception of the original DeSabra Powerhouse, the key buildings, dams, reservoirs, canals, tunnels, penstocks, and other elements of the hydroelectric system are all in their original locations. The new DeSabra Powerhouse, erected in 1961, sits at the location of the original facility. Therefore the DeSabra-Centerville district retains good integrity of location.

#### 3.3.3.3.1.4 Design

The main design elements of the historic DeSabra-Centerville system are intact, with only a few modifications. The original system comprised two powerhouses, Centerville and DeSabra, and the canals and reservoirs that provided the water to power their equipment. In 1926, Philbrook Reservoir was added to the system. By 1933, when three of the smaller original canals were

taken out of commission, the form, plan, and spatial arrangement of the system had been finalized. In 1961 the original DeSabra Powerhouse was demolished, but a new facility was erected on the same site. No other changes in the overall design of the system occurred until 1986, when a third powerhouse, Toadtown, was constructed. The structure and style of the historic components also have not changed. Being only minimally impaired, therefore, the DeSabra-Centerville Hydroelectric System retains good integrity of design.

#### 3.3.3.3.1.5 Setting

The basic character of the region immediately surrounding the DeSabra-Centerville Hydroelectric District has remained much as it was during the early twentieth century. The mountainous northern Sierra Nevada and foothill region has seen some recreational and residential development, but the area remains largely forested and the topography, vegetation, road system, and areas of settlement remain much as they were during the period of significance. This is particularly true for the areas between the upper reservoirs (Philbrook and Round Valley) and the DeSabra Forebay. Since 1960 the area below DeSabra Forebay has seen scattered development of single-family residences on forest plots. Nonetheless, the integrity of setting is only minimally impaired and the district retains good integrity of setting.

#### 3.3.3.3.1.6 Materials

There have been more changes in the materials of the DeSabra-Centerville Hydroelectric District than in location, design, and setting. With the exception of the DeSabra Powerhouse, the main buildings and structures have not been rebuilt; however, essential components of the system have been maintained, repaired, and upgraded throughout the life of the system. Frequently, the work has used materials of similar function and appearance, although some upgrades have involved replacement of original fieldstone or wood crib walls with concrete (Round Valley Dam, Hendricks Diversion Dam). Additionally, intakes, drains, and spillways have been rebuilt (DeSabra and Philbrook dams), and canal walls have been lined with gunite or other materials in some areas to reduce leakage. Flow control and cleaning and maintenance structures also have been improved. In most instances these repairs and improvements occurred during the period of significance, and can be said to contribute to the function of this highly technical system. In some sense, these evolutionary changes reflect the development of hydroelectric technology and in and of themselves contribute to the significance of the system. In sum, the district presents a mixture of materials and fabric, some of which is new but much of which is old. Being moderately impaired, the integrity of materials of the DeSabra-Centerville Hydroelectric System can only be said to be fair.

#### 3.3.3.3.1.7 Workmanship

Like materials, workmanship is also a mixed case. Much physical evidence of the early craftsmen's labor, skill, and knowledge remains, particularly in the Centerville Powerhouse and the canal grades, dams, tunnels, penstocks, and other equipment that is still in service. Alternatively, the original DeSabra Powerhouse was replaced in 1961. Similarly, new tools and techniques have been used to maintain and repair the key elements of the DeSabra-Centerville Hydroelectric District over the years. For example, flow control and cleaning structures that

were formerly operated by hand now are automated. Being moderately impaired, therefore, the integrity of workmanship of the DeSabra-Centerville Hydroelectric System can only be said to be fair.

#### 3.3.3.3.1.8 Feeling and Association

Standing in the interior of the Centerville Powerhouse, or walking the canals, a visitor to the DeSabra-Centerville Hydroelectric District finds a strong feeling of connection to the early years of the system. There are direct and visible links between this property and the people and events that make it significant, so that the historical district does communicate a sense of what it was like during its period of significance. These aspects of integrity must therefore be ranked as excellent.

In sum, the overall integrity of the DeSabra-Centerville Hydroelectric District is good. Considering the importance of the system, the impairments in integrity cited above are not sufficient to diminish the strength of its associations beyond the point where the district can convey its historical significance. For this reason the district is judged eligible for the NRHP. Key features of the system are evaluated below both individually and as contributing elements of the district.

#### 3.3.3.3.2 Project Features

The following section provides evaluations of the individual DeSabra Centerville project features.

##### 3.3.3.3.2.1 Round Valley Dam and Reservoir (04-003074)

Round Valley Dam and Reservoir provide storage capacity needed to ensure that sufficient water is available to maintain power production. This feature system retains integrity of location, setting, feeling and association, though integrity of design, materials, and workmanship are minimally impaired as a result of renovations and repairs since the period of significance. Although associated with the important theme of hydroelectric development, the design of the dam and reservoir, and its materials and workmanship, are not sufficiently unusual or unique to qualify the property individually for the NRHP. Because it is a key component of the DeSabra-Centerville Hydroelectric System necessary for the effective function of the system, however, the dam and reservoir are considered contributing elements of the DeSabra-Centerville Hydroelectric District.

##### 3.3.3.3.2.2 DeSabra Dam and Forebay (State number pending)

DeSabra Dam and Forebay impound water from the northern canals, which then travels from the forebay into the powerhouse penstocks. This feature system retains excellent integrity of location, setting, feeling and association, though integrity of design, materials, and workmanship are minimally impaired as a result of renovations and repairs since the period of significance. Although associated with the important theme of hydroelectric development, the design of the dam and forebay, and its materials and workmanship, are not sufficiently unusual or unique to

qualify the property individually for the NRHP. Because it is a key component of the DeSabra-Centerville Hydroelectric System necessary for the effective function of the system, however, the dam and reservoir are considered contributing elements of the DeSabra-Centerville Hydroelectric District.

#### 3.3.3.3.2.3 Philbrook Dam and Reservoir (04-003073)

Philbrook Dam and Reservoir were added to the system in 1926 to provide additional storage capacity needed to ensure that sufficient water would be available to maintain power production. This feature system retains excellent integrity of location, setting, feeling and association, though integrity of design, materials, and workmanship are minimally impaired as a result of renovations and repairs since the period of significance. Although associated with the important theme of hydroelectric development, the design of the dam and forebay, and its materials and workmanship, are not recommended as sufficiently unusual or unique to qualify the property individually for the NRHP. Because it is a key component of the DeSabra-Centerville Hydroelectric System necessary for the effective function of the system, however, the dam and reservoir are recommended as contributing elements of the DeSabra-Centerville Hydroelectric District.

#### 3.3.3.3.2.4 Centerville Diversion Dam (State number pending)

The Centerville Diversion Dam is an integral part of the system that conveys water to the powerhouses. It retains excellent integrity of location, design, setting, materials, workmanship, feeling, and association. The design of the dam and its materials and workmanship are not recommended as sufficiently unusual or unique to qualify the property individually for the NRHP. Because it is a key component of the DeSabra-Centerville Hydroelectric System necessary for the effective function of the system, however, the dam is recommended as a contributing element of the DeSabra-Centerville Hydroelectric District.

#### 3.3.3.3.2.5 Butte Creek Diversion Dam (State number pending)

The Butte Creek Diversion Dam diverts water into the Butte Creek Canal, and is thus an integral part of the system that conveys water to the powerhouses. Located on a bedrock foundation within a narrow canyon, the concrete structure is a key component of the DeSabra-Centerville Hydroelectric System necessary for the effective function of the system, and is considered a contributing element of the DeSabra-Centerville Hydroelectric District. The dam retains excellent integrity of location, design, setting, materials, workmanship, feeling, and association, and embodies the distinctive curve, proportion, and other characteristics of the thin arch dam, a distinctive architectural type and method of construction. Because of its thematic association and individual characteristics, the dam also qualifies individually for the National Register under Criteria A and C.

#### 3.3.3.3.2.6 Hendricks Diversion Dam (State number pending)

The Hendricks Diversion Dam diverts water from the West Branch of the Feather River into the Hendricks Canal. In 1990 G. Maniery evaluated the significance of this structure in anticipation



of repairs proposed by PG&E. He found that the dam had been repeatedly repaired and renovated over its lifetime. In his judgment, the dam did not meet the NRHP significance criteria, lacked integrity, and was not individually eligible for the NRHP (G. Maniery 1990:18-19). Æ concurs with this evaluation. However, Maniery did not define a period of significance for the dam and did not consider the dam in the context of the larger hydroelectric system. Within the larger framework and period of significance defined currently for the DeSabra-Centerville system, the dam is associated with the important theme of hydroelectric development. It retains integrity of location, setting, feeling and association. Most repairs and modifications of the dam occurred within the period of significance and can thus be considered part of the on-going maintenance of this complex technical system, embodying the evolution of technology that is a key element of the system's associative value. Modifications from the 1970s through the 1990s have diminished the integrity of design, materials, and workmanship, but nonetheless, the dam still conveys a sense of connection with the hydroelectric system and the historical past, and is therefore recommended as a contributing element of the DeSabra-Centerville Hydroelectric District.

#### 3.3.3.3.2.7 Butte Creek Canal (CA-BUT-874-H, 04-000874)

Maniery et al. (1985) evaluated the Butte Creek Canal during their assessment of proposed improvements to the DeSabra-Centerville system. They opined that the canal was "85% intact" and retained integrity of location, design, setting, and workmanship (Maniery et al. 1985: Table 4-1). Nonetheless, they concluded that the canal is ineligible for the NRHP (Maniery et al. 1985:5-1).

Æ did not concur with this evaluation. Maniery did not define a period of significance for the canal and appears to be considering its integrity only within the earlier mining context. Within the larger context of hydroelectric system development and period of significance defined currently for the DeSabra-Centerville system, the canal is associated with the important theme of hydroelectric development. Most repairs and modifications of the canal occurred within the period of significance and can be considered part of the on-going development and maintenance of this complex technical system, themselves embodying the historical evolution of the technology. Æ further finds that the canal retains integrity of feeling and association; a walk along the canal evokes a sense of time and place and communicates a strong feeling of association with the early years of the hydroelectric system. For these reasons the Butte Creek Canal is considered eligible for the NRHP under Criterion A both individually and as a contributing element of the DeSabra-Centerville Hydroelectric District.

#### 3.3.3.3.2.8 Hendricks Canal (CA-BUT-869-H; 04-000869)

Maniery et al. (1985) evaluated the Hendricks Canal during their assessment of proposed improvements to the DeSabra-Centerville system. They concluded that the canal "is eligible for inclusion to the [National] Register under criterion (a)" (Maniery et al. 1985:5-2). They further opined that the canal was "85% intact" and retained integrity of location, design, setting, and workmanship despite modifications in the years since 1905 (Maniery et al. 1985:4-17; Table 4-1).

Æ concurred with the prior evaluation and further found that the canal also retains integrity of feeling and association; a walk along the canal evokes a sense of time and place and communicates a strong feeling of association with the early years of the hydroelectric system. For these reasons the Hendricks Canal is recommended as eligible for the NRHP both individually and as a contributing element of the DeSabra-Centerville Hydroelectric District.

#### 3.3.3.3.2.9 Toadtown Canal (CA-BUT-875-H; 04-000875)

Maniery et al. (1985) evaluated the Toadtown Canal during their assessment of proposed improvements to the DeSabra-Centerville system. They opined that the canal was “85% intact” and retained integrity of location and setting (Maniery et al. 1985: Table 4-1). Nonetheless, they concluded that the canal was ineligible for the NRHP because it lacked distinctive physical or technological features, particularly in comparison with other canals in the system (Maniery et al. 1985:4-27).

Æ concurred that the Toadtown Canal is not individually eligible for the NRHP. Despite its lack of individual distinction, however, it has played a key role in the hydroelectric system for 100 years, linking the individually eligible Butte Creek and Hendricks canals. Because it is a key component of the system necessary for its effective function, the canal is recommended as a contributing element of the DeSabra-Centerville Hydroelectric District.

#### 3.3.3.3.2.10 Lower Centerville Canal (CA-BUT-876-H; 04-000876)

Maniery et al. (1985) evaluated the Lower Centerville Canal during their assessment of proposed improvements to the DeSabra-Centerville system and concluded that it is “eligible for inclusion on the National Register of Historic Places under 36 CFR 60.4 (a) as part of the Centerville Hydroelectric System District” (Maniery et al. 1985:4-28). They found that the canal was “90% intact” and retained integrity of location, design, setting, workmanship, and association (Maniery et al. 1985: Table 4-1).

Æ concurred with the prior evaluation and further found that the canal also retains of materials and feeling; although the canal has been regularly repaired and renovated over time, much of its historic fabric remains intact and well preserved. Additionally, a walk along the canal evokes a sense of time and place and communicates a strong feeling of association with the early years of the hydroelectric system. For these reasons the Lower Centerville Canal is recommended as eligible for the NRHP both individually and as a contributing element of the DeSabra-Centerville Hydroelectric District.

#### 3.3.3.3.2.11 Upper Centerville Canal (CA-BUT-891-H; 04-000891)

Maniery et al. (1985) did not evaluate the Upper Centerville Canal during their assessment of proposed improvements to the DeSabra-Centerville system. However, documentation by California State University, Chico, indicates that “the canal does not appear to be greatly modified from its original construction” (Kallenbach and Huberland 2001). It was not one of the main canals in the hydroelectric system, but provided extra water when needed and was thus important to the consistent production of power at Centerville. The Upper Centerville Canal has

retained integrity of location, design, setting, materials, workmanship, feeling and association. Because it was not a key component of the system, the Upper Centerville Canal is not recommended as individually eligible for the NRHP. However, because of its function as a component of the system, it is recommended a contributing element of the DeSabra-Centerville Hydroelectric System Historic District.

#### 3.3.3.3.2.12 Centerville Powerhouse (CA-BUT-870-H; 04-000870)

As part of a previous evaluation, the Centerville Powerhouse and its penstocks were determined eligible for the NRHP under Criteria A and B (Maniery et al. 1985; SHPO 1986). Because the company planned to demolish the structure, HAER documentation was completed for the Francis Turbine (Maniery 1993). Because it is an integral part of the system, it also contributes to the significance of the DeSabra-Centerville Hydroelectric System Historic District.

#### 3.3.3.3.2.13 DeSabra Powerhouse (CA-BUT-868-H; 04-00868)

Demolition of the original DeSabra Powerhouse built in 1903 marked the end of the manually-operated period of the hydroelectric system. The current DeSabra Powerhouse was placed in commission in the early 1960s, after the end of the system's period of significance. The current DeSabra Powerhouse does not meet the requirements for individual eligibility for the NRHP, and is not recommended as a contributing element of the DeSabra-Centerville Hydroelectric District.

#### 3.3.3.3.2.14 Toadtown Powerhouse (no State number)

The Toadtown Powerhouse, built in 1986, is only 21 years of age and does not meet the age criterion for historic properties. It also does not exhibit any special characteristics that make it eligible to the NRHP on an individual basis or as a contributing element.

#### 3.3.3.3.2.15 Maintenance and Construction Camps

Camp 1 (04-003071)) was originally the construction camp for DeSabra Powerhouse. It was later used as the maintenance camp for the system, which is its current function. Only two buildings associated with the camp are still extant. One building likely served as the camp's bunkhouse and is now the main office for the PG&E workers; it has a small apple orchard in front of it and is adjacent to the west side of the Skyway. The superintendent's house is located across the road, east of the Skyway.

Camp 1 is considered a contributing element of the historic hydroelectric district because of its important association with the district and the people who built and operated it. Because most of the original structures or other features have been removed, Camp 1 does not qualify for listing on the NRHP on an individual basis. Similarly, neither the bunkhouse nor the superintendent's house qualifies individually for the National Register. Neither of these buildings is architecturally distinct and both buildings have notable modifications that have altered their appearance. As a result, they no longer reflect their period of significance or the distinctive characteristics or this kind of company architecture.

The powerhouse and tenders' camps no longer have any standing buildings, with the exception of the Philbrook Lake tender's residence (CA-BUT-3068-H) and Butte Creek Canal Camp 3,(CA-BUT-3040-H) although some landscape elements survive. Because these camps may contain intact archaeological deposits, they may be significant under Criteria A and D because of their historical associations and archaeological data potentials. In particular, the Philbrook Lake Tender's Camp (CA-BUT-3068-H) and Butte Creek Canal Camp 2 (CA-BUT-871-H) are likely to yield important information about the system and the people who built, operated, and maintained it. The PSEA Camp (CA-BUT-3070-H), while not a construction camp, was nonetheless a PG&E camp associated with the hydroelectric system. It is evaluated as eligible to the NRHP as a contributing element, and potentially as an individual property. Additional discussions of Project camps and an evaluation of the PSEA Camp are provided in Section 5.1 below. If these camps contain intact archaeological deposits they may also provide important historical information not available in the documentary record. They remain to be evaluated individually for their significance.

#### 3.3.3.4 Summary

The historic DeSabra Centerville Hydroelectric Project features assessment indicates that the DeSabra-Centerville Hydroelectric System has been recommended as eligible for the NRHP as a historic district that has contributed to the broad patterns of state and national history. It is significant under all four NRHP criteria because of its association with the development of hydroelectric technology in California; its association with individuals instrumental in the development of the technology in the Pacific West; its distinctive characteristics that exemplify the Western regional style of hydroelectric development; its and its potential to yield information important in history. It is also a significant and distinguishable entity as a system of interconnected dams, reservoirs, canals and powerhouses. Several elements of the system have also been recommended as individually for the NRHP.

## SECTION 4.0

# General Treatment Measures

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This section describes the *general* management measures that Pacific Gas and Electric Company proposes to undertake as conditions of the new license for the purpose of protecting cultural resources or mitigating impacts that would result from, continued Project O&M, or for the purpose of enhancing resources that would be affected by continued Project O&M. Proposed general management measures are based on the premise that preservation of historic properties in place and the avoidance of damage to those properties are the most desirable objectives of management. Additionally, the measures are designed to address both the short- and long-term impacts that may threaten each site. PG&E is proposing a variety of general management measures whose application will be dependent on the nature of the sites and commensurate with the nature and extent of the anticipated effects.

The management of historic properties within the APE primarily involves maintaining control over human activities either by *directing activities away from sensitive areas* and focusing them on other locations, or by *using restrictive measures* to deter damaging activities and inappropriate behavior. Controls may include restricting recreation and vehicle access and parking and controlling areas accessible to livestock grazing. Public and employee education, barricading and monitoring sensitive locations, and prosecuting violators also serve as deterrents. As a result, a variety of measures may be applied to minimize Project effects or provide treatment to eliminate Project effects. Such measures are described below.

### **4.1 Avoidance of Impacts to Historic Properties**

PG&E will appropriately manage historic properties with avoidance being the preferred action during routine operations and maintenance activities. Many of the resources are located near facilities that may at times require maintenance resulting in ground disturbance; thus, PG&E will institute operating procedures to ensure that cultural resources are taken into consideration during project planning and design and reduce the possibility of inadvertent damage to these properties. This can only be accomplished by apprising the DeSabla-Centerville Generation Supervisor and other key operating personnel of site locations to avoid during Project activities and by providing the locations to management personnel on a need-to-know basis.

### **4.2 Public Education and Employee Training**

Information can deter negative impacts by informing land users (both PG&E employees and the public) that certain kinds of activities are prohibited, or that the conduct of certain activities is inappropriate at specific locations. This assumes that land users, when provided appropriate information, will act responsibly and conform to proscriptions conveyed by the information, resulting in the protection and avoidance of damage to historic properties. The distribution of information is the least expensive measure in the short-term, although the long-term, cumulative costs for continuous distribution of information may be substantial. Information does not provide insurmountable physical barriers, but it is a prerequisite for other treatment options, such

as the involvement of law enforcement. By informing land users of the legal prohibitions and restrictions, PG&E will establish a context for effective prosecution.

In order to provide the public and PG&E employees with a better understanding of the importance placed on the Project region by Native Americans, the need for protection of both cultural and natural resources, and measures taken to provide protection, PG&E will implement programs to promote the following messages:

- The Native American people, the cultural history, and their relationship with the land;
- Importance of cultural resources and the efforts to protect them; and
- Enjoy the land, the resources, and leave them untouched for others to enjoy.

#### **4.2.1 Public Education**

PG&E will work closely with the USFS to develop a public education program that informs the public about use restrictions at Round Valley and Philbrook reservoirs, and encourages boaters, hikers, campers, and other users to leave the area the way they found it. Without emphasizing public awareness of cultural resources or highlighting their presence in the reservoir areas, the education program will still aid in protecting archaeological and historical sites by encouraging the public to leave the area as they found it. The educational program will be reviewed by representatives of the USFS, BLM, SHPO, and, as appropriate, Native American Tribes prior to its implementation.

PG&E will install new informational signs at designated locations to inform the recreating public about the resources of the area and use restrictions for resource protection. PG&E will invite a designated representative from the Tribes, USFS and BLM as appropriate, to work with PG&E during the development of interpretive information.

The methods for delivering the information to target audiences will be determined by PG&E in consultation with the USFS and the Greenville Rancheria and Mechoopda Indian Tribe of the Chico Rancheria (the Tribes). Delivery methods may include, but may not be limited to brochures, signs, and other media. Periodic updates to information may be necessary due to changed conditions or changes in laws and regulations.

#### **4.2.2 Employee Training**

Beginning the first full calendar year after license issuance, Licensee shall perform employee awareness training annually. Licensee shall invite USFS and BLM staff to participate in the training. The goal of the training shall be to familiarize Licensee's operations and maintenance (O&M) staff with culturally sensitive areas that are known to occur within the FERC Project Boundary on federal lands, procedures for reporting to the USFS and/or BLM, and USFS/BLM orders that pertain to federal lands in the vicinity of the Project. The Licensee shall direct its O&M staff to avoid disturbance to these sensitive areas, and to advise all Licensee contractors to avoid these sensitive areas. If the Licensee determines that disturbance of a sensitive area is unavoidable, Licensee shall consult with the USFS and/or BLM prior to any ground disturbing activities in the sensitive area to minimize impacts.

Specific to cultural resources, it is PG&E's plan to institute a positive education program for local employees using posters, PG&E's cultural resources video, and training sessions for supervisory personnel. Educational materials will emphasize cultural resource preservation, and will be reviewed with the SHPO, BLM and USFS prior to distribution. All Project employees and employees of the General Construction Department who work on the Project will be informed that artifact collecting on company property or on public land is grounds for disciplinary action. Tree trimming crews will be instructed not to drive into sensitive areas, to avoid such areas to the degree practical, and to avoid using heavy equipment in sensitive locations.

### **4.3            Signage**

Two types of signs are proposed for the Project: regulatory warning signs, and interpretive signs and displays.

#### **4.3.1           Regulatory and Warning Signs**

Regulatory warning signs will be clearly posted in protected, sensitive areas to warn the public that violators will be vigorously prosecuted. Signs will be highly visible and placed at access points for potentially vulnerable historic properties. Signs effectively warn the public that they are in a protected area and serve as an enforceable notice of that warning. Careful placement of signs is crucial so as not to increase public knowledge of site locations thereby making the properties more vulnerable to vandalism. Appropriate wording for the signs and their placement will be developed in consultation with PG&E cultural resources personnel, Corporate Security and legal advisors, local, state and federal law enforcement agencies, the appropriate Native American communities and resource management specialists.

Throughout the Project Area, historic properties may be subject to various forms of impacts, including vandalism from looters and damage caused by off-highway-vehicles. Adequate signage notifying users about regulations and restrictions in sensitive areas are essential for the successful prosecution of violators. Signs to the following effect (Figures 4.3.1-1 through 4.3.1-3) will be placed at designated locations throughout the Project Area. USFS/BLM permission and approval of final sign design must be obtained prior to placing signs on NFSL or BLM lands.

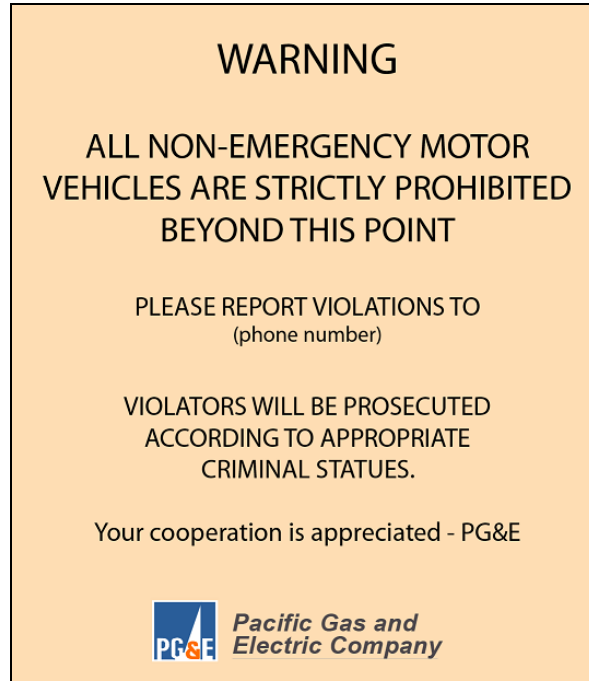


**Figure 4.3.1-1. Warning Sign/Sensitive Resource Area:**  
Signs to this effect will be posted throughout the Project Area in locations easily viewed from roads and developed recreation areas.



**Figure 4.3.1-2. Warning Sign/No Unauthorized Vehicles:**  
Signs to this effect will be posted in select locations along public roads where OHVs have traveled off-road and on Project roads that are used only for administrative purposes by PG&E, resource agencies, and law enforcement personnel.





**Figure 4.3.1-3. Warning Sign/Motor Vehicles Strictly Prohibited**  
Signs to this effect will be posted throughout the Project Area at all roads and other locations where vehicles are prohibited; emergency vehicles excepted.

#### 4.3.2 Interpretive Signs and Displays

Interpretive signs and displays are intended to convey information to the public regarding the cultural history of the area, the spiritual values of the Tribes, and the importance of natural resources to the lifeways of the Tribes. Interpretive displays may be placed at various locations within the Project Area; potential locations include:

- Philbrook Reservoir;
- DeSabra Forebay; and
- Centerville Powerhouse
- Project canals
- Trails (as appropriate)

The following types of information will be considered for each interpretive sign or display:

- A map of the Project Area;
- Project facilities; and
- Location of recreation facilities.

Information regarding the area's natural history and at least one interpretive panel dedicated to cultural history and values should be included. Each interpretive display will be unique and describe features in the vicinity of the interpretive display.

The interpretive displays will be professionally designed, constructed of material compatible with the surroundings, and conform to USFS and/or BLM and other applicable sign standards. PG&E will request that a representative from the Tribes and the USFS and/or BLM, as appropriate, consult on the content and presentation of cultural information during the design phase of the displays. The content and presentation will be reviewed every fifth year following installation and changes will be made as agreed to by PG&E, the Tribes, and the USFS and/or BLM. Changes to the content and presentation on sign panels will not require modification of any sign structures that are installed for the purpose of the interpretive display. The interpretive displays will be regularly maintained in good condition and will be kept graffiti-free.

#### **4.4 Travel Routes and Road Closures**

All vehicle traffic will be restricted to designated roadways except in the event of the following: 1) an emergency requiring access, 2) access for Project-related facility maintenance, or 3) other agency administrative purposes. Unless access is required for emergency purposes, notification will be given to the Tribes and USFS (as appropriate) prior to any necessary travel off of designated roads. Known archaeological sites shall be avoided, if possible. If non-emergency travel is necessary in an area where there is a reasonable potential to impact a cultural site, PG&E shall consult with the Tribes and USFS (if appropriate) regarding appropriate measures to identify and protect such resources, with avoidance of the site being the preferred measure. If sites are unavoidable, PG&E and the USFS (as appropriate) will determine appropriate measures to avoid site impacts and will request that a Qualified Tribal Cultural Monitor observe vehicle passage through the area. If damage to a site is unavoidable, PG&E shall comply with Section 106 of the National Historic Preservation Act (as amended) to evaluate and, if necessary, mitigate any adverse effects to the site.

PG&E will take measures to post and enforce restrictions on vehicular access below the high water line of the Project reservoirs, for any cultural resources identified within the reservoirs. Access restrictions may not be necessary should cultural resources within reservoirs be evaluated as ineligible for listing on the NRHP. In areas of restricted access, vehicles will be permitted in designated areas only. Boulder barricades and other restrictive devices will be used in areas where vehicles are accessing Project lands below the high water line. A plan for specific placement of these barricades will be developed in consultation with the appropriate agencies. Restricting and enforcing vehicular access will eliminate the effects that vehicular access has upon historic properties within the reservoir.

In consultation with all appropriate reviewing agencies and interested parties, PG&E may install barricades, vegetation, or similar physical obstructions to reduce or limit access to sites. Such barricades will be approved by the LNF, BLM, SHPO, FERC, and/or participating Tribes, as appropriate.

It is anticipated that a road management plan will be developed for the Project. Such a plan will cite and consider the Historic Properties Management Plan.

#### **4.5 Road Maintenance and Rehabilitation Controls**

The regular maintenance and periodic rehabilitation of Project roads are necessary for continued safe access to Project facilities, public safety, and prevention of environmental damage. Much of this work is planned in advance, allowing for identification of sensitive resources that may be present in the work area and implementation of appropriate actions to protect resources during the performance of work. At other times road maintenance and rehabilitation is performed on an emergency basis and is necessary to protect life and property, prevent damage to the environment, or maintain access to Project facilities during critical periods. Time for advance planning is not available during emergency circumstances and therefore may require that an assessment of impacts occur after the emergency has ended.

Routine maintenance or rehabilitation of Project roads may have a reasonable potential to impact historic properties. *Reasonable potential* is defined as: (a) ground disturbing work within 30 meters of any identified site eligible for the NRHP, (b) ground disturbing work within 30 meters of any identified site that has not been evaluated for eligibility for the NRHP, or (c) ground disturbing work in any area that has not been previously surveyed by a qualified archaeologist. "Ground disturbing work" is defined as any work that has the potential to expose subsurface cultural materials or cause an impact to the archaeological context of cultural materials. Routine road maintenance will be regulated to avoid adversely affecting cultural resource sites and historic properties. If road improvement is necessary for continued use, then alternative treatment options, such as fill or rerouting, will be considered.

It is anticipated that a road management plan will be developed for the Project. Such a plan will cite and consider the Historic Properties Management Plan and will specify that the following steps shall be taken when planning and implementing Project road maintenance and rehabilitation work involving ground disturbance:

1. PG&E will request a Qualified Tribal Cultural Monitor for routine road maintenance and repair in areas where there is a reasonable potential for impact to an archaeological site. Where appropriate, PG&E will notify FS of routine road maintenance and rehab work. This notification can be made during the annual collaborative meeting or, at a minimum, 10 days prior to implementation of work on NFSL.
2. Any road work in areas having a reasonable potential for impact to archaeological sites will be identified and flagged by a PG&E Cultural Resources Specialist to indicate the location of the sensitive area immediately prior to performing the work. All flagging will be removed immediately following completion of the work.
3. A Qualified Tribal Cultural Monitor may not be requested from the Tribe(s) for work being conducted outside of an area having a reasonable potential for impact. However, if cultural materials are discovered during the performance of ground disturbing work, work will stop immediately and the protocol identified in section 4.9, Inadvertent Discoveries will be followed.

#### 4.6 Recreation Development and Improvements

The Project Area is a popular recreation destination for people engaged in activities such as hiking, fishing, camping, picnicking, swimming, boating, and hunting. It is anticipated that a recreation management plan will be developed for the Project. Such a plan will cite and consider the Historic Properties Management Plan.

The following steps to protect historic properties are required during the construction of any new recreation facility or any improvements to existing recreation facilities

1. During recreation planning, PG&E recreation planners/land managers and Cultural Resources Specialists will request a meeting and site visit with the Tribes, and where appropriate, the USFS and/or BLM to:
  - a. Discuss the need and plans for additional recreational site development or improvement to existing recreation facilities;
  - b. Present preliminary recreational site plans;
  - c. Discuss prior cultural resource mitigation measures implemented during previous development;
  - d. Consider site constraints; and
  - e. Discuss avoidance of cultural resources as a preferred action or the need for additional mitigation measures.
2. If it is determined that avoidance of impacts to a historic property is not possible, suitable mitigation measures will be developed in consultation with the SHPO, FERC, the Tribes, and where appropriate the USFS and/or BLM in compliance with Section 106 of the National Historic Preservation Act (as amended). Mitigation may include, but is not limited to, archaeological site testing to determine formal NRHP eligibility, and data recovery.
3. PG&E will request a Qualified Tribal Cultural Monitor from the Tribes to be present during any recreation improvement or development requiring ground disturbing work<sup>2</sup> where there is a reasonable potential for impact to a historic property<sup>3</sup> in accordance with Section 4.7, Historic Properties Monitoring.
4. If unanticipated cultural materials or features are discovered during ground disturbing activities associated with recreation-related work, work in the immediate area shall cease until the material is evaluated and documented by a PG&E Cultural Resources Specialist or designated archaeologist if appropriate, and protection or mitigation measures identified and implemented.

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<sup>2</sup> "Ground disturbing work" is defined as, work that has the potential to expose subsurface cultural materials or cause an impact to the archaeological integrity of cultural materials.

<sup>3</sup> "Reasonable potential for impact" is defined as: (a) ground disturbing work within 30 meters of any identified site eligible for the NRHP, (b) ground disturbing work within 30 meters of any identified site that has not been evaluated for eligibility for the NRHP, or (c) ground disturbing work in any area that has not been previously surveyed by a qualified archaeologist.

#### **4.7 Archaeological Monitoring and Condition Assessment**

Sound management of the resources requires that any progressive degradation of sites be identified. Additionally, PG&E recognizes the need for a mechanism to identify any accidental damage that may occur. To accomplish these goals, PG&E will establish a program of annual monitoring and condition assessment. The program will include all NRHP-eligible sites within and immediately adjacent to the APE, as well as sites that have not been formally evaluated. Where the probability of ground disturbance is considered low, monitoring will be the primary or sole site-specific management effort. Where the probability of such disturbance is high, monitoring will be combined with other management procedures. Should unevaluated sites be judged ineligible to the NRHP during the term of the new license, they will be removed from the monitoring list. Similarly, unknown sites that may be encountered during Project actions will be included in the monitoring program unless evaluated as ineligible. The USFS and BLM have suggested that some ineligible sites on federal lands may contain other values that are not addressed under Section 106 of the National Historic Preservation Act; however, impacts to these resources could be considered violations under the Archaeological Resources Protection Act (ARPA). PG&E will be working with the USFS and BLM to determine which ineligible sites may be affected by Project-related impacts and to determine if monitoring of these sites is appropriate.

The detailed monitoring plan will call for initial visits to each site by qualified archaeologists retained or hired by PG&E, who will return to each site for annual follow-up visits. Special attention will be paid to unevaluated sites along or within water sources to assess the degree of erosion, if any, which may be occurring at these sites. The physical condition and any existing effects will be documented photographically as well as on site forms and maps and site condition forms. Timber benches, logs, and campfire rings erected by campers within site boundaries will be dismantled and removed as part of the monitoring program. If feasible, archaeological monitoring will be completed in the fall after disturbances from summer activities and following the reservoir drawdown, but prior to winter conditions potentially worsen erosion or other disturbances.

A total of 46 archaeological sites were identified within the Project APE during PG&E's relicensing surveys. The need for and frequency of site monitoring is determined based on NRHP eligibility, the potential risk for Project induced impacts, the type of management measures implemented or prescribed, and the accessibility of the site. Not all sites will require routine monitoring. Monitoring will be implemented at each site within 1 year of license issuance. A monitoring report and copies of the condition assessments will be compiled into an annual report to be given to the Tribes, FERC, USFS, and/or BLM as appropriate, and SHPO at least 10 business days before the annual meeting described below in Section 1.12.

PG&E will request that the Tribe(s) provide one Qualified Tribal Cultural Monitor (Section 1.11) to be present during monitoring efforts at Native American sites to assist the designated archaeologist in evaluating if cultural materials or archaeological integrity of a site are being affected by Project induced activities. The purpose of the Qualified Tribal Cultural Monitor is to assist the archaeologist with the identification and documentation of each site's condition, with particular attention paid to the presence of human remains and changes in a site's condition observed during subsequent years of monitoring following the initial monitoring effort. In the event human remains

are discovered, the measures identified below in Section 1.13, Treatment of Humans Remains, will be followed.

#### **4.7.1 Tribal Cultural Monitor Qualifications**

Qualified Tribal Cultural Monitors shall be appointed by the Tribes, and meet all Tribal and PG&E qualifications for archaeological monitoring. At a minimum, qualified monitors:

- Must be a member or an authorized representative of the Tribe;
- Must have completed all training requirements of the Tribe;
- Must have completed PG&E's Cultural Monitor Training Program within two years prior to any monitoring work; and
- Must have demonstrated monitoring skills.

Additional qualifications may be required according to changes in Tribal requirements or state and federal regulations. The PG&E training program will be offered annually.

Qualified Tribal Cultural Monitors will be required to maintain a standardized Daily Monitoring Log of monitoring activities, observations, recommendations, and actions taken by PG&E. The Qualified Cultural Tribal Monitor will provide a copy of all daily monitoring logs to the job supervisor at the end of each week or at the conclusion of the monitoring effort whichever occurs first. PG&E's Cultural Resources Specialist will also provide copies of the Daily Monitoring Log to the USFS and/or BLM, where appropriate, and to the Tribe(s) at the end of the monitoring session.

#### **4.7.2 Monitoring Report**

PG&E will prepare an annual report summarizing the results of all historic properties monitoring activities during the preceding calendar year and provide a copy of the report to the Tribe(s), USFS, BLM, FERC, and SHPO by March 15 of each year. The report shall include a description of measures taken to protect historic properties, description of the condition of mitigation structures and recommended maintenance, description of maintenance work performed, and any other relevant information. Copies of all Daily Monitoring Logs kept by the Qualified Tribal Cultural Monitor will be appended to the annual report. The annual report will also describe any management recommendations made by Qualified Tribal Cultural Monitors, which management measures were implemented, and explain the reasons for not implementing recommendations that were not adopted. The report shall be provided at least 10 business days in advance of an annual meeting with the USFS, BLM and Tribes. The annual meeting will be scheduled between January 1 and March 30 of each year.

If monitoring detects activities or site damage on federal lands that may need immediate response or law enforcement action, [e.g. signs of looting, OHV use in restricted areas, serious site damage (human or naturally caused), etc.] it must be reported immediately to that appropriate USFS/BLM district office so that the USFS/BLM may initiate any necessary independent action such as an investigation, or work with PG&E to develop appropriate mitigation measures.

#### **4.8 Site Stabilization and Erosion Control**

Due to the presence of potential historic properties near Project reservoirs, PG&E will develop a stabilization and erosion control program for any sites where monitoring identifies erosion as an adverse effect. Such programs typically employ stone or sediment barriers, hay bale or other organic impediments, or placement of geoweb, native plants, or other materials to lessen the effects of wave action and secure unstable slopes. Limited testing and/or data recovery, archaeological monitoring (on site), archival research, and photo documentation to augment monitoring also may be employed to assess sites or monitor the efficacy of erosion control measures. Site-specific stabilization and erosion control plans, and schedules for their implementation, will be developed in consultation between the USFS and/or BLM (as appropriate), PG&E, and other parties.

#### **4.9 Treatment of Human Remains**

Human remains, graves, and cemeteries that may be encountered during Project-related activities are protected by state and/or federal law. Under federal law, and on NFSL, the provisions of the Archaeological Resources Protection Act (ARPA), American Indian Religious Freedom Act (AIRFA), and Native American Graves Protection and Repatriation Act (NAGPRA as amended) protect human graves, associated funerary objects, and the free expression of Native American religious beliefs. On privately-owned lands, the California Health and Safety Code (CH&SC, Section 7050.5, 7051, 7054), and California Public Resources Code (CPRC 5097) also prohibit damage, defacement, or disinterment of human remains without legal authority, and establish civil and criminal penalties. These statutes also are applicable to anyone who knowingly loots prehistoric or historical Native American or other graves.

Selecting an appropriate course of action when human remains come to light can be a complex decision-making process. In addition to compliance with federal and state law, various entities such as the County Coroner, the California NAHC, local Native Americans or members of other ethnic, religious, and/or familial groups, archaeological contractors, physical anthropologists, PG&E system operators and Cultural Resources Specialists, USFS, BLM and, in some cases, the SHPO, may be involved. Moreover, human remains and associated funerary objects, if any, are often viewed as sacred and must be treated with respect. Sensitivity toward all interested parties is essential whenever human remains are concerned.

For all Project-related activities, the general policy shall be strict avoidance of all human burials, whether marked or unmarked, whenever possible. Re-interment in-place and avoidance of further disturbance through project redesign will be conducted where feasible. Any Project-related activity in the burial area may continue only after all steps defined by applicable state and federal laws have been completed.

#### **4.10 Unanticipated Discoveries**

Project maintenance, erosion, or other factors could expose and damage previously unidentified cultural resources. In addition, previously unknown qualities may be revealed at known cultural resources. If such unanticipated discoveries are made, the cultural resources coordinator and Project Generation Supervisor will be notified immediately. PG&E also will notify the USFS and/or BLM

of any new discovery on federal land within 24 hours, will coordinate all subsequent consultations and activities with USFS/BLM personnel, and will provide the USFS and/or BLM with all associated documentation.

Newly discovered cultural resources will be examined by a qualified professional archaeologist or historian and recorded according to accepted contemporary standards. Impacts to the site, if any, also will be identified. If impacts are identified, PG&E will consult with the USFS, BLM, SHPO, and tribes, as appropriate, to determine the proper course of action. The HPMP will provide the decision-making framework for management. The USFS, BLM or SHPO may request, or PG&E may decide, to complete a formal evaluation of the property. When prehistoric archaeological sites are involved, such evaluations will be made in consultation with the appropriate Native American representative. If the resource is not formally evaluated, it will be assumed to be eligible for the NRHP and managed accordingly.

If the discovery occurs during the implementation of a specific Project action and PG&E has followed the terms of the HPMP, PG&E will act on behalf of the FERC in implementing the procedures set forth in 36 CFR 800.13(b). Until agency and tribal consultation has been completed, PG&E shall assume NRHP eligibility of the property and shall attempt to prevent any harm to the property.

If unanticipated discoveries are made during any Project related activities (i.e., new construction, facility maintenance) the following steps will be implemented in consultation with the Tribes, the USFS and BLM as appropriate:

1. All work in the immediate area will cease until PG&E Cultural Resources Specialist (or their designee, who will be a professional archaeologist), the Tribes, and the USFS/BLM Archaeologist as appropriate, are able to evaluate the find.
2. If the cultural materials constitute isolated material, or an “isolated find” (e.g., less than five unformed artifacts per square meter, isolated formed tools, isolated historic items), PG&E Cultural Resources Specialist or their designee will document the material as such to current NPS standards on a Primary Record, a Qualified Tribal Cultural Monitor will be invited to monitor subsequent ground-disturbing activity, and the construction activity may continue without any further consultation. Exceptions would be for isolated cultural materials or features that are unique in some way or those that could be eligible for the NRHP on their own merit following application of the National Register criteria.
3. If the cultural materials constitute a “site” (e.g. greater than five unformed artifacts per square meter) or an isolated find that may be eligible for the NRHP on it’s own merit, PG&E’s Cultural Resources Specialist or their designee will document the property to current NPS standards, and the material will be assumed eligible for the NRHP in accordance with 36 CFR 800.13
4. Following documentation, where feasible, measures will be taken to protect newly discovered sites from further disturbance. PG&E shall consult with the Tribes, USFS,



and BLM as appropriate, to seek ways to avoid, minimize, or mitigate potential adverse effect

5. PG&E will notify the SHPO and the Tribes within 48 hours of the new site discovery in accordance with 36 CFR 800.13(b)(3). The notification will describe any assessment of NRHP eligibility (formal or informal) and the recommended actions to be undertaken to resolve potential adverse effects.
6. In accordance with 36 CFR 800.13(b)(3), the SHPO and the Tribes will have 48 hours to respond to the notification of a new site discovery. Any response will be taken into account by PG&E and USFS/BLM as appropriate. If no response is received within 48 hours, PG&E will assume that no comments are forthcoming, that the SHPO and Tribes concur with the proposed actions, and PG&E may proceed with implementing the actions. Following completion of the actions, work in the vicinity of the find may continue
7. Following completion of all construction activities, PG&E shall provide to the SHPO, Tribes, USFS/BLM (as appropriate), and the California Historic Resources Information Center at California State University Chico, a report of the actions that were undertaken during construction activities and copies of all field documentation and consultation. This report will describe in detail isolated finds and potential historic properties (sites) identified during construction activities, all measures undertaken to resolve potential adverse effects and copies of all consultation documents.

#### **4.11            Emergency Actions**

Natural and other disasters that pose serious threats to life and property may require emergency actions that will affect significant historic properties or unevaluated resources. If an emergency action has the potential to affect historic properties, the Licensee will immediately notify the SHPO, the FERC, and the BLM, USFS and participating Tribes as appropriate and provide them with an opportunity to comment regarding such actions within 7 days of notification. If the FERC determines that circumstances do not permit 7 days for comment, PG&E shall notify the SHPO and the BLM, USFS and participating Tribes as appropriate to invite any comments within the time available. This procedure will apply only to emergency actions implemented within 30 days after the disaster or emergency. If more than 30 days have passed since the emergency or disaster, PG&E will review the action in accordance with 36 CFR 800.4–800.6.

Emergency work includes: (a) equipment failures requiring immediate repairs, (b) immediate risk to public or employee safety, (c) prevention of loss or damage to property, or (d) unanticipated situations where immediate actions are required to maintain or restore utility service or avoid more serious impacts.

The following steps will be taken following any required emergency work:

1. The work supervisor shall notify PG&E's Cultural Resources Specialist within 48 hours of any emergency work performed;
2. PG&E's Cultural Resources Specialist will make a determination if the work was performed within any areas having a reasonable potential for impact to historic properties and will provide this information to the SHPO, the Tribes, and the USFS and/or as appropriate;
3. If the work was performed within an area having a reasonable potential for impact, a Qualified Tribal Cultural Monitor will be requested from the Tribe(s) to assist PG&E's Cultural Resources Specialist and USFS and/or BLM as appropriate, with surveying the work area for archaeological resources and assessing any impacts to these resources if present; and
4. If necessary, appropriate mitigation measures will be developed and implemented
5. Emergency repair work will stop immediately should potential human remains be discovered unless there is eminent danger to human safety. Should human remains be identified, the procedures provided in Section 8.1.12.1.1.9, Treatment of Human Remains, will be followed in compliance with applicable state and federal law.

#### **4.12 Additional Archaeological Investigations**

Various kinds of archaeological studies may become necessary in the future. All lands within the FERC project boundaries have been inventoried for cultural resources. Any additional inventory, should it become necessary, will conform to contemporary professional standards and will be performed in consultation and coordination with the USFS, BLM, FERC, SHPO, and participating Tribes, as appropriate.

Effective management of prehistoric and historic-era cultural resources requires information regarding the boundaries, integrity, vertical and horizontal structure, and content of the resources. In some cases, much of this information can be gleaned from careful surface inspection. In some cases, however, archaeological test excavation may be necessary to define a site's content and vertical or horizontal extent, or to gather sufficient information to evaluate site significance, assess effects, or plan for treatment. Similarly, data recovery excavation is a standard treatment option when significant archaeological properties will be affected by Project actions. PG&E has a long standing commitment to the preservation and protection of cultural resources. In general, PG&E views excavation as a last resort to be employed only in circumstances where impact avoidance or other management measures are ineffective in maintaining and protecting site integrity, following consultation with the USFS and/or BLM, Tribes, and other interested parties. Additional analysis of existing archaeological collections and data from the study area may be an alternative to excavation in some cases.

In the event that excavation is determined to be the appropriate measure, any such work on federal lands will be conducted under the terms of an Organic Act or Archaeological Resources Protection Act of 1979 (ARPA) permit, as determined by the nature of the work proposed. Any such work

will be designed in accordance with the principles, standards, and guidance contained in Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (USDI 1983), the ACHP's Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites (ACHP 1999), and guidance offered by the SHPO, USFS, BLM and as appropriate, interested Tribes. A detailed fieldwork plan will be prepared and will include a research design that identifies relevant research questions and data requirements as well as appropriate field, laboratory, and analytic methods for obtaining such data. Any fieldwork plan also will include procedures for consultation with the Native American community, as appropriate, a discussion of the final disposition and curation of any cultural materials recovered during excavation, and a plan for management and dissemination of information gleaned from data recovery. Curation of any prehistoric materials recovered from archaeological sites within the Project will aspire to the standards outlined in 36 CFR§79.

PG&E will retain appropriately qualified personnel for all cultural resources investigations performed under the terms of the FERC-approved HPMP. At a minimum, supervisory personnel will meet specifications set forth in *Secretary of the Interior's Historic Preservation Professional Qualifications Standards* (USDI 1997) for the discipline(s) relevant to the particular study.

#### **4.13 Periodic Reporting and Meetings**

Qualified Tribal Cultural Monitors will be required to maintain a standardized Daily Monitoring Log of monitoring activities, observations, recommendations, and actions taken by PG&E. The Qualified Cultural Tribal Monitor will provide a copy of all daily monitoring logs to the job supervisor at the end of each week or at the conclusion of the monitoring effort whichever occurs first. PG&E's Cultural Resources Specialist will also provide copies of the Daily Monitoring Log to the USFS, where appropriate, and to the Tribe(s) at the end of the monitoring session.

PG&E will prepare an annual report summarizing the results of all historic properties monitoring activities during the preceding calendar year and provide a copy of the report to the Tribe(s), USFS, BLM, FERC, and SHPO by March 15 of each year. The report shall include a description of measures taken to protect historic properties, description of the condition of mitigation structures and recommended maintenance, description of maintenance work performed, and any other relevant information. Copies of all Daily Monitoring Logs kept by the Qualified Tribal Cultural Monitor will be appended to the annual report. The annual report will also describe any management recommendations made by Qualified Tribal Cultural Monitors, which management measures were implemented, and explain the reasons for not implementing recommendations that were not adopted. The report shall be provided at least 10 business days in advance of an annual meeting with the USFS, BLM, and Tribes. The annual meeting will be scheduled between January 1 and March 30 of each year.

If monitoring detects activities or site damage on NFSL and/or BLM land that may need immediate response or law enforcement action, [e.g. signs of looting, OHV use in restricted areas, serious site damage (human or naturally caused), etc.] it must be reported immediately to that appropriate USFS district office so that the USFS may initiate any necessary independent action such as an investigation, or work with the PG&E to develop appropriate mitigation measures.

#### **4.14**            Periodic Review and Revision of the HPMP

After five years, PG&E will meet with the LNF, BLM, and Native American representatives to evaluate the effectiveness of the site monitoring and condition assessment program and evaluate the need for continued monitoring. Once every 10 years, the Cultural Resources Specialist, the SHPO, the USFS, the BLM, and Native American representatives will review the HPMP to appraise its effectiveness regarding the identification, evaluation, and treatment of Project effects on historic properties. If necessary, the HPMP will be revised to address comments and concerns raised during this review process. Steps to revise, amend, or otherwise alter the plan will be approached in the same manner as the development and approval of the Draft HPMP.

## SECTION 5.0

# Site Descriptions, Identified Impacts, and Site-Specific Treatment Measures

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Site-specific management measures are based on multiple factors that take into account site locations relative to Project-related operation and maintenance activities, site eligibility for listing on the NRHP, and identified on-going or potential Project-related impacts. Management measures may require modifications or revisions during the term of the license due to changes in site conditions, the discovery of new site information, or other conditions necessitating the need for additional or revised site protection measures. Revisions, additions, and modifications to management measures will be developed in consultation with the FERC, SHPO, USFS, BLM, and Tribes, as appropriate.

Management measures specific to the 46 archaeological sites identified within the APE are presented below in Section 5.1. Section 5.2 presents the management measures for the DeSabra-Centerville Hydroelectric Project Historic District and individual system features. As no resources were identified (to date) that qualify for inclusion on the National Register of Historic Places as Traditional Cultural Properties, no site-specific measures are proposed.

### 5.1 Proposed Site-Specific Management Measures for Prehistoric and Historic-Era Archaeological Sites.

Thirty-four of the 46 archaeological sites identified in the APE have been formally evaluated for listing on the NRHP; all contain strictly historic-era deposits. Six of these are associated with the DeSabra-Centerville hydroelectric system and are evaluated as contributing elements of the system's historic district. Four of the contributing sites may also be eligible to the NRHP on an individual basis. Fourteen additional sites, including 6 with prehistoric deposits and features and 8 with both prehistoric and historic-era cultural remains, have been preliminarily assessed for their eligibility to the NRHP but are not formally evaluated. All NRHP evaluations provided in this HPMP are considered only to be recommendations. As discussed in Section 3.2 above, the USFS and BLM have expressed concern regarding some of the NRHP recommendations of sites located on federal lands. PG&E understands these concerns and looks forward to discussing them further. Additionally, the SHPO has been made aware that comments on the recommendations are forthcoming. Final determinations are pending and will be made by the appropriate agencies.

Table 5.1-1 presents PG&E's recommended management measures proposed for each prehistoric and historic-era archaeological site within the APE. Individual discussions of site-specific management measures are presented below.

**Table 5.1-1.** Site Descriptions, Identified Impacts, and Site-Specific Treatment Measures for Archaeological Sites within the APE.

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-597/H	Toadtown	Private /SPI	Lithic scatter, BRM, historic bottle frags	Calsierra Rd via Skyway	No observed project impacts	Potentially eligible	Yes	No other management beyond annual monitoring and condition assessment.
CA-BUT-729/H	WBFR	LNF	BRM, historic trash scatter	Campground access loop via USFS Rd. 25N27	No project impacts observed	Potentially eligible	Yes	No other management beyond annual monitoring and condition assessment.
CA-BUT-868-H	DeSabra	PG&E	Original DeSabra powerhouse site: foundations, pads, trash deposits	DeSabra Powerhouse Road	Current powerhouse built on the same site	Recommended ineligible	No	No management
CA-BUT-871-H	Butte Creek Canal	PG&E	Butte Creek Canal Camp 2: foundations	Camp No. 2 Road	Structures removed, erosion, no current or on-going project impacts.	Recommended eligible as contributing property, potentially eligible individually	Yes	No other management beyond annual monitoring and condition assessment.
CA-BUT-872-H	Toadtown	Private	Poumeratt Quartz Mine: foundation, drift, structures	Jaguar Ct. via Toadtown Rd	No observed project impacts	Recommended ineligible	No	No management

**Table 5.1-1 (continued)**

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-873-H	Lower Centerville Canal	PG&E	Hog Ranch ditch tender's camp: foundations, pads, historic trash deposit	Hog Ranch Road extends west from Humbug Summit Road to the site.	Modern trash dumping	Recommended eligible as contributing property, potentially eligible individually	Yes	Block public access into the site from Hog Ranch Road and post warning signs to stop trash dumping; annual monitoring and site condition assessments.
CA-BUT-877-H	Toadtown	Private, possible BLM	Mining ditch	Private drive	No observed project impacts	Recommended ineligible	No	No management
CA-BUT-887-H	DeSabra	PG&E	Orofino Mine entrance	DeSabra Powerhouse Road	Culvert construction, road/creek alterations	Recommended ineligible	No	No management
CA-BUT-933-H	WBFR	Private	Dewey Ditch	Humbug Summit Road	No project impacts observed	Recommended eligible	Yes	No other management beyond annual monitoring and condition assessment.

**Table 5.1-1 (continued)**

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-965-H	DeSabra	Private	Indian Spring Mine	Private	No observed project impacts	Recommended ineligible	No	No management required
CA-BUT-1111-H	Toadtown	BLM	Corral with refuse scatter	Private drive	No observed project impacts	Recommended ineligible	No	No management
CA-BUT-1225/H (1226/1227/ 1228/H)	RVR	LNF	Lithic scatter, quarry, historic trash scatter	Humbug Summit Road	Fluctuating reservoir levels, erosion, off-road vehicles	Potentially eligible	Yes	Site is currently being evaluated for NRHP eligibility. Appropriate management measures to be developed in consultation with SHPO, FERC, LNF, Tribes .
CA-BUT-1229-H	RVR	LNF	Mine shaft, tailings ditch	USFS Rd. 26N22 via Humbug Summit Road	No observed project impacts	Recommended ineligible	No	No management
CA-BUT-1465-H	Butte Creek Canal	Private	Ditch	Humbug Summit Road	No observed project impacts	Recommended ineligible	No	No management



**Table 5.1-1 (continued)**

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-3040-H	DeSabra	PG&E	BCC Camp 3, DeSabra Headquarters Camp (aka BCC Camp 3, a possible ditch tender's camp)	Skyway/Lake DeSabra Road	Vandalism, overgrown	Recommended ineligible	No	No management
04-003041	DeSabra	PG&E, Private	Hupp's Sawmill and residence	Humbug Road	Structures removed over 25 years ago; no current or on-going project effects.	Unevaluated due to dense vegetation. Potentially eligible.	Yes	No other management beyond annual monitoring and condition assessment.
04-003042	Lower Centerville Canal	Private	Camp 2, Upper Centerville Canal ditch tender's camp	Centerville Road	No observed project impacts	Recommended ineligible	No	No management

**Table 5.1-1 (continued)**

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-3043/H	RVR	LNF	Bedrock mortar, lithic scatter, historic trash scatter, turpentine tree(s)	USFS Rd. 27N11B via Humbug Summit Road	No observed impacts	Potentially eligible	Yes	Update site record with LNF information on turpentine trees in site and vicinity; include in annual monitoring and condition assessment.
04-003044	RVR	SPI	Fence	USFS Rd. 27N11B via Humbug Summit Road	No observed project impacts	Recommended ineligible	No	No management
CA-BUT-3045/H	RVR	SPI	Midden, lithic scatter, BRMs, historic trash scatter	SPI Road	No observed project impacts	Potentially eligible	Yes	No other management beyond annual monitoring and condition assessment.
CA-BUT-3046-H	WBFR	SPI	Historic trash scatter	Humbug Summit Road	No observed project impacts	Recommended ineligible	No	No management

**Table 5.1-1 (continued)**

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-3047-H	WBFR	SPI	Historic trash scatter	Humbug Summit Road	No observed project impacts	Recommended ineligible	No	No management
CA-BUT-3048-H	WBFR	Private	Historic trash scatter	Humbug Summit Road	No observed project impacts	Recommended ineligible	No	No management
CA-BUT-3049	RVR	SPI	BRM	Humbug Summit Road	No observed project impacts	Potentially eligible	Yes	No management
CA-BUT-3050/H	RVR	CDFG	Lithic scatter, historic trash scatter	Humbug Summit Road	No observed project impacts	Potentially eligible	Yes	No other management beyond annual monitoring and condition assessment.
CA-BUT-3051/H	RVR	CDFG	Lithic scatter, Historic trash scatter	Humbug Summit Road	No observed project impacts	Potentially eligible	Yes	No other management beyond annual monitoring and condition assessment.

**Table 5.1-1 (continued)**

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-3052	RVR	LNF	BRM	USFS Rd. 26N22 via Humbug Summit Road	No observed project impacts	Potentially eligible	Yes	No other management beyond annual monitoring and condition assessment.
CA-BUT-3053-H	WBFR	LNF	Historic trash scatter	USFS Road	Modern campground	Recommended ineligible	No	No management
CA-BUT-3054-H	WBFR	LNF	Historic trash scatter	USFS Road	No project impacts observed	Recommended ineligible	No	No management
CA-BUT-3055-H	RVR	LNF	Historic USFS Camp	SPI/USFS Road	No project impacts observed	Recommended ineligible	No	No management
CA-BUT-3056	WBFR	Private	BRM, lithic scatter	Humbug Summit Road	No project impacts observed	Potentially eligible	Yes	No other management beyond annual monitoring and condition assessment.
CA-BUT-3057-H	PBR	PG&E	Historic trash scatter	Philbrook Reservoir Road	No project impacts observed	Recommended ineligible	No	No management
CA-BUT-3058-H	PBR	PG&E	Historic trash scatter	Philbrook Reservoir Road	Public access	Recommended ineligible	No	No management

**Table 5.1-1 (continued)**

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-3059-H	PBR	LNF	Historic trash scatter	No	No project impacts observed	Recommended ineligible	No	No management
CA-BUT-3060-H	PBR	PG&E	Historic trash scatter	Philbrook Reservoir Road	Public access, pit manually excavated into cultural deposit with artifacts stacked around edge of pit, likely for artifact collection	Recommended ineligible	No	No management
CA-BUT-3061-H	PBR	LNF	Historic trash scatter	Philbrook Reservoir Road	No project impacts observed	Recommended ineligible	No	No management
CA-BUT-3062-H	PBR	LNF	Historic trash scatter	Philbrook Reservoir Road	No project impacts observed	Recommended ineligible	No	No management
CA-BUT-3063-H	PBR	PG&E	Historic trash scatter	No	No project impacts observed	Recommended ineligible	No	No management
CA-BUT-3064-H	PBR	PG&E	Historic trash scatter	No	Public access	Recommended ineligible	No	No management

**Table 5.1-1 (continued)**

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-3065-H	PBR	LNF	Mining	No	No project impacts observed	Recommended ineligible	No	No management
CA-BUT-3066-H	PBR	LNF	Mining	No	No project impacts observed	Recommended ineligible	No	No management
CA-BUT-3067	PBR	LNF	BRM	No	No observed project impacts	Potentially eligible	Yes	No other management beyond annual monitoring and condition assessment.
CA-BUT-3068-H	PBR	LNF	Historic trash scatter Philbrook Gate Tender's House	Philbrook Reservoir Road	Recreational use, vandalism of cabin	Recommended eligible as contributing element of the historic district, potentially eligible individually	Yes	Block public access to site and include in annual monitoring and condition assessment.

**Table 5.1-1 (continued)**

<b>Trinomial, Primary, or Other Number</b>	<b>Location<sup>1</sup></b>	<b>Land Owner<sup>2</sup></b>	<b>Description<sup>3</sup></b>	<b>Vehicle Access</b>	<b>Project-Related Impacts<sup>4</sup></b>	<b>NRHP<sup>5</sup></b>	<b>Annual Monitoring</b>	<b>Recommended Management Measure</b>
CA-BUT-3069/H	WBFR	Private	BRMs, Historic trash scatter , possible ditch tenders cabin	Humbug Summit Road	No project impacts observed	Historical site component recommended eligible as contributing to the historic district, potentially eligible individually	Yes	No other management beyond annual monitoring and condition assessment.
CA-BUT-3070-H	DeSabra	PG&E	PSEA Camp	Lake DeSabra Road	Modern developments and use of camp	Recommended eligible as contributing to the historic district, potentially eligible individually	Yes	No other management beyond annual monitoring and condition assessment.
04-003071	DeSabra	PG&E	Camp 1	Skyway	Most original structures and features are gone	Recommended eligible as contributing to the historic district	Yes	No other management beyond annual monitoring and condition assessment.

**Table 5.1-1 (continued)**

1/ PBR = Philbrook Reservoir ; RVR = Round Valley Reservoir; WBFR = West Branch Feather River

2/ CDFG = California Division of Fish and Game; LNF = Lassen National Forest; PG&E = Pacific Gas and Electric Company; SPI = Sierra Pacific Industries

3/ BRM = Bedrock Mortars

4/ Only Project-related impacts cited

5/ Recommended = Formal evaluation of NRHP eligibility pending SHPO concurrence



**Site Number:** CA-BUT-597/H

**Other Designations:** 04-000597

**Property Ownership:** Private/SPI

**Site Description:** This is an extensive lithic scatter with BRMs and the remnants of a historical bottle. It is located on private and SPI lands in a relatively open area surrounded by mixed conifers and an oak canopy; manzanita comprises the understory. The site is at an elevation of 2,860 feet on a gentle, south-facing slope. It encompasses approximately 4800 square meters along the east side of an unnamed, seasonal creek that drains to the south. The site is on private property and is bound on the south by a private dirt road and on the west by the seasonal drainage. The north and east site boundaries are defined by the aerial extent of surface-visible artifacts and features.

CA-BUT-597/H was first recorded by Markley and Smart (1978) as a small lithic scatter containing debitage and flaked and ground stone tools, including a hopper mortar and pestle. PAR redocumented the site in 1984 as a much more extensive lithic scatter, noting basalt as the dominant toolstone with only trace amounts of obsidian (Van Bueren and McCombs 1984). PAR also discovered one basalt Rosegate projectile point, one basalt foliate point, one small, wide-stemmed basalt point, numerous cores, scrapers, as well as two previously unrecorded historical bottle fragments from a single, dark (olive) liquor bottle. The 2006 field survey encountered two previously unrecorded bedrock milling features in addition to the previously documented artifacts, which include basalt and obsidian debitage, a basalt core, a granite pestle, a granite handstone, and a granite hammerstone. Modern debris is also present. Although the site has been disturbed by a logging road that cuts through the site, it retains good integrity.

Prehistoric artifacts and features are evidence of multiple activities that took place on site, including plant processing, hunting, and lithic reduction of obsidian and basalt toolstone. The Rosegate and other small projectile points, and the presence of BRMs, suggest the site was occupied during the Early Kings Beach Phase (700-1300 B.P.). The few pieces of bottle glass recorded by PAR do not provide enough information to interpret historic-era activities that may have occurred there.

**Site Impacts:** No Project-related impacts observed

**NRHP Eligibility:** Site integrity is good and the cultural remains appear to have data potential. Minimally, debitage analysis could provide information relevant to tool making or reworking, an analysis of tools may provide details on the types of plant and animal resources utilized, chemical sourcing of the basalt and obsidian could lend insight into toolstone procurement and exchange, and obsidian hydration analysis could provide temporal designations. Maniery et al. (1985) informally evaluated the site as eligible for listing on the NRHP under Criterion D. The present study concurs with their informal evaluation.

**Proposed Management Measures:** Include in a site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-729/H

**Other Designations:** 04-000729; FS 05-06-51-1023; temporary number DC-17/H

**Property Ownership:** Lassen National Forest

**Site Description:** This site contains a single BRM, one basalt core, and a historic-era trash scatter. No other prehistoric artifacts or features were observed on the ground surface. The site's historical element consists of domestic habitation debris and refuse, such as glass jars and bottles, metal beverage and food cans, window glass, structural hardware, and shotgun and cartridge shells distributed across three loci. Historic-era materials appear to post-date 1915, but the presence of amethyst glass suggests the deposit dates to sometime in the late 1910s or 1920s.

**Site Impacts:** No Project-related impacts were observed during the current study.

**NRHP Eligibility:** The prehistoric element of the site is preliminarily assessed as eligible for listing on the NRHP. Formal evaluation is necessary to identify the eligibility of the prehistoric remains. However, terraces and gentle slopes in close proximity to major water sources such as found at this site are generally considered sensitive cultural locations, suggesting there is potential for additional buried deposits.

The historic-era deposit of the site retains good integrity overall. Additional archival research and possible test excavations are required to determine the association of the historic element to events or themes, but the variety of artifacts present suggest the site contains data potentials. It is preliminarily assessed as eligible for listing on the NRHP under Criterion D. It may also meet Criteria A for its potential association to past USFS activities.

**Proposed Management Measures:** Include in annual site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-868-H

**Other Designations:** 04-000868

**Property Ownership:** PG&E

**Site Description:** This is the site of the original DeSabla Powerhouse on lands owned by PG&E. It measures 160 meters north-west by 200 meters east-west, encompassing approximately 25,132 square meters across terraces (man-made leveled flats) on a hillside adjacent to Butte Creek. The site sits at an elevation of 1,300 feet within a mixed conifer forest comprised of oak, pine, and toyon. Understory species include manzanita, gooseberry and various grasses. Geologically, the site is within a setting of granitic outcrops and loamy brown soil with decomposing granite.

The site was first recorded in the mid 1980s (Van Buren et al. in 1984). Eighteen features of the powerhouse and its associated camp were recorded at that time. The site was revisited in 2006 and 2007 during field work for the DeSabla-Centerville Hydroelectric Relicensing Project. Major changes to site were documented during this effort. The physical remains are nearly gone. Only six previously recorded features are still present and one metal structure was encountered that was not previously documented. The existing features include Feature R, the back wall of the original powerhouse, which is intact and retains fairly good integrity with only slight weathering; and Feature Q, a small ground level concrete pad (pig sty?) in poor condition, that shows cracking and is breaking apart. Also present are Feature M, now only a flat earthen pad covered with gravel, and all that remains of Feature H, the walkway, is a depression. Only three previously recorded ceramic fragments were observed on the ground.

The newly discovered feature does not appear to be an oversight to the previous recording in 1984, but rather appears to have been exposed during a landslide or construction to prevent landslides. The feature is located in the side of the hill by the graveled parking lot of the new DeSabla powerhouse, which sits directly on top of the previous location of the camp hotel (Feature L). The metal feature appears very stable as the three of sidewalls are inset into the hillside. The sidewalls are made of wood and iron supported by iron “T” bars. There also a new slab of concrete on the ground with a modern power box on top.

During the current investigations, John Yeoman, the Chief Operator for Hypower Inc., Fork of Butte Powerhouse, provided information about the site. Mr. Yeoman noted that the only remains of the original DeSabla Powerhouse he was aware of was Feature R, the back wall of the original powerhouse.

See Section 2.3.8.6.2 above for detailed information regarding CA-BUT-868-H.

**Site Impacts:** Current powerhouse built on same site as original DeSabla powerhouse

**NRHP Eligibility:** In 1985, PAR noted that the DeSabla Powerhouse facility played an important economic and social role in Butte County (Maniery et al. 1985). PAR recommended that the site was eligible to the NRHP under Criterion B because of its association with Eugene de Sabla, an eminent figure in the hydroelectric field, and Criterion D because of the extensive trash deposits that could contribute information about the powerhouse’s support community. The site had integrity of location, setting, and association. However, this site has significantly changed since that evaluation. None of the buildings remain and there is no evidence of any of the trash scatters recorded by PAR. The site has also lost integrity of setting and association.

This site retains its theme and date in documents only. That is, the site has lost its ability to convey its use, theme, and historic period to an observer. These are the elements that made it significant. Therefore it is recommended as ineligible for the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-871-H

**Other Designations:** Butte Creek Canal Camp 2; 04-000871

**Property Ownership:** PG&E

**Site Description:** This is a PG&E ditch tender's camp known as Butte Creek Canal Camp 2. Located on PG&E land adjacent to the Butte Creek Canal (BCC), the site contains firs, pines, oaks, maple, oaks, and incense cedars. The understory is composed of mountain lilac, scotch broom, and blackberry.

PAR visited the site in 1980 and recorded three concrete building pads, an extensive trash scatter, mortared and dry-laid rock retaining walls, a drinking water delivery system, and a dirt access road. A large, man-made flat northeast of the site may have once been the location of some of the dozen or so structures that were once located here. The trash dump contains over 2500 cans, bottles, ceramics, and other domestic artifacts that correlate with the documented use period of the site (1902–1950s).

**Site Impacts:** Buildings have been removed, otherwise the site is in the same condition as originally documented in 1980.

**NRHP Eligibility:** PAR also indicated a potential for buried deposits. Because of its research potential and good integrity, PAR suggested that this site is eligible to the NRHP as a contributing property to their earlier proposed DeSabra-Centerville Hydroelectric System district (1985). During the 2006 study, Æ found the site to be essentially unchanged since PAR's investigation. It meets all of the standards and retains integrity of location, setting, and association, and is therefore recommended as eligible for listing on the NRHP as a contributing element. Additionally, buried cultural deposits suggest the site retains data potentials and may also be individually eligible to the NRHP.

**Proposed Management Measures:** Include in a site monitoring and condition assessment program. Test excavation needed to assess individual eligibility.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-872-H

**Other Designations:** 04-000872

**Property Ownership:** Private

**Site Description:** This is the site of a hard rock mining complex known as Pomeratt Quartz Mine and Mill or the Toadtown mining complex. Victor Pomeratt purchased the property from John Murphy around 1865. In 1885, Joseph Richards, who claimed the 40 acre unpatented mining claim, had a mineral survey performed. The survey documented improvements to the mine by Richards, including a five stamp mill, hoist works, overshot water wheel and a shaft (BLM 1885). The survey report noted that “the bed of Little Butte Creek had been worked for gold in the early years and at that time (1885) there were several cabins occupied by miners who worked other mines in the area” (PAR 1985:5). Curiously, the survey plat indicates that the mill and shaft were on the eastern bank of Little Butte Creek. The shaft, mill foundation, and associated structures of this site are located on the western bank of the Creek. An 1896 State Mineralogist report on the mine stated that the “2’ vein strides N. and S. and dips 45 degrees E., between slate walls. A 6’ x 8’ double-compartment incline shaft has been sunk 100’ without a hoist. At 70’ depth a drift has been run on the vein 100’ N. Two men are at work” (Crawford 1896:91). An 1892 Mining Bureau report noted that a five stamp mill was in operation at the site in the early 1870s, but had been reported as “long idle in 1892” (Gudde 1975:350-351). Ralph Hupp, a resident in the vicinity from the 1890s onward reported that Pomeratt, who owned the quartz mine, had a “...peculiar set-up. It had originally been operated with a big overshot water wheel that had been abandoned. They had used old traction engines to furnish the power to operate the mine” (Hupp 1974:21). Hupp also described a store and several miner’s cabins in the area that were no longer extant in the 1970s. The Toadtown Mining Company took over the mine between 1927 and 1930. Gudde (1975:350) writes that a new drift mine was opened in Toadtown in 1930. This site may represent that mining event, while earlier activities attributed to this site actually occurred on the other side of the Creek, as shown on the 1885 plat map. In 1930, J. Frazer, H. Mayes, and A. Richards were leasing the mine from the Toadtown Mining Company. A 1930 State Mineralogist report called the site the El Monte (Toadtown) mine and reported that the “old shaft, 150 feet deep on an incline of 45 degrees has been unwatered by the lessees. The north drift, 70 feet long and south drift, 18 feet long were both being advanced early in October 1930, on the 150-ft. level. A strike of high-grade ore was made late in September and has yielded several hundred dollars besides fine specimens” (Logan 1930:372). The report further noted the equipment in use at the mine, which included a 3 ½ foot Huntington mill, 10 horsepower gas engine, air compressor with a 15 horsepower steam engine, and a small pump and hoist operated by a three horsepower gas engine. No further historical information was discovered.

This site is located on private lands, at an elevation of 2,780 feet amsl, and measures 325 feet north-south by 212 feet east-west. The eastern exposure is heavily forested with fir, black oak, incense cedar, dogwood, broadleaf maple, and sugar pine. Blackberry and other groundcover have grown uncontrolled, and have covered most of the structural remains.

This site was recorded by PAR in 1984. That survey documented five features and historical information was gathered from the former landowner Ray Velliquette. A mobile home, carport, and modern barn were present on the property. Feature A was described as a standing, single-gable two-story house that measured 28 feet north-south and 16 feet east-west. The board and batten structure, constructed with wire nails, had a wooden block foundation. It was protected by a tin roof. Fenestrations were composed of wood sash windows and three doors. All door openings were located along the western elevation; one opening had been filled with a store-bought door, while the other two openings were filled with homemade doors. Knob and tube insulators were used to carry electricity through the structure, which was being used for storage. The structure was in good condition. Velliquette identified the structure as the 100-year old Toadtown Hotel that was a stage stop. However, no documentation about this use was located. Additionally, Hupp's detailed description of 1900s Toadtown does not include a two story building, a hotel or a stage stop. Wire nails observed throughout the feature indicate that it was constructed no earlier than 1891. The electrification of this feature would not have occurred until the DeSabra Powerhouse came online in 1903.

Feature B was a concrete foundation constructed from Portland Cement for the mill. It measured 37 feet north-south and 28 feet east-west, and was devoid of equipment. Velliquette told PAR researchers that this was once a ball mill. A ball mill rotates around a horizontal axis partially filled with the material to be ground plus the grinding medium (such as steel or ceramic balls or pebbles). There is no documentary evidence that the mill at this site was a ball mill.

Feature C was a collapsed structure measuring 22 feet north-south by 46 feet east-west. No foundation was present. It was identified as the ore house. According to Velliquette, this structure once housed a steam donkey engine that hauled ore up from the mine. If the engine failed, a windlass was used.

Feature D was a standing one story structure constructed of board and batten siding with wire nails. The single gable building is set on concrete pier blocks. A shed roof extension covers the porch. Fenestration is composed of four doors along the eastern wall and wood sash windows. This house, wired for electricity with knob and tube insulators, was being used for storage and was in good shape. Velliquette identified this structure as the change house, constructed around 1935, where miners showered and changed clothes before and after work. The structure was built so that miners, many of whom were Chinese, had to follow a back hallway between the locker room and shower without clothes on, limiting their ability to steal ore.

Feature E was a drift mine that measured 5 feet in diameter. The mine was partially concealed by boards and did not appear to have collapsed. Support timbers were not visible around the drift, which was set at a 45 degree vertical angle into the ground surface. Tailings piles were noted along Little Butte Creek and near Features B and C. The Toadtown Ditch (CA-BUT-877-H), located along the eastern periphery of the site, was once partially diverted to feed the mill's waterwheel.

Many features of this site indicate that mining activity occurred no earlier than the 1920s or 1930s. Hupp's description of the site did not include any of the features recorded by PAR, particularly the hotel or stage stop. The mill foundation is composed of Portland Cement, a

twentieth-century building material. PAR researchers also believed that the change house was a 1920s or 1930s construction.

PAR found that although the site retained integrity of location and setting, the structures had been modified to an extent where integrity of materials and design, critical components of mining systems, had been lost. Based on the recent dates of the structures and the modern intrusions, PAR judged the site as not significant and it was not recommended for listing in the NRHP.

The 2006 survey found that there has been fire damage to some buildings since the 1984 record was completed. The mobile home, occupied between 1974 and 1981, burned around 1996. The modern barn, constructed by Ray Velliquette in 1975, remains fairly intact (Harper 2006). Feature A, the two story house was destroyed by fire around 1996 and is now covered with blackberry vines. Feature B is intact, but appeared to be a different configuration than mapped in 1984 and was remapped during the recent fieldwork. Feature C has not changed since 1984. Feature D is fairly unchanged, but it has deteriorated in the last 22 years. The doors have been removed and the floors are rotting, which has allowed a tree to grow in the structure and through the roof. Feature E, a drift mine, appears to have changed considerably since 1984. A collapsed structure lies over the shaft entrance. This structure was not present during the previous survey, suggesting it was recently placed there and is not in situ. Also, water and modern trash have accumulated or been placed in the shaft. Additionally, the opening is twice as large as the one depicted on the 1984 map. This indicates that in the last 20 years, there may have been activity to see if the mine was still productive. Ore cart rails noted during the 1984 survey were not found during the current field effort. Three features not mentioned in the 1984 documentation were recorded during this survey. Feature F is a board and batten building with a corrugated metal roof measuring 16 feet east-west by 36 feet north-south. It has burned and is partially collapsed. This structure was built in 1975 as a one bedroom, one bathroom home with a fireplace (Harper 2006). Feature G is the remains of a small building located south of the carport and east of Feature E. This single gable board and batten structure has corrugated tin roof and ceramic insulators are nailed to the roof joists. This collapsed structure was not recorded in 1984 and may have been moved to this location since that survey. Feature H is a small spring box and associated piping. The spring was noted on the 1984 map, but this box was not. The tailings piles have not changed.

Artifacts not directly associated with the features include an iron wedge fragment located on the mill foundation and window glass fragments scattered throughout the site.

**Site Impacts:** No Project-related impacts observed

**NRHP Eligibility:** PAR noted that, although this site possessed integrity of location and setting at the time it was first documented, site modifications and modern intrusions made the site ineligible for the National Register. *Æ*'s assessment using the evaluation standards is provided below. The site appears to meet some of the standards. However, it lacks integrity. Modern intrusions have caused a loss of setting. Movement and loss of historic features has degraded integrity of location and design. Materials, workmanship, and feeling are no longer present. The

site is associated with a storied mining community, but there is little to make the observer understand that context. Therefore, this site is still evaluated as ineligible for the NRHP.

**Proposed Management Measures:** None required

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-873-H

**Other Designations:** Hog Ranch Ditch Tender's Camp; 04-000873

**Property Ownership:** PG&E

**Site Description:** This is a possible PG&E ditch tender's camp known as Hog Ranch and may represent Lower Centerville Canal Camp 2. It measures 100 feet north-south by 100 feet east-west. Located on PG&E land along the Centerville Canal, the camp includes remnants of three building pads, a possible privy pit, a trash scatter, a drinking water delivery system supplied by the canal, and a fig tree. A separate ditch system was apparently used for hydraulic mining activities not associated with the ditch tender's occupation. A small trash scatter of tin cans, bottles, ceramics and other domestic artifacts dates to the 1930s and 1940s, and gives insight into life at this rural location.

See Section 2.3.8.6.1 above for detailed information regarding CA-BUT-873-H.

**Site Impacts:** Modern trash dumping

**NRHP Eligibility:** PAR suggested that the site, associated with the Centerville Hydroelectric System, retained integrity and should be considered a contributing property of their proposed DeSabra-Centerville system historic district (1985). When Æ visited the site during the current project, it was found unchanged from the 1984 documentation and appears to meet all the evaluation standards. The site gives the observer a true sense of the life of the ditch tender, and the trash scatter contains data important in understanding subsistence activities. There are also likely to be other trash deposits, not visible during the survey, that contain more data. Therefore, this site is recommended as eligible for listing on the NRHP as a contributing property to the newly proposed DeSabra-Centerville Hydroelectric System Historic District. The site contains privies and other features suggestive of buried archaeological deposits that may retain data potentials. Test excavations are required to define the data potentials and thus, the site may also be eligible to the NRHP as an individual property under Criterion D.

**Proposed Management Measures:** Block public access from Hog Ranch Road and post warning signs, include in annual site monitoring and condition assessments. Test excavation needed to assess individual eligibility.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-877-H

**Other Designations:** 04-000877

**Property Ownership:** Private/Possible BLM

**Site Description:** This is a shallow, abandoned earthen ditch with no apparent associated features. The ditch originates at Little Butte Creek and terminates 1500 linear feet away at CA-BUT-872 (Poumeratt Quartz Mine/Toadtown Mine). It may have been used to power the overshot waterwheel that was reportedly present at the Poumeratt Mine. The ditch begins in a riparian zone dominated by alder, willow, and marsh grasses. It then passes through a transition zone of ponderosa pine, Douglas fir, incense cedar, and oak. The ditch is on private land and may extend onto BLM property.

PAR recorded this ditch in 1984. The initial portion of the ditch was excavated through a rock outcrop and has a stacked rock berm packed with earth. At this initial point, the walls of the ditch were perpendicular to the floor. The berm was 3 feet high and the bottom of the ditch was 7 feet wide. Once through the outcrop, the ditch was earthen with a rounded cross-section, with a berm 3.5 feet tall and 1 foot wide at the base. In 1984, the ditch was overgrown with pine and fir trees up to 6 inches in diameter, and was partially filled with silt and duff. The ditch was reportedly built in 1910, and may be associated with the 1930s mining activities at the Toadtown Mine. Sometime before 1984, Toadtown Way was built across the ditch, destroying a portion of it. The ditch was considered not eligible for the NRHP because of a lack of associated features and the ephemeral natural of the resource.

This site was visited by Æ during the 2006 field project. It was found to be consistent with PAR's 1984 description, although the earthen portions of the ditch appear to have suffered from some erosion in the past 22 years.

**Site Impacts:** No Project-related impacts were observed

**NRHP Eligibility:** The association of this site with CA-BUT-872-H is possible, but not documented. Even if an association can be made, there are no features that give the observer a sense of the use of this ditch. Modern intrusions have impacted this ditch. As the site fails to meet important evaluation standards, it is evaluated as ineligible for inclusion on the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-887-H

**Other Designations:** Orofino Mine; 04-000887

**Property Ownership:** PG&E

**Site Description:** This site is the entrance to the Orofino Mine. It has a northern exposure in a pine-chaparral transition zone with a manzanita understory. Dense vegetation covers portions of this hillside site, which lies on PG&E land.

This site was first recorded in 1985 by Chico State during archaeological reconnaissance for the DeSabra Forebay Timber Sale (Dreyer and Kramer 1985). At that time hardware fragments were visible in the mine shaft, but “non-cultural materials” had been dumped into the entrance, making identification and documentation difficult. The collapsed opening to the mine was shown mapped on the inside of the hairpin curve in the road that leads to the DeSabra Powerhouse. No other information was documented.

Æ’s visit to the site during the 2006 survey found that area to have substantially changed since the 1985 visit. No feature was observed at the location identified in the previous site record. However, a newer road has been constructed in the area where the site was recorded. A culvert, 4 feet in diameter, has been placed under the road and it empties into the previously mapped location of the mine entrance. This culvert does not appear to be more than 20 years old, and was likely placed here after the 1985 recordation.

Feature 1 recorded at the site is a pit surrounded by tailings. The waste rock is serpentine. Feature 2 is the location where five cart rails protrude from the tailings pile. Feature 3 consists of two collapsed rock walls on the south side of Feature 1. The lower wall is 20 feet by 3 feet by 3 feet and the upper wall measures 12 feet by 3 feet by 3 feet. Heavy vegetation cover obscures these walls and the slumping of tailing piles has caused loss of integrity. A can scatter is located just west of these walls. The walls may represent foundations for buildings or tent pads. There is a linear area just east of the road that appears to have been dug out at the southern end. It is covered with blackberry vines, and may have once been the location of a building. Amethyst glass was observed, suggesting activity between 1880 and the 1920s.

During Æ’s visit, there was no evidence of the mine entrance documented in 1985. This may be the result of the culvert and road construction that appears to have taken place in the intervening years. It is possible that the mine entrance was filled. However, it is unclear why the 1985 survey did not record the features observed during this field effort. The proximity of these new features to the location of the mine entrance mapped in 1985 suggests that the two loci are associated.

The feature recorded during the 1985 field visit as the Orofino Mine appears to have been destroyed or filled. The relationship between that feature and the features recorded during the present field effort is unclear. The ore cart rails protruding from the tailings pile suggest that the newly recorded area could represent a locus of the Orofino Mine that was reused by later prospectors.

**Site Impacts:** Culvert installation and road/creek alterations

**NRHP Eligibility:** Evaluating the integrity of mining properties is particularly challenging because most historic mines are abandoned and in poor condition. As observed by the NPS, the integrity of a historic mine cannot be evaluated in the same way a building is evaluated:

[T]he passage of time, exposure to a harsh environment, abandonment, vandalism, and neglect often combine to cause the deterioration of individual mining property components. For example, buildings may have collapsed, machinery may have been removed, and railroad tracks may have been salvaged. However, the property may still exhibit a labyrinth of paths, roads, shaft openings, trash heaps, and fragments of industrial activity like standing headframes and large tailings piles. Although these individual components may appear to lack distinction, the combined impact of these separate components may enable the property to convey the collective image of a historically significant mining operation. In essence, the whole of this property will be greater than the sum of its parts. In such cases, a mining property may be judged to have integrity as a system even though individual components of the system have deteriorated over time [Noble and Spude 1992:19].

This site has integrity of location but the setting has been severely impacted. The powerhouse access road cuts through the site, making it difficult to ascertain the relationship between the upper and lower features. A modern culvert and dirt road were placed through the site, causing erosion and possibly filling the mine and severely impacting the setting. The cultural remains that are present are not sufficient to reconstruct technological processes and their evolution through time. Therefore, the site does not have integrity of design. Additionally, there are no structures or equipment, so materials and workmanship are not well represented. Although some mining features are identifiable, providing some association, the site does not evoke a strong sense of the past. Therefore, feeling is absent.

Because this site lacks focus, data potential, and integrity, it is not recommended as eligible for the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-933-H

**Other Designations:** Dewey Ditch, 04-000933; temporary number DC-22-H

**Property Ownership:** Private

**Site Description:** This is the Dewey Ditch, which is fed by the West Branch Feather River. It lies on private property, parallel Humbug Summit Road. The ditch follows a gentle to moderate sloping hillside, and extends over 2 miles in a south-southeast direction from the West Branch Feather River to FS Road 25N17 at Cuddleback Flat. It is unclear if the ditch currently continues past Cuddleback Flat. It passes through a mixed conifer forest that contains an understory of manzanita, chinquapin, and gooseberry. The top of the ditch is 12 feet wide and the bottom is 4 feet wide. The segment is 2 feet 6 inches deep and 2.1 miles long.

One feature, a penstock frame, is associated with the ditch. The base of the frame, which consists of two concrete foundations, measures 5 feet by 14 inches by 6 1/2 inches and served as

a mount for curved iron frames that once held a 3-inch-diameter penstock. The foundations are 8 feet apart and are in situ. The iron frames have been removed and placed a short distance from the foundations.

The ditch was built in 1858 and sold to the Cherokee Mine in 1873. In 1902, Eugene de Sabla purchased the Centerville Powerhouse system and the dams, pipeline, and ditches of the Cherokee Mine, which included the Dewey Ditch (Jackson et al. 1985:141–142). He used the water carried by the old Cherokee ditches to generate power in his new Centerville hydroelectric system. The Dewey, Miner's, and Inskip ditches worked in tandem to carry water from Round Valley Reservoir to the Toadtown Canal, then ultimately to the DeSabra Forebay. In 1922, the ditch was 8 ½ feet wide at the top, 4 feet at the bottom, and 2 ½ feet deep. The ditch was decommissioned in 1933. A cabin near the head of the Dewey Ditch at the river (site CA-BUT-3069/H) straddles the ditch and may be the remains of a ditch tender's cabin. The resident at a modern cabin constructed on nearby site CA-BUT-3056 mentioned to the field crew that the ditch was used for hydraulic mining.

The portion of this ditch near Cuddleback Flat may have been turned into a road for logging. Certain sections of the ditch remain intact along most of its course. Integrity is diminished only in developed areas where roads and cabins are present and the ditch has filled in and used as roads and driveways.

**Site Impacts:** No Project-related impacts were observed during the current study.

**NRHP Eligibility:** The Dewey Ditch was originally associated with gold mining at the Cherokee Mine, and with later use for power generation associated with the early development hydroelectric power by the DeSabra-Centerville Hydroelectric System. Having been decommissioned in 1933, the ditch is no longer a feature of the hydroelectric system, but is considered individually eligible to the NRHP under Criterion A for its association with events that have made a significant contribution to the broad patterns of our history.

**Proposed Management Measures:** Include in annual site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-965-H

**Other Designations:** Indian Springs Mine; 04-000965

**Property Ownership:** Private

**Site Description:** The Indian Springs Mine was a drift mine started in 1860. It lies on private land and measures 79 meters by 70 meters. The mine is surrounded by pine, oak, fir, bay, and willow trees, as well as manzanita, California laurel, grasses and ferns. Located on a slope in

Butte Canyon, the southeasterly exposure is partially sheltered by the surrounding hills. A small perennial creek flows out of the main adit.

PAR recorded this site in 1987 during a survey for *Additions and Corrections to a Supplemental cultural resources survey of the Forks of Butte Hydroelectric Project, Butte County, California* (Farber 1987). Their documentation states that this drift mine, started in 1860, was worked continuously until the 1890s, and then sporadically until the 1920s and possibly later. The mine once encompassed 6,500 feet of tunnel, including turns, within a 5,200-foot stretch. In the 1880s and 1890s, the mine yielded as much as seven to eight dollars per cartload, but was abandoned by the 1920s because the cost of operation was too high (Logan 1930). This mine, like others in the area, was reworked during the Depression when there was a renewal of interest in prospecting. This mine was not as successful or as prominent as other mines in the Magalia District (Farber 1987).

Feature 1 of the site is a deep pit, measuring 4 feet by 12 feet by 5 feet, that appears to be a portal to a minor adit or perhaps just a locus for gravel washing. The pit has a collapsed frame made from 2 inch by 4 inch lumber, 1 inch by 12 inch wall boards, and corrugated galvanized sheet metal. Feature 2 is a collapsed cabin. A cast iron wood stove marked “United States Stove Co., So. Pittsburgh, Tenn., No. 6495, Kitchen Heater” was documented behind the cabin. The U.S. Stove Company has been producing stoves since 1869. Feature 3 is a shallow ravine adjacent to the cabin that contains stove pipe, sheet metal, amber, aqua, and amethyst bottle glass, ceramics, flat top beer cans, galvanized wash basin, and modern trash. These artifacts appear to date to the 1920s and 1930s. Feature 4 is a pit, measuring 4 feet by 7 feet by 4.5 feet deep, blocked by a broken and corroding ore cart. This pit is partially lined with undressed natural stone cobbles, and may have been a minor shaft. Feature 5 is a concentration of sheet metal, primarily composed of stove pipe. Feature 6 appears to be an area where fill has been imported to construct a flat earthen platform measuring 25 feet by 40 feet. Feature 7 was the main adit. It measures 3 feet wide and approximately 4.5 feet high. Two twisted ore cart tracks were documented that extend into the adit, which are very long and intact. The adit had been cut into rock and no supporting structure is visible. A sizeable flow of water emanates from the adit. This water appears to have been diverted from a natural channel, located parallel to the adit, by a metal conduit. The water re-enters the natural drainage downslope of the adit. Feature 8, shown on the map but not discussed in the site record, appears to have been another flattened area.

Artifacts previously recorded around the site included ore carts, ore cart track, food cans, tobacco cans, beer cans with church key openings, Union Carbide cans (probably kerosene), whiteware with a green makers mark (the mark is not described in the site record but the date is given as 1850s–1860s), mason jar fragments, window glass, wire nails, galvanized screen mesh, and cans with handles. Except for the concentration recorded as Feature 3, there is no trash dump, but rather a trash scatter across the site.

The cabin was recorded as being collapsed and the site in a general state of disintegration. The mining portals were collapsed and/or sealed. Later activity at the site, particularly Depression-era mining and recreational traffic, have obscured or obliterated all signs of earlier mining activity. Evidence of recreational activities, including possible prospecting, suggests that artifact collectors could have easily accessed the site. Modern trash litters the mouth of the adit, again

suggesting that this area is heavily used for recreation. About 40 feet northeast of the portal, a BLM cadastral survey marker was also recorded. It was emplaced in 1969, as the quarter section marker for Sections 3 and 10.

When *Æ* visited this site during the 2006 project, it was found to be essentially the same as the 1987 documentation. Recreational activities have continued in the area, and those, combined with weather and time, have caused continued disintegration of the site. This is most notable in the disappearance of artifacts, particularly the ore cart. However, most features and artifacts recorded in the 1987 record are still present and identifiable.

The primary, or most significant, time period of this site is from 1860 to the 1890s, with some sporadic activity into the 1920s. During the Depression era (1930 to early 1940s), old mine sites such as this one attracted people who hoped to improve their economic condition. This should be considered the secondary period of significance. The later activity obliterated many of the features dating to the primary period of significance. Many of the components of the site, including the ore cart, cart rails, and other mining artifacts are no longer present. Because these components represent the technology, their disappearance has caused a loss of integrity of materials and workmanship. Flattened areas can be identified as potential building pads, but there is no data to show what kind of buildings occupied those areas. With spatial relationships lost, integrity of design is impaired. Feeling and association are present. However, repeated recreational use of the site has deflated both artifact features and the site area itself, affecting setting and data potential.

**Site Impacts:** Although Depression-Era mining at the site obliterated many of its features dating to the site's primary period of use (1860-1890), no Project-related impacts were observed at the site.

**NRHP Eligibility:** The severe loss of integrity and low data potential result in a recommendation that this site is not eligible for the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-1111-H

**Other Designations:** 04-001111

**Property Ownership:** Private

**Site Description:** This site is an old corral and chute with an associated artifact scatter. It lies on private land at an elevation of 2,840 feet amsl and measures 60 feet by 60 feet. The area is relatively flat with a canopy of Ponderosa pine, cedar, Douglass fir, and black oak trees. Little Butte Creek is 125 meters to the west.

This site was originally recorded by the BLM in 1989 as having been constructed with split cedar boards, tongue-and-groove boards, hog wire, barbed wire, tin sheeting and cedar posts. The split cedar boards appear to have been taken from the nearby Little Butte Creek ditch and flume. A foundation was present under a portion of the corral and was thought to possibly be an older structure. Four gates were recorded by the BLM. A loading chute, projecting from the southeast corner of the corral, measures 18 ½ inches long by 2 feet wide. The artifact scatter contains sanitary cans, 1930s car parts, beer cans with church key openings, window glass, and cedar posts with 16D nails. At the time of documentation, the corral, which is on BLM land, was still used on occasion by Eldon Duensing of Chico. Duensing informed the BLM that the corral dated to the 1930s or 1940s. The BLM recommended that the corral be preserved because it might possess historic value.

Æ revisited this site during the current project. The corral measures 48 feet by 45 feet by 52 feet by 51 feet. The fence is 5–7 feet tall. The configuration appears to have changed slightly since 1989. The northern and eastern gates have been removed and vehicular traffic patterns are evident through those openings. An interior gate attached to an interior fence division has been removed. A large trash scatter is present under and around the chute. Several marked bottles are present, as listed in Table 5.1-2.

Other artifacts include various glass fragments, ceramic fragments, leather shoe soles with iron tacks, miscellaneous metal fragments, old car parts, and window glass. These artifacts appear to span a wide range of dates, suggesting that this site has been used from about 1950 until at least the 1970s.

This site is associated with grazing. Although thought to date to the 1930s by locals, the artifacts present support a date only as early as approximately 1950. This site has changed significantly from when it was first recorded. In 1989, the corral was still in use and the site map makes it easy to understand the flow of cattle from initial capture to chute to transport. However, the corral now appears to no longer be in use and it has disintegrated. Portions of the fence have fallen. The interior fence divisions, as well as the gates, have been removed. This eliminates several primary components of the corral and makes it difficult to understand the flow of work once carried out there.

**Table 5.1-2. CA-BUT-1111-H Bottle Marks and Dates**

<b>Date Range</b>	<b>Description</b>	<b>Maker</b>	<b>Origin</b>	<b>Reference</b>
1956?	Two amber bottles; “D11 / 56 (“I” in diamond and circle) /4	Owens-Illinois	Various	Lockhart 2006
1940–1973	Amber bottle base with stipling; “531 (connected NW) 73/D7”; “PLEASE HELP FIGHT LITTER” embossed around body	Northwestern Glass Co.	Seattle, Washington	Lindsey 2007; Toulouse 1971

**Table 5.1-2 (continued)**

<b>Date Range</b>	<b>Description</b>	<b>Maker</b>	<b>Origin</b>	<b>Reference</b>
1949?	Colorless bottle; 3 inches x 1 ½ inches x 6 inches tall; continuous thread finish; “D 23/101 9” with (“I” in diamond and circle) on base near the heel; “Federal Law Forbids Sale or Reuse of this bottle” on shoulder; “Half Pint” on body near heel	Owens-Illinois	Los Angeles, California	Lockhart 2006
1923–1964	Colorless prescription bottle; “O 7011/ (“H” over “A”) / 9”	Hazel Atlas	Oakland, California	Whitten 2006
1923–1964	Colorless bottle base; 2 ½ inch diameter “73/ (“H” over “A”) / 0-863”	Hazel Atlas	Oakland, California	Whitten 2006
1923–1964	Colorless bottle base; 2 inch diameter (“H” over “A”) / (stamped in reverse) 4131”	Hazel Atlas	Oakland, California	Whitten 2006
Unknown	Colorless oval bottle; “R181/90 (“I” in diamond and circle)”	Owens-Illinois	Unknown	Lockhart 2006

**Site Impacts:** No Project-related impacts observed

**NRHP Eligibility:** Although the site has features and appears to meet the 50-year requirement, it lacks important aspects of integrity. Location, setting, and feeling are retained. However, design is the primary data potential for this feature. Removal of key aspects of the corral makes this just another partial enclosure with a chute. The loss of design, the primary aspect of integrity for this site result in a recommendation that this site is not eligible for listing on the National Register.

**Proposed Treatment Measures:** None

**Monitoring Frequency:** None

**Site Number:** CA-BUT-1225/H (1226/1227/1228/H)

**Other Designations:** 04-001225; FS 05-06-51-739

**Property Ownership:** Lassen National Forest



**Site Description:** This is an extensive lithic and historic-era trash scatter. Basalt is the dominant toolstone on site and includes an extensive scatter of debitage; a core and three bifaces also were noted. Additionally, a small basalt outcrop on site served as a quarry. Obsidian is minimally represented by a biface, scraper, eared projectile point, and a few pieces of debitage. The projectile point is suggestive of an Elko-series point, which are primarily indicative of the Late Martis Phase (3000-1300 B.P.) associated with the Eastern Sierra Front cultural-temporal periods.

**Site Impacts:** Reservoir wave action, erosion, and recreation use, including ATV activities on site.

**NRHP Eligibility:** Formal test excavations at the site were completed in September and October 2007 under the existing license to determine the site's level of integrity and eligibility for listing on the NRHP. There is a potential that inundation and sedimentation may protect intact, subsurface deposits, if present. Given the variety of stone tools and the presence of both basalt and obsidian, the site appears to have the potential to address research questions about prehistoric occupation. Historic-era cultural remains may also provide insight into historic travel activities. Thus the site is preliminarily assessed as eligible for listing on the NRHP pending completion of artifact analysis and formal evaluation.

**Existing Site Protection Measures:** On August 31, 2007, PG&E submitted an ARPA permit application and scope of work (research design) to LNF to formally test and evaluate this site under the existing license. The purpose of this work was to determine the site's level of integrity and eligibility for listing on the NRHP. Formal test excavations were completed in September and October 2007. Artifact analyses are currently being undertaken. Given the variety of stone tools and the presence of both basalt and obsidian, the site appears to have the potential to address research questions about prehistoric occupation. Historic-era cultural remains may also provide insight into historic travel activities. In the Final License Application (October 2007), the site was preliminarily assessed as eligible for listing on the NRHP. A final evaluation report is expected in April 2008.

**Proposed Management Measures:** PG&E will consult with the SHPO, LNF, and Tribes, to develop treatment measures if evaluation indicates the site is eligible for listing on the NRHP.

**Monitoring Frequency:** Annual monitoring if the site is eligible for listing on the NRHP unless other treatment measures are developed and implemented as proposed in consultation with the LNF.

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**Site Number:** CA-BUT-1229-H

**Other Designations:** 04-001229; FS 05-06-51-624

**Property Ownership:** Lassen National Forest

**Site Description:** CA-BUT-1229-H is a historical mining site on NFSL. It contains a horizontal mine shaft with associated tailings, a rock cairn, and a prospect pit. It lies on a west facing

mountain slope approximately 5680 feet above sea level in mixed coniferous forest. The site contains dense stands of fir and Ponderosa pine amongst an understory of chinquapin and manzanita. It measures approximately 162 feet by 100 feet.

First recorded in 1986, the site was described as containing three features (Sloper 1986). These included a horizontal mine shaft/ditch with associated tailings (Feature 1), a possible rock cairn (Feature 2), and an exploratory mining hole (Feature 3). No associated artifacts were observed on the site surface. The horizontal mine shaft/ditch measured 46 feet long by 7 feet wide and 3 feet deep. The adit had collapsed and its opening was obscured by brush and recent deposition. Two tailing mounds were visible at the base of the adit. One measured 29 by 20 feet wide and 5 feet high and contained a large Ponderosa Pine in its center. The other measured 9 feet in diameter and surrounded a small stand of fir trees. Feature 2, the rock pile resembling a large cairn, was recorded approximately 50 feet southwest of the tailings. It measured 8 by 8 feet wide and 2.5 feet high. The exploratory mining hole, Feature 3, was observed 96 feet from the cairn in the same southwest direction. It was described as being 8 by 11 feet wide and 2.5 feet deep. Large boulders were piled up 2.5 feet high around the pit and a large mound of fill measuring 13 feet wide by 2.5 feet high was associated.

The site was revisited by Æ for the 2006 project and found to be fairly consistent with Sloper's 1986 description; however, some of the site attributes and features could not be relocated. These include the large Ponderosa Pine within the adit's tailing pile (Sloper's 1986 site datum) and the exploratory mining pit and associated mound (Feature 3). It is possible that the pine fell victim to a forest fire that swept the area since 1986. Feature 3 may have been obscured by accumulated forest debris, deposition, and vegetation. Also, Æ observed that what Sloper (1986) refers to as a "mine shaft/ditch" is actually the collapsed adit; there is no ditch associated. Æ's reconnaissance resulted in the discovery of one additional feature, a prospect pit, 6 feet northeast of the collapsed adit portal. It measures 8 by 4 feet wide by 1 foot deep. In addition, the tailing pile appeared to have become more dispersed over the years and was found to extend 15 meters west of the original site boundary. Æ updated the site record to document these changes.

This site has components of a small mining operation. However, the dense duff on the ground makes feature recognition difficult. The fire that went through the area appears to have caused the site to erode. In fact, one feature appears to have disappeared. The only features present at this site are the collapsed adit, prospect pit, and tailings. There are no artifacts that give clues to who mined this site or when activity occurred.

**Site Impacts:** No Project-related impacts observed

**NRHP Eligibility:** The site retains integrity of location and its association is clear. However, the dense stand of trees that appear to postdate the mining activity have impacted the site's setting and feeling. There is also no integrity of workmanship, materials, or design. Because this site lacks data potential, and retains little integrity, it is recommended as ineligible for the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-1465-H

**Other Designations:** 04-001465

**Property Ownership:** Private

**Site Description:** This site is a segment of an unnamed water conveyance ditch on private land. It is cut into a steep sandstone bank on the west side of Butte Creek. It is 40 to 48 inches wide and between 14 and 30 inches deep and extends approximately 500 feet long, paralleling the creek. It lies within a densely vegetated riparian zone containing sycamore and live oak trees, blackberry thickets, and various grasses. It was likely used to carry water for mining or agricultural activities.

This ditch was first recorded by John Furry in 1997 as a 45-foot discontinuous segment directly under the bridge. The ditch measured 2 1/5 feet wide by 18 inches deep and sustained considerable damage caused by high floodwater and vandalism (Furry 1997). Furry noted that 90 percent of the ditch was destroyed due to erosion and no section longer than 5 feet appeared to remain intact. The site was rerecorded in 1999 by Trudy Vaughan of Coyote and Fox Enterprises. Vaughan relocated the previously recorded segment under the bridge as well as additional segments both north and south of the bridge. Approximately 500 feet of ditch was observed in all; however the 40 foot section under the bridge and to the north was the most intact. Vaughan described the ditch as measuring 40 to 48 inches wide by 14 to 30 inches deep (Vaughan 1999). She noted intermittent draws intersecting the ditch from the bank above and suggested they may have supported a wooden flume or pipe to carry the water that flowed east from the bank above. An oval pad measuring 6 1/2 inches wide by 47 inches long and 4 feet deep was observed cut into the sandstone north of the bridge and may have served as the flume support base. Much of the ditch was filled in with rocks and vegetation and its outer sandstone wall displayed varying degrees of erosion. Sections of the ditch were completely destroyed by recent construction. Vaughan concluded that the ditch retains little integrity except for the short segment directly below and north of the bridge. AÆ's visit to the site in 2006 found that portions of the ditch were filled in with rocks and vegetation obscuring it from view; however, much of the ditch appears to be in fair condition. Other portions of the ditch are more heavily disturbed by construction of the bridge, road, and neighboring residence.

**Site Impacts:** No Project –related impacts were observed.

**NRHP Eligibility:** Because the date and owner/operator of the ditch could not be determined, its lack of integrity, and the fact that water conveyance ditches of this type are common in this area, Vaughan previously concluded that the site has little data potential and is not eligible for listing on the NRHP (Vaughan 1999). In general, AÆ found the site to be consistent with Vaughan's description and agrees with Vaughan's recommendation that the site is not eligible for listing on the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3040-H

**Other Designations:** Butte Creek Canal Camp 3; 04-003040; temporary number BCC-4-H

**Property Ownership:** PG&E

**Site Description:** CA-BUT-3040-H is Butte Creek Canal Camp 3 and was likely a ditch tender's camp. It is located on PG&E property on the north end of Lake DeSabra, adjacent to the Toadtown Canal. It was identified by PAR (1985) as the site of the PG&E Headquarters Camp. However, maps and other references reviewed during the archival research indicate that Camp 1 (04-003071), located on the south end of Lake DeSabra, is the PG&E Headquarters' Camp. The site is located in a generally flat area with an eastern aspect. The surrounding vegetation is conifer forest with poplar trees and Manzanita understory. The irregular shaped site measures approximately 235 feet north-south by 210 feet east-west. The Toadtown Canal abuts the eastern perimeter. Lake DeSabra (the DeSabra Forebay) lies 30 feet to the northeast.

Several features are extant within the site. Feature A is the perimeter fence, which demarcates the northern, eastern, and western boundaries of the site. It is constructed from recycled lumber, including board and batten siding and sawed-off power poles, and barbed wire. It is approximately 6 feet tall. Feature B is a board and batten garage that sits on a concrete foundation. This front-gabled structure measures 27 feet by 27 feet and has a corrugated metal roof. The original door on the northern elevation has been replaced with a modern metal garage door. A single window, a 3/3 wooden horizontal slider, is present on the southern elevation. A piece of aluminum gutter lies on the ground just west of the structure, but there is no evidence that it was used on this structure. In the garage doorframe, there is a metal placard that reads "Pacific Gas & Electric Company/Building 4516/This plate to be returned to/General Office San Francisco, immediately/This Building is sold or destroyed". A concrete slab abuts the eastern side of the garage. It measures 25 feet east-west by 40 feet north-south. Feature C is a depression with an associated rock alignment. The shape of the depression indicates a structure may have once been located within the current alignment of the driveway. The single course of rock on the southern end of the depression may be remnants of a foundation. Feature D is an area of introduced vegetation, including two cherry trees, one plum tree, a lilac, acacia, and ivy.

A light scatter of artifacts was noted across the site. Miscellaneous metal hardware, including bolts, square spikes, and wire, were primarily observed along the fence line. A broken brown insulator is attached to a post on the west side near the north gate has "Illinois / PAT. 1709477" embossed around the circumference. This patent number dates to 1923. A red brick fragment was also observed.

The site is visible to users of the recreational trail along Toadtown Canal. Modern trash is present within the site boundaries.

For additional information regarding CA-BUT-3040-H, see Section 2.3.8.6.6 above.

**Site Impacts:** The lack of features and artifacts is believed to have occurred as a result of a major cleanup episode that removed structures and trash, leaving little to no data potential at the site. Additionally, the site no longer conveys its use as a camp, which affects the setting, feeling, and association. Workmanship, materials, and design were affected by removal of the features. Although intact subsurface deposits may be present, the removal of surface features has severely impacted the data potential found in the spatial layout of the site. Only one artifact of the few that remain on site was datable indicating activity after 1923.

**NRHP Eligibility:** AEC believes that the lack of features and artifacts is due to a major cleanup episode that happened sometime in the past, where structures were removed and trash was picked up. That event has left almost no data potential at the site. Additionally, it affected six aspects of integrity. The site no longer conveys its use as a camp, which affects the setting, feeling, and association. Workmanship, materials, and design were affected by removal of features. Although intact subsurface deposits may be present, the removal of surface features has severely impacted the data potential of the spatial layout of the site. Only one artifact of the few that remain on the site was datable. Even so, that artifact merely points to activity on the site after 1923. The one structure on site (Feature B) lacks integrity and retains no other significant characteristics that would make it individually eligible to the NRHP.

Removal of the structures, loss of spatial relationships, lack of features or artifacts, and a loss of integrity result in a recommendation that this site is not eligible for the National Register.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** 04-003041

**Other Designations:** Hupp's Sawmill; temporary number BCC-5-H

**Property Ownership:** PG&E/Private

**Site Description:** This was the location of Hupp's Sawmill and residence, in use between 1864 and 1890. It lies on both PG&E and private lands. All structures were removed over 25 years ago. The area is now covered with blackberry bushes and ground vegetation was thick during the field visit. Modern trash has been dumped on the site. Only a few historic ceramics and glass fragments were observed. It is possible that tall, thick vegetation is obscuring artifact concentrations. It is also possible that artifact-bearing hollow features are present, but hidden. These could include privies, trash pits, and industrial features related to the sawmill.

For additional information regarding 04-003042, see Section 2.3.8.6.6 above.

**Site Impacts:** Removal of the structures

**NRHP Eligibility:** Because the site is so overgrown, this site is not formally evaluated. Subsurface investigations are necessary to determine the data potential of this site and thus, its significance. A map of all the facilities that once occupied this site could be used to guide that work. A significance evaluation cannot be made at this time and the site remains potentially eligible for the NRHP.

**Existing Site Protection Measures:** None

**Proposed Management Measures:** Include in annual site monitoring and condition assessment program. Subsurface investigations are necessary to determine the data potential of this site and thus, its significance.

**Monitoring Frequency:** Annual

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**Site Number:** 04-003042

**Other Designations:** Centerville Canal Camp 3; temporary number CC-4-H

**Property Ownership:** Private

**Site Description:** 04-003042 is a ditch tender's camp on the Lower Centerville Canal. It is located on private property, south of where the canal intersects with Centerville Road. Based on archival research, this is likely the site of Camp 3. Because this site is on private property, only minimal access to the site was possible. A rock retaining wall was observed next to the house and may be a remnant of the camp, but its exact association is unclear.

**Site Impacts:** Non Project-related modern construction and disturbances have negatively affected the overall integrity of the site. Even if subsurface features still exist, the setting, feeling, association, materials, and design have been essentially eliminated. No Project-related impacts were observed.

**NRHP Eligibility:** Modern construction and disturbance have affected the overall integrity of the site. Even if subsurface features still exist, the setting, feeling, association, materials, and design have been essentially eliminated. This site is recommended as ineligible for listing on the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3043/H

**Other Designations:** 04-003-43; FS 05-06-52-10206; temporary number DC-1/H

**Ownership:** Lassen National Forest

**Site Description:** CA-BUT-3043/H is an extensive prehistoric and historic-era site containing BRMs, projectile points, a small historic-era trash dump, historical U.S. USFS road, and turpentine trees. Although a formal identification of the projectile points is necessary, those observed on site are similar in form to Elko-eared and Corner-notched styles associated with the Late Martis Phase (3000-1300 B.P.) and the Kingsley Complex (500 B.C. – A.D. 500) respectfully, which are identified in the Eastern Sierra Front cultural-temporal sequences. Ponderosa trees were tapped for turpentine in the 1860s, which was shipped back east to support the Civil War. The trash dump indicates the site was used from 1917-1950, and the road is shown on a 1949 Division of Forestry map.

**Site Impacts:** No Project-related impacts observed

**NRHP Eligibility:** Formal evaluations are necessary to identify the site's eligibility for listing on the NRHP. However, surface-visible artifacts and features suggest the site retains significant data potentials that provide insight into prehistoric and historical use of the site and important event both locally and nation-wide.

**Proposed Management Measures:** Include in annual site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** 04-003044

**Other Designations:** Temporary number DC-2-H

**Property Ownership:** SPI

**Site Description:** This is a corral on SPI lands, located on a flat adjacent to Humbug Road. Pine and cedar trees dominate the site, giving the corral area only 25 percent open exposure. The exposed ground contains sparse grasses, while pine needles and thick duff cover the remainder of the site. Gooseberry is also present in the area. Scattered granite rocks are noted in the site area.

The corral is an irregular pentagon shape with a northeast-southwest orientation. The longest (northwestern) side measures 328 feet in length. The northeast side measures 67 feet and the southwest side is 197 feet long. The southeast side of the corral is comprised of two segments; one measures 82 feet and the other 262 feet. The corral was constructed with wooden posts and barbwire. Ceramic insulators were used to attach and tie the wire.

**Site Impacts:** Overall, the corral is in poor condition. Although most of the posts survive, the wire has either fallen down or been removed along most of the fence line. Trees have grown

within the corral area. However, no Project-related impacts were observed during the current study.

**NRHP Eligibility:** Although some portions of the corral are intact, this feature has lost integrity of design, workmanship, and materials. New forest growth has affected the feeling and setting. This site does not appear to have any data potential and is recommended as ineligible for listing on the NRHP.

**Proposed Treatment Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3045/H

**Other Designations:** 04-003045/H; temporary number DC-3/H

**Property Ownership:** SPI

**Site Description:** CA-BUT-3045/H

is a large prehistoric village site with midden, a moderately dense lithic scatter, and BRMs. The lithics include a dense scatter of debitage comprised primarily of basalt and a few pieces of obsidian, bifaces, a core, projectile points (one corner-notched and one side-notched), a handstone, and a pestle fragment. Historical trash and evidence of historic-era logging are also present, dating to 1933-1964.

**Site Impacts:** No Project-related impacts were observed during the current study. Although historic-era activities have affected the prehistoric deposit, both prehistoric and historic-era deposits retain a high level of integrity overall.

**NRHP Eligibility:** Formal evaluations are necessary to identify the site's eligibility for listing on the NRHP. However, based on the data potentials visible in surface-evident artifacts and features, the site is preliminarily assessed as eligible for the NRHP.

**Proposed Management Measures:** Include in annual site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3046-H

**Other Designations:** 04-003046; temporary number DC-6-H

**Property Ownership:** SPI



**Site Description:** This site, which contains two trash dumps, is located on a south facing slope under a canopy of pine and cedar trees on SPI land. A skid trail passes through the western portion of the site, which measures 65 feet north-south by 72 feet east-west. Fallen trees, dead branches, and heavy duff litter the area. Granite outcrops were noted inside the site boundaries. The West Branch Feather River is located approximately 272 feet to the south.

Feature A at the site is a trash dump measuring 26 feet by 13 feet. Approximately 100 cans are present, including cone-top beer cans; some matchstick filler milk cans measuring 2 1/2 inches in diameter and 2 1/2 inches in height and some that measure 2 15/16 inches in diameter and 3 15/16 inches in height; large and small sanitary cans; a small pail; rectangular can; flat top beer can with large church key opening; a one-quart Pennzoil can; "Prince Albert" upright tobacco tin; meat cans; sardine tins; spice cans; "Log Cabin" syrup tin, and an external friction lid from a coffee can (Rock 1987). Other artifacts include a Graniteware pot, a white improved earthenware bowl fragment, and a colorless bottle neck and finish exhibiting automatic bottle machine seams (post-1904). The beverage cans date this deposit between 1935 and 1963 (Rock 1987).

Feature B is a trash dump that measures 16 feet by 9 feet. About 30 cans are present, including pull-top aluminum soda and juice cans with steel body, a small propane canister, sanitary cans, and a large ham can. The beverage cans date this deposit to post 1963 (Rock 1987).

A skid trail passes through the western portion of the site. Feature B is located within the skid trail, suggesting that the trail was not in use when that deposit was made.

Two eras of use are present at this site. Feature A, related to a skid trail, may be associated with logging activity. Feature B is a later deposit likely associated with recreational campers.

**Site Impacts:** No Project-related impacts were observed during the current study.

**NRHP Eligibility:** Although this site meets most of the evaluation standards, it does not contain enough data potential to address research questions about industry or subsistence. The association of Feature A is tenuous. There are no documented logging camps in this area. Therefore, if it is associated with the lumber industry, it is a single dump episode likely associated with loggers away from their main camp. Although many food containers are present, it provides only a one-dimensional view into the past. The data potential of this site, the threshold of Criterion D, is low, and therefore the site is evaluated as ineligible for listing on the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3047-H

**Other Designations:** 04-003047; temporary number DC-7-H

**Property Ownership: SPI**

**Site Description:** This site is composed of three trash dumps. Located on an east-facing slope, it is adjacent to the West Branch Feather River on SPI land. A dense stand of pine and cedar trees are within and around the site. Heavy duff and fallen branches litter the ground.

Feature A of the site measures 9 feet east-west by 6 feet north-south. Feature B, located 25 meters from Feature A at a bearing of 240 degrees, measures approximately 23 feet north-south by 26 feet east-west. These features contain a mixture of steel top cans with pull tabs (dating from 1962 to the early 1970s), clear liquor bottles with threaded closures, a can of Liquid Wrench, an upright tobacco can, and a Pepsi bottle with a 1970 makers mark. These two features appear to date to around 1970.

The northernmost dump, Feature C, measures 11 feet east-west and 10 feet north-south and is located 25 meters south of Humbug Road. This feature is the most extensive, containing over 200 items, with additional subsurface deposits. These items include clear glass condiment bottles and liquor bottles, brown liquor bottles, a 7-Up bottle, evaporated milk cans with matchstick filler lids, cone and flat top beer cans, coffee cans, jelly jars, tumblers, a pickle jar, and a tube of Colgate toothpaste. The datable artifacts suggest that this site dates between 1945 and 1960 (Table 5.1-3).

**Table 5.1-3. CA-BUT-3047-H Bottle Marks and Dates.**

Date Range	Description	Maker	Origin	Reference
1933-1953	20 ("I" in diamond and circle) 3	Owens-Illinois	Brackenridge, Pennsylvania OR Oakland, California	Toulouse 403-406; Lockhart 2006
1933-1964	"Federal Law Prohibits Sale or Re-use of this bottle"			IMACS 2001
1924-1968	"K" in keystone	Knox Glass Bottle Co/Knox Glass Co., Inc.	Knox, Pennsylvania	Toulouse :293
Post 1940	Duraglass (in script)	Owens-Illinois	Various	Lockhart 2006
Since 1945	Interlocking GC	Glass Containers, Inc/Glass Containers Corp.	Various cities, California	Toulouse 220
1935-late 1950s	Cone top beer can	Various	Various	Rock 1987:29

These deposits are undisturbed and appear to retain good integrity. Features A and B may have been created by recreational campers. Feature C may be related to the lumber industry, but that association is unclear.

**Site Impacts:** No Project-related impacts were observed during the current study. Overall, these deposits are undisturbed and appear to retain good integrity.

**NRHP Eligibility:** Like site CA-BUT-3046-H, this site meets most of the evaluation standards, but it does not contain enough data potential to address research questions about industry or subsistence. Again, the association of Feature C to the logging industry is tenuous. There are no documented logging camps in this area. Therefore, if it is associated with the lumber industry, it is a single dump episode likely associated with loggers away from their main camp. Although many food containers are present, it gives us only a one-dimensional view into the past. The data potential of this site, the threshold of Criterion D, is low, and therefore the site is recommended as ineligible for listing on the NRHP.

**Proposed Treatment Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3048-H

**Other Designations:** 04-003048; temporary number DC-8-H

**Property Ownership:** Private

**Site Description:** This historic-era trash scatter is located on an east-facing terrace overlooking the West Branch Feather River on private property. A canopy of pine and cedar allows 20 percent exposure of the site. Located at 5,280 feet amsl, the site measures 70 feet north-south by 60 feet east-west. A dense stand of trees to the north protects the site from travelers on Humbug Summit Road.

Feature A, the trash dump, is 40 feet in diameter. It contains approximately 100 items. Ceramics include white improved earthenware fragments, one marked "WALLACE/20V/ CHINA/LOS ANGELES/CALIFORNIA". That is the mark for the Wallace China Company, in business from 1931 to 1964 (Lehner 1988). A colorless Karo Syrup bottle has an Owens-Illinois basemark ("7 ["I" in circle and diamond] 9") suggesting it was produced in 1939 (Lockhart 2006). Matchstick filler milk cans measure 2 15/16 inches by 3 15/16 inches and has raised rings, suggesting a date of 1945-1950. Other cans include MJB coffee cans, meat cans, sanitary cans, and juice cans. A "Coca-Cola" bottle is also present, and "1956" was marked on its base. The dates of the artifacts are confusing, as they do not appear to be contemporaneous with each other. This may suggest that this site was used over a period of time and is not a single episode deposit.

Fallen trees and dead branches litter the site, and have potentially buried artifactual material. River flooding episodes and water scouring related to an adjacent mining ditch (CA-BUT-933-H) have caused erosion of the terrace bank that is slowly encroaching on the site.

The mix of datable artifacts at this site makes interpretation of the deposit difficult, thus the deposit lacks focus.

**Site Impacts:** No Project-related impacts were observed during the current study. Fallen trees and dead branches litter the site and have potentially buried artifactual material. River flooding

episodes and water scouring related to an adjacent mining ditch (CA-BUT-933-H) have caused erosion of the terrace bank. The erosion is slowly encroaching on the site.

**NRHP Eligibility:** As with sites CA-BUT-3046-H and CA-BUT-3047-H, this site meets most of the evaluation standards, but it does not contain enough data potential to address research questions about industry or subsistence. This site may be associated with logging or recreational camping, but appears to have been disturbed by the introduction of later artifacts. Although many food containers are present, it gives us only a one-dimensional view into the past. The data potential of this site, the threshold of Criterion D, is low, therefore, the site is recommended as ineligible for the NRHP.

**Proposed Treatment Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3049

**Other Designations:** 04-003049; temporary number DC-9

**Property Ownership:** SPI

**Site Description:** This site contains a granite BRM with two mortar cups and two milling slicks. The site encompasses approximately 500 square meters on a slope above the West Branch Feather River. It lies on SPI lands at an elevation of 5,540 feet within an overstory of cedar, pine, and cottonwood trees. Whitethorn and gooseberry also grow on site. A small amount of forest duff and soil covers the milling station, which exhibits signs of natural weathering and erosion. Overall, the milling feature is in good condition.

**Site Impacts:** No Project-related impacts were observed during the current study.

**NRHP Eligibility:** BRMs first appear in the northern Sierra cultural sequence during the Early Kings Beach Phase (1300-700 B.P.) and are absent from the cultural assemblages that define the Southern Cascade cultural sequence. Often, subsurface cultural remains are lacking from isolated BRM sites (cf. PAR 2001), and although isolated BRMs are indicative of plant processing activities, they lack diagnostic artifacts and other datable materials to substantiate specific temporal designations, and offer little information toward addressing additional research questions (i.e., resource procurement, lithic technology, social structure). However, cultural studies conducted by LNF have discovered the opposite in some cases, that for some BRM sites, a lack of surface manifestations does not reflect a lack of subsurface deposits. Site CA-BUT-3049 retains a moderately high level of integrity. Based on surface observations, it might be preliminarily assessed as lacking significant characteristics that would make it eligible for listing on the NRHP. However, formal subsurface testing and evaluation are necessary to fully identify the site's eligibility.

formal evaluation is necessary to determine the site's eligibility. However, it is preliminarily assessed as ineligible for listing on the NRHP due to the lack of surface-visible diagnostic artifacts or features that would suggest that a buried cultural deposit is present or whether the site contains data potentials.

**Proposed Treatment Measures:** Include in annual site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3050/H

**Other Designations:** 04-003050; temporary number DC-12/H

**Property Ownership:** CDFG

**Site Description:** This is a sparse lithic scatter and historic-era trash dump. The prehistoric deposit includes two basalt bifaces and approximately 10 basalt flakes. The historic-era trash dump contains jar and bottle glass, ceramics, various types of tin cans, a leather hobnail boot, and a brass, center fire cartridge, dating to 1940-1963.

**Site Impacts:** No Project-related impacts were observed during the current study.

**NRHP Eligibility:** Formal evaluation is necessary to determine if additional, buried prehistoric cultural remains are present and whether subsurface materials retain integrity. However, creek-side terraces and other major water sources are generally considered to be sensitive cultural locations, suggesting there is potential for additional buried deposits. Based on these observations, the site is preliminarily assessed as eligible for listing on the NRHP.

The historic-era trash dump is recommended as ineligible for listing on the NRHP. It contains personal and household remains, but has no known associations. Its location adjacent to Humbug Summit Road may have provided opportunistic dumping for travelers or recreationists and residents who occupied cabins in the vicinity. It may also be associated with a corral that was observed in the area. However, without concrete associations, the dump offers no information to address the research questions or historic-era themes identified in the historic context.

**Proposed Management Measures:** Include in a site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3051/H

**Other Designations:** 04-003051; temporary number DC-13/H

**Property Ownership:** CDFG

**Site Description:** CA-BUT-3051/H contains a sparse lithic scatter, a diffuse historic-era trash dump, and a logging skid trail. The lithic scatter includes 1 basalt core, 1 basalt biface fragment, and 2 basalt flakes. The historic-era portion of the site is limited to 6 tin cans, 1 jar, and 1 bottle that represent food consumption but otherwise offer no information specific to historical events or other associations. Diagnostic historic-era artifacts suggest the site was used in 1935-1945.

**Site Impacts:** No Project-related impacts were observed during the current study.

**NRHP Eligibility:** Formal evaluation is necessary to identify the eligibility of the site's prehistoric deposit for listing on the NRHP. The surface-evident artifacts are sparse. However, locations near major water sources are considered to be culturally sensitive and intact subsurface deposits may be present. Thus, the prehistoric deposit is preliminarily assessed as eligible for listing on the NRHP.

The historic-era trash dump contains personal and household remains, but has no known associations. Its location adjacent to Humbug Summit Road may have provided opportunistic dumping for travelers or recreationists and residents who occupied cabins in the vicinity. It may also be associated with a corral that was observed in the area. However, without concrete associations, the dump offers no information that addresses the historic-era themes identified in the historic context, or the research questions, and it is recommended as ineligible to the NRHP.

**Proposed Treatment Measures:** Include in a site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3052

**Other Designations:** 04-003052; FS 05-06-51-1021; temporary number DC-15

**Property Ownership:** Lassen National Forest

**Site Description:** This site is a granite BRM with one mortar cup. Overall, the milling station is in good condition. No other cultural remains were observed during the current study. This BRM is on a semi-flat slope on National Forest System Lands (NFSL) at an elevation of 5,740 feet. The site measures approximately 400 square meters and is covered by pine, fir, and chinquapin with a dense ground cover of pine needles, cones, and dead tree branches. Overall, the milling station is in good condition. Free-range cattle and deer tracks were observed within the site boundaries.

**Site Impacts:** No Project-related impacts were observed during the current study.

**NRHP Eligibility:** BRMs first appear in the northern Sierra cultural sequence during the Early Kings Beach Phase (1300-700 B.P.) and are absent from the cultural assemblages that define the Southern Cascade cultural sequence. Often, subsurface cultural remains are lacking from isolated BRM sites (cf. PAR 2001), and although isolated BRMs are indicative of plant processing activities, they lack diagnostic artifacts and other datable materials to substantiate specific temporal designations, and offer little information toward addressing additional research questions (i.e., resource procurement, lithic technology, social structure). However, cultural studies conducted by LNF have discovered the opposite in some cases, that for some BRM sites, a lack of surface manifestations does not reflect a lack of subsurface deposits. Site CA-BUT-3052 retains a moderately high level of integrity. Based on surface observations, it might be preliminarily assessed as lacking significant characteristics that would make it eligible for listing on the NRHP. However, formal subsurface testing and evaluation are necessary to fully identify the site's eligibility and the site remains potentially eligible.

**Proposed Management Measures:** Include in annual site monitoring and condition assessment program until unless formal evaluation is conducted at the site.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3053-H

**Other Designations:** 04-003053; FS 05-06-51-1022; temporary number DC-16-H

**Property Ownership:** Lassen National Forest

**Site Description:** This site is a historic period refuse deposit consisting of bottles, glass, ceramics, enamelware, and cans. It is located on NFSL on a gentle slope within a clearing near a campground access road. It lies at an elevation of 4,800 feet amsl within a mixed conifer forest and manzanita and gooseberry understory. The West Branch Feather River is located approximately 500 meters to the west. Site boundaries, which are 38 meters north-south by 25 meters east-west, were determined by both the surface extent of artifacts and topography.

Although a few artifacts were located throughout the site, most artifacts were concentrated in a 5-foot diameter area in the northeastern quadrant of the site. Artifacts include a white improved earthenware vessel foot or finial; a yellow ware plate rim with ".../WIS." on the base; a colorless bottle with a brandy finish and "FEDERAL LA[W]...DS SALE / OR RE-USE OF ...S BOTTLE" (1933–1964); three beer cans with lapped side seams marked with "OLD DUTCH" and "[G]old[en] Grain"; a brass shotgun cartridge marked "WINCHESTER/No 16/ REPEATER"; a colorless glass bottle, slightly rectangular with "..OW.." on the base; and a red and white enamelware handle. Some bottles exhibit makers marks. Two short amber bottles were marked "20 ("I" in diamond and circle) 0/ 10E / 20075-GB." A colorless one quart bottle is marked "20 ("I" in diamond and circle) 59// (in circle) M / REG. CAL. // 7037-G 26." These appear to be liquor bottles, and Owens-Illinois marks on liquor bottles cannot be reliably dated (Lockhart 2006). One aqua bottle base, 3 ¼ inches in diameter, is marked "20 ("I" in diamond

and circle) 55,” suggesting it was made by Owens-Illinois in Oakland in 1955 (Lockhart 2006; Toulouse 1971:403–406).

Five sanitary cans with two dimensions were encountered. One size, 3 1/8 inch diameter by 4 3/8 inch tall most closely corresponds with the 303 can which was used for vegetables, some fruits and juices, soups, and specialties. The can measuring 2 1/8 inch diameter by 2 7/8 inches tall appears to correspond with the 5Z can, which was used for baby food or chocolate syrup. A matchstick filler hole-in-top can measures 3 inches in diameter and 4 3/8 inches tall. Also present was a rectangular meat can and an aluminum meat tin with steel key. A tin can with a screw cap and pour spigot in the corner of the top measures 10 inches by 8 inches by 3 1/4 inches, and has an unreadable round brand design on the front and back. One tin can, measuring 4 1/2 inches in diameter and 5 inches tall has an external friction lid pail with lugs. The handle is missing. A slit knife opening is present on the bottom and a hole has been punched near the edge of the base.

This site appears to date to about 1955. It retains good integrity and most of the artifacts appear to be undisturbed, although the nearby campground gives collectors easy access suggesting that other deposits on the site may have been disturbed or removed.

This site may be associated with mid-twentieth century camping at the West Branch Campground. However, this association is unclear. Although the deposit can be dated, and there are artifacts related to subsistence, the data potential is very small.

**Site Impacts:** The site is within a clearing near the campground access road.

**NRHP Eligibility:** The site meets most of the evaluation standards, but there are no personal artifacts that would assist with the site’s association or give clues to age, gender, social class, or ethnic group. The lack of data potential results in a recommendation that the site is ineligible for the National Register.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3054-H

**Other Designations:** 04-003054; FS 05-06-51-424; temporary number DC-18-H

**Property Ownership:** Lassen National Forest

**Site Description:** This is a historic period refuse deposit composed of bottles, cans, and metal hardware that is located in a clearing near the West Branch Feather River on NFS. Site boundaries, which measure 25 meters north-south by 23 meters east-west, were determined by the extent of surface artifacts as well as topography. The western boundary is defined by the bank of the West Branch Feather River. The natural contour of the base of an adjacent hill



composes the northern and eastern boundaries. The area surrounding the site is thickly forested with pine and cedar trees. Thick duff, as well as many dead trees and limbs, litters the area.

Most of the artifacts, consisting of ceramic, glass, and metal, are concentrated in a 5 meter diameter area in the northwestern quadrant of the site. One ceramic fragment from a white improved earthenware vessel has a green, orange, and blue design of a woman outdoors with blue around the rim. Cans include two matchstick filler milk cans, a rectangular tin can that measures 7 inches by 4 inches by 2 1/2 inches, five sanitary cans, and five cone top beer cans which date between 1935 and the late 1950s (Rock 1987:29). Three cans are marked "Old/Frisco/Extra Pale/Lager Beer." A colorless condiment jar measures 3 inches tall and has a 2-inch diameter. It has an external thread and is marked "6848 A/23 (interlocking oval and diamond) 7/4," suggesting it was produced by Owens-Illinois prior to 1954. A colorless condiment tumbler that once displayed an adhesive label measures 2 7/8 inches in diameter and 3 1/2 inches tall. A green quart-sized bottle, displaying a partial adhesive label marked "...JUICE..." has a base mark of "Duraglass/ 23 ("I" within an oval and diamond) 4 / 2G / 1596-E." This bottle was produced by Owens Illinois between 1940 and 1954. One milk bottle was made of colorless glass and has an inset finish. Amber and colorless glass bottle fragments are also present. One milk glass canning jar seal was noted.

Hardware includes a Z-shaped metal bracket with five rivets. The bracket is 1 inch wide and 3/16 inches thick. Two legs of the Z each measure 4 inches long, with the third leg measuring 3 inches long. A single wire nail measuring 2 1/4 inch long was also noted.

One Hill Brothers coffee can was noted near the eastern site boundary. The one pound can is marked "Hills Bros / Coffee / Red Can Brand / The Original Vacuum Pack." This can dates to after 1914 (Rock 1987).

This site appears to retain good integrity, but because of its proximity to the river, it may have been subject to flooding episodes. Based on the artifacts, this site appears to date to between 1940 and the late 1950s.

**Site Impacts:** No Project-related impacts were observed during the current study.

**NRHP Eligibility:** The association of the site is unclear. There are no documented work camps in this area, so the deposit appears to be a single dump episode. There is subsistence information present, but with no association, there is little data potential, thus the site is evaluated as not eligible for listing on the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3055-H (Permanent State trinomial pending)

**Other Designations:** USFS Snag Lake Camp; 04-003055; FS 05-06-51-1024; temporary number DC-20/H

**Property Ownership:** Lassen National Forest

**Site Description:** This site, located at 5,600 feet amsl on NFSL, is the remains of the USFS Snag Lake Camp, which is shown on a 1949 Division of Forestry map. The site, which measures 137 meters north-south and 119 meters east-west, contains structures and artifacts. Located on gentle terrain at the base of a mountain, and just upslope of the West Branch Feather River, the camp lies in a mixed conifer forest with gooseberry, fern, and manzanita understory. The ground is littered with duff and fallen trees and branches. The vegetation and this ground cover are dense in most locations, potentially hiding features and artifacts. An enormous cascade of rocks is located along the steeper sections of the mountain along the eastern boundary. This site may be associated with CA-BUT-3043/H, also recorded during this survey, which is located across the river along FS Road #27N11B.

A number of features are located within the site. Feature 1 is a concrete and rock fireplace that measures 4 feet 5 inches by 4 feet by 13 inches. Concrete was used as mortar for the rocks and to face the top and inside of the fireplace. This feature is not intact, as rocks have been removed and the concrete has been broken up. The concrete is still present only on the north side. The northwest corner is collapsed. Some fragments of colorless and green glass are associated with this feature, as is one “Light/Olympia Beer” can with a church key opening. A flat top Coca-Cola can with a church key opening, dating from between 1960 and 1964, was noted nearby to the east.

Feature 2 is a depression with artifacts. This depression appears squared off, suggesting it may be a privy, and measures 7 feet by 6 feet by 14 inches. Artifacts present in this depression include 1/8-inch thick plate glass; green, amber, and colorless fragments of bottles and/or jars; steel wool; a white earthenware plate or platter fragment with a thin red line around the base of the rim, and brown wheat-like stalks and a green design on the rim; a 12-inch diameter metal gas can with two holes on the top (one threaded); sanitary cans; steel beer cans, including one Budweiser can; a barrel hoop; a colorless condiment bottle; and a 1 1/2 inch globular light bulb. Marked bottles include a colorless bottle base, 2 1/4 inches in diameter with “Hires” on the base (post 1893). An amber bottle base, 2 3/8 inches in diameter, is marked with “(in a square) N 66 (underlined) / 50.” It was produced by the Obear-Nestor Glass Company after 1915. A colorless extract bottle, 3 5/8 inches tall with a metal “Sh[ill]in ]g” cap, with “REG PAT / 94 T 47” on the base was produced prior to 1947. This feature dates between 1935 and 1947.

Feature 3 is a well with corrugated metal casing that is capped by a metal plate. The casing, which is 37 inches in diameter, sticks up above the ground to a height of 24 inches. The cap is soldered to the casing, likely as a safety precaution.

Feature 4 is a wooden bridge that crosses the West Branch Feather River. Constructed with milled lumber and wire nails on wooden piers, the bridge appears to have suffered from flooding episodes.

Feature 5 is a rock fire ring with corrugated metal that was used to reflect heat and protect the fire from wind. The single ring of rock measures 4 feet 5 inches in diameter and is 6 inches tall. The flashing is 64 inches long by 16 inches tall by 1/32 inch thick.

Feature 6 is an artifact deposit in a depression that measures 20 inches by 14 inches by 4 inches. A bottle labeled “Catsup” has the Owens Illinois mark “20 I (in a circle) 6 / 3E / Duraglass (in cursive) / 2143-EP” on the base. This bottle was produced after 1954. Many soda cans are present. One readable label is “SHASTA / TRUE FRUIT / BLACK CHERRY / FLAVORED / SODA / HASTA BE SHASTA / DO NOT FREZE”. This can dates to the 1950s. One of the soda cans is labeled “ORANGE / CREAM SODA”. A French’s mustard jar with a screw on cap is also present. Two sanitary cans are 7 inches tall and 4 inches in diameter, corresponding to a No. 3 can that would have been used to package fruit or tomato juices. One sanitary can measures approximately 4 3/8 inches tall and 3 1/8 inches in diameter. It is likely a No. 303 can that was used for juices. This feature dates to the late 1950s.

Feature 7 is another artifact deposit. This deposit, which covers an area measuring 9 feet by 5 feet, lies near a road through the camp. Two aluminum cans marked “Maid Rite Brand/Imitation/ Grape/Soda/Artificially Flavored” are present, as are five Olympia Beer cans, 7-Up cans, rootbeer cans, and Coors and Hamm’s beer cans. The pop-top openings on these cans date them between 1963 and the early 1980s. Several meat containers are present, including an Armour jar top and a rectangular tin marked “Dinty Moore/Sandwich/Loaf.” One plastic coffee mug with handle is marked “VACRON / PATENT NO. 0-192,174 / BOPP-DECKER PLASTICS INC / BIRMINGHAM, MICH” and was likely manufactured in the 1950s or 1960s. This feature appears to date to the period between 1963 and 1980.

Additionally, various artifacts not associated with features, such as sanitary cans, milled lumber with wire nails, and metal flashing, are located throughout the site.

There is evidence that cattle have been pastured and/or moved through the site. Vehicular access roads are located throughout the site boundaries, and there is evidence of recent recreation and camping activities. East of the well, black plastic pipes lay 21 feet apart in a shape resembling a horseshoe pit.

There are indications that the campground was once improved with a water cistern and a privy, but these have fallen into disuse. The camp further appears to have first been occupied sometime after 1935 and to have closed prior to 1980. However, recent signs of vehicular access suggest that recreational users continue to use the area.

**Site Impacts:** No Project-related impacts observed during the current study.

**NRHP Eligibility:** This site meets many of the evaluation standards. However, no documentary evidence of the camp was located. It is unclear if this was a USFS work camp that was later turned into a recreation camp, or if its only purpose was recreation. The founding date of the camp is unknown, but artifacts suggest it may have been used for 40 years. If that is true, there appears to be a relative paucity of artifacts for that length of time. The site also shows evidence of modern intrusions, suggesting that features or artifacts may have been removed or destroyed

prior to this recordation effort. Because this site does not have enough data potential to meet the threshold for Criterion D, it is evaluated as ineligible for listing on the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3056

**Other Designations:** 04-003056; temporary number DC-21

**Property Ownership:** Private

**Site Description:** This is a prehistoric site with three BRMs and a small flaked stone scatter. The site encompasses approximately 2700 square meters on a river terrace at 5,200 feet in elevation. It lies within a meadow covered by pine and cedar, with riparian species lining the river bank. Site boundaries were determined by the extent of surface-visible artifacts and features. The historic Dewey Ditch (CA-BUT-933-H) passes through the west side of the site. The BRMs are located on three separate granite outcrops and contain multiple mortar cups and a grinding slick. The outcrops are covered with moss, pine needles and soil, but are in good condition. Flaked stone consists of one basalt biface, one basalt scraper, and a light scatter of basalt flakes.

**Site Impacts:** No Project-related impacts observed during the current study. However, a modern cabin, storage structures, and an access road have been constructed on top of the site.

**NRHP Eligibility:** BRMs are indicative of plant processing activities and are associated with the Early Kings Beach Phase (1300-700 B.P.). A modern cabin, storage structures, and an access road have been constructed on top of the site. However, its integrity still appears to be good. The few flaked stone artifacts observed do not include diagnostic materials that could substantiate the temporal placement of the site, and while sourcing could likely shed light on basalt procurement, there is little additional information to address other research questions. Test excavations are required to determine if additional, subsurface cultural materials are present and to formally evaluate the site. However, given the site's proximity to a major water source, it is likely that additional, buried cultural remains are present, and the site may be eligible for listing on the NRHP.

**Proposed Management Measures:** Include in annual site monitoring and condition assessment program until unless formal evaluation is conducted at the site.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3057-H

**Other Designations:** 04-003057; temporary number DC-23-H

**Property Ownership:** PG&E

**Site Description:** The single feature of this site is a trash dump measuring 18 feet north-south and 17 feet east-west. Approximately 100 items are visible on the surface, with the potential that more items are buried. About 98 percent of the artifacts are cans, including matchstick filler milk cans measuring 2 15/16 inches by 3 14/16 inches (probably Type 18 dating from 1935 to 1945); Log Cabin syrup tins; motor oil cans; meat cans; juice cans; soda cans; various sanitary cans; flat top beer cans with large church key openings (1935–1962); Burgermeister beer cans; and USFS green-colored alcohol fuel cans (similar to Sterno) for heating and cooking. A few bottles were also noted. A 6 ounce light green Coca-Cola bottle, marked “SACRAMENTO, CA,” has an Owens-Illinois base mark “3 I (in a diamond and circle) 47.” It was likely produced in Huntington, West Virginia in 1947. A colorless Peter Pan peanut butter jar has a script Duraglass mark and the base mark “C3786/ 9 “I” (in circle and diamond) 4 / 8.” It was produced in Streator, Illinois, in 1944. A colorless glass bottle base, marked “38819 / Ball (in script) 4”, was manufactured between 1919 and 1969. A brown bottle base is marked “MONTMORENCY DISTILLERY LTD/BEAUPRE P.O. CANADA/MADE IN USA,” with the Owens-Illinois mark “4 / 56 I (in script) 54.” Owens-Illinois marks on liquor bottles are different from those used on food bottles (Lockhart 2006). It is likely that this bottle was manufactured in 1944. An olive green champagne bottle was also present. Overall, this assemblage appears to have been deposited around 1947. No other artifacts are associated with this site. Some logging has recently occurred in the area, but no other disturbances were noted.

The association of this site is unclear, although the site is located across the West Branch Feather River from the 1949 USFS Snag Lake Camp (CA-BUT-3055-H). Thus, the site may be related to USFS use or to use of the area by recreationists.

**Site Impacts:** No project impacts observed

**NRHP Eligibility:** The deposit appears to have integrity and it contains a variety of food product containers. However, its lack of clear association makes it difficult to place the site into the contextual framework and research domains. This severely limits the data potential of the site and makes it ineligible for the National Register.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3058-H

**Other Designations:** 04-003058; temporary number DC-24-H

**Property Ownership:** PG&E

**Site Description:** This historic-era trash dump is upslope and approximately 50 feet northeast of a cabin marked as “Atkinson’s Hideaway” and 60 feet northwest of a cabin with a red tin roof. It lies on PG&E land along Philbrook Road. The site is located on a south-facing slope, and is surrounded by pines, cedars, gooseberry, chinquapin, and granitic outcrops. Philbrook Creek is located 470 feet to the south.

The single feature of the site is the trash dump, which measures 29 feet north-south by 34 feet east-west. Approximately 300 items are present. A variety of cans, including milk cans, meat cans, juice cans, sanitary cans, spice cans, Redi-Whip whipped cream can, and a Padre Pale Lager Beer can with church-key opening. Matchstick filler milk cans measure 2 1/2 inches by 2 3/8 inches and have four rings, suggesting a date of 1931–1948. A white improved earthenware plate is marked “DUFF... / DGH (in script) / ROUGE LAM... / PAT... / 184... / MADE IN...”, and could not be identified. A whole brown bottle is marked “Duraglass (in script)/15 I (in circle and diamond) 52/ W-5/5159-6,” and dates between 1940 and 1959 (Lockhart 2006). A colorless ketchup bottle is marked “7454 / (H over A) / 115,” identifying it as a Hazel Atlas jar produced between 1923 and 1964 (Toulouse 1971; Whitten 2006). Other condiment jars also exhibits a portion of a Hazel Atlas mark, while some condiment jars are marked with “C (interlocking GC) 4 / 3507” indicating a Glass Containers, Inc./Glass Containers Corp. container, produced since 1933 (Toulouse 1971; Whitten 2006). One of a number of small jars is marked with a connected “NW,” indicating it was produced by Northwestern Glass Co. in Seattle, Washington, between 1931 and 1973 (Lindsey 2007; Toulouse 1971). A colorless bottle marked with a Ball script dates between 1919 and 1969. A crown cap with a cork lining was produced from 1912 to 1955. A white porcelain-coated wash basin was also noted. This group of artifacts postdates 1940, but was likely deposited between 1940 and 1955. No other artifacts were observed in the site boundaries.

Because this site is located behind a residential cabin, collectors can easily access the area. Downed trees and erosion have also impacted the site.

This feature may be associated with the nearby cabin. However, the large number of items suggests that accumulation occurred over a long period of time or there were occupants from other nearby cabins also using the dump site. This unclear association negatively impacts the focus of the site.

**Site Impacts:** No Project-related impacts observed

**NRHP Eligibility:** This deposit gives some insight into subsistence habits. However, it is unclear if this deposit was made by an individual, a group, or multiple unrelated groups. The deposit provides no clues as to ethnicity, gender, or age. These factors limit the site’s ability to provide significant data and the site is evaluated ineligible for listing on the NRHP under Criterion D as a result.

**Proposed Management Measures:** Include in a site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3059-H

**Other Designations:** 04-003059; FS 05-06-51-1025; temporary number DC-26-H

**Property Ownership:** Lassen National Forest

**Site Description:** CA-BUT-3059-H is a historic-era trash dump on a gentle south-facing slope within an open area currently used for burning slash piles. The site, which measures 26 feet north-south by 28 feet east-west, is on NFSL. It has an open exposure due to tree thinning activities. A dense tree line of pines and cedars separates the exposed site area from an open, grassy meadow is located approximately 300 feet downslope of the site, adjacent to Philbrook Road.

This site contains a single feature, the trash dump, which measures 6 feet north-south by 8 feet east-west. Approximately 20 items are present, including a rectangular olive oil can with spout, sanitary cans, meat cans, a coffee can with a friction lid, matchstick filler milk cans, and a stove pipe fragment. The size of the milk cans indicate that deposition postdates 1950.

USFS activity has impacted the site. Slash piles were placed on top of and adjacent to the artifact dump and a fire line was cut through the feature. The slash piles and other downed trees may be obscuring other artifacts.

There is no clear association for this site as it is not near any cabins, camps, or established recreational areas. Additionally, the quantity of artifacts is very low and the date is tenuous.

**Site Impacts:** No Project-related impacts observed

**NRHP Eligibility:** The site meets few evaluation standards. The number of questionable assessment factors further illustrates the lack of focus of the site materials and it is evaluated as ineligible for listing on the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3060-H

**Other Designations:** 04-003060; temporary number DC-29-H

**Property Ownership:** PG&E

**Site Description:** This site consists of four trash dumps associated with cabins on PG&E lands along Philbrook Road. The site, located on a south facing gentle slope, measures 200 feet north-south by 35 feet east-west. It has open exposure and many fallen trees litter the site. Pines, chinquapins, various grasses, and granite outcrops are present throughout the area, and a stand of cedar trees is present at the northeastern corner of the site. Philbrook Reservoir is approximately 656 feet to the south. A water tank is present in the southwestern quadrant of the site.

Feature A is a trash dump that measures 38 feet north-south by 39 feet east-west and contains over 300 items. Cans dominate this assemblage, and include paint cans, large ham cans, meat tins, juice cans, soda cans (including Shasta), sanitary cans, aerosol cans, and Olympia, Hamm’s, and Falstaff beer cans with church-key openings. A number of marked glass containers are present. Aside from the items listed in Table 5.1-4, two Ball canning jars, a jelly jar, and a champagne bottle were also documented.

**Table 5.1-4. CA-BUT-3060-H Bottle Marks and Dates.**

Date Range	Description	Maker	Origin	Reference
Since 1945	Colorless bottle base: A (Interlocking GC) 8 / 3656/T	Glass Containers, Inc./Glass Containers Corp.	Various cities, California	Toulouse 1971:220
Since 1945	Brown bottle base: V (Interlocking GC) 8 /3525/1	Glass Containers, Inc./Glass Containers Corp.	Various cities, California	Toulouse 1971:220
1958	Colorless condiment bottle base: 101 (I in oval) 58 / D- 9/M25 46	Owens-Illinois	Brackenridge, Pennsylvania OR Oakland, California	Toulouse 403–406; Lockhart 2006
1939-1957	Colorless bottle base: SAN MARTIN VINEYARDS/ (connected LM in oval) Pat APP...	Latchford-Marble Glass Co.	Los Angeles, CA	Toulouse 1971:332

Structural materials include milled lumber, sheet metal, and various metal fragments. This dump appears to date to 1958, but the large size of the deposit suggests that it is the result of multiple dumping episodes and not a single event.

Feature B is a trash dump that is 6 feet in diameter. It contains approximately 10 items, including sanitary cans and flat top beer cans with church key openings. The latter indicates a deposit date of 1935–1963 (Rock 1987). Feature C also measures 6 feet in diameter. Among the 20 items in this deposit are large and small sanitary cans and flat top beer cans with church key openings. Again a deposition date of 1935-1963 is suggested. Feature D measures 24 feet east-west by 22 feet north-south. This feature includes 20 items, including flat top beer cans, coffee cans, and a rectangular can with a large spout.

Feature A is the only portion of the site that has been disturbed. An excavated pit in the center of Feature A indicates that artifact collecting is likely occurring at the site.



**Site Impacts:** Easy public access, manual excavation of cultural deposit, stacking of artifacts.

**NRHP Eligibility:** The association of these features could not be ascertained. Feature A appears to date to 1958, but the collector's pit in this feature indicates that it has been severely disturbed. Because this feature may be the result of multiple dumping episodes, it is possible that the collecting activity has mixed the feature's stratigraphy and destroyed its integrity. Features B, C, and D all contain similar items from contemporaneous time periods, and therefore appear to be related. However, these features contain very few items and very little variety. Therefore they have low data potential. Additionally, they may not be 50 years old. This site is recommended as ineligible for the National Register.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3061-H

**Other Designations:** 04-003061; FS 05-06-51-1026; temporary number DC-32-H

**Property Ownership:** Lassen National Forest

**Site Description:** This historic-era trash dump is located on NFSL above and north of Philbrook Road. It lies on a moderate slope with an open exposure, and measures 131 meters north-south by 164 meters east-west. Cedars, pines, various grasses, and granite outcrops are present in the area.

The trash dump, which measures 22 feet north-south by 30 feet east-west, contains approximately 25 items. Most of the artifacts are cans, including small and large sanitary cans, matchstick filler milk cans, meat cans, and a Mennen talcum powder tin. A single glass jar with a threaded metal lid is marked "Duraglass (in script) / 23 ("I" in circle and diamond) 6 / 4 / 7106F. This suggests that the bottle was produced by Owens Illinois in Los Angeles in 1956 (Lockhart 2006). Other isolated cans are scattered about between the site and Philbrook Road.

**Site Impacts:** No Project-related impacts observed

**NRHP Eligibility:** This site cannot be associated with any particular theme and the date is tenuous. Furthermore, this site contains little variety or quantity of artifacts. It has very low data potential and is therefore recommended as ineligible for the National Register

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3062-H

**Other Designations:** 04-003062; FS 05-06-51-1027; temporary number DC-34-H

**Property Ownership:** Lassen National Forest

**Site Description:** This site lies on NFSL. It contains artifacts and features associated with a USFS Camp. The camp, which sits at 5,560 feet amsl, is labeled on the 1949 Division of Forestry, Butte County map. A canopy of pines shades the site, which measures 114 meters north-south by 64 meters east-west. C hinquapin, gooseberry, and granite outcrops are present in the area, which is littered with broken branches, pine needles, and duff.

Feature A is a trash dump that measures 26 feet east-west by 27 feet north-south. It appears to have a depth of 4 feet. Over 300 items were visible, including Shasta soda cans, Padre, Hamm’s, and Coors beer cans, Hill’s Brothers coffee cans, and meat tins. Marked bottles are described in the Table 5.1-5.

**Table 5.1-5. CA-BUT-3062-H, Feature A, Bottle Marks and Dates.**

Date Range	Description	Maker	Origin	Reference
1923-1964	Colorless bottle jar: 6716/ (H over A)/0 30	Hazel Atlas	Oakland, California	Whitten 2006
Since 1945	Colorless liquor bottle: 118 (interlocking GC) 62/L O U - D-2/4111	Glass Containers, Inc./Glass Containers Corp.	Various cities, California	Toulouse 1971:220
1931-??	Colorless jar: (connected NW)/ 186 S	Northwestern Glass Company	Seattle, Washington	Whitten 2006
Post 1900	Colorless jar: 16/455-15/Mary Ellen (in script)/Ball (in script)			Toulouse 1971:67

A brown beer bottle had a partial mark that may be an Anchor Hocking mark that postdates 1937 (Whitten 2006). A large colorless Wesson oil bottle and a Log Cabin syrup bottle were also noted. This feature has been impacted by collectors who have dug out the feature and likely removed items. This feature appears to date to the 1940s.

Feature B is a privy that measures 19 feet north-south and 4 feet east-west. The west end of the privy is rock lined. Pits excavated into the feature and artifacts stacked beside it indicate collecting activity. Over 500 artifacts are visible on the surface and it appears that even more are buried. Shoe and boot fragments are present. Ceramic items include white improved earthenware plate fragments, cup fragments. A whole plate is marked “ROYAL CHINA” in a diamond that is superimposed on a rectangle, a mark that dates to the 1930s and 1940s (Lehner 1988:388). Metal containers include flat-top beer and soda cans with church key openings (1935–1963), cone top beer cans (1935–1950s), meat tins, and sanitary cans. Marked bottles are listed in Table 5.1-6.

**Table 5.1-6. CA-BUT-3062-H, Feature B, Bottle Marks and Dates.**

Date Range	Description	Maker	Origin	Reference
1940-1958	Brown bottle: (interlocking MG) / 63 (in box)	Maywood Glass Co.	Compton, CA	Toulouse 1971:357
Since 1945	Colorless glass bottle: NOT TO BE REFILLED/ H (interlocking GC) 2/ 10 FL OZ	Glass Containers, Inc/Glass Containers Corp.	Various cities, CA	Toulouse 1971:220
1938-1969	Brown bottle base: D126 12 (A in circle) 47	Armstrong Cork Co.	Lancaster, PA	Toulouse 1971:24; Whitten 2006
Post 1944	Colorless bottle base: AHK	Alexander H. Kerr & Company	Los Angeles, CA	Toulouse 1971:44; Whitten 2006
1948	Brown bottle base: 20 (I in diamond and circle) 48/Duraglass (in script)/1-WAY	Owens-Illinois	Oakland, CA	Lockhart 2006
1947	Brown bottle base: 20 (I in diamond and circle) 47	Owens-Illinois	Oakland, CA	Lockhart 2006
1915-1957	Light green hobbleskirt bottle: Coca-Cola (script) Oakland, CA	Coca-Cola	Oakland, CA	Coca-Cola 2006
1915-1957	Light green hobbleskirt bottle: Coca-Cola (script) Vallejo, CA	Coca-Cola	Vallejo, CA	Coca-Cola 2006

Feature B dates to the 1940s. Feature C is a dirt road that allowed access to the campground from Philbrook Road. Six rock fire rings are scattered throughout the site.

The features of the site that contain artifacts have been severely affected by looting activities. The privy and the trash pit have both been picked over by collectors.

**Site Impacts:** No project impacts observed

**NRHP Eligibility:** This USFS camp dates to the 1940s and appears to have undergone some improvements. Extant rock rings and the presence of a privy give some clues to spatial relationships. However, the most significant aspect of this site is the artifact assemblage. This collection had the potential to contain data directly related to 1940s recreational users. However, these deposits have been impacted to the point that they now lack integrity. This lack of integrity significantly lowers the data potential of the site. These factors result in a recommendation that CA-BUT-3062-H is ineligible for the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3063-H

**Other Designations:** 04-003063; temporary number DC-38-H

**Property Ownership:** PG&E

**Site Description:** This historic trash dump is located on PG&E lands on a north facing terrace above the flood plain of Philbrook Creek. It measures 15 meters north-south by 15 meters east-west, and is surrounded by pine, fir and cottonwood trees and other riparian understory. Granite outcrops are present throughout the area as are fallen trees, dead branches, and thick duff.

The site's single feature is the trash dump. It measures 9 feet by 11 feet and contains approximately 25 items. Artifacts include three Lucky Lager beer cans (1948–1963), two Coors beer cans, two Shasta rootbeer cans, one Hamm's beer can, five unidentified beverage cans, and a large rectangular can. Also present is a colorless glass jar with threaded metal lid. The Lucky Lager cans and the church key openings on the other cans date the deposit between 1948 and 1963. The deposit appears similar to site CA-BUT-3064-H. The site has suffered minimal damage from erosion and fallen trees.

**Site Impacts:** No Project impacts observed

**NRHP Eligibility:** The association of this site is unclear, and the deposit may not be 50 years old. Furthermore, it lacks the quantity and variety of artifacts necessary to address data questions. This site is recommended as ineligible for the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3064-H

**Other Designations:** 04-003064; temporary number DC-39-H

**Property Ownership:** PG&E

**Site Description:** CA-BUT-3064-H is a historic-era trash dump on PG&E lands, located at the edge of a meadow on a terrace overlooking the Philbrook Creek floodplain. The site measures 8 meters north-south by 8 meters east-west. Densely forested areas surround the site, and pine, cottonwood, willow and fir trees are present. Granite outcrops were noted around the site area.

The singular feature of the site, the trash dump, measures 4 feet by 5 feet. It primarily consists of 12 soda cans, including "Shasta" brand, with church key openings. Also present are three large

sanitary cans and a “Kleen Floor” wax remover and cleaner can that is rectangular with a spout. The presence of soda cans with church key openings indicate that this dump was deposited between 1953 and 1963 (Intermountain Antiquities Computer System [IMACS] 2001).

The site has suffered minimal damage from erosion and fallen trees. Additionally, there is easy public access to the site, potentially encouraging collecting activities.

**Site Impacts:** Public access

**NRHP Eligibility:** The association of this site is unclear. The presence of a wax remover bottle suggests that it is related to nearby cabins, but this is uncertain. Additionally, the deposit may not be 50 years old. There is not enough quantity or variety of artifacts at this site to meet the data potential threshold for Criterion D. Therefore the site is recommended as ineligible for the National Register.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3065-H

**Other Designations:** 04-003065; FS 05-06-51-1059; temporary number DC-40-H

**Property Ownership:** Lassen National Forest

**Site Description:** This site, which measures 82 meters north-south by 58 meters east-west, contains features associated with mining and logging. Located at 5,600 feet amsl, the site lies on NFSL on a slope above Philbrook Reservoir, approximately 900 feet southeast of the lake level monitoring building. The southern site boundary is a steep slope, which gradually becomes more moderate to the north. Pines, firs, chinquapin, manzanita, and various grasses are found in and around the site.

Mining features on the site consist of three prospect pits. Feature A measures 8 feet east-west by 9 feet north-south. Pit B is a linear prospect pit that measures 13 feet east-west by 72 feet north-south. This pit is 2 feet deep. A large pile of tailings, measuring 20 feet by 25 feet, are located at the northern end of the pit. Feature C is a round prospect pit that measures 12 feet north-south by 11 feet east-west. It is 3 feet deep. Feature D appears to be a logging feature and may be unrelated to the mining features. It consists of a logging choker cable, with one end attached to a snag tree and the other end attached to a long piece of milled lumber that measures 48 feet long, 1 foot wide, and 2 inches thick. This site does not seem to have suffered any disturbances.

This site appears to have elements of mining and logging activities. It is unclear if these activities occurred at different times, or if the logging activity was related to the construction and working of the mine.

**Site Impacts:** No Project impacts observed

**NRHP Eligibility:** The prospect pits and tailings do not provide much information about mining technology. Furthermore, there are not datable artifacts on the site, making it impossible to fit this site into a regional mining chronology. Lack of technological information and data potential results in a recommendation that this site is ineligible for the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3066-H

**Other Designations:** 04-003066; FS 05-06-51-1060; temporary number DC-43-H (Note: FS indicates that this resource may be recorded as FS 05-06-51-499 and will require field verification.)

**Property Ownership:** Lassen National Forest

**Site Description:** This mining-related site is located at 5,740 feet amsl on a steep north facing slope above a small flat on NFSL. It measures 122 feet north-south by 110 feet east-west. Pines, fir, various grasses, and granite outcrops are present in and around the site. Fallen trees and branches litter the site area. A seasonal pond is located approximately 250 feet to the northeast.

Four features are present within the site. Feature A is an adit that measures 38 feet long by 14 feet wide by 4 feet deep. An associated tailing pile, measuring 48 feet long by 33 feet wide by 21 feet tall, is located at the northern end of the adit. Feature B is a prospect pit that is 6 feet in diameter and 1 foot deep. Feature C is a prospect pit that measures 6 feet wide by 4 feet wide by 1 foot deep. A small tailing pile is located on the northern edge of this feature. Feature D is a pile of tailings and waste rock that measures 17 feet long by 12 feet wide by 2 feet tall.

Two artifacts were noted at the site. One is an amber-colored bottle base marked "SB&G Co / 52." This mark was used by Streator Bottle & Glass Co. and dates between 1881 and 1905. The other artifact is a piece of riveted metal.

**Site Impacts:** No project impacts observed

**NRHP Eligibility:** The only artifact present dates the site to the late 1900s. However, this small mining site could not be located on any maps. Because only the mining pit and tailing piles remain, there is very little technological information present, and there is no artifactual information with which to address research questions. The dearth of data available on the site results in a recommendation that this site is ineligible for the NRHP.

**Proposed Management Measures:** None

**Monitoring Frequency:** None

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**Site Number:** CA-BUT-3067

**Other Designations:** 04-003067; FS 05-06-51-1061; temporary number DC-44)

**Property Ownership:** Lassen National Forest

**Site Description:** This site consists of a single granite BRM with six mortar cups. No other cultural remains were encountered. CA-BUT-3067 is at an elevation of 5,760 feet on a moderately flat saddle between two seasonal ponds. The site encompasses about 625 square meters on NFSL and is sheltered by three cedar trees. The site is open, but is surrounded by other cedars, pine, fir, chinquapin, and sparse grasses. It displays signs of natural weathering and erosion, but overall is in good condition.

**Site Impacts:** No project impacts observed

**NRHP Eligibility:** BRMs first appear in the northern Sierra cultural sequence during the Early Kings Beach Phase (1300-700 B.P.) and are absent from the cultural assemblages that define the Southern Cascade cultural sequence. Often, subsurface cultural remains are lacking from isolated BRM sits (cf. PAR 2001), and although isolated BRMs are indicative of plant processing activities, they lack diagnostic artifacts and other datable materials to substantiate specific temporal designations, and offer little information toward addressing additional research questions (i.e., resource procurement, lithic technology, social structure). However, cultural studies conducted by LNF have discovered the opposite in some cases, that for some BRM sites, a lack of surface manifestations does not reflect a lack of subsurface deposits. Site CA-BUT-3067 retains a moderately high level of integrity. Based on surface observations, it might be preliminarily assessed as lacking significant characteristics that would make it eligible for listing on the NRHP. However, formal subsurface testing and evaluation are necessary to fully identify the site's eligibility.

**Proposed Management Measures:** Include in annual site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3068-H

**Other Designations:** 04-003068-H; FS 05-06-51-1062; temporary number DC-46-H

**Property Ownership:** Lassen National Forest

**Site Description:** This site is a lake tender's cabin and associated features on NFSL below Philbrook Reservoir Dam. This site was occupied by the lake tender from 1926 to 1970.

Located at 5,480 feet amsl, the site is surrounded by coniferous forest with sparse, grassy groundcover. The site measures 320 feet north-south by 400 feet east-west.

Thirteen features are present. Feature A is a lake tender's cabin built in approximately 1926. Feature B, which is a collapsed structure, appears to be the oldest of three outhouses. It is located south of the main cabin. Feature C, which is also collapsed, appears to be the second oldest outhouse. It is located southeast of the main cabin. Feature D is the most recently constructed outhouse. It is also collapsed and is located northeast of the main cabin. Feature E is a well with a corrugated metal casing that measures 1 foot 7/8 inch in diameter. The well platform is 3 feet 11 inches by 3 feet 7 1/2 inches. Feature F is a 13 foot-tall snow gauge located east of the cabin. Feature G is a foot trail, 2 feet 10 inches wide, that angles east from the entrance road to the cabin. Feature H is the dirt road to the cabin. It is 13 feet wide. Feature I is the road to the dam. This dirt road is 11 feet wide and passes through the eastern boundary of the site. Feature J is a can dump that measures 89 feet by 43 feet. It includes one gallon paint cans, five flat top beer cans, an amber Clorox bottle, five sanitary cans, a one-quart oil can, a Marvel Pride picnic ham tin, three Shasta soda cans a Falstaff beer can, and a plank with wire nails that measures 4 inches by 8 inches by 4 feet. Two marked bottles are present. An amber bottle base is marked "73 53 / D-125 / 54-0-25 A / Ball (in script) / Made in USA." A colorless bottle is marked "9 (I in oval)/H410/8C." The latter bottle postdates 1952. Feature K is a can dump measuring 40 feet east-west by 12 feet north-south, located south of Feature B and the main cabin. It contains one colorless bottle from an automatic bottle machine (ABM) mold; a condiment jar; a whiteware fragment, a friction lid coffee container; two flat-top beer cans; five medium sanitary cans; milk cans, six small sanitary cans, a meat tin, one cone-top beer can, and a large sardine can. A matchstick filler can measuring 2 1/2 inches by 2 3/8 inches likely postdates 1917 (Simonis 1997). Feature L is a can dump measuring 40 feet east-west by 22 feet north-south. It is located northwest of the main cabin and consists of five medium sanitary cans, one rectangular can of Hershey's Cocoa, one large sanitary can, a flat top beer can, and a metal basin. Feature M is a can dump of 20 to 30 cans. It measures 10 feet north-south by 5 feet east-west and is located just over the edge of the bank south of Feature L. Features A through I and Features K and L are located in a flat area above the terrace. Feature J is located on the floodplain below the terrace. The slope of the site ranges from flat to steeply banked.

The site has suffered from vandalism, erosion, weathering, recreational use, logging, and collecting. However, it still retains great integrity and clear association. Spatial relationships of features remain intact and there are many trash dumps, deposited over a period of time, that can be directly associated with this cabin.

For additional information regarding CA-BUT-3068-H, see Section 2.3.8.6.8 above.

**Site Impacts:** Public recreation, vandalism to the cabin

**NRHP Eligibility:** The site likely contains subsurface archaeological deposits, given the length of occupation and the presence of outhouses, which often provided information on diet, personal grooming, ethnicity, and other aspects of people's lives. Test excavations are necessary to make this determination. Thus, the site has a wealth of data potential that can give insight into life at this site, particularly within the framework of rural life, subsistence, and hydroelectric maintenance. This site also meets the 50-year age requirement. While the site appears to contain



data potential sufficient to qualify for the NHRP under Criterion D, test excavations are necessary to determine if the site is eligible on an individual basis. However, CA-BUT-3068-H is considered eligible for listing on the National Register as a contributing property to the DeSabra-Centerville Hydroelectric System Historic District for its ability to relay details of, and a sense about, the life of a Project lake tender. The tender's cabin is still standing and many other features (e.g., outhouses) help convey the distinctive characteristics of a certain period and possible method of construction (Criterion C), and are associated with events that have made a significant contribution to the broad patterns of our history (Criterion A). PG&E plans to remove the building and will consult with LNF and the SHPO to develop treatment measures prior to its removal.

**Proposed Management Measures:** Consult with LNF and SHPO to develop treatment measures to address adverse effects associated with PG&E's proposed removal of the lake tender's cabin. Include in a site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3069/H

**Other Designations:** 04-003069; temporary number DC-51/H

**Property Ownership:** Private

**Site Description:** CA-BUT-3069/H contains two BRMs, historic-era cabins, and associated structural remains and out buildings. The historic Dewey Ditch (Site CA-BUT-933-H-H) passes through the center of the site. Although archival research did not reveal information specific to this site, one cabin straddles the ditch and may represent a ditch tender's cabin associated with the Project.

**Site Impacts:** No project impacts observed

**NRHP Eligibility:** The historic remains present at the site are recommended as eligible for listing on the NRHP as a contributing element to the DeSabra-Centerville Hydroelectric System Historic District. As a residence for a ditch tender or other occupants, the site may contain buried cultural deposits. Additionally, it is not known if buried prehistoric cultural remains are present; no surface-visible prehistoric artifacts were encountered. Formal subsurface investigations would be necessary to evaluate the site for its eligibility for listing on the NRHP on an individual basis.

**Proposed Management Measures:** Include in a site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** CA-BUT-3070-H

**Other Designations:** 04-003070; temporary number DC-52-H

**Property Ownership:** PG&E

**Site Description:** This is the site of the Pacific Service Employees' Association (PSEA) Camp DeSabra. It was built before 1922 on the banks of DeSabra Forebay. In 1916, PG&E employees living at Camp 1 at Lake DeSabra founded the initial PSEA club to organize social events and recreational activities for PG&E employees. A detailed discussion of the PSEA is provided in Section 2.3.8.6.9 above. By the early 1920s, PSEA had begun establishing campgrounds at various locations around the DeSabra-Centerville Hydroelectric Project for its employees, including the one at CA-BUT-3070-H.

The camp contains a row of single family cabins that face the lake, service buildings in the center of the camp, and multi-family cabins that face the lake along the west side of the camp. The multi-family structures are a later addition, built about 1950. Conifers shade all of the cabins and a playground is situated along the lake. When the camp was built in the early 1920s, it offered platform tents for campers. The single family cabins replaced the platform tents; the multi-family cabins are more recent additions to the camp.

The single-family cabins are approximately 20 feet wide and 14 feet deep, rest on wood piers set on concrete footings, and are clad with board and flat battens. Fenestration on the front façade consists of a door flanked by screened openings that can be closed with shutters. The back elevations have small six-light fixed windows. The hipped roof is clad with corrugated metal. An addition on the back of the cabins houses an indoor toilet. A shed-roofed porch shelters the front façade. Wood steps lead to the wood deck; the balustrade is three horizontal boards, and square wood columns support the roof. Near each cabin is a grill and picnic table.

The multi-family cabins rest on poured concrete foundations and are clad with board and flat battens. Fenestration consists of a front door and aluminum-framed sliding glass windows on the front façade. The side-gabled roof is clad with corrugated metal. A shed-roofed porch shelters the front façade and wood steps lead to individual doors. The balustrades consist of crossed boards between square columns that support the roof.

For additional information regarding 04-003070-H, see Section 2.3.8.6.9 above.

**Site Impacts:** Modern development and use of the camp

**NRHP Eligibility:** The APE follows the shoreline of DeSabra Forebay. CA-BUT-3070-H lies outside the APE for the most part, but also extends to the lake's shoreline within the APE. The camp was established in the early 1920s by PG&E employees as a means of providing social activities for PG&E employees living at and working on the hydroelectric system. The camp would not have been established if the hydroelectric system had not been built. Thus, the site is eligible to the NRHP as a contributing element under Criterion A because it is associated with

events that have made a significant contribution to the broad patterns of our history. Additionally, the camp has been in place for about 85 years and likely retains subsurface deposits. Test excavations are needed to determine if such deposits are present and if they retain integrity. However, if intact deposits are present, the site is likely to yield information on the lives of PG&E employees and others who may have occupied the camp over the years. Thus the site may also be eligible under Criterion D. A description of the historic context of this camp is provided in Section 2.3.8.7 above.

**Proposed Management Measures:** Include in a site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

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**Site Number:** 04-003071

**Other Designations:** Lake DeSabra Camp 1; temporary number DC-53-H

**Property Ownership:** PG&E

**Site Description:** Camp 1 was originally set up as the construction camp for the DeSabra Forebay and Powerhouse. It is located on the south end of DeSabra Forbay. The site straddles the Skyway. It originally contained an office, other work-related buildings, residences for staff, and fruit trees. The bunkhouse for unmarried men is currently used as the office for PG&E workers. The superintendent's house and the foreman's house were located across the road from the main camp area, currently on the east side of the Skyway. The superintendent's house is currently a residence for a PG&E employee. Upon completion of the forebay and powerhouse, Camp 1 served as a residential area for PG&E workers. In 1916, PG&E employees living at Camp 1 founded the initial Pacific Service Employees' Association (PSEA) club to organize social events and recreational activities for PG&E employees living at DeSabra.

See Section 2.3.8.6.1 above for detailed information regarding 04-003071.

**Site Impacts:** Most of the original buildings, structures, and features of Camp 1 have been removed

**NRHP Eligibility:** With the exception of the superintendent's house, the bunkhouse, and fruit trees, the structures associated with Camp 1 have been replaced by modern PG&E structures. As a result, the Camp does not meet the NRHP criteria for listing as an individual property, but is a contributing element of the hydroelectric system historic district because of its important historical associations. Neither the superintendent's house nor the bunkhouse qualify individually for the NRHP because they have been modified extensively and no longer reflect the period of significance or the distinctive characteristics of this kind of company architecture. A detailed background on the Camp 1 is provided in Section 2.3.8.6.1 above.

**Proposed Management Measures:** Include in a site monitoring and condition assessment program.

**Monitoring Frequency:** Annual

**5.2 Proposed Management Measures for Historic System Features.**

As The DeSabra Centerville Hydroelectric Project system has been recommended as eligible for the National Register of Historic Places as a Historic District and several elements of the system also have also been recommended as eligible on their own merit. The elements recommended as eligible are listed in Table 3.3.3.3-1 above.

Throughout the term of the License, activities such as maintenance, repair, alteration, replacement, and new construction may be necessary. Any major repairs or modifications to the NRHP-eligible components of the System or Historic District contributing elements shall be performed in accordance with *the Secretary of the Interior’s Standards for the Treatment of Historic Properties* (48 FR 44738-44739) in consultation with the SHPO. The most appropriate treatment for eligible properties and/or contributing components—preservation, restoration, or rehabilitation—shall be part of the consultation. Ideally, all repairs or modifications shall be done utilizing the same design and construction techniques as the original, and matching the existing materials. If repairs, modifications, or replacement are necessary for any of the NRHP contributing electrical or mechanical elements, they shall be replaced in kind by functionally equivalent parts whenever possible.

Table 5.2-1 depicts repair and maintenance activities that may be undertaken on NRHP-eligible or contributing structures that do not require consultation with the SHPO. PG&E will ensure that all Project foremen and supervisors responsible for repairs, maintenance, or construction on Project facilities are provided with this table and are aware of the requirements. If repairs, modifications, or replacement of individually eligible components of the system (including any original mechanical or electrical hardware) becomes necessary and cannot be accomplished in a manner that conserves the historic character and value of the affected component(s), PG&E shall consult with the SHPO regarding alternatives to such actions.

Under extraordinary circumstances (i.e., unusual system outages caused by severe weather, fire, flood, landslide, earthquake or other natural cataclysm) where prompt restoration of electrical service is a vital necessity, reasonable effort shall be made to minimize effects on historic properties during emergency repair work and PG&E will proceed in accordance with Emergency Undertaking provisions identified above.

**Table 5.2-1. Repair and maintenance activities to NRHP-eligible Project features that do not require SHPO consultation.**

Element	Activity
Structural Elements	Repair or replacement of trim, or hardware when done in kind to match existing material and design;

**Table 5.2-1 (continued)**

<b>Element</b>	<b>Activity</b>
	Replacement of glass when done in kind to match existing material and design.
	Windowpanes may be double or triple glazed as long as the glazing is clear and replacement does not alter existing window material and form. This excludes the use of tinted glass, which will require consultation;
	Maintenance of features such as frames, paneled or decorated jambs and molding through appropriate surface treatments such as cleaning, rust removal, paint removal, and re-application of protective coating systems;
	Repair or replacement of doors, when done in kind to match existing material and form;
	Repair or replacement of roofs or parts of a roof that are deteriorated, when done in kind to match existing material and design. Adequate anchorage for roofing material to guard against wind damage and moisture penetration shall be provided;
<b>Structural Elements (cont.)</b>	Repair or replacement of gutters and drain pipes, when done in kind to match existing material and design;
	Repair or replacement of porches and stairs when done in kind to match existing material and design;
	Repair of window and doorframes by patching, splicing, consolidating, or otherwise reinforcing or replacing in kind those parts that are either extensively deteriorated or are missing. The same configuration of panes will be retained;
	Repair or replacement of window and door screens when done in kind to match existing material and design;
	Alteration, repair, and/or modification of the interior of buildings/structures, not impacting on exterior appearance; and
	Demolition of buildings/structures within the DeSabra-Centerville Historic Hydroelectric District boundaries that have been evaluated and found to be ineligible for the NRHP and are not part of a contributing property.
<b>Surfaces</b>	Painting or patching exterior surfaces when the new paint or patch material matches the existing or original color/material;
	Replacement or installation of caulking and weather-stripping around windows, doors, walls, and roofs; and
	Removal of non-original intrusive surface applied elements such as exterior wall mounted conduit, pipes, wiring, junction boxes, etc.
<b>Utility Systems</b>	Installation of mechanical equipment that does not effect the exterior of the buildings/structures; and
	Replacement, removal, or upgrading of electrical wiring.
	Ongoing maintenance of immediately surrounding landscaping, including such modifications as removing diseased or safety-threatening vegetation;
	Repair or replacement of street or road surfaces, curbs, driveways and walkways done in kind to match existing materials and design; and
	Repair or replacement of fencing done in kind to match existing material and design.

**Table 5.2-1 (continued)**

<b>Element</b>	<b>Activity</b>
<b>New Materials</b>	Installation of dry insulation;
	Installation of securing devices, including dead bolts, door locks, window latches, and door peepholes. Damage to historic doors and windows should be minimized during installation;
	Installation of fire or smoke detectors;
	Installation of securing systems; and
	Installations of screening or other like materials in order to protect the building/structure from rodents and other intrusive wildlife (e.g. bat screening).
<b>Ground Disturbing Activities</b> (When No Prehistoric Materials Are Present)	Excavations for repair or replacement of building footings or foundation work within two (2) feet of existing footings and foundations;
<b>Ground Disturbing Activities (cont.)</b> (When No Prehistoric Materials Are Present)	Tree or shrub planting or removal in areas that have been previously disturbed by these activities; and
	Installation of landscape sprinkler systems.
	Removal of non-native weeds.

## SECTION 6.0

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## **Appendix A**

### DeSabra Centerville Hydroelectric Project Area of Potential Effects

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## **Appendix B**

### Cultural Resources Study Plans

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## **Appendix C**

### **Traditional Cultural Properties (Study 6.3.8-2) Confidentiality Agreement**

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## **Appendix D**

### **Record of Section 106 Consultation**

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