

***Boundary Hydroelectric Project (FERC No. 2144)***

***Study No. 24***

***Cultural Resources Study***

***Final Report (Public Summary)***

**Prepared for  
Seattle City Light**

**Prepared by  
Historical Research Associates  
(under contract to Tetra Tech)**

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# **Study No. 24: Cultural Resources Study**

## **Final Report (Public Summary)**

### **Boundary Hydroelectric Project (FERC No. 2144)**

#### **1 INTRODUCTION**

Study No. 24, Cultural Resources Study, was conducted in support of the relicensing of the Boundary Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) No. 2144, as described in the Revised Study Plan (RSP; SCL 2007). The RSP was submitted by Seattle City Light (SCL) on February 14, 2007, and approved by FERC in its Study Plan Determination letter dated March 15, 2007. This is the public version of the final report describing the field efforts, analyses, and determination of Project effects. Because of the potentially sensitive nature of the information regarding archaeological and historic resources, the complete report is not being distributed to the general public. The full report may be obtained by request to SCL or FERC (subject to confidentiality requirements). Tasks in 2007 included an archaeological and historic resources inventory survey, archaeological testing, archival records research, and preparation of resource documentation including an interim report (SCL 2008). Tasks in 2008 consisted of a cultural resource survey of select areas identified as needing additional survey, including areas added to the area of potential effects (APE) after the 2007 survey, and several site revisits to collect additional information at those locations, additional archival records research, and the compilation of this final report.

#### **2 STUDY OBJECTIVES**

The goal of the Cultural Resources Study was to gather information that will be used to develop a Historic Properties Management Plan (HPMP) with recommended protection, mitigation, and enhancement measures for the management of historic properties under the new Project license. The objectives of the study included the following:

- A field inventory to identify historic properties within the Project APE
- Consultation with Tribal representatives to document any Traditional Cultural Properties (TCPs) and other culturally significant locations within the APE
- Evaluation of resources to assess whether they meet criteria for National Register of Historic Places (NRHP) eligibility
- Documentation of Project-related effects on any NRHP-eligible historic properties

The Cultural Resources Study was conducted in consultation with the Washington State Department of Archaeology and Historic Preservation (WDAHP), Indian tribes, federal agencies, and other interested parties. Toward this end, SCL contacted the following with regard to planning the Cultural Resources Study: the Colville National Forest (CNF), the Bureau of Land Management (BLM), the WDAHP, the Kalispel Tribe of Indians, the Confederated Tribes of the Colville Reservation, the Kootenai Tribe of Idaho, the Spokane Tribe of Indians, the Coeur d'Alene Indian Tribe, and the Confederated Salish and Kootenai Tribe. A number of these

parties participated in the Cultural Resources Workgroup (CRWG). CRWG members actively participated in meetings to develop the Implementation Plan for the Cultural Resource Study and reviewed progress reports, testing plans, the interim report, and preliminary products such as draft Washington Archaeological Site Inventory (WASI) and Historic Property Inventory (HPI) forms, Determination of Eligibility (DOE) forms, and field summary memorandums.

### 3 STUDY AREA

#### 3.1. Project Area of Potential Effects

The APE, or study area, of a project is defined as “the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historical resources if any such cultural resources exist” (Title 36 Code of Federal Regulations [CFR] Section 800.16). For the purposes of the relicensing analysis, the Project APE was defined as follows:

- Downstream of Metaline Falls—The reservoir and the land within the FERC Project boundary, which includes most Project facilities, the land 200 horizontal feet (along the ground surface) inland of the high water elevation (1,994 feet NAVD 88 [1,990 feet NGVD 29])<sup>1</sup> along both shorelines, and the transmission line right-of-way (ROW) from the powerhouse to the Bonneville Power Administration interconnection (Figure 3.1-1).
- Upstream of Metaline Falls—The reservoir and the land within the FERC Project boundary, plus the land within 25 horizontal feet inland of the high water elevation along both shorelines (approximately 2,019 feet NAVD 88 [2,015 feet NGVD 29]), extending south to the FERC Project boundary for the Box Canyon Project.
- The SCL-owned Boundary Wildlife Preserve (BWP) (155 acres) and adjoining SCL-owned property (85 acres).
- Major Project-related roads—The SCL ROW for the road from Boundary Dam to the Vista House and the road from the dam to County Road 2975. The Pend Oreille County ROW for the road from the Vista House to State Route 31.
- All SCL-owned lands outside the FERC Project boundary, in the Pend Oreille Valley between Box Canyon Dam and the international border, including lands where there are Project-related structures or activities, such as maintenance and equipment staging locations.
- In addition, the APE was adjusted to include any areas where other resource studies (such as erosion or dispersed recreation) identify a Project effect in an area not within the original APE.

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<sup>1</sup> SCL is in the process of converting all Project information from an older elevation datum (National Geodetic Vertical Datum of 1929 [NGVD 29]) to a more recent elevation datum (North American Vertical Datum of 1988 [NAVD 88]). As such, elevations are provided relative to both data throughout this document. The conversion factor between the old and new data is approximately 4 feet (so, for example, the crest of the dam is 2,000 feet NGVD 29 and 2,004 feet NAVD 88).

Ownership of lands within the APE is shown in Table 3.1-1. For ease of general location reference, portions of the Project APE are referred to as the Upper Reservoir Reach, the Lower Reservoir Reach, and the Tailrace Reach, as defined below:

- Upper Reservoir Reach—includes the area from the southern end of the Project APE below Box Canyon Dam to Metaline Falls.
- Lower Reservoir Reach—includes the area from Metaline Falls downstream to the Project dam. As such, the Lower Reservoir Reach includes the narrow, incised canyon portion of the river.
- Tailrace Reach—includes the SCL-owned land from the Project dam north to the end of SCL-owned land at the U.S.-Canada border (see Figure 3.1-1).

**Table 3.1-1.** Ownership of land within the APE.

Owner	Acres
BLM	319.6
BPA	29.4
City of Metaline	13.7
City of Metaline Falls	4
Federal – Other	0
Pend Oreille County PUD	2.7
Pend Oreille County	2.8
Pend Oreille Valley Railroad	0
Private	72.6
SCL	1,014.4
Selkirk School District	2.1
USFS	633
DNR	1,335.2
WSDOT	3.6
Unknown	10.5
<b>Total Acres</b>	<b>3,443.6</b>

Notes:

BLM – Bureau of Land Management

BPA – Bonneville Power Administration

DNR – Washington State Department of Natural Resources

PUD – Public Utility District

SCL – Seattle City Light

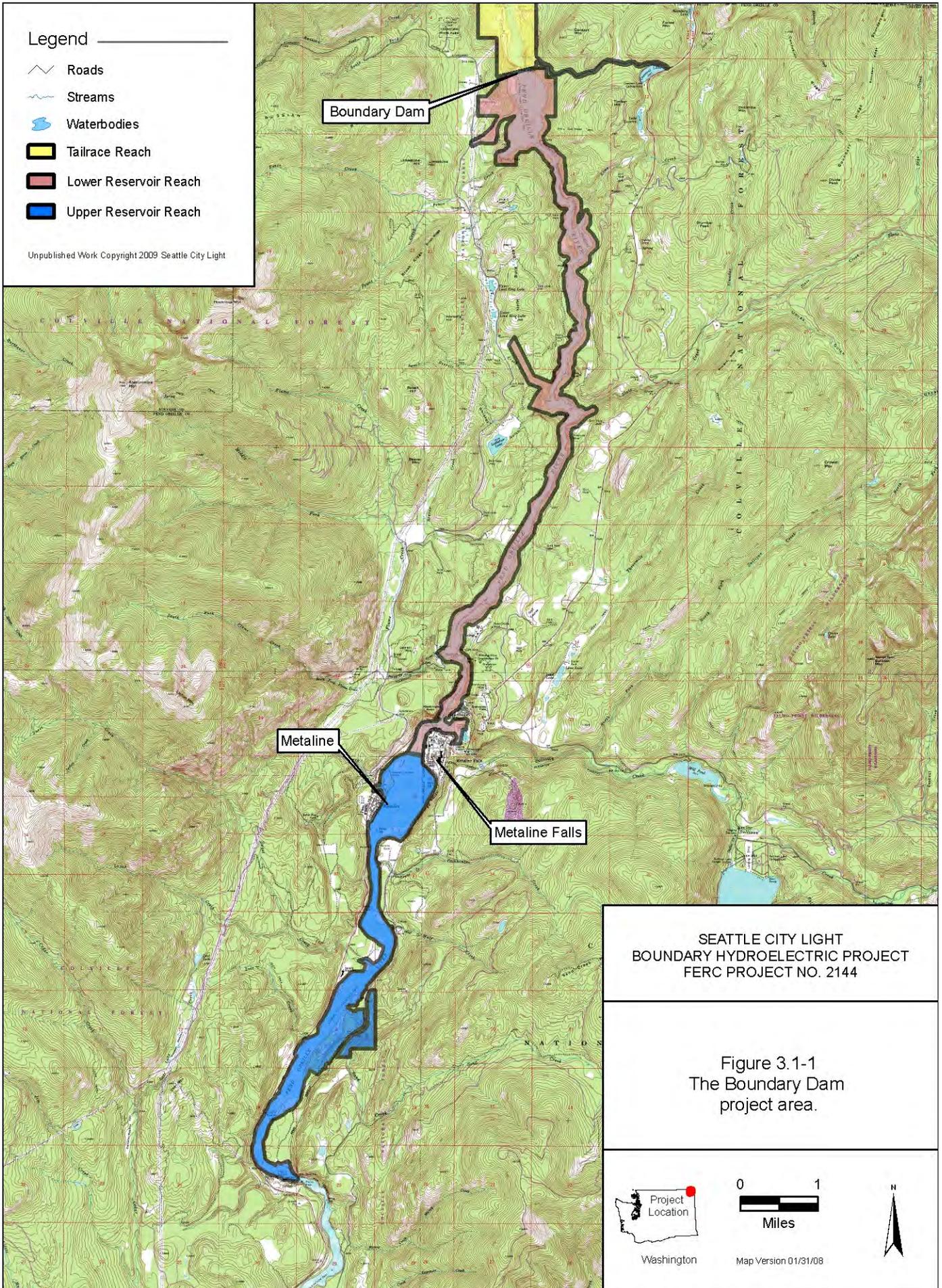
USFS – U.S. Forest Service

WSDOT – Washington State Department of Transportation

Legend

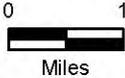
-  Roads
-  Streams
-  Waterbodies
-  Tailrace Reach
-  Lower Reservoir Reach
-  Upper Reservoir Reach

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SEATTLE CITY LIGHT  
BOUNDARY HYDROELECTRIC PROJECT  
FERC PROJECT NO. 2144

Figure 3.1-1  
The Boundary Dam  
project area.



Washington

Map Version 01/31/08

## 3.2. Cultural Resources Context

Background information is presented for the prehistoric, ethnographic, and historic periods. In addition, information about previous cultural resource studies is summarized. This information is given brief treatment here because it was presented previously in other Project relicensing documents, including the Pre-Application Document (PAD) (SCL 2006) and the RSP (SCL 2007). Records research was conducted at various local and state historical archives and libraries for the background section on the historic period.

### 3.2.1. Prehistory and Ethnographic Period

The interior Northwest has experienced more than 10,000 years of human occupation, as demonstrated by the archaeological record and, in the more recent past, by the ethnographic record. Within the past several decades, researchers have looked to address broad questions of adaptation and settlement patterns of the inhabitants of this area. Several themes emerge, including settlement patterns, changes in subsistence strategies, and artifact chronologies (Pokotylo and Mitchell 1998).

General cultural and technological stages emerge that may respond, in part, to changes in climate, which in turn affect such things as availability of food resources and population size and density. The following Interior Plateau cultural sequence is described by Pokotylo and Mitchell (1998) and supplemented by Ames et al. (1998). Generally speaking, the earliest phase was cooler and wetter; the climate gradually became warmer and drier until a shift around 4000 BC back to cooler, wetter conditions similar to today's climate.

#### 3.2.1.1. *Period IA (11,500-11,000 B.P.)*

The melting of the Late Wisconsin glaciation after the last Ice Age was the setting for the earliest cultural period. Archaeological assemblages of this earliest period are marked by lanceolate chipped projectile points, known as Clovis, which are poorly represented in excavated sites in the region. The brief appearance of Clovis in North America (lasting approximately 500 years) is not fully understood, but may suggest a response to a flux in the environment. A question also remains about settlement during this period. The sites located tended to be small open camps or sheltered residences. The paucity of sites could partly be a result of poor preservation of certain material types. Organic remains that date to this time period, such as fish, small mammals, and mollusks, may suggest a wetland or lacustrine environment.

#### 3.2.1.2. *Period IB (11,000-7000/6400 B.P.)*

Alpine glaciers continued to melt and retreat during this period. This period, termed "Anathermal," exhibited warmer winters, with less precipitation, and hotter summers. Temperatures were an average of 1.2 degrees Celsius higher than at present. This warmer weather, along with a rise in tree line elevation, facilitated growth of shrubs and grassland. During this period, water oxygen isotope ratios near the confluence of the Okanogan and Columbia Rivers were at a maximum, suggesting greater levels of evaporation, and therefore highest rates of precipitation (Chatters 1998).

### 3.2.1.3. *Period II (7000/6400-3900 B.P.)*

This period is characterized by a long warming and drying trend. This “Altithermal” period indicates warm, dry summers and warm, wet winters. As a result of the overall decrease in precipitation during this period, water bodies shrank, and flow decreased in rivers and streams, some vanishing altogether. The environmental response included pine forests that expanded into lower elevations, thereby decreasing grazing areas for ungulates such as elk and deer. These factors may have led to a population decline and increased use of salmon as the runs became more predictable (Chance and Chance 1982; Pokotylo and Mitchell 1998).

Chatters (1995) suggests a reduction in mobility for inhabitants of the Okanogan watershed, which may indicate a similar situation in other upland forested biomes (Chatters 1989, 1995). During the Pithouse I period, the majority of pithouses were concentrated along river floodplains and upland tributaries. Chatters suggests that inhabitants foraged year-round, but maintained a permanent base (a semi-sedentary settlement pattern). The presence of large heavy mortars suggests that there may have been great exploitation of the local environment, with a secure base for processing; however, Ames and Marshall (1981) suggest these mortars were present as food productivity intensified in response to population pressure on resources. The abandonment of these pithouse sites by 3900 B.P. may indicate that a dramatic climatic flux, such as a decline in temperature, more arid conditions, forced a population crash, and a subsequent return to a mobile foraging strategy (Chatters 1995).

Post-glacial ponding of flood waters in the Box Canyon Project area upstream on the Pend Oreille River would have drained by the early part of Period II, exposing the valley floor to human occupation. Initial occupation is indicated by sites explored by the Calispell Valley Archaeological Project (Andrefsky et al. 2000), as well as the initiation of intensive resource exploitation at the end of this period, mainly focused on camas (*Camassia quamash*) processing.

### 3.2.1.4. *Period III (3900-ca. 200 B.P.)*

By this period, temperatures had become cooler. Vegetation on the Plateau became denser, and winter precipitation increased. The melting of the snowpack was delayed, allowing for increased fish runs; however, the extent of the runs was likely shorter than before. Schalk (1977) notes that, although cooler water temperatures did not correspond with larger amounts of food, the cooler water was advantageous for fish reproduction. Temperatures generally increased after 3500 BC, and dwellings seem to be occupied primarily in winter. This period is typically referred to as the “Plateau pattern” or “winter village pattern.”

Winter temperature slightly increased, as summer temperatures slightly decreased by 2400 B.P., producing conditions similar to those today. Reduced hydrology is observed when alluvial fan deposits are examined, suggesting a warmer, more arid environment between 1400 and 600 B.P. After this time, conditions became wetter and cooler both regionally and throughout North America. This period is commonly referred to as the “Little Ice Age.”

Villages grew in size throughout Period III, as demonstrated archaeologically by the number of pithouses and, together with an increase in diversity of camps as compared with the Pithouse I

period, reflects a gradually increasing population. At the end of this period, diseases introduced by European explorers cause marked depopulation (Boyd 1985).

### 3.2.1.5. *Ethnography*

The Project, located in the lower Pend Oreille River valley, lies within the traditional territory of Interior Salish-speaking people, and more specifically, the Lower Kalispel Indians. The Lower Kalispel Indians share many traditions with other Interior Salish tribes, such as seasonal travel for subsistence procurement; a lacustrine or river settlement with a subsistence emphasis on fish, land game, and vegetables (root crops); and communities linked by family relations and trade. The Kalispel, along with Lakes and Kootenai Indians, were particularly adept at canoe travel (Ruby and Brown 1992).

Early twentieth century ethnographers noted two divisions of the Kalispel: the Upper and Lower. The Upper band resided in Idaho and Montana, with the Lower band centered around the Pend Oreille River. The Kalispel were dubbed by French Canadian trappers as Pend d’Oreille, which means “to hang by the ear” or “ear pendants” and by the Nez Perce as “camus [sic] eaters” (Lahren 1998). According to Lahren (1998), the name Kalispel is a derivative of the Spokane-Kalispel-Flathead “qlispël;” variations include “Kalispelm, Kalispelum, Kulespelm, and kälespilum.”

Lower Kalispel winter villages numbered at least 12 and were located between Newport to the south and Jared to the north (Fandrich et al. 2000; Ray 1936; Smith 1961). The largest of these villages was located a few miles north of present-day Cusick, on the east bank of the Pend Oreille River (Fahey 1986). Lewis and Clark estimated the entire population at around 1,600 persons residing in 30 winter houses in the early nineteenth century (Moulton 1990). A typical winter dwelling consisted of either a large excavated pithouse or a conical mat lodge. Each dwelling could hold as many as 12 families, but averaged about 50 residents. Summer dwellings included lean-tos, tepees, and mat lodges (Lahren 1998). Although no winter village sites were located north of Jared, fishing camps, gathering locations, and vision quest areas were located throughout the area. Goods procured throughout this area included huckleberries, pinenuts, serviceberries, caribou, deer, western red cedar bark, and medicinal juniper and other roots (Fandrich et al. 2000; Smith 1961, 2000).

The Kalispel also relied heavily on fish, especially trout, whitefish, and other inland freshwater species (Lahren 1998; Lyons 2003). Salmon was usually obtained at seasonal fisheries, primarily at Kettle Falls, because the Pend Oreille River did not support large fish runs.

One of the most heavily used vegetable foods was camas. Camas bulbs could be ground into flour and then baked into cakes, which could easily be stored for the winter (Fahey 1986; Gough 1997; Smith 2000; Thoms 1989). After the camas harvest, the people separated into smaller bands for fishing and collecting. Hunting would intensify before the first snow arrived, and travel to salmon fisheries may have occurred to store goods for the upcoming winter.

The advent of the Kalispels’ use of horses in the eighteenth century increased regional interaction, which in turn facilitated cultural and social change. By the last half of the eighteenth century, the effects of the indirect contact with Euro-Americans were devastatingly clear—by

1780, an estimated 30 to 50 percent of southern Plateau Indians succumbed to smallpox (Boyd 1998). Soon after, the direct contact with these new settlers would lead to massive disruption and, inevitably, to a loss of many social customs (Boyd 1998; Fahey 1986).

### 3.2.2. Historic Period

Pend Oreille County was established in 1911, making it the youngest of Washington State's counties (Bamonte and Bamonte 1999). It was originally part of Stevens County, created in 1858, which itself had been carved out of Spokane County. Stevens County was named after Isaac I. Stevens, Washington Territory's first governor (Winans 1904). Early settlers were trappers and traders associated with the British North West Company, which dominated the interior Northwest fur trade in the early nineteenth century. David Thompson, an early explorer of the area affiliated with the British North West Company, explored the Pend Oreille River in 1809, reaching as far north as Box Canyon, near Metaline Falls (Boyle 1996); however, settlement was sparse on this section of the Pend Oreille River until gold was discovered in the 1850s.

The first American inhabitants of northeastern Washington Territory were missionaries and military personnel. Missionaries moved to the region as early as 1838, and the first Protestant mission in the area was established at Tshimakain, about 25 miles northwest of Spokane, in 1838. Two sites existed in the area with the name Fort Colvile (the second spelled "Colville"). The British Hudson's Bay Company built the first at Kettle Falls in 1825, and it served as a trading post. Americans constructed the second fort in 1859 at the future town site of Colville, about 10 miles east of the Columbia River, once the international boundary commission had solidified the boundary between British and American interests (Washington State Historical Society 1940).

Spurred on by the Homestead Act of 1862 and again in 1900 by the opening of the northern half of the Colville Indian Reservation to white settlement, Americans fervent about acquiring land and looking for wealth through minerals, timber, and agriculture began to settle Stevens County in growing numbers. These settlers came primarily via the rapidly expanding network of railways. Indeed, more settlers came to Stevens County by rail than by any other mode of transportation (Bohm and Holstine 1983). In the 1880s, pioneer Enoch Carr homesteaded the location where Metaline Falls was eventually platted by Lewis P. Larsen in 1910 (Boyle 1996). Carr's landing, a busy boat landing spot near Metaline Falls, was named for this early homesteader.

The town of Metaline Falls was named for the falls on the Pend Oreille River; the falls were named for nearby Metaline, a mining district named by hopeful prospectors looking for gold and other precious metals in the mid-1850s. As it turned out, the miners' hopes were fulfilled, as Metaline Mining District's vast deposits of lead and zinc made it the most prominent mining district in Washington State between the late 1920s and 1950. The area was also prime logging territory, with mills and timber operations dotting the landscape along the banks of the Pend Oreille River (Bamonte and Bamonte 1999).

### 3.2.2.1. Mineral Resources

The earliest documented mining closest to the Project APE occurred near Fort Colville when placer gold was discovered along the Columbia River in 1855. News of the discovery caused a small rush of several hundred prospectors to the area, provoking conflicts with the local Native American population. This clash temporarily hindered further mining in the region for several years. Within 3 years of the Fort Colville discovery, a massive gold rush into the Fraser River country of southern British Columbia, coupled with the growing hostility of the Indians, convinced many of the early placer miners to move elsewhere, including into eastern Washington. “As the miners worked their way north up the Columbia, some ventured up the banks of the Pend Oreille River (then called Clarke’s Fork) where they found relatively rich ground, particularly in the Sullivan Creek area near present Metaline Falls” (Ferguson and Root 2004a).

The first large influx of Chinese into northeast Washington was directly related to placer mining. Beginning in the 1860s, the Chinese laborer population was concentrated in the Upper Columbia region of eastern Washington. The mining industry in California had declined considerably during this time, but rumors of new mines in the Northwest and British Columbia lured Chinese miners northward (Chin 1977). Racial prejudice and lack of employment in California, where the major portion of Chinese were originally concentrated, led considerable numbers of Chinese to disperse to mines outside of California. They also found work in salmon canneries, hop-picking areas, and railway camps. The poor conditions the Chinese were facing in California directly affected the increase in Chinese population in the Washington Territory, from 234 in 1870 to 3,186 in 1880, when the Chinese represented 4.2 percent of total Washington residents (Chin 1977).

Until the 1890s, Chinese miners had a significant presence in the upper Columbia and Pend Oreille rivers area, particularly along the Columbia River between the present-day towns of Northport and Kettle Falls and along Big Sheep Creek north of Northport, and along the Pend Oreille River near present-day Metaline Falls (Ferguson and Root 2004a). The general pattern of migration and formation of placer camps by the Chinese followed in line almost directly behind the whites, along old white and Indian miner trails (Chin 1977). Placer mining in Pend Oreille County had begun in the late 1850s. Large camps arose to accommodate the Chinese placer miners, including one about 2 miles north of present-day Metaline Falls. The camp became known as Chinaman’s Bar (Hudson et al. 1981).

Historian Charles Barker noted that a log cabin the laborers built at Chinaman’s Bar featured a stone fireplace, and was still standing as late as 1945. Apparently, at that time, Barker had the roof patched and used the structure to house a worker doing assessment work on four mining claims at that location. A 100-foot horseshoe circle of rock and boulders that the Chinese miners had piled was still evident on the site as well (Barker, “Memories” n.d.). Any remnants of this structure would be under water in the current reservoir. Chinese miners also mined upriver as far as LeClerc Creek and at Cedar Creek near Ione (Barker, “Prospecting” n.d.). They would typically work claims abandoned by non-Chinese, and use pans, rockers, and hydraulic systems in sandbars and shorelines for placer gold. Few records detail the Chinese population, living conditions, or social and economic interactions between the Chinese and non-Chinese in the Project area (Gaylord n.d.).

In fact, in Pend Oreille County in particular, sparse details exist on the lives and work of any of the early placer miners. This absence of information is likely a result of the relatively meager gold deposits and the fact that most miners retreated from the area for richer fields to the west and northwest. As the twentieth century approached, most of the Chinese miners had deserted the region (Ferguson and Root 2004a). The nature of the county's gold deposits probably contributed greatly to this exodus. According to research, the placer deposits along the Pend Oreille River were in gold-bearing glacial debris carried into the area from British Columbia by the continental ice sheet. Thus, the lode veins that prospectors sought in the region were not present, and mining for placer and lode gold historically has been limited. In 1940, the Z Canyon Gold Dredging Company organized with the intent to mine placer deposits below Z Canyon. This method, however, was not very successful, and the company eventually abandoned the project (Hudson et al. 1981).

By 1880, most of the placer deposits in northeastern Washington had been exhausted. Gold was discovered in many places, but not in paying quantities. In addition, the discovery of rich mines in the Idaho panhandle attracted miners away from this region (Dingee 1930). As a result of depleted placer resources, attention turned toward the exploitation of lode deposits (metal deposits that had not eroded from the surrounding rock). The mining of lode deposits, or "hard-rock mining" as it is often called, was different than readily accessible placer deposits in that it involved extensive underground development. This type of work required heavier, more complex equipment. Large, expensive milling operations were necessary to process the ore to separate its metal content from the excess rock that surrounded it. The lone placer prospector was therefore replaced by mining corporations with a hired labor force and absentee ownership because large investments of capital from wealthy investors or companies of stockholders generally were required before an effective lode-mining operation could proceed. A lack of the technology and knowledge about complex mineralogy required to perform deep, underground mining led the earliest lode mining operations to switch to gold and silver recovery, as these were the most profitable metals to mine. As knowledge of hard-rock mining and mineralogy increased, however, efforts eventually focused on economically important base metals such as copper, lead, and zinc. These three metals, along with some silver, were the primary mineral resources found in northeastern Washington. Although prospectors were aware of the presence of these deposits in the Pend Oreille valley as early as 1869, it was not until 1928 that they discovered large commercial ore bodies. By the 1950s, the mines in Pend Oreille and Stevens counties had produced nearly the entire output of lead and zinc for the entire State of Washington. Small amounts of gold have been found in most lode mines within the region, but it generally has been of minor value compared with the other metals (Ferguson and Root 2004a). Most of the major deposits were found in the Metaline Falls area of the county. Consequently, this approximately 400-square-mile area was organized into the Metaline District and additionally has produced gold, silver, and copper since that time (Hudson et al. 1981).

Lewis P. Larsen, born in Denmark in 1876, was a pioneer in the Pend Oreille Valley cement industry. When he first traveled to the United States, he found employment in the mining industry in Salt Lake City, Utah. In 1905, Larsen made his way to the present day Metaline and Metaline Falls area to assess the scope of mineral deposits; instead, he discovered geological deposits vital to producing cement. Realizing the potential for the industry, he acquired the

Defiance and Sullivan Creek placer claims, which later formed the area of the town of Metaline Falls, as well as the water rights to Sullivan Creek. With investors assisting him, Larsen incorporated the Inland Portland Cement Company in 1909. The populations of the towns of Metaline, Metaline Falls, and Ione grew as the scale of lead, zinc, and limestone mining increased, and with the establishment of a cement industry. Completion of the Idaho and Washington Northern Railroad in 1910 supported this influx of workers and the success of the industries. The Inland Portland Cement Company began manufacturing at Metaline Falls in May 1911, 1 year after the construction of the Sullivan Creek power plant, which provided energy for the operation. The company's name later changed to the Lehigh Portland Cement Company and, until it closed in 1990, dominated Pend Oreille County's economy. By 1912, Metaline Falls had entered the modern industrial world, with various businesses, hotels, parks, and electric lighting.

Larsen's influence was not only in the development of the cement industry, but continued when, with his claims, the Pend Oreille Mines and Metals Company (POMMC) came into being in 1910. This enterprise became the largest producer of lead and zinc in Washington. From 1942 to 1952, 20 percent of the nation's lead and 13 percent of its zinc was produced in the Metaline district. The Josephine Mine, later renamed Clark, may have been Larsen's first set of claims to form the nucleus of the company. Records from 1915 indicated that this mine, located on the west side of the Pend Oreille River, had produced 3,111 tons of metal that year. The Josephine property originally belonged to the Lead-Zinc Company from 1912 to 1924 and later came under the POMMC's holdings in 1934. In 1924, the Josephine included 15 claims, most of them patented; by the time the POMMC took it over, it apparently had increased to 20 claims. It continued to operate until 1974. Another nearby mine, the Riverside, on the east bank of the river, was abandoned in 1924; even so, it was added to the POMMC's holdings by 1943 (Baltien 1996).

By the second decade of the twentieth century, the once-remote wilderness that early fur traders originally traversed had been largely replaced with the characteristic traces of civilization that follow the mining frontier. By 1900, nearly 12,500 mining claims were located in Ferry County. A similar situation occurred in Stevens County and the part of Stevens County that would become Pend Oreille County, where at least 48 patented mining claims existed in 1903. By 1937 more than 21,000 mineral claims had been filed in Stevens County and, according to historical records, approximately 225 mines in Pend Oreille and Stevens counties had achieved some amount of production. Despite the steady growth in the industry, however, most of the northeastern mining operations remained small scale, employing only a handful of workers at any given time. By the 1940s, most of these operations were inactive.

Despite relative industrial successes, the town of Metaline Falls never surpassed the peak population of 316 that it reached in the 1930s. That same decade, the United States constructed an international border crossing just north of Metaline Falls. This crossing was constructed in response to increased immigration and smuggling at the border, and with the help of such Depression-era building programs as the Works Progress Administration and Civilian Conservation Corps. Over the past three-quarters of a century, border traffic has increased at the station, while the local population has dwindled. Although industrial gold mining has long since disappeared from the region, other mining products, most notably lead, and lumber have continued to play a role in the area's economy (Boyle 1996).

### 3.2.2.2. *Transportation*

The greatest impediment to early lode mining in eastern Washington was inadequate transportation facilities. Although the north and south ends of the county contained some of the best lead and zinc deposits in the Pacific Northwest, access to the Metaline region was difficult. Until the end of the nineteenth century, steamboats provided the only large-scale reliable transportation for freight upstream along the Pend Oreille (SCL 2006 Appendix 4-5). While steamboats were running, they performed the duties of a ferry in moving heavy cargo across the river.

In 1906, the federal government dynamited the Pend Oreille River channel through Box Canyon to make the river more navigable for steamboats laden with ore from the mines in the Metaline District. In that same year, a mail steamer, the *Elk*, was successfully piloted through the canyon and established regular steamboat and barge service. Around this time, a wagon trail was completed between Ione and Metaline (SCL 2006 Appendix 4-5).

With the arrival of the railroads, the limited extent of transport by steamboat was remedied. In 1889, the Spokane Falls and Northern Railroad expanded northward from Spokane to service the prosperous mining industry along the upper Columbia River. Soon, the tracks were extended to Northport and eventually into Canada. By 1910, the Idaho and Washington Northern Railroad was being built downriver to Ione, Metaline, and Metaline Falls to service the Pend Oreille Valley (Baltien 1996). In 1914, the Milwaukee Railroad obtained this Idaho & Washington Northern line. A bridge to Metaline Falls was not built until 1920, and water transport remained the only link between the towns until that year.

The Civilian Conservation Corps (CCC), established in 1933, provided unemployed men with rural and wilderness-area jobs during the Depression. Men were employed in forestry, trail and road construction, fire suppression, and other work in national forests and parks and state lands. A CCC camp was located at Sullivan Lake, where workers built a ranger station and airstrip, as well as trails and other improvements. By 1929, transportation in and out of the valley was facilitated by construction of a state highway between Newport and the Canadian border, now part of the International Selkirk Loop (SCL 2006 Appendix 4-5).

With the completion of the railroad and the demise of the steamboat, another method was necessary to accommodate the cargo resulting from increasing industry. The river current-powered ferry proved to be the most practical and economical in most places where the current was swift enough. The ferries operated by turning at an angle to the current, similar to the way a sailboat tacks into the wind by angling the sail (Piper 1990). These improved transportation facilities attracted an increasing number of homesteaders and spurred on forms of industry in addition to mining, such as logging, agriculture, and cement production.

### 3.2.2.3. *Homesteading and the Logging Industry*

Before the 1900s, most of present day Pend Oreille County was covered with forests. The lumber industry began there in 1888 when Edwin Winchester built a sawmill on Winchester Creek in the Calispell Valley. This mill functioned primarily to supply early settlers with lumber

for their building projects. The second recorded mill operating in Pend Oreille County was Wood's portable tie mill, which cut ties for the Great Northern Railroad as that line was being built through Newport in 1892. After these two mills were established, lumbering and homesteading seemed to go hand-in-hand throughout the Pend Oreille Valley (Bamonte and Bamonte 1998).

As previously mentioned, settlement in the Metaline Falls region did not occur until the middle of the 1880s, the earliest permanent homesteaders along the Pend Oreille River being placer miners (Bamonte and Bamonte 1996). By the early 1900s, large numbers of homesteaders discovered the woods of northern Pend Oreille County as a place to settle. They realized they could make a living from the timber and came to the area before any market for logging even existed. To prove up on a homestead claim, however, law required an applicant to live on that plot of land for 6 months out of a year, during a 3- to 5-year period, within which time improvements were made to the property. One such improvement was to clear an acre of land, and occasionally it was necessary to cut valuable timber and burn it to meet this requirement (McInturff 1971).

Selling logs or trees was prohibited before a final certificate was issued on a homestead; the claim entry was subject to cancellation if timber was cut or removed for any purpose other than land clearance for cultivation or lumber for constructing buildings and fences on the homestead itself. In addition, the person in violation was liable to civil suit for the recovery of the timber's value. Essentially, the intent of these regulations was to prevent the sale of any timber prior to patent (Chance n.d.).

Tract book records show that single women made up a significant portion of early twentieth century homesteaders in Pend Oreille County (Chance n.d.). According to a law enacted in 1900, an unmarried woman still could complete the claim entry and receive patent to the land if she settled on a tract of public land, improved it, maintained residence with the intent of appropriating it under the homestead law, and then married. To do so, however, she had to continue residing on her claim, and her new husband could not claim a separate tract under the homestead law. Consequently, the homestead law worked to women's advantage whether they stayed single or decided to marry. It likely was beneficial to those looking for a husband, as it equipped them with a land dowry going into marriage. For those who chose not to marry, the law offered considerable independence and an estate of their own. Single women living alone in such an isolated, forested region seemingly would have been vulnerable to robbery and molestation, but newspaper records provide no evidence of such reports. Although instances of these women being endangered may have occurred, these issues of private life may simply have been kept hidden from public view (Chance n.d.).

F.A. Blackwell was probably more responsible than any other individual to bring early economic development to the Pend Oreille Valley. His greatest single contribution to the region was his promotion of the Idaho and Washington Northern Railroad, which reached Ione in 1909. This town, a few miles south of the southern Project boundary and settled in 1894, did not become a thriving community until rails connected it to the outside world. The following year, these same tracks were extended to Metaline Falls. As in other areas of the Pacific Northwest, the timber industry boomed after railroads and cheap transportation arrived. Access to a vast transportation

network provided the stimulus for extensive development of the industry (Bohm and Holstine 1983). The expansion of the Idaho and Washington Northern Railroad ushered in an era of big mills almost immediately, including Blackwell's Panhandle and Dalkena lumber companies, as well as the Phelps Lumber Company in the downriver country and the Fidelity Lumber Company at Newport (succeeded by the Humbird Lumber Company) (Howe 1976).

Portable sawmills were a common tool that many settlers were skilled at using, but these small mills tended to disappear as quickly as they developed. The lumber industry began to boom in the early 1900s when land was open to private ownership and timber was available for purchase. The Northern Pacific Railroad was the first major timberland owner in Pend Oreille County and, for that matter, in the nation. Higher-volume mills developed as river boats began offering a means to transport lumber (Bamonte and Bamonte 1998).

The purchase of timber claims under the Timber and Stone Act of 1878 was a widely used method of acquiring land from the public domain in the Pend Oreille Valley. Nearly all of the 160-acre tracts bought at \$2.50 an acre, in compliance with the 1862 homestead law, were held for timber cutting, which was legal as long as an owner did not hold more than one tract, nor intend to sell the land to a lumber company. According to historical records, few people built cabins or other improvements on these claims. Additionally, evidence shows that settlers purchased the timber entries with money put up by logging companies, and then illegally deeded them over to those companies. Sales through the Timber and Stone Act were occurring at least as early as 1900 in Pend Oreille County (Chance n.d.).

By 1914, the timber industry was paying 55 percent of all wages earned in the State of Washington. This percentage may have been even higher in the northeastern corner of the state, in and around Pend Oreille County. The Diamond Match Company mill was built in 1920 in the town of Cusick. More than 200 mill workers and their families lived in the community until 1927, when the stands of white pine had been depleted and the mill closed (Holstine 1987).

In the early 1920s, the lumber industry and homesteading in the area began to level off and eventually recede. The declining payrolls of the logging camps and sawmills contributed to the increasing problems homesteads faced. More than half of the land in the county was the property of absentee owners such as the Northern Pacific Railroad, Diamond Match, and Panhandle Lumber. Homesteaders could not expand into that land, and profits from logging went to pay investors and stockholders who lived elsewhere (Chance n.d.).

#### 3.2.2.4. *Hydropower*

Studies of the potential for a hydroelectric development in the Z Canyon area, just upstream of the current Project dam site, were begun as early as 1914. Colonel Hugh L. Cooper, the engineer who undertook these initial investigations, applied for a license from the Federal Power Commission (FPC, FERC's predecessor), but the application was denied (Sugiyama 1980).

In 1943, the U.S. Army Corps of Engineers (USACE) published a comprehensive "308 Report" on the Columbia River and its tributaries, which included the finding that the Boundary site, approximately 1 mile downstream from the Z Canyon site and 1 mile upstream from the Canadian border, was superior to the Z Canyon site for construction of a hydroelectric project.

The report recommended a dam that would create a reservoir to the elevation of 2,062.5 feet above mean sea level (NGVD 29), which is the elevation of Lake Pend Oreille. However, USACE encountered considerable opposition to this proposal during hearings held in 1947, and instead built the Albeni Falls Dam, near the outlet to Lake Pend Oreille. In 1951, the City of Seattle commissioned a study of undeveloped potential hydropower sites in the state of Washington. Based on the study's findings and recommendations, the City of Seattle applied for a preliminary permit on October 28, 1953, to build a dam at the Boundary site. The permit was granted on August 30, 1954 (Sugiyama 1980).

### **3.3. Previous Cultural Resources Investigations**

As part of early information development for relicensing, SCL conducted background research that is documented in the PAD (2006) and is summarized here.

Eight small-scale surveys and two previous Project-wide assessments (Daugherty 1962; Jackson 1981) have been performed in and around the vicinity of the Project APE. Both of the previous surveys conducted for SCL were concerned only with prehistoric archaeological sites and examined only the portion of the Project APE downstream of Metaline Falls. Neither survey identified any cultural resources within the survey areas. The small surveys were largely performed for the U.S. Forest Service (USFS) or BLM to satisfy the National Historic Preservation Act (NHPA) requirements for activities such as land exchanges and timber sales (USFS 2000), predominantly in the CNF. These investigations were largely limited to surveys conducted by foresters with training in archaeological survey rather than by professional archaeologists. The scopes of investigations for these projects were necessarily limited, and studies were usually restricted to the immediate Project locale (SCL 2006).

Records research for the development of the PAD identified 61 previously recorded cultural resources within 1 mile of the Project APE. Ten additional sites and 34 isolated finds were also recorded in 2002 and 2003 by Ferguson and Root (2004a). Four of these historic period cultural resources are located within the Project APE, including the Josephine Mine and associated features. The State Highway 31 bridge across the river at Metaline Falls was recorded in 2001 as part of a survey of the highway (Komen 2001).

Of these resources, all but two are related to early settlement, logging, and mining operations. Five are historic structures listed on the NRHP: the Idaho and Washington Northern Railroad Bridge; the Lewis P. Larson House; the Metaline Falls School; the Pend Oreille Mines and Metals Building; and the Washington Hotel. None of these five listed resources is within the Project APE.

### **3.4. Archaeological Expectations**

The physical geography of the Project produces two distinct zones for cultural resources investigations. Upstream of Metaline Falls, the river approximates its pre-development configuration. The river gradient is moderate, and alluvial fans and terraces are evident. Below the falls, the predevelopment river was incised into a deep, steep-sided gorge. There, the original riverside environments are now deeply submerged.

A predictive model for prehistoric archaeological sites was developed using empirical environmental data to better explain the potential distribution of prehistoric archaeological sites in the Project. This predictive model was supplemented with additional information from previous archaeological investigations in the Pend Oreille valley and with locational information derived from ethnohistorical literature. The model is essentially a set of Geographic Information System (GIS)-based maps that describe zones as having high, moderate, or low potential to contain prehistoric archaeological sites. The underlying assumption in developing the model was that most prehistoric archaeological occurrences are associated with sets of environmental and cultural variables. The model was developed in consultation with the Boundary CRWG.

Archaeological sensitivity mapping for prehistoric sites suggests that the Project APE downstream from Metaline Falls has a low potential to contain cultural resource sites; however, the part of the Project upstream of the falls has greater potential for prehistoric archaeology. Conversely, the area downstream of the falls contains extensive mineral deposits that were mined in the historical era. Thus, there is greater potential for evidence of these activities downstream from the falls. There is potential for logging-related features and isolated artifacts throughout the Project APE.

## **4 METHODS**

This section describes the methodologies used to perform the tasks noted in Section 1. Field work, consisting of archaeological and historic resources surveys and archaeological testing of one site (45PO583), was conducted in the spring and fall of 2007, and additional surveys were performed in the spring of 2008. Archival research was conducted before the initial field surveys and in the summer and fall of 2007, and again in spring and summer of 2008 following completion of the cultural resource survey.

### **4.1. Archival Research**

Background research in various libraries and archives was conducted to complete the historic context section of this report and portions of the HPI forms prepared for this study (Appendix 2). Archival research also was conducted to collect information on specific archaeological sites and features found by the archaeological survey. Documentation and photographs at local, regional, and personal archives were consulted for information on properties inventoried within the Project APE. These research facilities included the University of Washington libraries in Seattle; the University of Montana in Missoula; Washington State University's online archives; Metalines Community Library in Metaline Falls; the records of local Metaline Falls resident and historian John Ogmundson; the Newport Public Library in Newport, Washington; and the Pend Oreille County Museum and Historical Society in Newport. Additionally, research was conducted in SCL's relicensing library in the early phases of background research for the historical context of the Project APE.

## 4.2. Archaeological Resources Inventory

Archaeological field surveys were conducted by the study team in the spring and fall of 2007, and in the spring of 2008. Methods followed that are described in the Implementation Plan (HRA 2007) are summarized here. The field survey entailed crews of two to four archaeologists walking transects spaced at intervals no greater than 82 feet across the accessible terrain within the Project APE. In most places, survey transects were narrower than 82 feet as a result of the width of the APE. Before the spring 2007 field work began, the predictive model maps were examined to plan field investigations. Landforms in the Lower Reservoir Reach are varied, often steep, and include fewer areas of high or moderate probability. In this area, pedestrian survey transects followed the topography and adjusted to the landforms encountered as necessary. In 2007, a tactical survey approach was used where the steep topography was unsafe for crews to access or the 200-foot wide APE occurs entirely on low-probability landforms visible from the river. Crews in these areas moved by boat to specific landforms to investigate, rather than sweeping nonstop along the length of the APE. In such places, decisions about where to survey were made in consideration of both safety and the potential for any cultural resources. The field director or crew chief examined the shorelines from the river to assess the feasibility of the survey. Landforms in the Upper Reservoir Reach and the Tailrace Reach reflect the wider river valley topography, including river terraces and forested hillsides, presenting few survey obstacles.

In 2008, a field director and two archaeological technicians completed the cultural resource survey by investigating areas within and beyond the Project APE that were identified as needing supplementary survey. These areas include remaining and newly identified SCL-owned lands, upper elevation areas of relatively level topography identified from review of study area maps, locations of specific resources reported by SCL staff and other relicensing study participants, and locations that were added to the APE since the 2007 fieldwork was conducted. In addition, several sites recorded during the 2007 inventory were revisited to further their recordation including site 45PO577 at the POMMC Powerhouse, site 45PO578 at the Riverside Mine, site 45PO585, and site 45PO586.

Areas that were not surveyed for safety reasons (excessively steep terrain or unstable footing) or as a result of access constraints from private landowners were documented. In addition, the field crew examined horizontally and vertically exposed sediment surfaces (cutbanks) for archaeological materials. Shovels or trowels were used in non-riverine upland environments to clear areas of forest duff to examine the soil for evidence of artifacts, features, soil discoloration, and other potential anthropogenic characteristics. Crews also examined exposed bedrock faces for potential petroglyphs and pictographs. The ability to conduct field surveys on private land within the APE (mainly upstream of Metaline Falls) was limited by access constraints in seven locations. Less than 10 percent of the private land within the APE was not surveyed due to access constraints.

The study team used current WDAHP definitions for isolates and archaeological site types to classify cultural resources. Sites are defined as at least two artifacts within an area 50 feet in diameter or one or more archaeological features. Isolated finds are defined as less than two artifacts within an area 50 feet in diameter. Collapsed historic-era structures are recorded as

archaeological sites on WASI forms, and not as historic buildings on HPI forms (see Section 4.3).

The archaeological inventory was facilitated by the delineation of separate survey segment types. The extent of each survey segment was defined and mapped in the field based on the survey strategy employed at each segment with the strategy based on accessibility, which was the result of the topography. Survey segments were defined as one of three categories: pedestrian survey with supplementary shovel test probes (STPs); pedestrian survey without STPs; and survey via visual reconnaissance only. Each survey segment category is described below with a presentation of an example of the survey segment type. All segments were documented photographically and plotted on Project maps.

#### **4.2.1. Pedestrian Survey with Shovel Test Probes**

Survey segments where pedestrian survey could be supplemented with STPs were common in the Upper Reservoir Reach, where alluvial terraces were frequently found within the APE. In these areas, surface visibility (40 to 100 percent) was adequate for pedestrian survey but STPs were conducted to determine if any cultural materials were present below the ground surface. In the Upper Reservoir Reach, most STPs were excavated on alignments that followed the top of the riverbank edge.

#### **4.2.2. Pedestrian Survey without Shovel Test Probes**

Portions of the APE often were conducive to pedestrian survey, but were located where excavating STPs was not feasible or would not have provided any applicable information. For example, shovel probes were not excavated in certain areas, given the recent nature of beach deposits, the character of the undercut terraces, and steepness of slopes above.

#### **4.2.3. Visual Reconnaissance**

As described above, survey segments where the field director determined it unsafe to attempt pedestrian transects because of the steep inclines, or where the terrain is otherwise inaccessible or unstable, were examined only through visual reconnaissance. For areas along the reservoir, this generally was viewed from a boat at the reservoir elevation. Areas further from the reservoir that were surveyed through visual reconnaissance were examined from nearby roads (e.g., the upper elevations of the SCL wildlife preserve lands and the hillside below the dam east of the river).

#### **4.2.4. Shovel Test Probes**

STPs were used for subsurface investigation of areas of high and moderate probability for archaeological materials during survey to assess the presence or absence of subsurface cultural material and to determine the density and types of archaeological materials at recorded sites. In addition, STPs were used as part of the evaluative testing at a number of sites recorded during the survey. Specific locations for STPs and the numbers of STPs to be excavated were selected by the field director. STPs averaged approximately 14 inches in diameter, but this measurement

varied depending on the character of the local soils. All sediments were screened through standard 1/8-inch mesh hardware cloth. A total of 136 STPs were conducted in the Project APE.

In addition to the STPs, 24 shovel scrapes (SSs) were conducted. As with STPs, SSs were performed to ascertain whether subsurface historic-period artifacts were present, and to delineate the spatial extent of deposits. SSs were conducted when attempts to do STPs found virtually no soil. SSs measured approximately the same surface area as STPs (14-inch diameters) and involved the removal of shallow amounts of soil over bedrock or extremely compacted and cobbly glacial sediments.

### **4.3. Historic Resources Inventory**

The study team recorded the Ross Cabin in tandem with the archaeological survey of the Project vicinity on May 17, 2007. On September 5, 2007, the study team inventoried the POMMC Powerhouse and its entry portal structure. These three structures represent the historical built environment within the Project APE. These resources were examined, photographed, and recorded at a reconnaissance level of inventory, as described in the WDAHP guidelines. Required recorded information includes the location and architectural style of the resource, any obvious modifications or disturbances, and at least one photograph. HPI forms were completed as required by WDAHP. Additional information was gathered for these resources during the evaluation phase in 2008 to be able to describe their potential eligibility for inclusion in the NRHP and the extent of Project effects.

### **4.4. Archaeological Testing**

Subsurface archaeological investigations were conducted at a number of newly identified sites to help evaluate them for potential NRHP eligibility. Following standard professional procedures and techniques, investigations included controlled surface mapping of cultural materials (at all sites); archaeological probing of the sites with exploratory STPs (sites 45PO577, 45PO581, 45PO584) or SSs (sites 45PO585, 45PO586) to find and delineate the spatial extent of any deposits; and, at 45PO583, archaeological testing involving the excavation of subsurface excavation units (EUs) (in addition to shovel probes) to document the contents of the site.

## **5 ARCHAEOLOGICAL SURVEY RESULTS**

Summary information for the archaeological sites identified (Table 5.0-1) within the Project APE is presented in the sections below. The survey resulted in 2 newly recorded prehistoric sites, 20 newly recorded historic archaeological sites, and 1 historic-era isolated find (site 45PO595). WASI forms have been prepared for all newly recorded sites. In addition to the newly recorded sites and isolated find, archaeological site forms for 3 previously recorded sites (45PO520, 45PO575, and 45PO573) were updated, and 1 previously recorded isolate (45PO599) was re-recorded as a historic site at the request of the CRWG. In 2008, BLM designated sites 45PO520, 45PO575 (formerly recorded as NELDP-0012), and 45PO573 (formerly recorded as NELDP-0018) as part of a historic district anchored by the previously recorded Josephine Mine complex (45PO520) (Ferguson and Root 2004b).

**Table 5.0-1.** Archaeological resources identified within the Project APE.

Site/Isolate	WDAHP Type	Ownership	Date Recorded
45PO520 – Josephine Mine	Historic Mining Properties	BLM	05/22/07 and 10/05/07 <sup>1</sup>
45PO573 – Chickahominy Prospects	Historic Mining Properties	BLM	05/22/07 <sup>1</sup>
45PO575 – Flume Creek Aqueduct	Historic Mining Properties	SCL and BLM	05/22/07 <sup>1</sup>
45PO576 – Robert E. Lee Lode	Historic Mining Properties	SCL	05/19/07
45PO577 – POMMC Powerhouse Scatter	Historic Debris Scatter	SCL	10/04/07
45PO578 – Riverside Mine	Historic Mining Properties	USFS	10/07/07
45PO579 – Raise 3	Historic Mining Properties	BLM	10/04/07
45PO580	Flusey Lode	SCL	4/30/08
45PO581	Pre-Contact Lithic Material	Washington State (on bed of the river)	5/1/08
45PO582	Historic Mining Properties	SCL	5/4/08
45PO583	Pre-Contact Feature	SCL	05/16/07 and 10/09/07
45PO584 – Harvey Homestead	Historic Homestead	SCL and USFS	10/06/07
45PO585	Historic Homestead	SCL	05/17/07
45PO586	Historic Homestead	SCL	05/17/07
45PO587	Historic Structure Unknown	USFS	05/18/07
45PO588	Historic Mining Properties	USFS	05/18/07
45PO589	Historic Transportation	SCL	4/30/08
45PO590	Historic Mining Properties	USFS	5/14/08
45PO592	Historic Mining Properties	SCL	5/1/08
45PO593	Historic Transportation	SCL	5/3/08
45PO594	Historic Mining Properties	SCL	5/3/08
45PO595	Historic Mining Property (Isolate)	SCL	5/1/2008
45PO598	Historic Mining Properties	SCL	5/15/08
45PO600	Historic Mining Properties	USFS	5/15/08
45PO597	Historic Mining Properties	USFS	5/19/08
45PO599	Historic Mining Properties	BLM	5/19/08

Notes:

1 Re-inventory date

BLM – Bureau of Land Management

POMMC – Pend Oreille Mines and Metals Company

SCL – Seattle City Light

USFS – U.S. Forest Service

## 5.1. Site Inventory

Study team archaeologists conducted field surveys from May 15 to 23 and from October 3 to 11 in 2007, and from April 30 to May 15 in 2008. The cultural resource inventory recorded 22 new archaeological sites and 1 isolated find; all but 2 are historic-era resources. Site narratives presented below are arranged geographically from the southernmost site in the Upper Reservoir Reach to the northernmost.

### 5.1.1. Site 45PO583

The spring 2007 survey recorded site 45PO583 as a fire-cracked rock (FCR) feature (Feature 1) consisting of several FCR partly visible on the surface among thick grass. At least 30 pieces of FCR, a small piece of dark green quartzite rock (possibly the result of tool-making), and a cobble showing chips from possible human use were also observed. A single STP found additional FCR and charcoal. The site occurs near the margin of two distinct vegetation zones—conifer-dominant forest and a slough.

A series of 20 STPs was excavated at site 45PO583. A single EU was oriented perpendicular to the slope of the hillside. FCR constituted the only artifacts recovered from the EU, and they were found to be confined to a single stratum (soil layer) but were dispersed throughout that stratum. As a result, no feature fill was identified as might be found in a buried, intact fire hearth. Soils present in the stratum are alluvial in origin and demonstrate that the slough was cut by floods well before the FCR feature appeared. Soil horizons observed below the cultural layer follow the angle of the slope, indicating that the slough was developed prior to deposition of these sediments.

A charcoal sample was recovered from the EU at the base of the cultural deposit, at approximately 3.5 inches below surface. Radiocarbon dating analysis returned a calibrated result of 1010 to 1170 A.D. This result indicates that the sediments (and FCR) at 45PO583 have been in place for some time and cannot be attributed to recent events. Given the age of the wood charcoal that was dated, it probably resulted from cultural activities dating to that time period. Additional fire-modified rock and charcoal were observed on the surface upslope of 45PO583, but they likely result from more recent events, such as a forest fire. Comparison of the radiocarbon date and the sediment stratigraphy indicates that the dispersed remnant fire-related feature found in the EU post-dates creation of the slough. As such, the feature was constructed on a much steeper slope than where hearth features are commonly found. Kevin Lyons, Kalispel Tribal archaeologist, noted during a visit to 45PO583 that Native Americans used hearth features on slopes to catch winds for drying roots and other foodstuffs. Another explanation is presented by the dispersed nature of the FCR and charcoal in the sediments; they may represent cleanout debris from a nearby hearth or oven feature.

### 5.1.2. Site 45PO582

Site 45PO582 is a large mining adit at the edge of the APE and an associated waste rock apron with minimal historic debris. The adit portal measures 10.5 feet wide by 12.5 feet high and extends an unknown distance into the rock on a 270 degree bearing. The portal is blocked by an iron gate attached to the bedrock. Waste rock is present in large amounts to the south and more

significantly to the north where it extends approximately 400 feet. A metal axle and barrel are visible in the water offshore from the adit.

This site could be related to improvements listed on either the Hercules Lode mineral survey of 1908 or the Riverside Lode survey of the same year, part of the Metaline Mine. The site retains little integrity and is currently used for dumping modern waste and fill dirt. Grading by heavy machinery has greatly impacted the site since observations in the fall of 2007 (Figure 5.1-1).



**Figure 5.1-1.** Recent ground disturbance at the Metaline Mine/Hercules Adit site (45PO582); view is to the southwest

### 5.1.3. Site 45PO581

Site 45PO581 is a prehistoric FCR scatter with one deflated feature (Feature 1) and a lithic tool on a low and sandy island. The site, which measures 98 feet by 98 feet, is visible during low flow regimes and would otherwise be largely underwater. FCR (n=25+) is present in moderate densities. Feature 1 consists of a cluster of approximately 20 pieces of quartzite or metasedimentary FCR in a discrete concentration measuring approximately 19.7 inches in diameter. Rocks range between 2.4 inches and 4.7 inches in diameter with fractures consistent with their use as boiling stones. No soil staining or charcoal was observed at Feature 1.

The lithic tool is a flat, hardened silt stone with possible use wear along one lateral edge, and it measures 2.9 inches in length, 2.6 inches in width, and 0.12 inch in thickness. This site retains little integrity. A series of four shovel probes were excavated within the site boundary, none of which revealed cultural material.

**5.1.4. Site 45PO592**

Site 45PO592 is a single developed mining adit measuring 23 feet by 23 feet. The portal measures 28 inches high and is 115 inches wide. The adit extends 23 feet east from the portal to its end and has a maximum internal height of 6 feet. The adit has timbered shoring in a post and cap fashion at the entrance, spaced 5 feet apart with 67-inch lateral cap logs sitting on posts that are exposed 28 inches in height. A series of 4.5-inch diameter log roof beams spans the two cap and post shorings. A minimal waste rock apron extends downslope several feet from the portal.

**5.1.5. Site 45PO594**

Site 45PO594 is a single mining adit on a 320-degree bearing that splits internally and is partially filled with water. The adit portal measures 6 feet wide by 7 feet tall and extends west for 3 feet where the adit then splits into a likely crosscut that would have followed the ore body. Both chambers are of consistent height and width and extend undetermined distances into the bedrock. There is a minimal waste rock apron present but no artifacts in association.

**5.1.6. Site 45PO577**

Site 45PO577, the POMMC Powerhouse Scatter, includes nine features: a historic-era trash dump (Feature 1), a depression/building foundation (Feature 2), a large dump of rough aggregate cement (Feature 3), a foundation pad (Feature 4), a log frame (Feature 5), two separate anchor systems (Features 6 and 7), a stone-lined cistern/well (Feature 8), and a poured cement foundation (Feature 9). Features 1 through 3 were recorded in 2007, while Features 4 through 9 were recorded in 2008. These features are likely associated with the 1937 construction and subsequent operations of the POMMC Powerhouse (see Section 6.2; Figure 5.1-2). The area of site 45PO577 is approximately 591 feet north-south by 492 feet east-west.



**Figure 5.1-2.** POMMC Powerhouse and associated facilities under construction ca. 1937, view to the south.

Feature 1 is a historic-era trash dump that includes a large number of household and domestic items as well as items seemingly related to the construction or maintenance of the powerhouse facility. A depression on the south side of Feature 1 represents the top of a shaft excavated between the powerhouse's water diversion tunnel and the ground surface. It is labeled "Raise to surface" on the original blueprints for the powerhouse. One STP was excavated near Feature 1 to assess the potential for a subsurface component; it revealed highly disturbed sediments, likely the result of grading the site. The feature also has been the target of vandals digging for collectibles, as evidenced by the many items gathered in groupings around the area.

Feature 2 is a depression, probably a foundation, measuring 16.5 feet north-south by 8 feet east-west and containing one milled piece of lumber, several more unidentifiable lumber fragments, a heavy gauge steel pipe (cut and welded) with nine drilled holes and a single 1-inch bolt. Feature 3 consists of scattered piles of concrete of various aggregate types, several pieces of 1-inch rebar, and various small pieces of tin plating. Some of the broken concrete appears to have once been part of

stairs, perhaps from the operators' residences. Disturbance to the vegetation and surroundings soils indicates the effects of heavy machinery on this feature and the surrounding site area.

Feature 4 is a 30 foot by 60 foot foundation pad with no associated artifacts, but one structure. Feature 5 is an indeterminate log frame that is rectangular in shape and lying flat on the ground. Associated with this feature is a pile of 1.5-inch cinder block fragments (n=10+) and a number of 0.75-inch ceramic pavers or plates (n=10+). Features 6 and 7 are the remains of anchor system for intake systems for the powerhouse. Feature 8 is a stone-shored or -lined cistern with a small well opening. The well is concrete slab-lined with river cobbles along the outer edge of the well. The footprint of the cistern encompasses approximately 50 square feet and is evidenced by a rock shoring on its visible edge.

Feature 9 is a poured cement foundation measuring 9 feet by 13 feet and is associated with the aboveground powerhouse facility. The foundation contains three footings within the main foundation, and the walls are poured cement. This foundation likely served as an anchor for the power lines running from the existing powerhouse. One STP was excavated near Feature 1 to assess the potential for a subsurface component. Although the STP was positive for cultural materials at or just under the surface, it revealed highly disturbed sediments, likely the result of grading the site. The feature also appears to have been the target of vandals digging for collectibles, as evidenced by the many items gathered in concentrations around the area.

#### **5.1.7. Site 45PO593**

Site 45PO593 consists of a transportation corridor, likely a rail bed or narrow roadway, represented by two linear cuts in the bedrock (Cut 1 and Cut 2) and a sinuous path that follows the contour at the elevation of the two cuts. Cut 1 is approximately 6 feet wide at its base, 12 feet wide at the top, and 6 feet deep (Figure 5.1-3). Cut 2 is 6.5 feet wide at its base, 15 feet wide at its top, and 6 feet in depth. At its southern extent, 45PO593 ends at the top of a cliff face high above the Pend Oreille River. To the north, the corridor may extend beyond the Project APE. Within the Project APE, the corridor measures approximately 462 feet long.



**Figure 5.1-3.** Overview of Cut 1 in 45PO593; looking south.

#### **5.1.8. Site 45PO575, the Flume Creek Aqueduct**

The Flume Creek Aqueduct (site 45PO575) was used to divert water from Flume Creek to the powerhouse at the Josephine Mine. The water turned a Pelton water wheel that provided power for a Westinghouse turbine generator. A portion of the aqueduct is within the Project APE and includes disassembled 30-foot-long sections of the pipe and the suspension bridge across the river (Ferguson and Root 2002a). The Flume Creek Aqueduct has been included in the Josephine Mine Historic Mining District (45DT216), along with the Chickahominy Prospects (45PO573) and the Josephine Mine (45PO520) archaeological sites.

#### **5.1.9. Site 45PO573, the Chickahominy Prospects**

The Chickahominy Prospects (site 45PO573) includes four mine prospects: one pit (Feature 1) and three short trenches (Features 2 through 4). When surveyed in 2007, the condition of this site was unchanged from its previous recordation (Ferguson and Root 2002b). This site is located within the boundaries of Mineral Survey for the patented Chickahominy Lode, surveyed on July 26, 1910, for the Metaline Lead Company within the Spokane Land District.

Feature 1 measures 14 feet long (east to west) by 13 feet wide and was originally 9 to 10 feet deep at the rear of the cut, tapering to the surface at the front. Feature 2 is a short trench, open at one end and measuring 9 feet long by 4 feet wide that is mostly filled with slumped sediments from the sides of the trench, and is covered with a thick growth of moss and other vegetation. Feature 3 is a trench situated on the east side of a small knob (Figure 5.1-4). The trench is 15

feet long (northwest to southwest), 7 feet wide, and 9 feet deep at the back. The trench is open at its eastern end and is filled with slumped earth and small trees. Feature 4 is a shallow rectangular pit measuring 11.5 feet long (northwest to southeast) by 7 feet wide. BLM has included the Chickahominy Prospects within the Josephine Mine Historic Mining District (45DT216).



**Figure 5.1-4.** Feature 3, at 45PO573, the Chickahominy Prospects (view to the northwest).

#### **5.1.10. Site 45PO520, the Josephine Mine**

Site 45PO520 (Josephine Mine) was originally recorded by Ferguson and Root (2002c) for BLM. Study team field personnel inventoried the elements of the site that were within the Project APE and found their condition unchanged since the previous recordation. The study team found Features 1, 26, 28, 29, and 31 (Ferguson and Root 2002c) to be present within the Project APE. Additionally, the study team identified one new feature, inventoried as Feature 29a (Figure 5.1-5).

The Josephine Mine property originally belonged to the Lead-Zinc Company from 1912 to 1924. It later came under the Pend Oreille Company's holdings in 1934, under which it expanded to include 20 claims. The mine operated until 1974 (Baltien 1996). Within the Project APE, Site 45PO520 is located within several patented claims, including the Wedge Fraction, Cascade, Lookout, and Dividend lodes.

Ferguson and Root (2002c) describe five features present within the Project APE. Feature 1 is the foundation for the electric powerhouse, made of concrete and cinder blocks. The Flume Creek Aqueduct delivered water to this building to turn a Pelton water wheel that provided power for a Westinghouse turbine generator. Feature 26 is a mine prospect, open at the downslope end. The trench is mostly filled with sediments slumped from its sides and is currently about 5 feet deep. Feature 28 is a large ditch that runs north-south across a flat bench at the eastern edge of the site. Feature 29 is a 3-foot-high pile of telephone poles and miscellaneous pieces of lumber. Feature 31 is a “mine shaft near the Pend Oreille River. The wooden cover over the opening has partially collapsed. Two 7-inch-diameter timbers from a headframe remain erect near the shaft. The remainder of the headframe has collapsed” (Ferguson and Root 2002c).

Additionally, the study team recorded one newly identified feature. Feature 29a is mine shaft consisting of a 9-foot-square wood platform and support structure that has partially collapsed into the circular hard rock shaft. The platform and support structure are constructed of 3- by 12-inch and 2- by 12-inch planks and 4-inch-diameter posts. One 55-gallon metal barrel was observed near the shaft opening. BLM has developed a historic district with the Josephine Mine as the principal element along with the Flume Creek Aqueduct (45PO575) and the Chickahominy Prospects (45PO573). The district (45DT216) is described further in Section 7.1.



**Figure 5.1-5.** Newly recorded Feature 29a at site 45PO520.

### 5.1.11. Site 45PO579

Site 45PO579 is a historic-era mining operation with a fenced, partially collapsed shaft (Feature 1) and two standing buildings (Buildings 1 and 2). Also present on site are the remnants of two roads and a small pile of deteriorated lumber. Feature 1 is a partially collapsed mine shaft encircled by a 30-foot-square chain link fence. The shaft collar is approximately 10 feet in diameter and the shaft itself is at least 30 feet deep, the true depth obscured by pooled water. Several shoring logs are visible in the north elevation of the shaft. Also present is one piece of 1-inch cart rail that is falling into the shaft.

The single-room Building 1 measures 16 feet 6 inches east-west by 12 feet 3 inches north-south and is 7 feet 4 inches in height at the north elevation; the south elevation is 10 feet in height. Windows are present on the east and west elevations and are lateral twin-light windows. The south elevation has two sets of windows, and no windows are present on the north elevation. A doorway is present on the east elevation. Both the roof and flooring are present, but highly eroded, and are manufactured from 1-inch by 4-inch and 1-inch by 6-inch shiplap lumber.

Building 2 is a small utility building measuring 3 feet by 3 feet 7 inches by 6 feet with a 0.5-inch-thick plywood door. The roof is made of thin-gauge corrugated tin layered over 0.625-inch plywood. The walls are made of milled lumber in varying dimensions. No floor or windows were found in this building. Building 2 is attached to a nearby power pole with 2-inch by 4-inch and 2-inch by 12-inch milled lumber. The power pole is solitary and has three insulators. Based on available records (EPA 2002) and the materials present on the site, the site likely was initially developed around 1915 with the buildings added in the 1920s and 1930s.

### 5.1.12. Site 45PO587

Site 45PO587 consists of a mining- or logging-related landing site and includes four features. Feature 1 is a large arranged pile of cobbles 18 feet in diameter; all of the cobbles are generally the same size and are in a pile approximately 2 feet in height (Figure 5.1-6). Several tree stumps are present in the pile, indicating that the feature predates reservoir clearing operations. Feature 2 comprises two linear mounds of cobbles and boulders that are situated roughly perpendicular to the shoreline. The western end of the mounds, closest to the water, is closer together than the eastern portion, creating a wedge-like form. Earthen berms, devoid of cobbles, continue past the mounds of cobble upslope into the woods for approximately 16.4 feet. A 6.5-foot-wide trench defines the space between the berms possibly indicating that these cobbles are waste rock from a mining prospect effort. To the southwest of Feature 2 is Feature 3, a 131 foot by 52 foot landing with log piles and areas that have been cleared of large boulders and cobbles. Feature 4 consists of an 8-foot-wide road that rises to the northeast on an approximate 45-degree bearing. The landing is made of shale and silt on an otherwise cobble and boulder shoreline.



**Figure 5.1-6.** Feature 1, Site 45PO587 (view to the west).

### 5.1.13. Site 45PO578

Site 45PO578 is the previously-recorded Riverside Mine. A subset of features associated with the mine (inventoried by the USFS) lies within the Project APE and consists of the remains of two structures (Feature 1, Feature 2), two adits (Feature 3, Feature 4), two prospect pits (Feature 5, Feature 6), and a test hole (Feature 7). The Riverside Mine was worked between 1907 and 1943 (Hart Crowser 2006).

Feature 1 is a collapsed building that measures 30 feet by 20 feet. Milled lumber found on site includes 1-inch by 8-inch, 1-inch by 10-inch, and 2-inch by 4-inch-boards (Figure 5.1-7). Other artifacts observed include a single Mason jar lid and an unidentifiable metal can fragment. Feature 2 is a collapsed building measuring 12 feet by 15 feet. A partially intact portion of one elevation is leaning against a few small trees. The remnant of a 45-degree gabled roof can also be identified within the debris (Ogmundson 1997).



**Figure 5.1-7.** Feature 1 at site 45PO578; view to the east.

Feature 3 is an adit cut into the cliff face, likely to explore an exposed aspect of the vein. Feature 4 is a developed adit with a single gabled entryway and a 6-foot peak. A door is present at the face of the entryway measuring 2 feet wide and 4 feet tall. The gable is made with 2-inch by 4-inch lumber, 8p machine cut nails, and 0.75-inch-thick plywood sheeting.

Feature 5 is a small prospect trench with no associated artifacts. Previously recorded USFS features C and D are located in the vicinity of Feature 5. Feature 6 is a trench about 30 feet long by 10 feet wide by up to 3 feet deep, and it extends to the edge of the bluff overlooking the river. The trench is an extension of the access road leading in from near Feature A (a drill hole). Feature 7 is a test hole measuring 8 feet by 12 feet by 11 feet deep, with excavated material mounded up on two sides (Figure 5.1-8). No lining was observed in Feature 7, and there were no associated artifacts noted (Ogmundson 1997:4).



**Figure 5.1-8.** Overview of Feature 7 (test hole) at site 45PO578.

#### **5.1.14. Site 45PO588**

Site 45PO588 consists of a prospect trench located on a steep slope 79 feet above the high water mark of the Pend Oreille River. The trench has been excavated into the bedrock at a 340 degree bearing and measures 6.5 feet by 13 feet and is 11.4 feet in depth. An apron of waste rock extends directly downslope for a distance of 59 feet. Several feet west of the prospect trench is a circular prospect pit that measures 3.5 feet in diameter and is approximately 2 feet deep. A claim post 164 feet east-southeast of the trench bears a tag that reads “S. O. Line of Claim #1, Property of Hardrock Mining, Reclaimed by B. L. Barnett c 1619, Queen Spokane, Metaline Falls Mining District.” No additional artifacts were identified.

#### **5.1.15. Site 45PO590**

Site 45PO590 is a single developed adit situated on a relatively steep slope. The adit is oriented on a bearing of 120 degrees, extends for a distance of some 80 feet, and is 4.5 feet in height at its maximum. The portal measures 5 feet wide by 6 feet high with a 2-foot-high hump of waste rock partially blocking the portal. No artifacts are associated with this site.

### 5.1.16. Site 45PO576, the Robert E. Lee Lode

Site 45PO576, the Robert E. Lee Lode, consists of two collapsed adits or tunnels (Feature 1 and Feature 2) and a small amount of associated artifacts, including milled lumber and a segment of 1-inch ore cart rail. These features correspond with the Discovery and Improvement Tunnels 1 and 2 recorded on a 1905 Mineral Survey.

Feature 1 is a collapsed adit or tunnel (Figure 5.1-9) that measures about 25 feet in length to the point where roof fall and scree have obscured the view. This feature is excavated into a 40-degree slope with exposed bedrock faces. The portal consists of a milled lumber (various sizes) board and batten door that has been nailed to the outer face. Two small metal hinges attached the door to the log shoring. Additionally, a small pile of cut timbers or uniformly cut logs is present just outside the door on the waste rock apron. The waste rock apron extends for 15 feet.

Feature 2 also is a collapsed adit or tunnel that has been significantly overgrown by vegetation. This feature has less integrity than Feature 1. Accurate measurements of the portal are difficult to attain given the features integrity, however, the cut extends approximately 25 feet into the cliff face and is approximately 12 feet wide. A small stack of cedar planking is present just outside of the portal. The waste rock apron for this feature is approximately 40 feet in length and 12 feet in height.



**Figure 5.1-9.** Feature 1 at site 45PO576; view to the west.

### 5.1.17. Site 45PO580

Site 45PO580, the remains of mining operations at the Flusey Lode, measures approximately 50 feet north-south by 131 feet east-west. Cultural materials present within the Project APE include two features and some historic era debris. Feature 1 (Figure 5.1-10) is a collapsed adit or prospect pit, which likely corresponds with Improvement No. 2 (listed as a tunnel) on the 35.21-acre Flusey and Hoopalula Lodes listed on Mineral Survey 913 for the Spokane Land District, Metaline Mining District, Stevens County, Washington. Feature 2 consists of an anchor point or cribbed footing, possibly part of a dry flume. It is manufactured from axe-cut logs and is 4 feet by 5 feet. Historic debris associated with these features includes juice and fruit cans. This site extends beyond the APE, where additional features are present. These include the remains of two cabins, an adit, a privy, a trash dump, and an intact root cellar that retains its structural integrity. These features were not recorded.



**Figure 5.1-10.** Overview of Feature 1 (Prospect Pit or Collapsed Adit) at 45PO580; looking west/northwest.

### 5.1.18. Site 45PO598

Site 45PO598 is a small prospect trench that measures 4 feet in width by 9 feet in length and 2.5 feet in depth (Figure 5.1-11), and it is oriented roughly east/west. The Mocking Bird and Alemeda Lodes are recorded in this vicinity. The site likely corresponds with Improvement 1, a discovery cut that is shown on the 1906 Mineral Survey for these lodes.



**Figure 5.1-11.** View of 45PO598 located in extended APE; view to southeast.

#### **5.1.19. Site 45PO584, the Harvey Homestead**

Site 45PO584 is the Harvey Homestead. Civil War veteran Carl C. Harvey (Figures 5.1-12 and 5.1-13) was a well-known early prospector who came to Pend Oreille County in 1868. By 1889, Harvey had built a cabin homestead near Z Canyon and worked the gravel bars for placer gold. According to General Land Office (GLO) records, Harvey made a homestead application in 1913, for lots in the vicinity of the current site. At the time of his homestead application, Harvey was making his living principally by working a placer on a bar along the waterfront. Apparently, however, the placer did not yield an output extending beyond a minimal means of living. The GLO commissioner found no other mineral workings in the immediate vicinity of Harvey's claim. He described the lands as "agricultural in character," bearing a "heavy growth of underbrush and some timber of little apparent value."

Site 45PO584 was originally recorded during the 2007 spring survey as two prospect pits and two can scatters on SCL land. The Harvey Homestead site includes a collapsed log cabin, the remnants of an outhouse or privy (Feature 5), two can dumps (Feature 1 and Feature 2) of disparate temporal association, and two mining prospects (Feature 3 and Feature 4).



**Figure 5.1-12.** Carl Harvey in front of his cabin ca. 1900 (photograph courtesy of Janis Haglund).



**Figure 5.1-13.** Carl Harvey (second from left) at his cabin with hunters (photo courtesy of John Ogmundson).

Features 1 and 2 are discrete, low density trash dumps, containing mostly food cans. Feature 1 is a small scatter of historic debris dating to the 1900 to 1960s era that includes 80 or more cans, two bottle fragments, a shovel blade, an alarm clock casing, woodstove parts, and a boot heel. The cans are primarily food cans with solder dot and seal-hole in top forms. The woodstove parts are likely part of the woodstove remnant that is visible within the collapsed cabin. Feature 2 is another trash dump of primarily cans and a few bottle fragments. Can types found in this feature show that Feature 2 appears to older than Feature 1. The cans found are hole-in-cap (machine soldered rings on cap) and date the feature to approximately between 1880 and 1920. Features 3 and 4 are prospect trenches dug into a bedrock promontory, with large amounts of waste rock present. Feature 3 is now collapsed and filled with rubble. Feature 4 is located south of Feature 3 on the same landform and at approximately the same elevation. Feature 5 is a depression, likely the privy for the Harvey Cabin.

The Harvey Cabin (Building 1) is partially collapsed, with the north and east elevations retaining the most integrity (Figure 5.1-14). Cedar logs appear to have been cut with an axe and possibly a cross-cut saw. Hewn half-round logs are saddle-notched on the southeastern corner of the cabin, whereas notches on the northeast corner are square. A single saddle notch is found where the north elevation and roof meet. Both east and north elevations are chinked with wood slats. There are six roof purlins that are made of cedar and protrude from the north elevation approximately 20 to 24 inches. The remains of the roof were covered with cedar shake shingles.



**Figure 5.1-14.** October 2007 photograph of the north elevation showing the northwest corner in collapse; view is to the west.

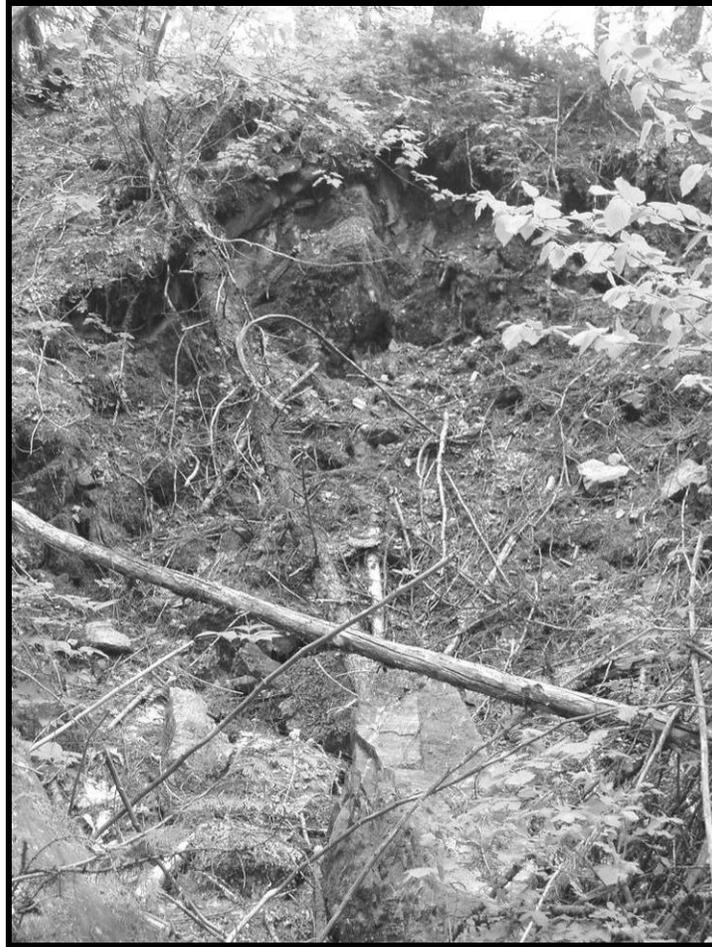
The cabin door, made of milled boards with a 5-inch door hinge, has been moved and placed in the western part of the cabin. Interior walls are flat and axe hewn. The cabin is divided into two separate rooms by an interior east-west wall (now collapsed) made of seven logs that have not been notched. No cabin floor or foundation is present. According to the GLO records, Harvey's log house was approximately 12 feet by 20 feet, with one door, two windows, and furnished with a cooking stove, bed, bedding, dishes, cooking utensils, and other household equipment. A small shed was located on the east side and south end of the house. Also on this land was a ground cellar, but no other buildings were found or claimed.

In 1962, local Metaline Falls historian Margaret McInturff contacted the Owen Pioneer Museum in northwest Washington about using Carl Harvey's cabin as a pioneer museum. Robert T. Owen of the museum replied with interest in the idea, proposing that the Metaline Falls community rebuild the cabin in or near the town (Owen 1962). Mrs. McInturff made an additional attempt to preserve the cabin the following year. In response to a letter she sent to USFS at the Colville National Forest in April 1963 about restoration of the "Harvey Cabin," the forest supervisor indicated that it was doubtful that the U.S. government would take an active interest in such a project. The supervisor instead suggested encouraging a local group to take up the endeavor: "These little historic remnants always add a great deal to the attractiveness of a community" (Ibenthal 1963).

Seven shovel probes were excavated around the cabin to assess the potential for an intact subsurface component. One probe produced one small piece of quartzite FCR near the surface; the other six probes found no subsurface materials. Additionally, 12 STPs was excavated through the previously identified can dumps. The results of this testing indicate that, although the dumps are largely intact, neither features contains a subsurface component.

#### **5.1.20. Site 45PO597**

Site 45PO597 is a prospector trench and a pile of waste rock. The trench measures 6.5 feet wide by 23 feet long and is about 16 feet deep (Figure 5.1-15). There is no registered operation for this location and no additional historic details are known.



**Figure 5.1-15.** View of site 45PO597, Prospect Trench; view is to the west.

#### **5.1.21. Site 45PO600**

Site 45PO600 consists of a linear prospect pit, on a bearing of 346 degrees. It measures 10 feet by 15 feet and is 5 feet deep (Figure 5.1-16). No associated artifacts were found with at this site.



**Figure 5.1-16.** Site 45PO600, prospect pit; view is to the east.

#### **5.1.22. Site 45PO599**

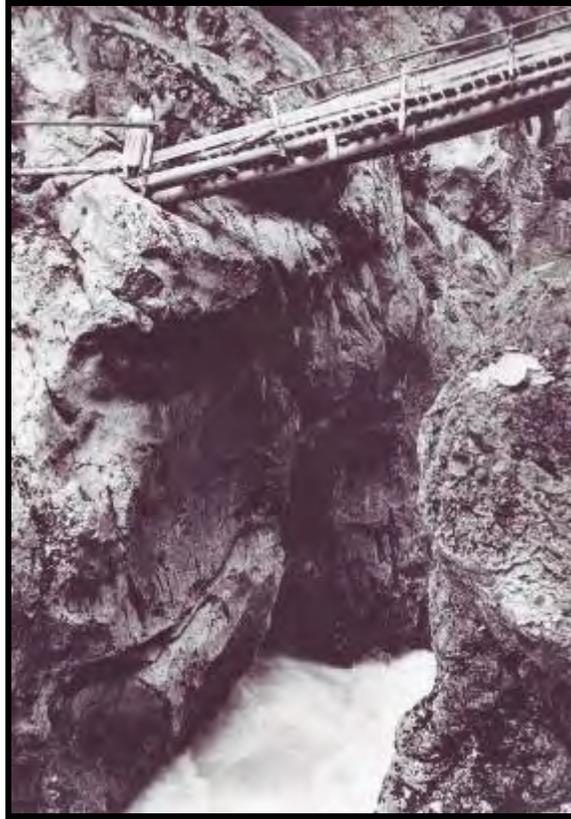
Site 45PO599, a mining prospect trench, is oriented roughly east/west and measures 10 feet wide by 23 feet long and 10 feet deep (Figure 5.1-17). No associated artifacts were found on site. A modern blue 5-gallon bucket was found nearby.



**Figure 5.1-17.** Site 45PO599; view is to the south.

### **5.1.23. Site 45PO589**

Site 45PO589 is the remains from the historic-period “Z-Canyon” footbridge (Figure 5.1-18). Cultural materials near the bridge include two Prince Albert tobacco tins and several pieces of unidentifiable rusted metal. It is uncertain if these items are associated with use of the footbridge. Also present are the remains of one of the bridge support cables and its anchor. From the anchor point the cable extends about 35 feet to the cliff edge then descends approximately 150 feet to the water below. Likely associated with these resources is a trail that leads northwest from the anchor point.



**Figure 5.1-18.** Historical photograph of the “Z-Canyon” footbridge in use; date and photographer unknown (photo courtesy of John Ogmundson).

#### 5.1.24. Site 45PO586

Site 45PO586 consists of three main structures: two likely residential buildings (Feature 1 and Feature 3) and one building possibly related to timber milling (Feature 2), plus an outhouse (Feature 4) and a cistern with trash debris (Feature 5). In addition, several items of industrial debris occur on the exposed cobble beach of the river, to the west below the terrace on which the buildings are located. A long length of steel tram cable, with a rock anchor at one end, runs in several loose coils over about 82 feet of the beach and bedrock at the south end of the site. A spooling axle is present in the water. A burner chimney, perhaps from a steam engine or ore processing station, is farther north on the cobble beach. Metal debris is scattered about, including bolts, washers, pipe, and sheet tin fragments. Several ponds and a number of apple trees, indicative of homesteading or other historic activities, are present in the vicinity.

The industrial debris above may be evidence of a dredge operation mentioned in *The Big Smoke* (J. Ogmundson [2001] interview with Bill Buffington, who grew up in the area). Archival research also located an account in a U.S. Geological Survey document describing the “Scherding placer,” and a treatment plant “designed to handle 200 cubic yards a day” (Park and Cannon 1943:78). The plant, which operated beginning in late summer, 1935, consisted of “a dragline scraper, a revolving grizzly, a screen and water jet, and two sets of sluice boxes lined

with blankets and riffles.” By 1938, the plant was dismantled because the equipment was unable to process the many cobbles and coarse rocks encountered during dredging operations (Park and Cannon 1943:78).

Feature 1 is a partially collapsed building that likely served residential purposes, a picnic table, and two fire rings. The main structure is a severely collapsed, single story, gabled building with a cellar, constructed of milled wood with log foundation supports. The roof is milled wood covered with deteriorating corrugated tin. The structure has a brick chimney. There is a mix of modern and historic trash in the cellar. The picnic table is cleverly constructed of milled wood using four live trees as supports. The fire rings measure approximately 3.3 feet across and are formed of local river cobbles (fire pit 1) and river cobbles, brick, and cinder block (fire pit 2). Both fire pits show recent use.

Feature 2 is a collapsed building constructed of milled wood and logs measuring 35 feet north-south and 15 feet east-west (Figure 5.1-19). The internal structure of the building indicates that the building may have housed a sawmill; however, there are no remnants of equipment to provide further indications. There is a pile of approximately 20 badly deteriorating sawed logs southwest of the main building of Feature 2.



**Figure 5.1-19.** Feature 2 at site 45PO586 (view to the west).

Feature 3 is a collapsed building, constructed mainly of logs with milled wood elements, measuring approximately 35 feet north-south and 30 feet east-west. The building is badly overgrown with local vegetation. There is a burner, possibly related to the timber industry,

located nearby on the rocky Pend Oreille River shoreline. Feature 4 is a two-seater, shed-style outhouse constructed of milled wood and measuring approximately 4.5 feet by 8 feet wide by 8 feet tall. It has two doorways with only one remaining door, featuring metal hinges and a canvas door handle. The remaining door is sprayed with blue paint that reads “Ladies and Gentlemen.” Inside, it has two holes cut into wood slats separated by a wood partition.

Feature 5 is a covered stone cistern and trash dump. The cistern is located at the base of a side hill and is likely a partially buried cistern, faced with stacked rock (6 to 8 courses visible) and covered with what appears to be a rotting log roof that has a protruding ventilation pipe. Safety concerns precluded further investigation of this feature.

Additional debris recorded, or re-recorded, in 2008 include a series of four cable anchor points and the coiling axle (Figures 5.1-20). Also present on site are numerous fragments of 0.75-inch, 1-inch, and 1.5-inch steel cable fragments that likely are remnants of the overhead cable used at the site.

Ten SSs were excavated here to better determine if there is an intact subsurface deposit present on site. All SSs were negative for cultural materials and revealed a thin duff of pine needles and moss over cobbles.



**Figure 5.1-20.** View of anchor #2 in rock located near the south/southwest corner of 45PO586.

### 5.1.25. Site 45PO585

Site 45PO585 consists of two collapsed cabins and two dugout structures (Features 1 to 4). Also present is a prospect pit (Feature 5). A low-density scatter of historic artifacts includes a metal bed frame, an enamelware basin, cans, bottles, crockery fragments, and a woodstove top. One bottle dates to the 1910s, another to the 1930s, and other materials date from the 1950s through the modern era.

Feature 1 is a collapsed log cabin, approximately 5 logs high and measuring 16 feet by 16 feet, and 3.5 feet high. The north, west, and south elevations remain partially standing. The east elevation is collapsed into the structure. On-site debris was limited to a few segments of 1.5-inch braided cable at the southeast corner of the structure.

Feature 2 is a collapsed log cabin in an advanced state of decay (Figure 5.1-21). It measures 12 feet east to west and 11.5 feet north to south. The remaining logs appear to be saw-cut cedar. Logs at the bottom of the structure are rotted and buried with forest debris. The only artifact associated with Feature 2 was a machine-made hinge.



**Figure 5.1-21.** Site 45PO585 (Feature 2), collapsed cabin; looking north.

Feature 3 is a depression, possibly a cellar, with an associated trash dump. Trash debris includes pieces of a rusted iron single-sized bed frame with springs, a whisky bottle, brown crockery pieces, a wood stove top, a blue and white enamelware basin, and a modern beer bottle. Nearby is Feature 5, a linear prospect pit that measures 19 feet by 10 feet and is 6.5 feet deep. Feature 4 is a depression located against the steep slope of a knoll. The depression measures 10.5 feet east

to west and north to south and is approximately 2 feet deep. The dugout was likely deeper, but is now covered with a thick layer of forest duff.

The site was revisited during the spring of 2008 to conduct limited site testing, and 14 shovel scrapes were excavated. All shovel scrapes were negative for cultural materials. SCL staff have provided anecdotal accounts that the site may have been used by Chinese miners conducting placer mining in the intermittent stream channel that passes through the site, although there is no identifiable evidence of stream alteration or artifacts that suggest the ethnicity of the site's occupants.

## 5.2. Isolate Inventory

One isolated find (45PO595) was identified in the cultural resource inventory. This isolate consists of a single historic era pipe that leads from the west side of the Pend Oreille River to an upper bench. The pipe disappears into the ground near the edge of the Project APE. It is likely that this pipe is related to mining operations that were present in the 1930s to the west, beyond the Project boundary.

## 6 HISTORIC RESOURCES INVENTORY

The historic resources inventory consisted of structures associated with the original POMMC Powerhouse and the Ross Cabin. The State Highway 31 bridge over the Pend Oreille River at Metaline Falls was inventoried as part of a highway survey in 2001 and was found not to be NRHP eligible; therefore, it was not re-examined for this study.

### 6.1. The Ross Cabin

The Ross Cabin is located on the west bank of the Pend Oreille River in SCL's Forebay Recreation Area, which includes a campground and boat launch. The door to the cabin is nailed closed, preventing examination of the interior. Anecdotal information conveyed during field work indicated that the cabin had been moved to the park from an unknown location and was substantially rebuilt. Conversely, another SCL employee reports he was told that it is the Carl Rose cabin, that it is in its original location, and that the dam construction supervisor had the cabin fenced off during construction to protect it. He also reports that SCL conducted repairs on the cabin in the early 1960s, including replacing the sill logs, re-roofing, and adding shutters to prevent vandalism (Johnson 2008). No additional evidence has been found during historical research of local and state repositories to support either conclusion about its age or provenance, or the context in which the cabin was inhabited. The cabin is maintained as a tourist attraction and is in excellent condition.

The cabin (Figure 6.1-1) measures 15 feet east-west and 19.2 feet north-south. It is a single-gabled building with a south-facing front. The logs have a diameter of 10 to 15 inches, are sawed and square notched, and are chinked with mortar and lath. The roof is supported by a log structure consisting of eight purlins on either side (east and west) with a central log ridge, for a total of 17 logs. There is an additional roof support structure, perhaps more decorative than functional, on the east and west elevations under the eaves, consisting of three evenly spaced log

supports placed diagonally outward from the elevation to the roof. The roof is steeply pitched with two layers of apparently hand-hewn wood shakes.



**Figure 6.1-1.** The Ross Cabin, front elevation; looking northeast.

The cabin has entry doors and attic doors on both the north and south elevations. There is an additional door or covered window opening on the west side of the building. The entry doors are constructed of milled wood planks. The entry doors have modern manufactured door handles. The window and attic doors are constructed in a similar fashion of milled wood planks with cross supports nailed on the top and bottom, and a diagonally set support nailed to the doors. No hinges are visible. There is a single six-light window with a fixed sash on the south elevation. There is a broken milled wood shutter on the west side of the window. Modern wire nails are visible throughout and may indicate the extent of the 1960s repair work.

The cabin is surrounded by a modern unsupported zigzag pole fence placed approximately 15 feet away from the structure on all sides. The log fence consists of sections of five interlocking horizontally stacked logs (no vertical posts) set at an angle, creating a “zigzag” effect.

## **6.2. Pend Oreille Mines and Metals Company Powerhouse**

With the backing of Lewis P. Larsen, the POMMC built the first hydroelectric project on the Pend Oreille River in 1937 (Figure 6.2-1). Danish immigrants Lewis P. Larsen and Jens Jensen began prospecting in the Metaline area in 1904. They first initiated the Lehigh Cement Company plant and quarries, and quickly expanded their mining holdings in the area by opening a number of lead and zinc mines. Under Larsen’s direction, first as the head of the Metaline Lead and Zinc Company, then the Pend Oreille Lead and Zinc Company, and then POMMC, the

lead and zinc mines were considered by the 1930s to be among the most productive in the state of Washington.

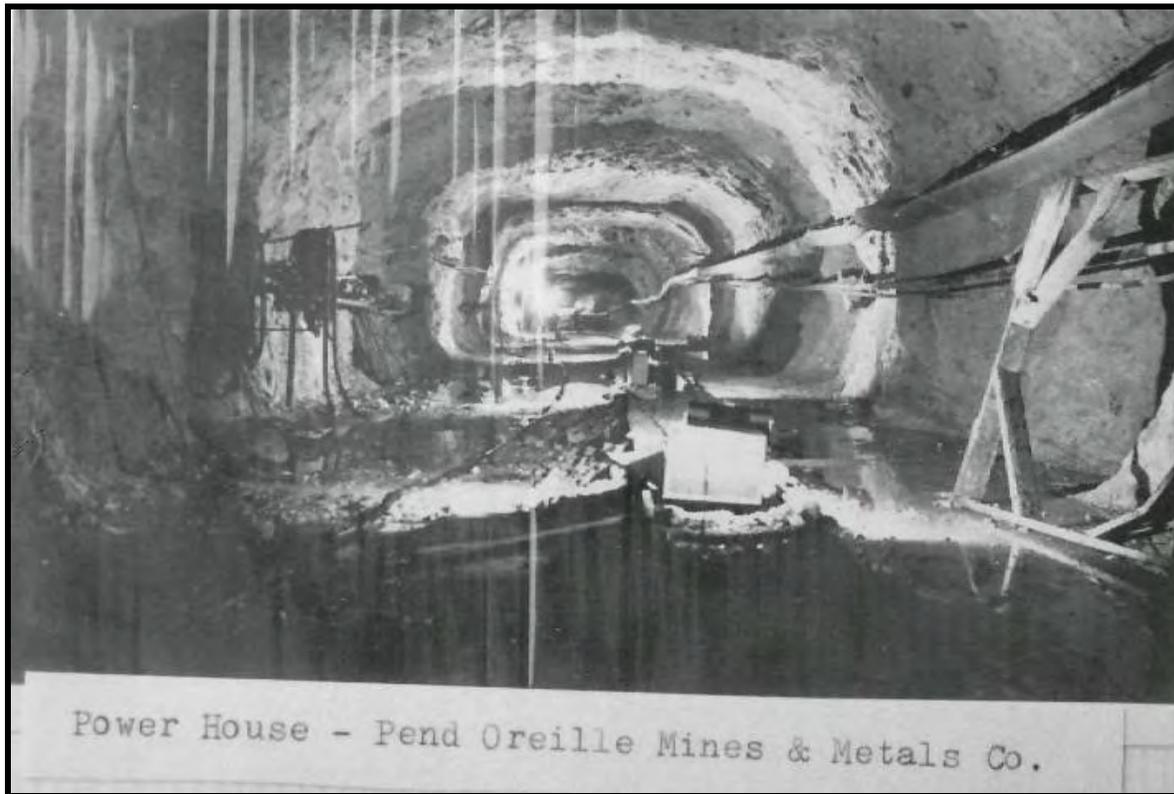


**Figure 6.2-1.** POMMC Powerhouse, view from river during drawdown, September 2007.

When the POMMC project began operations, it traded power with the 1910-built Sullivan Creek power plant, depending on the respective demands (Bamonte and Bamonte 1996). Gustav A. Pehrson, a Spokane architect-engineer, designed the POMMC Powerhouse. Pehrson was a Swedish-born architect who is credited with the design of hundreds of buildings in Spokane and the Inland Empire of the Pacific Northwest, from 1913 until his death at the age of 85 in 1968. Pehrson began his long Spokane career with the well-respected firm of Cutter & Malgren, and served as the project architect for the design of the Davenport Hotel in that city (Harvey and Krafft 2004). Louis M. Davenport was a famous restaurateur whose hotel, after its opening in 1914, became the social and commercial center for the city of Spokane (Becker 2007). After a falling-out with Kirkland Cutter in 1916, Pehrson established his own firm and continued as Louis Davenport's architect for several decades. During the 1920s and 1930s, Pehrson operated a diverse architectural practice, designed numerous highly regarded commercial and residential projects (including the POMMC Powerhouse), and gained regional fame. By the early 1940s, Pehrson was among the most well-known and well-established architects practicing in the Inland Empire. Pehrson designed several buildings in Metaline Falls during his career, including the Pend Oreille Mines and Metals Building (also known as Lewis Larsen Apartments), which is listed on the NRHP (Harvey and Krafft 2004).

Instead of a dam, the POMMC drilled and blasted a 12-foot by 20-foot diversion tunnel 720 feet through solid rock, from above Metaline Falls to the powerhouse, with an elevation fall of 25

feet over the length (Figure 6.2-2). At that elevation, much of the powerhouse was submerged (see ordinary pool level mark in Figure 6.2-1). As a result, the entrance also was bored through rock, from the bluff above. A concrete building, inscribed with “PO. M. & M. Co Power Plant 1937”, is located on the bluff above the powerhouse. Construction blueprints show this structure to be the entrance portal to the powerhouse, with a set of stairs descending 60 feet to the powerhouse below.



**Figure 6.2-2.** Photograph (ca. 1937) of the bored tunnel to the powerhouse; taken facing north.

The study team was limited to an exterior survey and inventory of the Pend Oreille Powerhouse because the structure has been sealed and the interior was, therefore, inaccessible. The majority of the overview evaluation of this powerhouse was conducted by boat. A scheduled drawdown of the river allowed greater visibility of the partially submerged structure during the inventory. The powerhouse is of reinforced concrete construction with a hipped roof. The blueprints show that the powerhouse originally had large glass-block windows at its top; whether they are extant under the steel plates that currently cover this portion of the façade is unknown. Four tailrace gates are located on the western façade of the structure.

According to research, the control equipment was originally located on the balcony floor, and a surge tank stabilized the starting and stopping operations. The original powerhouse contained only one turbine, but the structure was planned and built with expansion in mind, including an extra chamber for a second turbine. Mine output continued to grow over the 1940s, spurred on by demands for war materials for the Second World War and then the Korean War. The

increased production required more electrical power and, by the end of 1948, a second turbine was installed. At the same time, the tunnel intake was expanded and a second headgate was installed to direct and control water flow to the second turbine. With the second generator, the project reached its full capacity of between 4,000 and 5,000 kilowatts with a greater efficiency during low water than high water. When the Box Canyon Project was completed in 1955, it became cheaper for the POMMC to purchase power than to operate its own powerhouse.

Maps from the early 1950s, which include the site plan, show a transformer facility (which appears to be an unenclosed switchyard) and two operators' houses (Miscellaneous Blueprints, in SCL archives). These buildings are no longer extant, although a scatter of debris and some foundation materials are located across the bluff top. These are believed to represent the graded remains of one or more of these structures and archaeological remnants of their use (recorded as archaeological site 45PO577).

## 7 NRHP ELIGIBILITY AND EFFECTS

The study team prepared NRHP DOE forms for all newly identified sites and the POMMC historic district, and updated or prepared continuation sheets for resources that previously had DOE forms (e.g., the Josephine District, 45DT216). To qualify for listing in the NRHP, which includes resources significant at the national, regional, and local levels, resources need to be 50 years old or older (unless they are of exceptional importance, as determined by the Keeper of the Register), and possess historic significance and integrity. The criteria for evaluating the eligibility of resources for listing in the NRHP (36 CFR § 60.4) define significance and integrity as follows:

“The quality of significance in American history, architecture, archaeology, 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. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of persons significant in our past; or
- C. That embody the distinctive characteristics of type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded, or may be likely to yield, information important in prehistory or history.”

In *How to Apply the National Register Criteria for Evaluation* (Bulletin 15), the National Park Service (NPS) states that “to retain historic integrity, a property will always possess several, and usually most, of the [seven] aspects [recognized by the National Register]” (NPS 1990). The most important aspects of integrity depend on the criteria under which the property is potentially

eligible. Resources eligible under Criteria A and B for instance, should retain “physical features that make up its character during the period of its association with event, historical pattern, or person(s)” (NPS 1990). This translates to integrity of design, workmanship, materials, and feeling. Properties eligible under Criterion D should retain integrity of location, design, and materials to ensure that important information can be gleaned from extant remains.

For archaeological sites, NRHP eligibility typically is associated with contributions to knowledge of the prehistory or history of an area or region based on the kinds of archaeological materials present in the site (Criterion D). Some archaeological site locations also may be eligible based on their association with events that have made a significant contribution to the broad patterns of our history (Criterion A) or are associated with the lives of persons significant in a community’s past events (Criterion B). Eligibility under all criteria assumes the locations retain integrity and that measures to protect or otherwise treat the site would successfully conserve the features that make the site eligible. A property may also be significant if it has traditional or ethnographic importance because of its ties to the cultural past. The Kalispel Tribe of Indians has not identified any TCPs in the Project APE.

The potential NRHP eligibility of all resources documented within the Project APE is assessed against the criterion described above. Archaeological properties are discussed separately from historic resources.

## **7.1. Archaeology**

Most of the archaeological sites recorded during the inventory are minimal remnants of activities that did not occur over a long period of time and generally do not have associated artifacts that can inform the context of sites use/function. However, there are a few exceptions as described below. Archaeological isolates, by definition, are not eligible for inclusion in the NRHP; therefore, historic isolate 45PO595 is not included in the discussions below.

### **7.1.1. Eligible Archaeological Sites**

One archaeological site recorded during the 2007–2008 surveys, the Harvey Homestead (45PO584), and one previously recorded historic district for which the records were updated during the Cultural Resources Study surveys, the Josephine Mine Historic Mining District (45DT216), are recommended eligible for inclusion in the NRHP. Archaeological site 45PO584, the Harvey Homestead, consists of a collapsed cabin, two likely associated can scatters, and two mining prospects that also may be associated with use of the cabin. Several other depressions were observed in the vicinity but STPs found no archaeological deposits. The collapsed cabin has lost structural integrity and appears beyond salvaging as a representation of dispersed wilderness residential building styles of the time (Criterion C). By itself, the site does not represent an event of historical importance (Criterion A). It is, however, associated with the life of Carl Harvey, recognized locally as the first Euro-American to establish a permanent residence in the area. Carl Harvey was also recognized as a colorful person who represented the hard-working, physically tough character of the people who initially settled in this area (Criteria B). It is doubtful that this cabin is where Harvey first established residency, given the age of the materials in the can scatters and items observed at and around the cabin, as well as the terminus date suggested by Harvey’s homestead records. However, it may retain importance to the local

community due to its association with Harvey. There may be also be potential for contributions to archaeological research on early homesteading and the site is therefore also recommended eligible for inclusion in the NRHP under Criterion D. Management of this site is to be coordinated with the land manager.

The study team revisited the portion of the Josephine Mine Historic Mining District (45DT216) that occurs within the Project APE in 2007. The Josephine Mine site and district were originally recorded by Ferguson and Root (2002a, 2002b, 2002c, 2004b). Ferguson and Root (2004b) recommended Historic District 45DT216 eligible under all four NRHP criterion.

Study team field personnel inventoried those elements of the district that were within the Project APE. The study team identified Ferguson and Root's Features 1, 26, 28, 29, and 31 to be present within the current Project APE. Additionally, one new feature was identified, Feature 29a. Other than this additional feature, the study team recorded no apparent changes to the Josephine Mine Site (site 45PO520) or the district. The study team does not recommend any changes to the previous recommendation that the Josephine Mine Historic Mining District (site 45DT216) be considered eligible for inclusion in the NRHP under Criteria A, B, C, and D.

Archaeological site 45PO577 is associated with the POMMC Powerhouse, and represents debris from the construction, operation, and dismantling of the powerhouse. Most of the features and materials recorded are disturbed, dismantled, or badly deteriorated. These no longer offer information to understanding their purpose at the site, with the exception of one cement foundation (Feature 9) and the powerhouse waterway tunnel that passes through the bedrock on which site 45PO577 is located. It is difficult to separate the tunnel from the archaeological site, so the site is considered eligible as part of a historic district that includes the powerhouse and entrance portal buildings, with most of the contents of site 45PO577 (i.e., Features 1–8) being non-contributing elements to the district. This is described further in Section 7.2.

### **7.1.2. Ineligible Archaeological Sites**

As noted above, most of the archaeological sites in the Project APE are minimal remnants of short-term activities that did not leave much of an imprint on the land and have little to no associated artifacts left by the people who used the locations. Examples include the sites represented by small adits or pits with an associated waste rock apron. These appear to be have been exploratory tests that are collapsed (adits), or slumped and partially refilled (trenches, pits, and waste rock piles), and do not represent architectural elements for eligibility consideration. These features are unremarkable examples and do not represent cultural activities of importance in the way developed mines can. In most cases there were no additional artifacts observed in the vicinity, and no subsurface deposits indicated that would be important to understanding the local or regional history. Archival research often found no record of a documented mine operation for these locations, so the sites cannot be associated with a person of historical importance.

The lack of intact deposits of artifactual debris in the vicinity of collapsed cabins and structures undermines these sites' ability to describe what activities were undertaken that led to the construction of the cabins. Testing in the vicinity of these structures found little soil development over cobbles assuring that the contents of dumps or other features would be visible if present.

In some cases, the sites represent pieces of larger collections of features, or scattered artifacts, most of which occurs outside of the Project boundary on private or other non-SCL-owned lands. Where archaeological remnants of features that were important to the history of the area occur within the Project APE, the remnants are so minimal as to not well represent the historic feature. An example of this is the Z Canyon Footbridge, where all that remains of the bridge is a length of steel cable and one of the cable anchor points. In this case, integrity of the resource is lost and the historic importance is not represented by the cable and the few tobacco tins found nearby. Similarly, site 45PO593 is probably a remnant of what may have been an ore cart railway or just a road. Without any trace of tracks and ties, and/or artifacts that can describe how these two linear cuts in bedrock were used, the integrity of the resource is lost.

The two pre-contact archaeological sites are represented by low density scatters of fire-cracked rock, and one or two additional items. In both cases, the integrity of what probably were hearth features has been affected by the integrity of the landforms on which they occur. Site 45PO581 occurs on a slope that is moving downslope as a result of flood activity that cut a slough at the base of the hill. Site 45PO583 is located on a mid-channel island that has been eroded, and deposited upon, over the years since the site was created. These processes have scattered the FCRs across the eroding slope and sandy beach at this location. Neither of these sites retains enough information in its original condition to provide information important to our understanding of prehistory (i.e., NRHP Criterion D).

## 7.2. Historic Resources

The study team identified two historic resources, the Ross Cabin and the POMMC Powerhouse Historic District, in the course of the 2007–2008 surveys.

The Ross Cabin is maintained by SCL for public interpretation. It serves as a fine example of vernacular log-cabin construction that retains some of the integrity of workmanship, materials, design, and feeling. However, the building is believed to have been moved to its present location, compromising its setting and association. Also, repairs to the cabin have been substantial and often involved the use of modern materials and additions inconsistent with the original building and period when it was built (e.g., door hardware, nails, shutters, dimensional lumber). Additionally, conflicting versions of the history of the building, described in Section 5, muddy the story, and archival research conducted for this study has not resolved this. Due to its compromised integrity, and without any historical evidence to prove or disprove its significance, the study team recommends that the Ross Cabin is not eligible for inclusion in the NRHP. It is not known to be associated with a significant event or individual of note, and therefore is ineligible under Criteria A or B. Although it is a good example of log construction, its design and craftsmanship are not noteworthy, thus rendering it ineligible under Criterion C. Finally, because it is believed to have been moved to its present location, it cannot provide accurate data about the past through archaeological examination, making it ineligible under Criterion D.

The POMMC Powerhouse was emptied of power-generating equipment at the time it was closed up. A catwalk that circled the front of the building at window level has been removed, and the windows have been covered with steel plates. Soon after the project ceased operations, a number of associated buildings, including a transformer house and various outbuildings (the

archaeological remnants of which are included in site 45PO577), were torn down. The absence of these associated structures compromises the building's integrity of feeling and association; however, the remaining structures (the powerhouse at river level and portal on the bluff above) retain integrity of location, design, setting, materials, and workmanship. According to the NPS (1990) bulletin, a basic litmus test for integrity is "whether a historical contemporary would recognize the property as it exists today." Both historical contemporaries and people from the modern era would recognize the POMMC powerhouse and portal as a power-generating facility that contributed materially to the area's prominence as a lead and zinc mining district in the middle of the twentieth century.

Further, the underground tunnel that originally carried water from the Pend Oreille River to the powerhouse and the gates at the head of the tunnel, as well as some aspects of the archaeological site 45PO577, including the air shaft from the regulating chamber (surge tank) and a concrete anchor potentially used for the powerlines running from the existing powerhouse [Feature 9]), add to a collective integrity of feeling and association. So, although site 45PO577 by itself is not eligible, the combination of the underground tunnel, regulating chamber (surge tank) and air shaft, and the POMMC Powerhouse and entrance portal structure are recommended to be eligible as a historic district under Criterion A, with local significance from 1937 to 1955. It is also eligible under Criterion C for its association with Gustav A. Pehrson, a regionally respected architect-engineer.

### **7.3. Effects Assessment**

Assessment of Project-related effects only applies to NRHP-eligible historic properties as a step towards determining appropriate measures for managing any identified effects; ineligible properties do not require further management.

#### **7.3.1. Effects to Archaeological Properties**

Archaeological properties assessed for effects include the Josephine Mine Historic Mining District (45DT216) and the Harvey Homestead (site 45PO584).

The Josephine Mine complex is large, with most of the area and remnant cultural resources occurring outside of the Project APE. Of the various buildings, ore cart lines, roads and trails, the Flume Creek Aqueduct, and mine shafts and adits, only a segment of the aqueduct, one building foundation, and a few substantial equipment artifacts are present within the APE.

Ferguson and Root (2002c) recorded the condition of the Josephine Mine (45PO520) as having been picked over by visitors, so that only the largest pieces of equipment remained. The site does have the appearance of having been picked over, probably for all of its working history, as salvage of some equipment by the mining company can be expected from when the mine was shut down. It appears from the 2007 survey that the only pieces of equipment that have not been removed by visitors are those too heavy to bear away. Conversely, the Chickahominy Prospects were described in 2002 as being covered with a thick layer of duff and moss, evidence that the mining features have seen little disturbance. The study team observed no changes in condition from that described on the 2002 site form. The Flume Creek Aqueduct is in fair to poor condition, as it was when originally recorded, with its constituent parts present, but has been

dismantled and is non-functional where present in the Project APE. No direct effects to the aqueduct from Project operations or activities are anticipated; however, visitation by recreationists to the Josephine Mine Historic Mining District is likely to continue.

The Harvey Cabin (site 45PO584) has deteriorated under the stress of the natural elements as evidenced by the poorer condition of the logs and milled lumber pieces visible in the 1991 photographs taken by the USFS versus those taken in 2007 by the current study. The USFS intends to treat the cabin with an antifungal spray in the near future. In addition, the structure has seen the deleterious effects of visitors. .

### 7.3.2. Effects to Historic Resources

The POMMC Powerhouse Historic District was found to be eligible for inclusion in the NRHP. Effects only need to be considered for the contributing elements of the district, which include the POMMC powerhouse, entrance portal, and one cement foundation. The powerhouse is affected by the Project because it is partially inundated by the reservoir. The other resources of the district are not directly affected by the presence or operation of the reservoir. The entrance portal structure appears undisturbed and the cement foundation is not of a material that is susceptible to visitors' activities.

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