BRIEF TECHNICAL REPORT

Albeni Falls Dam and Pend Oreille Lake Historic Property Inventory of Proposed Black Rock Bank Protection Project Bonner County, Idaho

US Army Corps of Engineers
Seattle District

OCTOBER 2003

Brief Technical Report

Albeni Falls Dam and Pend Oreille Lake

Historic Property Inventory of Proposed Black Rock Bank Protection Project

South Half, Section 11, Township 57 North, Range 2 West, Boise Meridian, Bonner County, Idaho

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U.S. Army Corps of Engineers, Seattle District

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1. **Introduction**. The federally-owned Albeni Falls Dam and Lake Pend Oreille Project (project) was authorized in 1950 and completed in the mid-1950's. The Seattle District, U.S. Army Corps of Engineers (Corps) operates the project for the multiple purposes of power generation, navigation, recreation, flood control, and fish and wildlife conservation. The dam is at Albeni Falls at River Mile 90 on the Pend Oreille River in Bonner County, Idaho; the reservoir includes all of Lake Pend Oreille and 25 miles of the Pend Oreille River between the dam and the lake. From time-to-time, the Corps undertakes construction to control the effects of erosion caused by pool operations on private lands, transportation and utility networks to prevent or cure encroachments thereupon.

Such Federally-funded erosion control measures comprise "*undertakings*" in accordance with 36 CFR Part 800.3 (a) as the work uses federal funding, would take place on federal property, and would have material consequences. Compliance with the National Historic Preservation Act (NHPA) requires the Corps to identify, evaluate and assess effects on historic properties that might be affected by the undertaking. The Corps identifies the *area of potential effects* (*APE*) for each proposed work item before starting the analysis of environmental effects of the work. Some undertakings have no potential to affect historic properties (either by its very nature or restrictions in its APE) (Part 800.3(a)(1)), but others might affect such properties under certain circumstances. Where properties might be affected, the Corps carries out inventory, including fieldwork, to identify the properties and to determine the extent and kind of effect that could occur. This report describes how the above process has been applied to the proposed Black Rock Bank Protection Project ("Project").

2. **Study Purpose and Scope**. This report documents the results of a series of inventories for historic properties that took place in the 1990's within the APE for construction of the Black Rock Bank Protection Project. The inventory-level studies were conducted to support real estate acquisition and environmental coordination for the proposed undertaking, including NHPA Section 106 consultation. As the proposed undertaking addresses effects of hydroelectric power operations, it falls within the general scope of the 1991 Programmatic Agreement for the Federal Columbia River Power System Hydroelectric Operations Intertie Development and Use (IDUPA), specifically Stipulation 3. As no previously undocumented historic properties were identified in the APE, this report follows an abbreviated format.

3. **Location and Description of Proposed Undertaking**. Black Rock, sometimes called Ponders Point (erroneously), is the name given to a section of shoreline that is continuously eroding into Pend Oreille Lake in Section 11, Township 57 North, Range 2 West, Boise Meridian, Bonner County, Ponderay, Idaho [1]. Erosion from a combination of prolonged and energetic wave action and underground springs has caused incremental failure of a high bank along the north Shore of Pend Oreille Lake westward from the Black Rock site. The mainline tracks of the Burlington Northern Santa Fe Railroad (BNSFRR) and Montana Rail Link (MRL) run adjacent to this failing bank. Bank failure has progressed well beyond the flowage easement, encroaching as much as 50 feet into the BNSFRR/MRL right-of-way at several points over a length of 1,500 feet. This failure is rapidly eliminating a narrow strip of private land between the reservoir and the railroad over another 1,500 feet. Soils in the affected areas are subjected to inundation, high winds and large waves while the lake is held at high pool during the summer.

[1] Reference maps: USGS 7.5 Minute Series, 048116C5; Seattle District Real Estate Map File RE-SE-382, Segment P

The soils along the high bank tend to slide when the high external and internal pore water pressures that hold the soil in place at high pool are reduced as the reservoir is drafted for winter. A major high bank failure has the potential to interrupt traffic on a mainline railroad if the erosion is not halted. Failing banks along the lake shoreline southwest of this project site have been stabilized in similar fashion through construction contracts or other agreements as early as 1963 (U.S. Army Corps of Engineers Seattle District 1963) and more recently to the northeast (U.S. Army Corps of Engineers Seattle District 1994).

Construction proposed to correct the situation will comprise placement of hard materials along 3,000 feet of shoreline, in an impact corridor that varies in width from approximately 30 to 50 feet. Materials will consist of Class IV riprap, Spalls, 3-inch minus Crushed Stone, and Granular Fill. MRL will construct three temporary crossings for construction access to the site. Secure barriers will be provided to prevent public access to the site during construction. The crossings will be removed after construction. All trees that have fallen into the lake will be removed and the coniferous trees will be placed into the bank stabilization project to provide fisheries habitat (large woody debris). Filter fabric will be placed along the shoreline next to the bank to help prevent fine sediment from entering the lake, but it will still allow water to flow through the membrane. Turnouts will be constructed as the project progresses to allow more than one dump truck to move atop the stabilization structure. These turnouts will be removed by placing the material along the constructed stabilization structure for added support.

Attachment 1 describes the project according to the amount of material and cross sections of the stabilization structure. Due to bank geometry, drainage features, and environmental concerns, there are five separate sections that comprise the project. Sections A-A, C-C, and D-D are designed to fit the topography, drainage conditions, and allow a maintenance road on top of the structure. Section B-B is designed to avoid mobilization of an existing ash pile, provide containment of the ash material, and also allows a maintenance road. The time frame for construction is 12 January 2004 through 30 April 2004.

4. **Area of Potential Effects Defined**. The APE for the undertaking is defined in Figure 2 as the area included within the red polygons. It comprises all areas that will be directly affected by the project to include haul road and railroad crossing alignments and turnarounds, the area in which lands will be prepared to receive rock fill, and the rock fill footprint itself. The protected area immediately adjacent to the fill also is included within the APE for the purposes of this study.

5. **Inventory of the Undertaking**. The following subparagraphs summarize the study procedures.

a. **Study Design**. The study was aimed strictly at archival and then field identification of evidence for potential historic properties (specifically prehistoric or historic archaeological sites) within a firmly-bounded APE. If potential properties were identified by the initial work, another study phase would be required to assess their National Register eligibility and identify effects of the undertaking on them. Previous general inventory work in the vicinity had identified one potential historic property within the APE (10-BR-539--Attachment 2)(Miss and Hudson 1986) and had established that potential existed for prehistoric archaeological properties based on findings in similar geomorphic situations, although the potential was considered low. The study design therefore was limited initially to *records review* comprising *search of existing records*

and literature; *field inventory* including *pedestrian field inspection*; and *writeup and coordination of results* using standard ISHS-recommended procedures.

b. **Records Review**. Records review began in 1995 and included inspection of previous historic properties survey reports; historical maps, including General Land Office maps; unpublished ethnographic information; and historical aerial photographs from 1935 and 1944. When historic archaeological site 10-BR-539 was found to be within the APE, the Corps contracted for an evaluation of the site's eligibility for the National Register of Historic Places based on archival research (Renk 2001; Attachment 3).

c. **Field Investigations**. Mr. Lawr V. Salo, Archaeologist, inspected work areas indicated in Figure 3, including potential access roads, for evidence of prehistoric or historic archaeological sites[2]. Field investigations occured on 26 April 1996 at the affected bank area; on 25 August 1999 in the upland parts, including features at 10-BR-539; and on 22 September 1999 in the access road corridor north of the railyard. Field conditions were as follows:

- **26 April 1996**. The site visit took place in late morning; the weather was cool, dry, and variably overcast with variable winds, generally light to moderate from the southwest. The spring refill had begun, but only the lowest parts of the beach had been inundated. Surface exposures were excellent, although access to some areas was hindered by dense accumulations of fallen trees and shrubs (see Plates 9 and 12).

- **25 August 1999**. The inspection took place in early afternoon, and the weather was very warm, clear and dry (see Plate 4 for example). Vegetation generally was dense and at full growth, and at times proved difficult to penetrate. Historic structural features were readily visible, and there were sufficient exposures of bare sediments on excavated surfaces to provide evidence of prehistoric occupation if such evidence were present.

- **22 September 1999**. The site visit took place in early evening, about 1730-1830 hours. Temperature was warm, winds calm and skies clear, with wan evening light (see Plate 18). There was excellent exposure of bare soil surfaces and sediments in all proposed impact areas.

Actual transects were recorded on prints of aerial photography and real estate maps and later transferred to ESRI ArcGIS 8.3™ shapefiles registered to 7.5 minute digital raster graphic topographic maps and 3.5 minute digital orthophotographic quadrangles. Features identified during the fieldwork and typical sections were photographed in color (except for the 25 August 1999 terrestrial survey in which the film takeup failed and no photographs resulted) and mapped on draft project contour maps. Data later were transferred to ESRI ArcGIS 8.3™ shapefiles as

[2] Diagnostic portable artifact evidence for *prehistoric occupation or use* would include non-sawed bone fragments, charcoal, fire-modified rock and stone tool flaking debris in a place where no prehistoric archaeological site has been identified previously. For *historic* archaeological sites such evidence usually comprises low-fired and bisque ceramics with subdued colors, or blue/pink willow-like design (usually decalcomania); thick-bodied sherds indicating crockery; non-tempered glass; violet-colored glass; miscellaneous fragments of non-ferrous metal (or plated) clothing closures (buttons, hooks and eyes, and suspender fittings) (but not zippers); bone, bakelite, celluloid, glass and shell buttons (but no Nylon or polystyrene); stopper-topped glass jars or bottles; press-capped (cork gasket liner) heavy-walled soda bottles (not twist-top thinwalled); zinc and vitreous glass-lidded glass canning jars with colored body; enameled ironware; punch-opened and solder-sealed beverage cans; solder-sealed food tins; older automotive parts; knob-and-tube electrical insulators; sawed bone; general *lack* of plastic, thin-walled aluminum cans, and welded steel cans.

above; feature centroids were generated with the use of the ArcView X-Tools extension for that function (Figure 5). Finally, no artifacts of any sort were removed from the field.

6. **Discussion of Results**. The following subparagraphs discuss results of the inventory.

a. **Records Review**. General prehistoric, ethnohistoric and historic background and context are well-described in previously-published reports (e.g., Miss and Hudson 1986) and will not be repeated here. Early ethnohistorical and ethnographic records show that the north bank of Pend Oreille Lake was used primarily by the Kalispel Tribe, but also frequented by Kootenai, Coeur d'Alene, and Pend Oreille Salish Tribes. Most intense and frequent use appears to have been in the protected bays and estuaries (especially Pack River and Oden Bay), however, and no use specifically has been recorded for the APE. Earliest homestead patent identified in the Idaho state GLO records is that of Frederick W. Schultz in nearby Section 12 (Figure 3). The most significant historic use of the APE is related to a heavy-metal smelter and refining operation that operated in the early years of the 20th century, the Ponderay Smelting and Refining Company, that resulted in formation of Black Rock itself that now is recorded as site 10-BR-539 (Figure 4). Corps of Engineers real estate records show that the site ownership is complex; part of the site is within original project flowage easement tracts O15005E (originally Northern Pacific Railway, now Burlington Northern Railroad) and P1637E (originally J.R. Winnington *et ux*., but now subdivided into several parcels); a very small part is within federal fee tract P1638. Other significant historic use of the APE is related to early construction and operation of the Northern Pacific Railroad (by 1883) (Livingstone-Little 1965).

b. **Field Investigations**. Field investigations focused on finding any evidence of prehistoric occupation or use of the APE and on documenting historic features that might be affected by the proposed construction. The three different episodes of field inventory found no evidence whatsoever of prehistoric use or occupation in the area, but documented several concentrations of historic period structural remains and refuse, none of which will be affected by the proposed undertaking. The concentrations are shown in Figure 5 and described in the following table. Dimensions are estimates only.

Table 1. Feature Descriptions and Locations (key to Figure 5).

Feature Number	Description	Centroid Easting (X)	Centroid Northing (Y)
1	Concentration of possible pits and other excavations, older iron metal containers. Part of 10-BR-539.	35115	365202
2	Rotational failure crack--evidence of large slide. Toe is shown in Plate 9.	35101	365135
3	Pit or possible erosional "pipe".	35082	365169
4	Excavation--8' deep. Probably railroad-related; may be drainage feature. 3504	2	365130
5	Excavated trough--possible railroad drainage feature.	35000	365078
6	"Ash Dump" (appears to be fine coal clinker); appears to be firebox cleanout; toxic mineral content assayed by Sound Analytical Service in 1999 (sample 85895-2)and found to be not significant. Other metal and glass debris is present. An automobile body rests on the slope a short distance to the east, and just east of that a large number of discarded automotive generators and a few lead-acid battery parts were found in 1996 (the "Delco Dump"). (Plates 11-15).	34798	364770

Feature Number	Description	Centroid Easting (X)	Centroid Northing (Y)
7	Mounded broken concrete with iron rebar and other metal debris. Probably railroad-related. Two deep holes also are present, but covered over. (Plates 16-17).	34768	3648 73
8	Stone wall/foundation built into hillside above Black Rock, undressed granite and mortar construction with brick-lined passage (possible ventilation channel for ore roasters); wall may be part of a coal bin. Part of 10-BR-539. (Figure 4, Plates 1, 3 and 7).	35226	365253
9	"Black Rock"--slag heap of Ponderay Smelter (Figure 4, Plates 1-4). Part of 10-BR-539. Includes double tramway tracks splaying in two directions from the slag heap (Plate 19), presumably part of the conveyance of leftover processing material to slag dump that was accessed by a railroad trestle that ran alongside between the coal bin and open ore bins (see Feature 10).	35253	365238
10	Berm--probably part of the roaster coal bin loading trestle (Figure 4). Part of 10-BR-539.	35258	365314
11	Pit in berm--ca. 7 feet diameter, and about 4 feet deep. May be from post-smelter activity (Plate 20). Part of 10-BR-539.	35248	365302
12	Ore hoist foundation comprising square chamber of undressed granite rock and mortar, Ponderay Smelter. Grooves/channels for raising ore from the dock train to a tram that dumped the ore into the open ore bins are visible on each side of the chamber; open at the top. Extending to the east is a foundation wall that provided support for smelter electrical and mechanical services. Part of 10-BR-539. (Figure 5, Plates 5 and 6).	35226	365215
13	Pilings and/or water intake on beach. Appears to be in very poor condition. Probably related to a loading dock and the water supply intake for the smelter. Part of 10-BR-539. (Figure 5, Plates 1 and 3).	35232	365184
14	Dock--appears to be modern structure. *Not* part of 10-BR-539.	35249	365189
15	Hole--evident in Plate 2. Unknown function. May be transient-related, but probably part of 10-BR-539.	35232	365305
16	Hole--evident in Plate 2. Unknown function. May be transient-related, but probably part of 10-BR-539.	35214	3652 97
17	Three roaster pads, upper area, 10-BR-539 (Figure 4; Plate 8 shows remains of one). Each pad has a pit at the south end, with evidence of brickwork in and around the pit.	35220	3653 14

Datum: D North American 1927. **Projection**: Albers Conical Equal Area, UTM Zone 11, GCS North American 1927. **Units**: meters.

The above features are a subset of what actually is present in the locality that would be stabilized by the proposed undertaking. The following subparagraphs discuss the more general findings thematically.

i). **Transient Camps**. For many years, isolated areas between the lake and railroad from just north of the Sandpoint Amtrak station to Kootenai Point have been used as camping spots by transients. There is much evidence for such use scattered through the woods (e.g. old mattresses, plastic tarpaulins, and cooking fire rings). There are frequent small piles of trash, most of relatively recent origin attested by plastic and paper content. Some, however, appear to be older and may comprise archaeological evidence for hobo or other migrant use of this relatively secluded but near-urban area throughout the 20th

century. None of this evidence actually occurs within the APE's construction footprint, however.

ii). **Transportation**. The Ash Dump probably relates to early railroad use of the area. Many other features found during the 1999 fieldwork also are railroad-related, and it is possible that some date back to the early years of the Northern Pacific line's construction and operation. Some of the debris occurs within the APE access road corridor, but the actual alignment of the access road would avoid them. The Ash Dump itself will not be affected by construction and actually would be stabilized as a result of the proposed undertaking, as it is now subject to loss during major bank failure (see Plate 13).

iii). **Industrial Activity**. Associated, though less visible, remnants on the hillside behind the early twentieth-century Ponderay Smelter left the greatest impression on the locality in the form of historic archaeological site 10-BR-539. The enterprise' slag heap ("Black Rock") itself is the most prominent landmark, but there is ample physical evidence for other elements of the enterprise, including a substantial stone wall, concrete foundations, stone hoist chamber, slag dump tram rails, dock pilings, and various depressions, all described in table 1. Many of these elements are obscured by dense vegetation, including some 80-year-old coniferous and deciduous trees. The ore loading dock elements are visible on the lower beach at low water, but no pilings are visible within the APE at present (Figure 4 and Plates 1 and 3). The current inventory did not prepare a detailed map of all of these features, as that was beyond the study's scope, but preliminary georegistration and rectification of the smelter's original layout drawing as shown in Figure 4[3] showed close correspondence between the drawing and some of the remaining on-the-ground features.

c. **Curation of Records**. All records, photographs, maps, and original copies of reports from this work are stored in Seattle District files and archives. Point of contract to arrange access to working records is Lawr V. Salo, Archaeologist, at telephone (206) 764-3630 or fax (206) 764-4470. Access to District archival records is available by calling Survey Branch's Map Records Section at (206) 764-6704.

7. **Determination of Eligibility and Project Effect, Site 10-BR-539**. Extensive review of the historic documentation for the smelter has shown that there is enough information to support a determination that 10-BR-539 is eligible for inclusion on the National Register of Historic Places under criteria A and D (Renk 2001; attachment 3).

a. **Context for Eligibility**. As the oldest remains of a private smelter facility in this region of Idaho's panhandle, 10-BR-539 represents an important piece of the state's early mining heritage in the time just before the enterprise shifted south to the Coeur d'Alene Valley. Established by a group of eastern capitalists in 1903, the Panhandle Smelting and Refining Company was built to process high grade silver and lime ores from Montana and Idaho. The smelter operation was well served by Northern Pacific and Great Northern railroad links and by watercraft that unloaded ore from local mines onto a long dock. Ambitious in scope and physically impressive, the smelter was active for a short period between 1907 and 1913. From its inception, the smelter was plagued with a lack of operating capital and periodic lawsuits by investors and eventually

[3] The boundaries of site 10-BR-539 in the ISHS records should be expanded to include the whole facility (Figures 4 and 5).

was sold for parts and dismantled by 1922. Today, the once dramatic presence (see attachment 3, Figure 4) along the lake survives as a landmark black slag pile and the masonry foundations of ore transport and processing areas.

b. **Criterion A Eligibility**. The site has significance under National Register criterion A in the area of "Industry" as it is an early and important example of the extractive industries that were the backbone of Idaho's panhandle economy, and of the early boosterism that championed the Sandpoint, Idaho area (Bonner County Historical Society. n.d.). The subject property marks the first private smelter enterprise in a region that was later dominated by the Bunker Hill complex in the lower Coeur d'Alene Mountains. Contributing elements[4] include the prominent slag heap, granite and concrete foundations, and loading dock strongly evoke associations with the historic industrial process. The remains of many mine shafts and ore loading facilities all around the lake further attest to the former local industry.

c. **Criterion D Eligibility**. Under National Register criterion D, the site also has the potential to yield important data not now known or available through archival records, oral history, or other sources. Such archeological data may provide a greater understanding of the operation of a small-scale smelter of this period, including the labor structure, and sociological, ethnic, and cultural realities of the workers who operated the facility. Additional insights into the relationship between the local community and the corporation may also emerge from further investigation of the site's components and possible artifacts. Although relatively little standing architecture is present at the site, enough pieces are there to support a detailed mapping and comparison of the features and the smelter's original design, and further investigation could examine how faithfully the smelter design and the built version correspond, perhaps shedding additional light on the legal controversies surrounding the smelter.

d. **Assessment of the Undertaking's Effect**. The proposed undertaking would not adversely affect the National-Register qualities of 10-BR-539, and incidentally would benefit the site by preventing further erosion or catastrophic bank failure that could degrade the remaining National Register qualities of the site. Construction would not involve excavation of parts of the property and would not materially change the context of the site or its setting, as the rock fill for the protection would be placed along the beach by back-and-fill techniques. None of the on-the-ground evidence needed for future scholars to pursue Criterion D-related studies would be affected by the proposed undertaking, with the possible exception that some currently-unknown buried pilings from the dock and water intake structure may be present beneath the armor's footprint. If such stubs are present, they would be preserved from further erosion or decay as the compression from the rock load would push them below the local water table. Existing maps and photographs should preserve enough information about the dock pilings to support further study of its relationship to the smelter's actual construction.

8. **Conclusions and Recommendations**. No prehistoric archaeological sites are present within the APE. One historic site (10-BR-539) is present and the site is recommended as eligible for the National Register of Historic Places under criteria A and D (Renk 2001), but the proposed construction would not affect the site adversely. As designed, the proposed erosion control measures actually would prevent further degradation of remaining National Register qualities of the site. The project should seek the Idaho State Historic Preservation Officer's concurrence by

[4] Contributing architectural elements are identified in table 1.

consensus that the site is eligible for the National Register and that the determination of "no adverse effect" applies. Following the concurrence, the project could proceed to construction.

Because there is always a chance, no matter how remote, that inadvertent discoveries of human remains may occur during construction, construction contracts and instructions to Corps staff supervising the project should include the following language to deal with such contingencies:

> *"If the Contractor inadvertently discovers human remains during work performance, the Contractor shall immediately cease work in the area of the find and leave all materials intact. The Contractor shall notify the Contracting Officer's Representative (COR) (or the COR's on-site representative) within 4 hours of the find, and the COR will contact the Bonner or Kootenai County Sheriff's Department to ascertain whether the remains are of recent and potentially criminal origin. Concurrently, the COR will notify the Kalispel Tribe, the Kootenai Tribe of Idaho, the Coeur d'Alene Tribe and the Confederated Salish and Kootenai Tribes of the Flathead Reservation for consultation about the nature and disposition of the remains, should the Sheriff's Department determine that the remains are not the results of a crime. Contractor shall redirect work to other areas, sites or tasks until the disposition of the remains is arranged to the satisfaction of the appropriate Indian group. Disposition will take place as rapidly as possible, in any case within 30 days of the find, in conformity with Native American Graves Protection and Repatriation Act (NAGPRA), Section 3 (d). The same clause applies to work conducted directly by the Government (including use of equipment rental contracts)."*

8. **Coordination and Consultation**. Since 1994, a Cultural Resource Management Cooperating Group (CG) composed of Federal, local, and state and tribal government representatives has met to identify, scope, review, and prioritize work items and take part in all historic preservation compliance work at the project. The Corps began discussing details of the planned undertaking with the CG in late summer 1999 and periodically has updated the CG *interim*.

As all of the work would take place in Idaho outside Indian lands, the *Idaho State Historic Preservation Officer* was the appropriate primary authority for coordination under Part 800.3(c). The technical interests in historic preservation of Kalispel Tribe of Indians, the Coeur d'Alene Tribe, the Confederated Salish and Kootenai Tribe and the Kootenai Tribe of Idaho are addressed by those tribes' representatives in the Cooperating Group. The Corps maintained that the *public interest* in the current coordination effort is best represented through the *CG* (Part 800.3(f). In view of the CG members' frequently-expressed concerns for security of archaeological site locational information, the Corps will not carry out more general public involvement (Part 800.3 (e)). This report will be provided to:

- The Idaho State Historic Preservation Officer;
- The Kalispel Tribe of Indians;
- The Kootenai Tribe of Idaho;
- The Coeur d'Alene Tribe;
- The Confederated Salish and Kootenai Tribes of the Flathead Reservation;
- The U.S. Forest Service, Idaho Panhandle National Forests Headquarters and the Sandpoint Ranger District;
- The Bonner County Historical Society; and

- Others with a need-to-know, including Seattle District cultural resource management contractors.

The report also will be filed in Seattle District's environmental coordination files, where it will be accessible to individuals or organizations for public inspection (with appropriate safeguards to prevent disclosure of sensitive site locational information.)

9. **References**.

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U.S. Army Corps of Engineers, Seattle District. 1963. *Albeni Falls Project, Supplement No. 4 to Design Memorandum No. 15, Alleviation of Erosion Damage*. Seattle.

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10. **Figures**.

Figure 1. Black Rock Bank Protection Location.

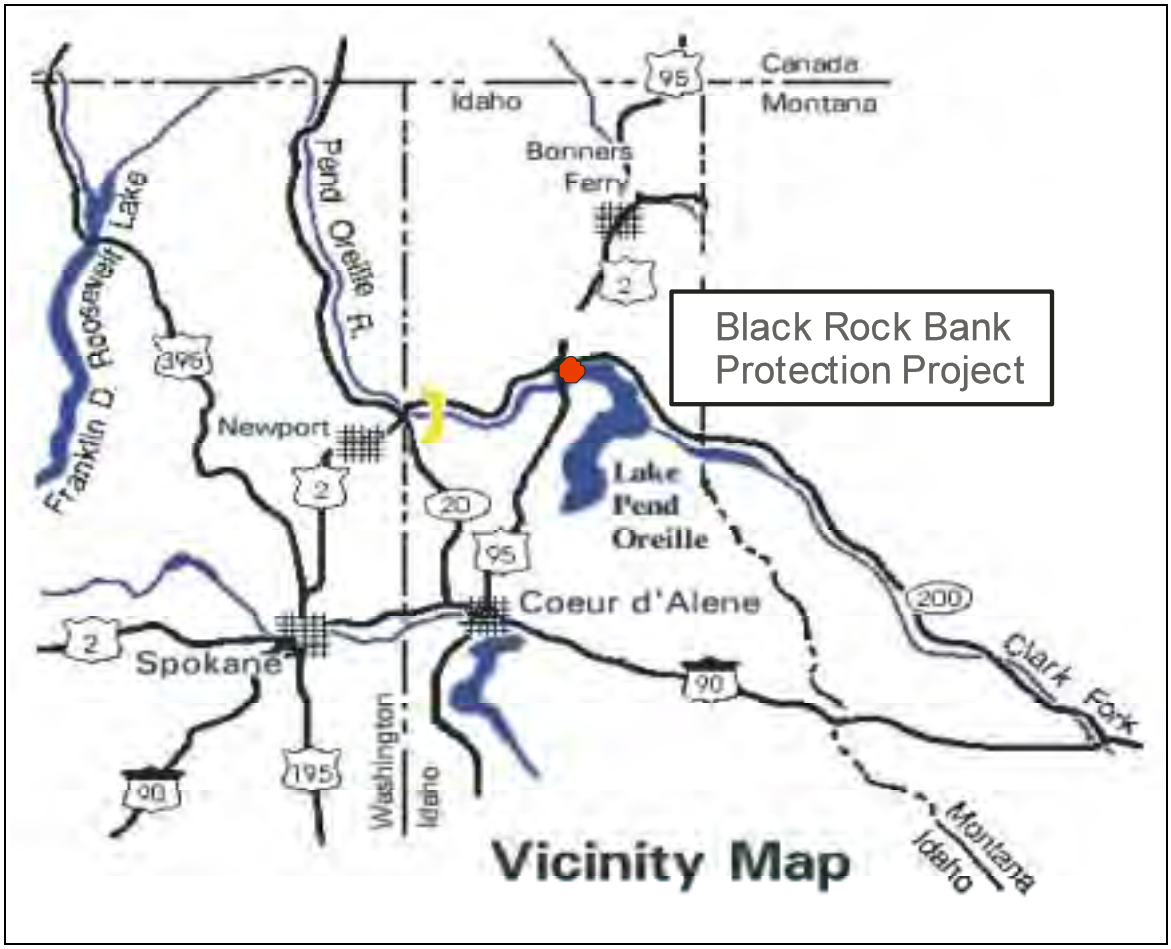


Figure 2. Black Rock Bank Protection, Area of Potential Effects

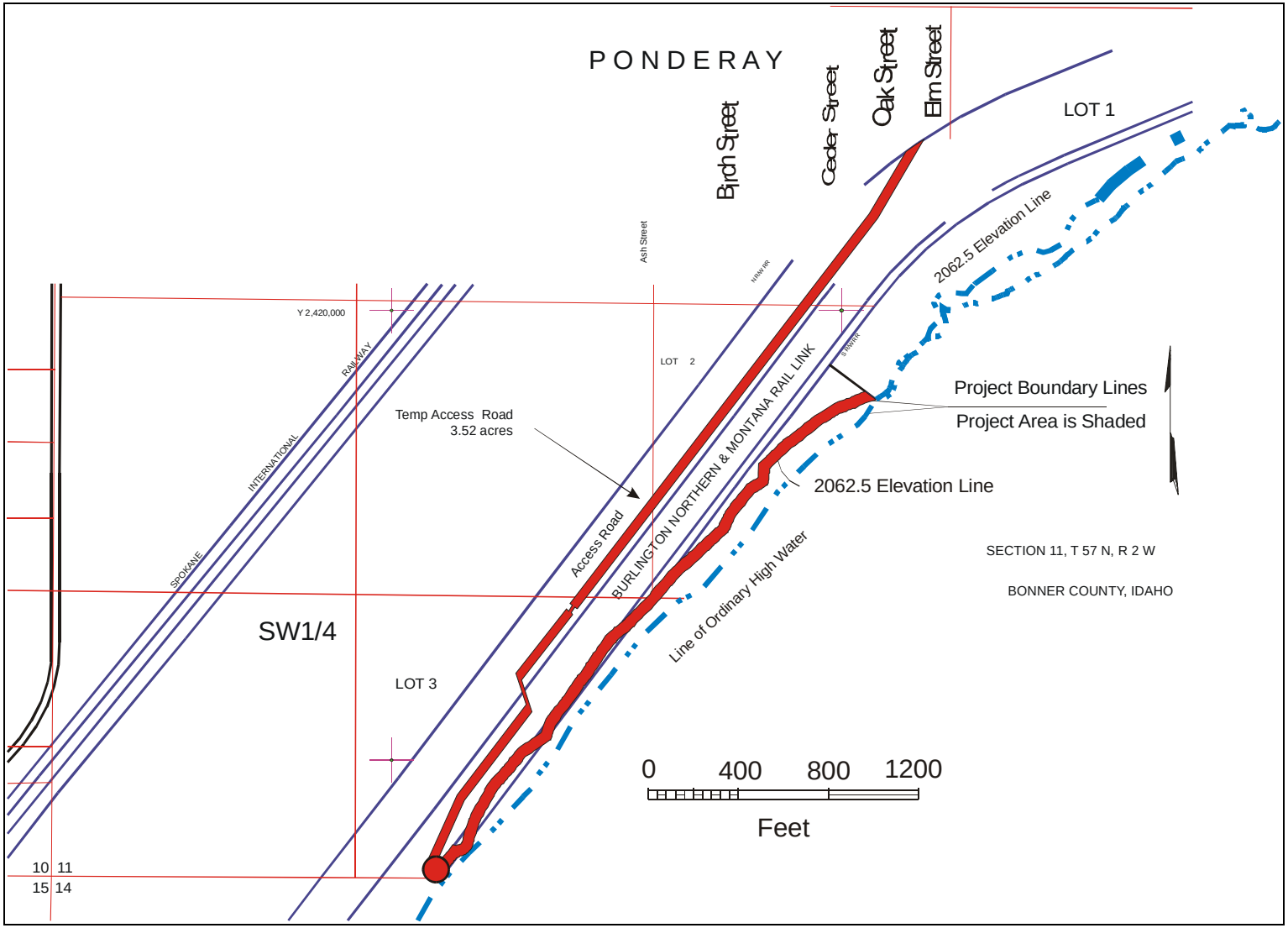


Figure 3. General Land Office Map of Area (1905), showing E.M. Peters and F.W. Schultz homesteads.

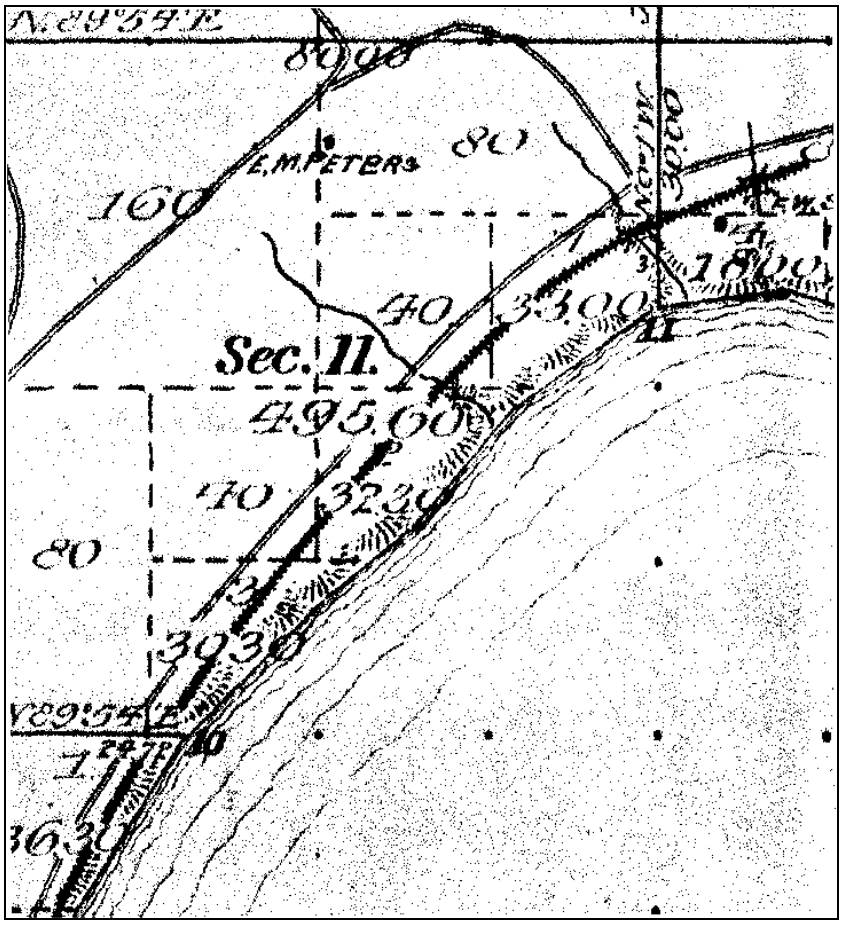


Figure 4. Idaho Smelter and Refining Co. Layout (from Renk 2001)

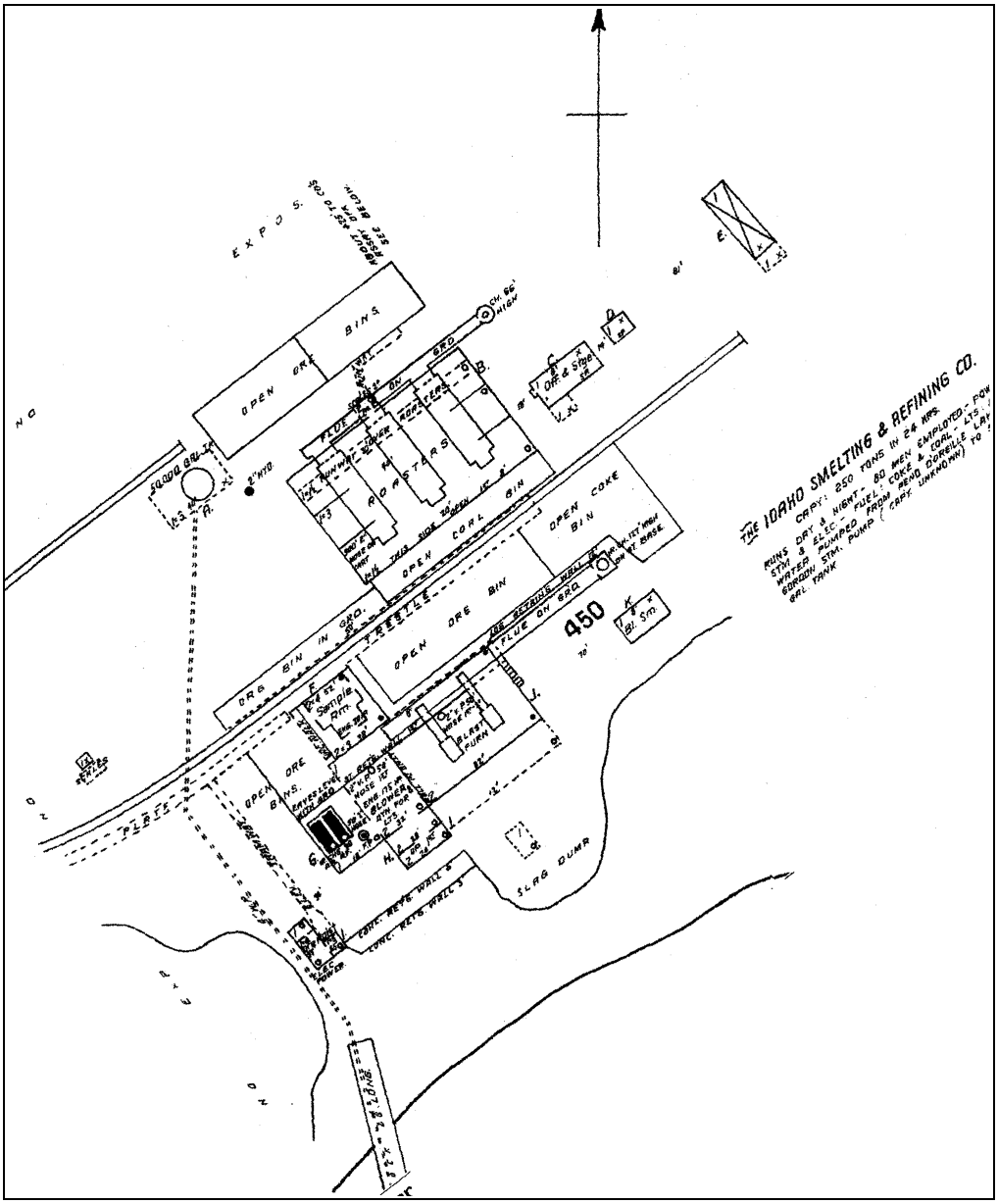
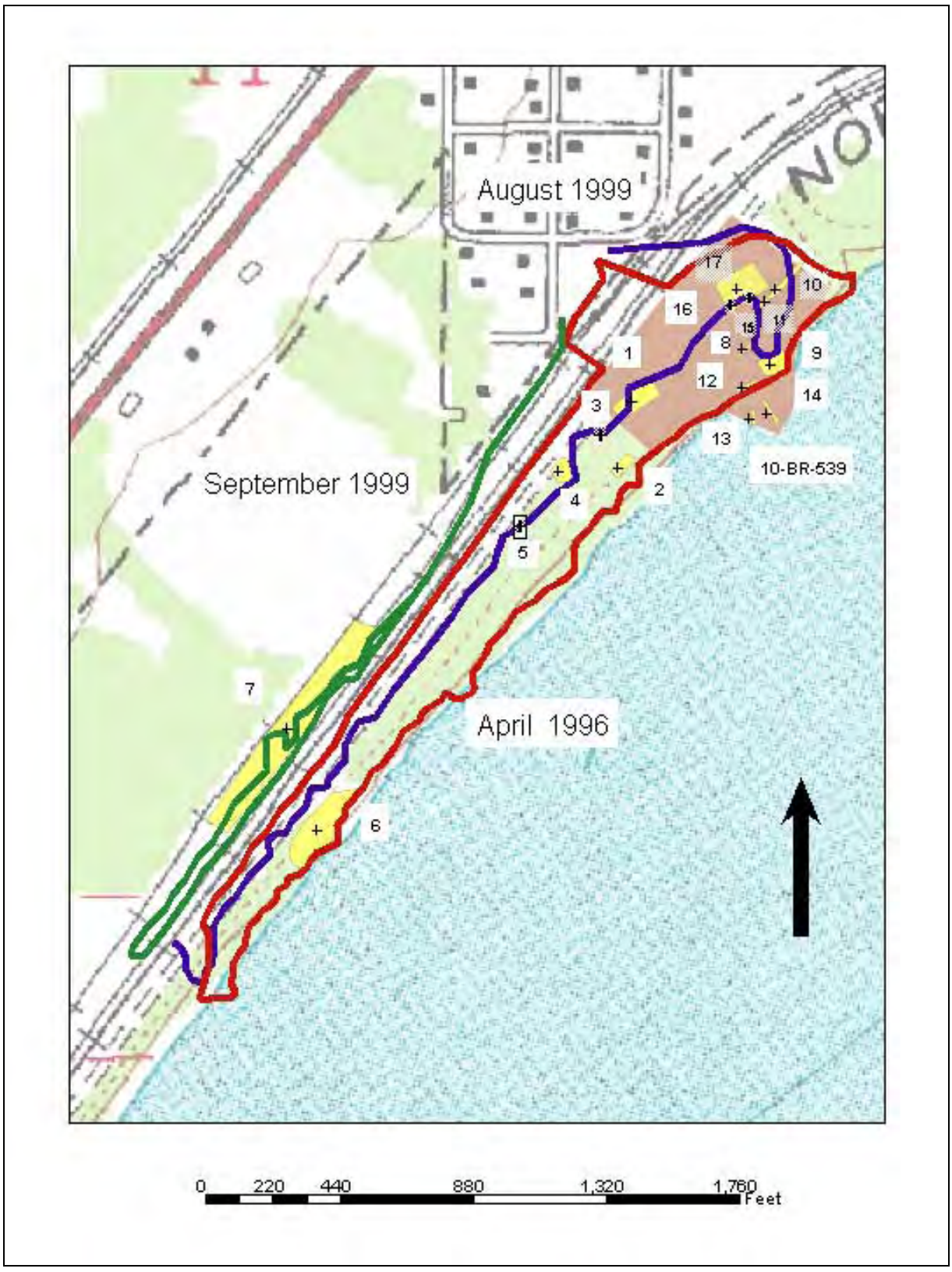


Figure 5. Black Rock Bank Protection Area Inspection Transects, Features and Revised Site 10-BR-539 Boundary.



11. **Plates**.

Plate 1. Black Rock Bank Protection Aerial View, April 2002.

Plate 2. Black Rock Vicinity Aerial View, 1935.

Plate 3. Enlargement of Smelter Vicinity, 1935

Plate 4. Black Rock at 10-BR-539 (Feature 9), View to West. August 1999.

Plate 5. Retaining wall at 10-BR-539, immediately west of Black Rock (part of Feature 12). View to northwest. August 1999.

Plate 6. Closeup of concrete retaining wall, west of Black Rock, 10-BR-539 (part of Feature 12). View to north. April, 1996.

Plate 7. Masonry foundation wall, 10-BR-539, upslope from Black Rock (Feature 8). View to northwest. April 1996.

Plate 8. View of westernmost roaster pad, upper area at 10-BR-539 (Feature 17). View to north. October, 2003.

Plate 9. Typical failing shoreline section just west of Black Rock, 10-BR-539. View to northwest. April, 1996.

Plate 10. Rotational failure, exposed slump block face, southwest of 10-BR-539. View to north. April 1996.

Plate 11. "The Delco Dump", in area between Black Rock and the Ash Dump. April 1996.

Plate 12. Large slide area, ca. 1600 feet southwest of Black Rock. View to northwest. April 1996.

Plate 13. Large slump near the Ash Dump, ca. 2200 feet southwest of Black Rock. View to west. April, 1996.

Plate 14. East end, Ash Dump (Feature 6). View to northwest. August, 1999.

Plate 15. Closeup, west end of Ash Dump (Feature 6). View to northwest. August, 1999.

Plate 16. Access road corridor, near west end. Concrete rubble mound in background (Feature 7). View to northeast. September, 1999.

Plate 17. Closeup of rubble mound--protruding metal (Feature 7). View to north. September, 1999.

Plate 18. Eastern end of access road area, Montana Rail Link yard. View to northeast. September, 1999.

Plate 19. Black Rock (10-BR-539, Feature 9), double tramway tracks. View to north. April 1996.

Plate 20. Site 10-BR-539, pit (Feature 11) in berm (Feature 10). View to southwest.

12. **Attachments**.

Attachment 1. Construction Plans
Attachment 2. 10-BR-539 Site Form
Attachment 3. 10-BR-539 Evaluation Report

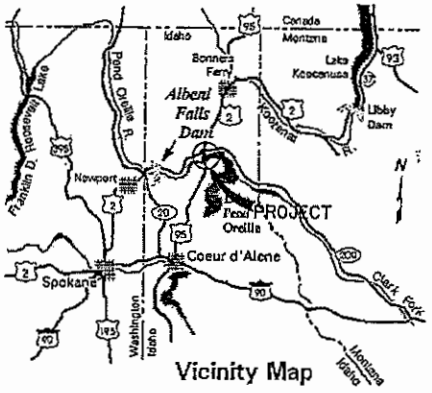
ATTACHMENT 1

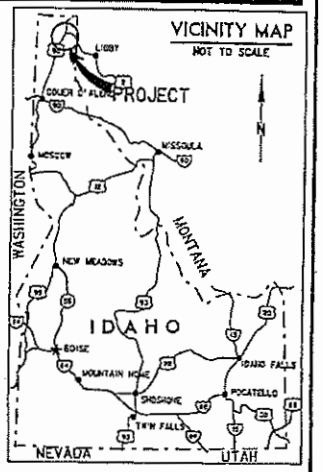
US Army Corps
of Engineers
Seattle District

BLACK ROCK BANK PROTECTION PROJECT

PONDERAY, IDAHO

DRAWING INDEX		
SHEET NO.	PLATE NO.	TITLE
1	G-1	TITLE, VICINITY MAP, DRAWING INDEX
2	C-1	SITE MAP
3	C-2	SECTION LAYOUT PLAN
4	C-3	CROSS SECTION 1
5	C-4	CROSS SECTION 2
6	C-5	GRADATION AND GENERAL CONSTRUCTION NOTES





SAFETY PAYS

FY03

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REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

ALBENI FALLS DAM
BLACK ROCK BANK PROTECTION
PEND ORIELLE LAKE, ID

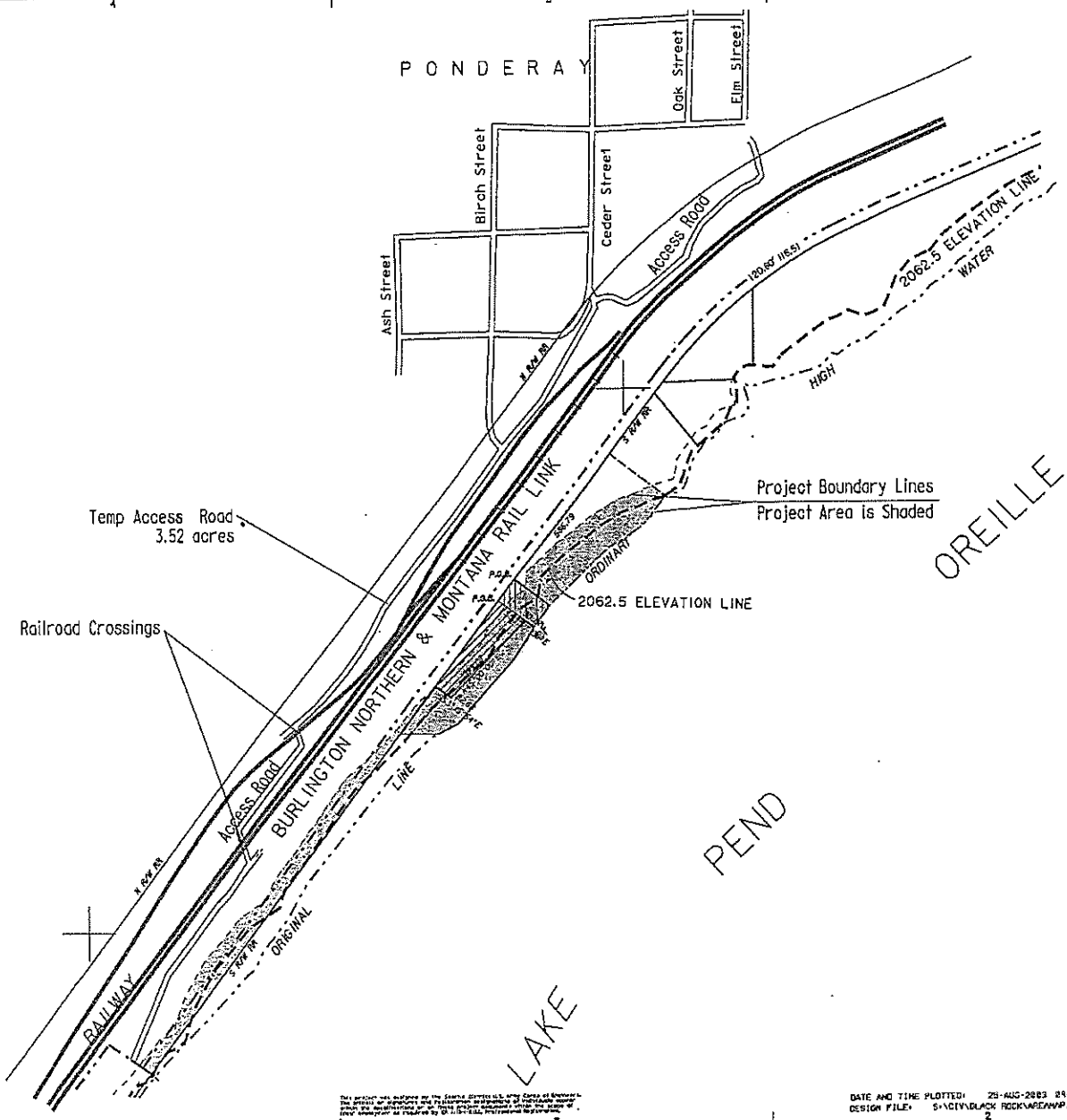
TITLE, VICINITY MAP, AND DRAWING INDEX

PONDERAY IDAHO

SIZE	OPERATION NO.	FILE NO.	DATE	PLATE
D			25AUG03	G-1

DES. KAISER DWN. FISCHER SHEET 1 OF 6

DENNIS A. FISCHER, P.E.



SECTION 11, T 57 N, R 2 W

BONNER COUNTY, IDAHO

1" = 200' 200' 100' 0 200' 400'

REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

ALBENI FALLS DAM
BLACK ROCK BANK PROTECTION
PEND ORIELLE LAKE, ID

SITE MAP

PONDERAY IDAHO

SIZE	INSTITUTION NO.	F.A.P. NO.	DATE	PLATE
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DSN. KAISER	CH. FISCHER		SHEET 2	

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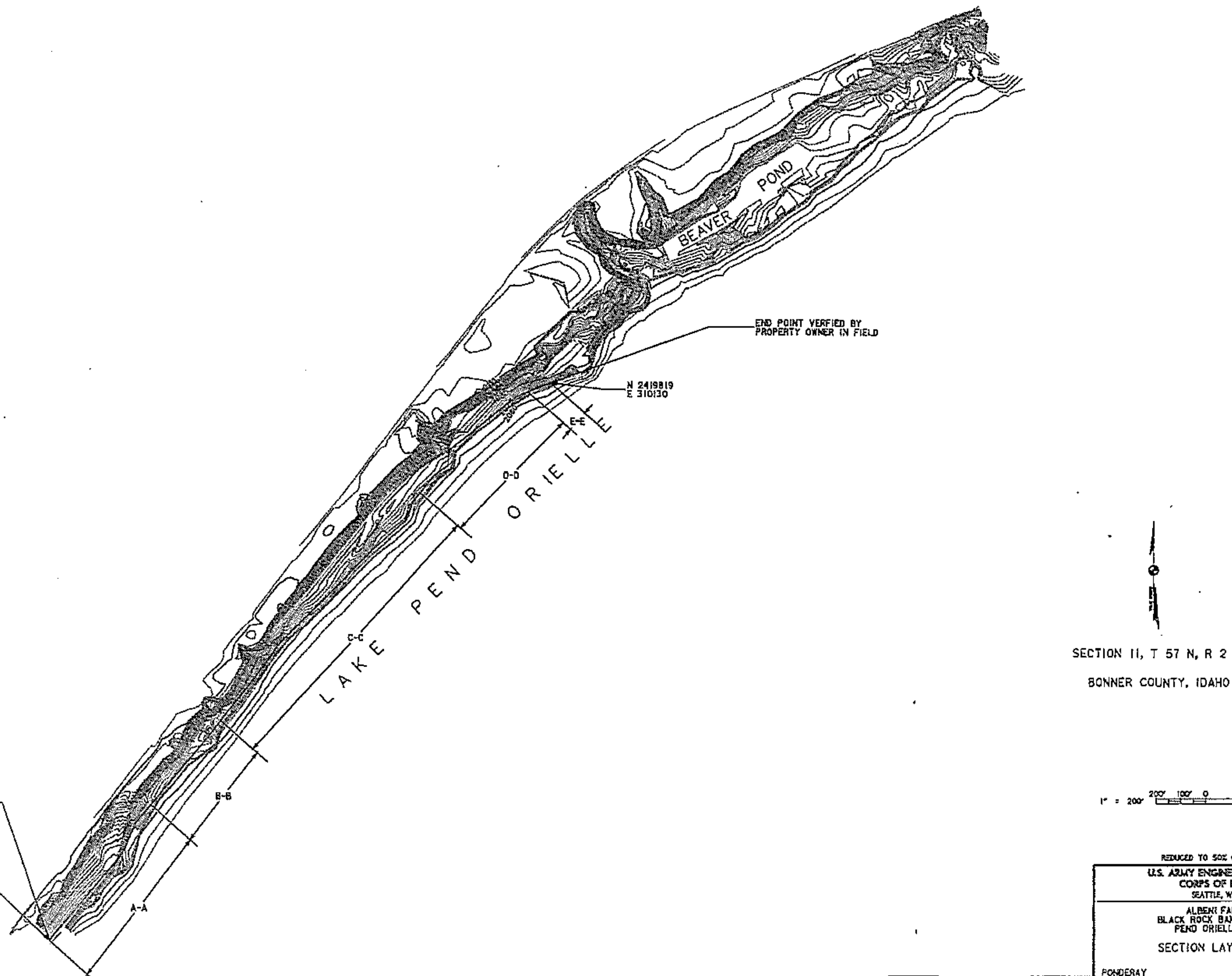
PREPARED: DENNIS A. FISCHER, P.E.
DWG.



SECTION 11, T 57 N, R 2 W

BONNER COUNTY, IDAHO

1" = 200' 200' 100' 0 200' 400'

REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

ALBENI FALLS DAM
BLACK ROCK BANK PROTECTION
PEND ORIELLE LAKE, ID

SECTION LAYOUT PLAN

PONDERAY IDAHO

SIZE	INVITATION NO.	FILE NO.	DATE	PLATE
D			25AUG03	C-2
DRN. KAISER		CK. FISCHER	SHEET 3	

DENNIS A. FISCHER, P.E.

DATE AND TIME PLOTTED: 28-AUG-2003 14:29
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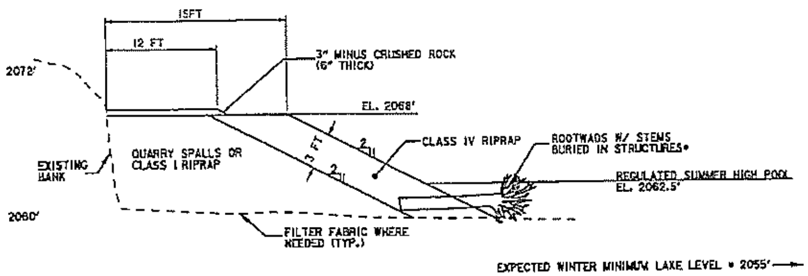

SECTION A-A (700 LF APPROX.)

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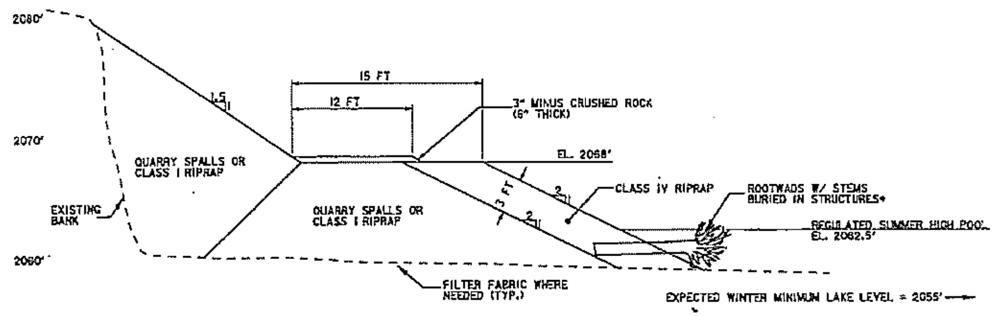

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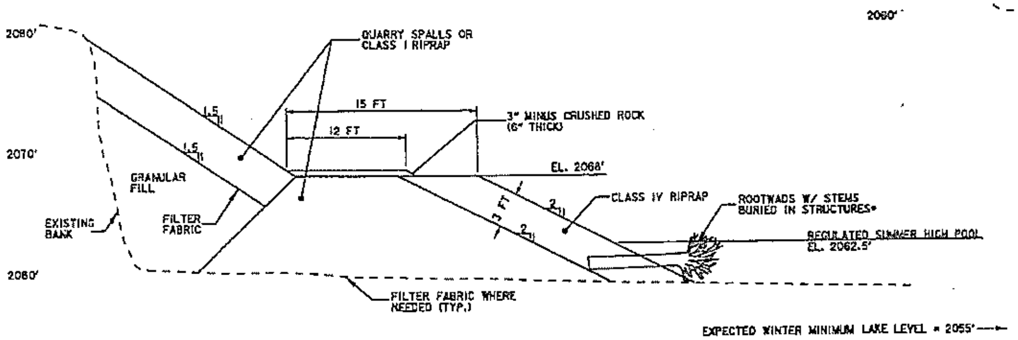

SECTION B-B (400 LF APPROX.) (ASH PILE)

SCALE: 1" = 5'

* ROOT WADS SHALL CONSIST OF FIR OR CEDAR OR OTHER DURABLE WOOD THAT WILL NOT RAPIDLY DECOMPOSE AND SHALL BE PLACED AS OFTEN AS POSSIBLE AND IN CLUMPS OF SEVERAL PIECES. WOOD SHALL BE SALVAGED FROM ON-SITE DOWNED TREES.

NOTE: FILTER FABRIC TO BE USED WHERE SOFT SOIL NECESSITATES.

1" = 5' 5' 0 5' 10'

REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

ALBENI FALLS DAM
BLACK ROCK BANK PROTECTION
PEND ORIELLE LAKE, ID

CROSS SECTION 1

PONDERAY IDAHO

SIZE D | DATE 25AUG03 | PLATE C-3
DENNIS A. FISCHER, P.E.
DWN. KAISER | CKD. FISCHER | SHEET 4

DATE AND TIME PLOTTED: 25-AUG-2003 09:32
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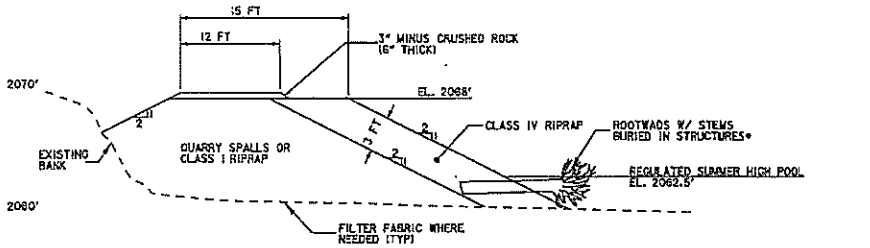
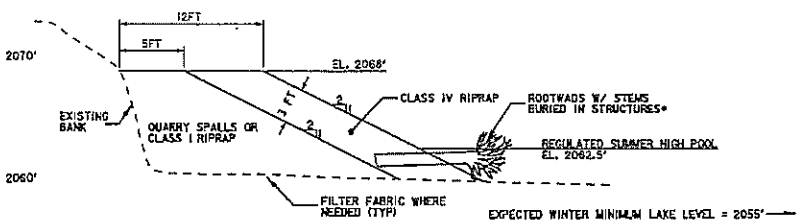


SECTION D-D (600 LF APPROX.)

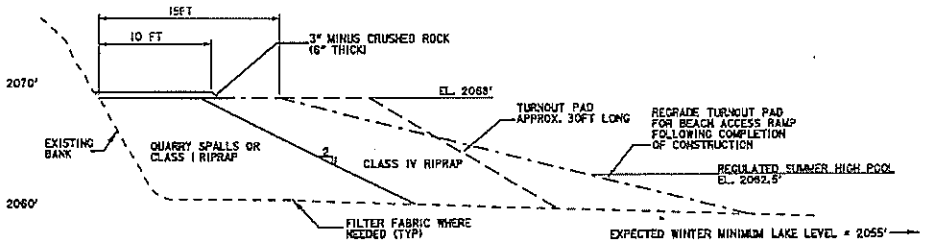
SCALE: 1" = 5'



SECTION E-E (40 LF APPROX.)

SCALE: 1" = 5'

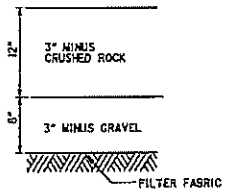
NOTE: TRANSITION TO 5' OR LESS TOPWIDTH AND TOP ELEVATION OF 2065'+/-



TYPICAL TRUCK TURNOUT PAD/ACCESS RAMP (ESTIMATE 6 EACH)

SCALE: 1" = 5'

NOTE: MINIMUM OF 4 TURNOUTS, AT LEAST ONE FOR EACH LAND OWNER, LOCATIONS TO BE DETERMINED IN THE FIELD.



TYPICAL NEW ACCESS ROAD (515 LF)

NOT TO SCALE

NOTE: ACCESS ROAD WILL BE LOCATED TO MINIMIZE IMPACT ON VEGETATION.

* ROOT WADS SHALL CONSIST OF FIR OR CEDAR OR OTHER DURABLE WOOD THAT WILL NOT RAPIDLY DECOMPOSE AND SHALL BE PLACED AS OFTEN AS POSSIBLE AND IN CLUMPS OF SEVERAL PIECES. WOOD SHALL BE SALVAGED FROM ON-SITE DOWNED TREES.

NOTE: FILTER FABRIC TO BE USED WHERE SOFT SOIL NECESSITATES.

1" = 5' (5' 0 5' 10')

REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

ALBENI FALLS DAM
BLACK ROCK BANK PROTECTION
PEND ORIELLE LAKE, ID

CROSS SECTIONS 2

PONDERAY IDAHO

DESIGN	SPECIFICATION NO.	FILE NO.	DATE	PLATE
D			25AUG03	C-4
DENNIS A. FISCHER, P.E.	KAISER	FISCHER	SHEET 5	

DATE AND TIME PLOTTED: 28-AUG-2003 14:18
DESIGN FILE: S:\CIV\BLACK ROCK\XSECTIONS2.DGN

GENERAL GUIDANCE
FOR
RIP RAP GRADATION
(PACIFIC NORTHWEST RIVERS)
COE

Class	I	II	III	IV	V
Rip Rap Thickness	18"	24"	30"	36"	48"
100% Smaller than	150#	500#	800#	1000#	1800#
50% Size	50#	200#	300#	400#	750#
90% Larger than	25#	100#	150#	200#	350#
10%	25#	25-100#	25-150#	25-200#	25-350#
Tolerance	+4"	+6"	+8"	+12"	+16"
Velocity fps	6-10	10-14	14-16	17	18

1. Assuming $w = 165\ lb/ft^3$
2. Assumes 1:2 slope; for slopes up to 1:1½, use same class with double the thickness.
3. Assumes that the L/W ratio of the rock is no greater than 3.
4. Riprap gradation for use on the outside bank of a bend should be based on a selection velocity that is twice the average channel velocity.
5. Riprap gradation for use on the banks of a relatively straight reach should be based on a selection velocity that is 1.5 times the average channel velocity.
6. Riprap gradation for channel bottoms should be based on the average channel velocity.

Example Class II

90% of stones shall range between 100 and 500 pounds. The 50% size of the gradation shall be 200 pounds. 10% of the stones may range between 25 and 100 pounds.

NOTES FOR RIPRAP AND SPALLS:

ALL ROCK SHALL BE SOUND, CLEAN, ANGULAR, DURABLE STONE. ROUNDED ROCKS ARE NOT ACCEPTABLE. THE LONGEST DIMENSION OF ANY STONE SHALL NOT EXCEED THREE TIMES ITS SHORTEST DIMENSION. ACCEPTABILITY OF STONES WILL BE DETERMINED BY VISUAL INSPECTION, LABORATORY TESTS, AND/OR GEOLOGIC INSPECTION.

GRANULAR FILL GRADATION:

SIEVE SIZE	% PASSING
6"	100
2"	70-90
1"	55-85
#4	35-75
#10	25-60
#40	15-40
#200	5-20

RAILROAD CROSSING SECURITY:
ECOLOGY BLOCKS WITH CABLE OR CHAIN ACROSS THE ROADWAY COVERED WITH WHITE PVC PIPE FOR VISIBILITY, AND WITH PADLOCKS. APPROXIMATELY 10-12 ECOLOGY BLOCKS REQUIRED.

RAILROAD SAFE CLEARANCE:
200 LF JERSEY BARRIER

REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

ALBENI FALLS DAM
BLACK ROCK BANK PROTECTION
PEND ORIELLE LAKE, ID

GRADATION AND GENERAL CONSTRUCTION NOTES

PONDERAY IDAHO

SIZE	INVITATION NO.	FILE NO.	DATE	PLATE
D			25AUG03	C-5

DESIGN KAISER DRAWN FISCHER SHEET 6 OF 6

DENNIS A. FISCHER, P.E.

DATE AND TIME PLOTTED: 25-AUG-2003 09:35
DESIGN FILE: S:\CIVIL\BLACK ROCK\NOTES.DGN

ATTACHMENT 2

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT

CULTURAL RESOURCES SITE SURVEY RECORD

State: Idaho County: Bonner Site Number: 10BR539

1. *Type of Site:*
   Historic
2. *Name of Site/Previous Designation*
   Ponderay Smelter
3. *Site Description:*
   Large slag heap and series of pilings on beach with concrete and stone foundations visible above cutbank.

4. *Reference Map:*
   USGS Sandpoint, Idaho Quad., 7.5' Series (1968)

5. *Location of Site:*
   North bank of Lake Pend Oreille just south of Ponderay, Idaho, elevation 2052-2062' a.s.l.
   NW¼ SE¼ *Section* 11 , *Township:* 57N *Range:* 2W BM

   U.T.M.: Zone 11 N. 5,349,660, E. 534,880 : *LAT.* *LONG.*

   Lambert: State , Zone , X. Y.

6. *Area of Occupation, N-S:* at least 40 meters *E-W:* 80 meters

7. *Depth and Character of Fill:*
   Cutbank of site consists of a slagheap 5 m. high and grass covered slope 2 m. high. The slag is undercut and the grassy bank if slumping. Beach is covered with slag fragments and sand.

8. *Terrain Features and Vegetation of Site and Surroundings:*
   Site is situated on a gently sloping beach and up along the slope to the terrace above. This area is covered with grass, shrubs, and trees.

9. *Previous Excavations:*
   None.

10. *Approach to Site:*
    Proceed east from Sandpoint, Idaho on State Highway 200 to Ponderay. Follow one of town streets to railroad and cross on foot. Walk to beach and site area.

11. *Material Collected and Present Location:*
    None.

12. *Material Observed:*
    Some metal, glass.

13. *Material Collected from Site by Others and Present Location:*

    Unknown

14. *Cultural affiliations:*
    Euroamerican.
15. *Owner and Address:*
    Private
    Attitude Toward Excavation:
    Unknown
16. *Occupant and Address:*
    Unknown
17. *Informants and Addresses:*

    Unknown

18. *Previous Owners and Addresses:*
    Unknown

19. *Location of Photographs Taken:*
    USACE, Seattle District
20. *Recorded By:* *Date:*
    L. Hudson 4/24/85
    S. Freiberg

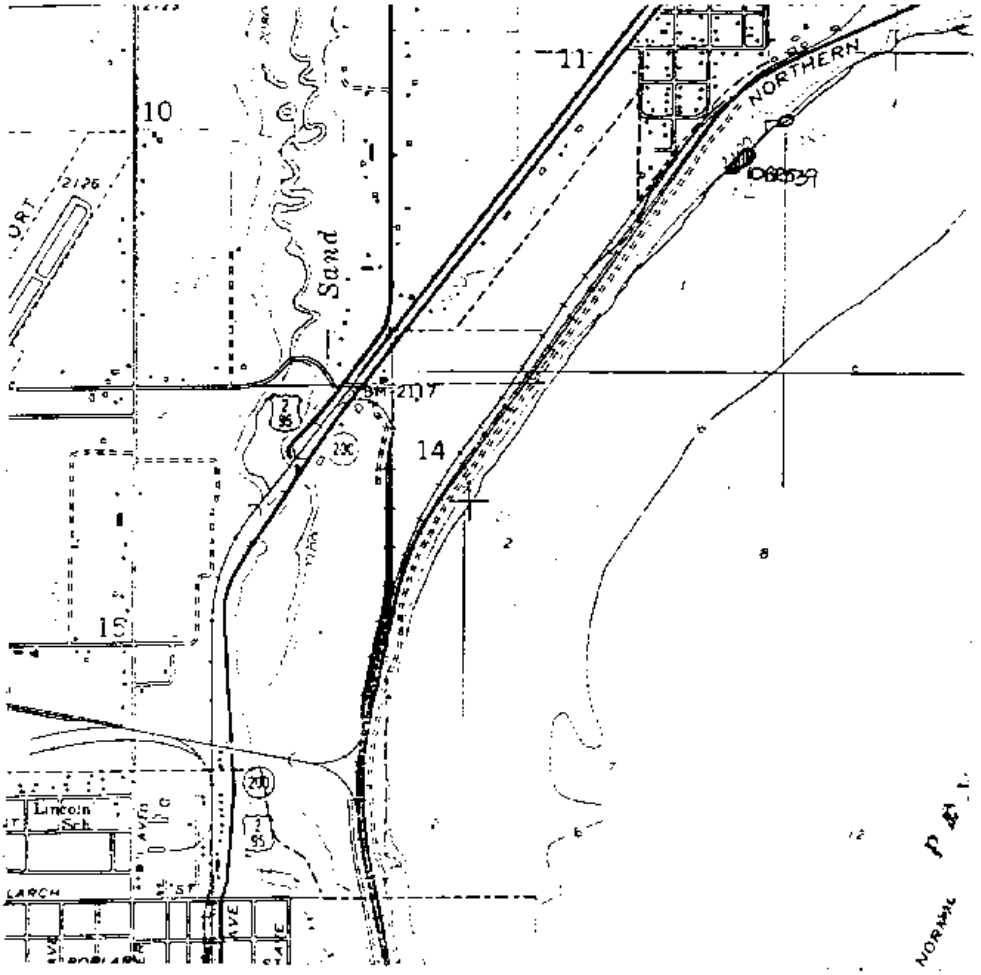
21. *Present Condition:*
Lagged onto beach.

22. *Probability of Destruction:*
Will continue to erode due to wave action and pool fluctuation.

23. *Recommendation for Further Investigation:*
Records search, test.

24. *Comments or Additions:*
None.

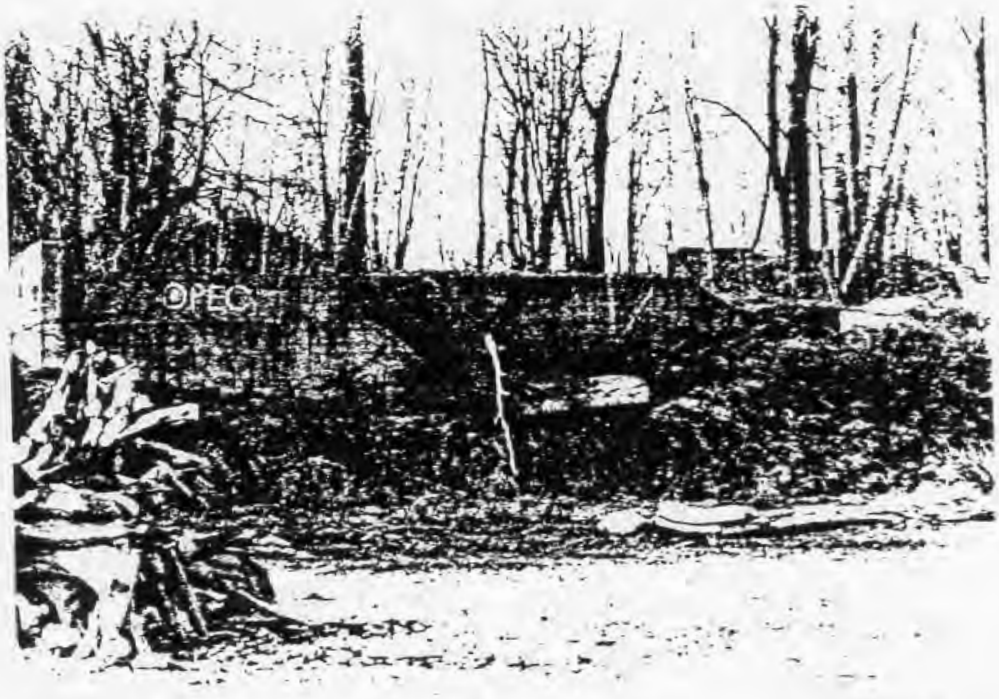
25. *Map of Site:*



B14-5 Overview to the north. Slag pile. 10BR539

B14-8 Foundations viewed from atop the slag pile. View to the west. 10BR539

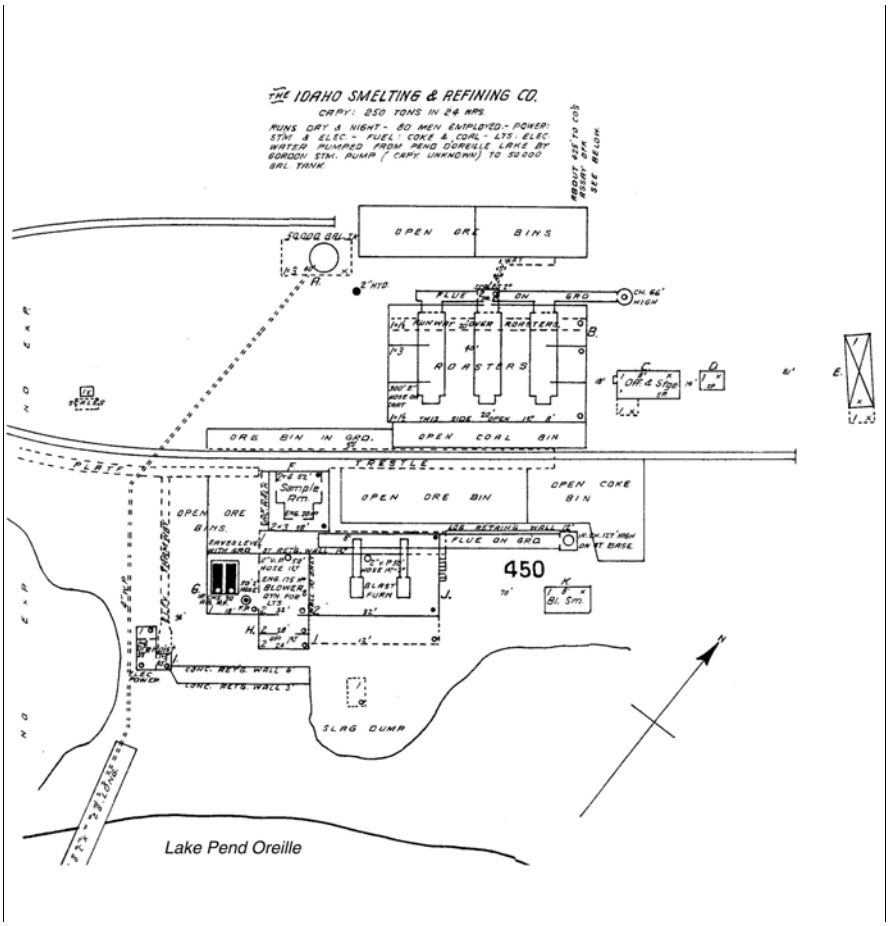
B14-9 Pilings viewed from top of the slag pile. View to the SE. 10BR539



B14-12 Foundations viewed from the west. 10BR539.

ATTACHMENT 3

National Register of Historic Places Evaluation
of the
Panhandle Smelting & Refining Company Facility, Ponderay, Idaho



February 13, 2001

NORTHWEST ARCHAEOLOGICAL ASSOCIATES, INC.
SEATTLE, WASHINGTON

National Register of Historic Places Evaluation
of the
Panhandle Smelting and Refining Company Facility, Ponderay, Idaho

Report Prepared by

Nancy F. Renk
Flume Creek Historical Services

for

U.S. Army Corps of Engineers, Seattle District
Contract No. DACA67-99-D-1014-0002

February 13, 2001

Northwest Archaeological Associates, Inc.
5416½ 20TH Avenue NW
Seattle, Washington 98107

TABLE OF CONTENTS

LIST OF FIGURES

INTRODUCTION

The U.S. Army Corps of Engineers, Seattle District (the Corps) requested National Register of Historic Places (the Register) evaluation of the remains of the Panhandle Smelting and Refining Company smelter, site 10BR539, in order to determine if proposed modifications to an adjacent railroad grade will affect elements of the site that make it significant. In order to complete the evaluation, preparation of an historical context for the smelter, including a history of the Panhandle Smelting and Refining Company, was proposed. The following text presents this context as well as recommendations for eligibility.

Location

The site is on the northwest shore of Lake Pend Oreille in Bonner County (Figure 2) and was recorded in 1985 as part of an inventory of non-federal lands affected by the operation of the Albeni Falls Dam Project (Miss and Hudson 1986) . Not much remains above ground at the site of the Panhandle Smelting and Refining Company in Ponderay, Idaho. There are tall stone foundation walls, occasional piles of bricks, building depressions, piers from two docks, and a slag pile - a dark formation that gives rise to the local name, “Black Rock” (Figure 1). There is nothing to suggest the rocky and litigious history of the short-lived company that processed lead-silver ore on the shore of Lake Pend Oreille.

Figure 1. Overview of structural remains (left of center), slag (right of center), and dock pilings (foreground) of the Panhandle Smelter, direction: N.

Figure 2. Location of the Panhandle Smelting and Refining Company, site 10BR539 (USGS Sandpoint, ID-MT, 30x60' Quad., 1984).

HISTORICAL CONTEXT

The Panhandle Smelter's promoters planned to serve mining operations primarily in western Montana and northern Idaho, including the rich Coeur d'Alene region, at a time when there were no independent smelters between Helena, Montana, and Everett and Tacoma, Washington. Eleven companies had formed American Smelting and Refining Co. (AS&R) in 1899, known in the mining world as the smelter trust. Its power soon increased with the addition of the Guggenheim brothers and another five smelters, giving AS&R control of sixteen lead-silver smelters in the United States and Mexico. The smelter trust purchased three major independent smelters by 1905, in Tacoma, Everett, and Selby, near San Francisco. This concentration of smelting control in AS&R made an independent smelter very attractive for mine owners in the region, and although the Coeur d'Alene mines did not send ore to Ponderay, they did strongly consider this as an alternative to their existing arrangements. The operations of the smelter at Ponderay ultimately failed due to lack of capital, possible mismanagement, and repeated litigation that tied up company assets and personnel at critical times (Aiken 2000; Fahey 1978:67-73).

Rumors of a new smelter near Sandpoint began as early as 1902 when promoters took bonds on seven mining properties at Lakeview. Within a few months, the company had purchased property and was announcing grand plans for its smelter operations. For the next few years, however, more action took place in the newspapers than on the ground as the company promoted its smelter in an effort to raise capital (*Kootenai County Republican*, 14 November 1902, 1:4; *Spokesman-Review*, 18 February 1903, 5:5).

The Plan

The smelter was part of a larger development plan, controlled by three interlocking companies: Panhandle Smelting and Refining Company, Panhandle Development Company, and Ponderay Transportation Company. A group of capitalists, mostly from St. Paul and Minneapolis, organized the first company by early 1903. They incorporated in Washington, with their office in Spokane. Officials included Jacob Hines, president, Minneapolis; W. A. Murphy, vice president, St. Paul; W. E. Nelson, secretary and manager, Denver; and Henry M. Williams, superintendent, Spokane. The remainder of the board included T. W. Teasdale, Frank W. Condron, and E. J. Norton, all of St. Paul (*Spokesman-Review*, 18 February 1903, 5:5). Panhandle Development Co. followed ca. March 1903, with a starting capital of $30,000. Promoters planned to use these funds to build the smelter, in exchange for half of the capital stock in the smelting company (*Spokesman-Review*, 11 March 1903, 5:2). For lake transportation, investors formed a third business, Ponderay Transportation Company, with capitalization of $30,000. The newspaper reported that the new company had bought four steamboats from the Jeannot-Childs line in Hope. Later records list only one boat, the *City of Hope*, renamed the *Panhandle*, that had a carrying capacity of 500 tons. The company planned to construct docks extending 600 feet into the lake (*Spokesman-Review*, 18 February 1903, 5:5, 25 March 1903, 7:3). Although corporate records have not been checked, newspaper articles suggest that the same men probably controlled all three companies.

The companies acquired a large block of land northeast of Sandpoint early in February 1903 when Henry M. Williams, general manager of all three companies, purchased the W2 NE4 and Lot 2 in Section 11, T57N, R2W, from David E. and Nettie M. Biglow. In late March Williams then transferred essentially the same property (W2E2 Section 11) to the Panhandle Development Co., which at some point transferred it to Panhandle Smelting and Refining Co. (Bonner County Deed Record, Book 15:188-189, 231, Book 14:498-499; *Kootenai County Republican*, 6 February 1903, 1:3; *Spokesman-Review*, 25 March 1903, 7:3).

Initial plans for the smelter, announced in February 1903, called for one tuyere furnace with a capacity of 300 tons of ore each day. A month later the company contracted with Paul Johnson to serve as superintendent of construction for the smelter; Johnson had built the smelter at Greenwood and had operated it until hired for this new job. Manager Williams said that they would break ground in early April, with plans to be operating the smelter by September 1, 1903. The only thing holding them back from starting production sooner was a problem in acquiring the necessary electrical machinery (*Spokesman-Review*, 18 February 1903, 5:5, 25 March 1903, 7:3).

Town and Smelter

While the smelter company prepared for construction, Panhandle Development Co. worked on a townsite adjacent to the smelter. The new town was initially known as Panhandle, but the name changed to Ponderay at least by early 1905. Crews were reportedly busy building boarding houses, offices, and laboratories by late March 1903. Construction was not as extensive as suggested by press releases, however, and by the spring of 1905 the only buildings in Ponderay were the assay office and the men-only boarding house/hotel for the crews building the smelter. Activity picked up then, and the first store was completed in June 1905. Initially known as Swanson and Son, the name soon changed to Pioneer Store. The First Bank of Ponderay also had a building in town (*Engineering and Mining Journal* 79, 16 March 1905:544; *Northern Idaho News*, 15 December 1905, 29; *Spokesman-Review*, 25 March 1903, 7:3).

In addition to construction, the smelter company worked to procure ore to supply the smelter's projected operations. The company purchased several mines around Lake Pend Oreille, including the Venezuela group near Chloride, in the Lakeview area, and the Queen Ann mine on Trestle Creek; both of these mines contained iron ore needed for flux in the smelting process. By 1905 at least, the company also owned 415 acres of limestone, easily accessible along Lake Pend Oreille; lime rock was also used in the smelting process. Aside from the mines it owned, the company announced in February 1903 that it had closed contracts with seventeen mines in both Montana and Idaho that agreed to ship ore to the smelter. A month later, officials claimed that mines had donated more than 50,000 tons of ore to get the smelter started. The company was to get the first $15 in values from this ore, with the donors taking anything over this amount. It had increased the contracts to twenty-two mines, including the Blue Bird, Union Silver Star, Little Joe, Conquest Consolidated, and Bimetallic. In addition to

the ore, the smelter company secured more than 600 acres of coking coal in the Crow's Nest district of British Columbia to heat the furnace (*Northern Idaho News,* 15 December 1905, 29; *Spokesman-Review*, 18 February 1903, 5:5, 25 March 1903, 7:3).

The smelter construction did not proceed as planned, however, and operations did not start in the fall of 1903. Instead, the Idaho mine inspector reported at the end of 1904 that the company had made good progress in its construction. At that time, the ore bins, sampler, and furnace rooms were completed and machinery was expected during the next season (Bell 1904:89). The company changed names and management in February 1905 when Panhandle Smelting and Refining Co. transferred all of Lot 2 in Section 11, T57N, R2W, and four lode claims, to Panhandle Smelting Company. David W. Casseday, formerly land and immigration commissioner for the Soo Road in Minneapolis, took over as president of the new company by March 1905. Company directors met in Minneapolis that month to let contracts for sampling and electrical machinery, supposedly completing the necessary equipment. At that time, work had halted on the smelter while crews waited for the machinery to arrive (Bonner County Deed Record, Book 7:175-176; *Engineering and Mining Journal* 79, 16 March 1905:544).

By July 1905, the smelter was essentially complete (Figure 3). The main building had enough room to eventually house three furnaces, with a capacity of 250 to 300 tons. It also contained the equipment to run the electrical lights and power the facility. Adjoining the main building was the sampler building, with sampling rooms located above the storage bins; these bins could hold up to 3,500 tons of ore. The receiving and crusher building was located on the railroad spur. Incoming ore was to be crushed in this building and then moved by automatic conveyors to the sampling building. The boiler room joined the smelter building on the south side. The pump house was located south of this, to supply water from springs on the site (*Northern Idaho News,* Industrial Souvenir Edition, July 1905:12-13).

The basic equipment was already installed by July 1905. It included a tandem Corliss 150 horsepower engine to operate the sampling works, crusher, conveyors and trams, and electric lighting plant. A second engine, a Reliance Corliss with 75 horsepower, was to run the No. 7 Connelsville blower for the furnace. The standard lead-silver furnace with water jacket was equipped with a variety of attachments to increase productivity and decrease expenses. The furnace was connected to the stack with granite and brick dust chambers 8 x 10 feet and 190 feet long. The steel stack, 7 feet in diameter and 125 feet tall, was set on granite foundations (*Northern Idaho News,* Industrial Souvenir Edition, July 1905:13).

In addition to the smelter buildings and equipment, the company had developed its transportation connections by July 1905. It had one dock at the smelter site that extended 2,200 feet into the lake; this gave boats twelve feet of draw during low water season. The dock was twenty feet wide to accommodate a tram and railroad track. The company needed the tram to move ore from boats to the crusher house. In addition, the railroad track could

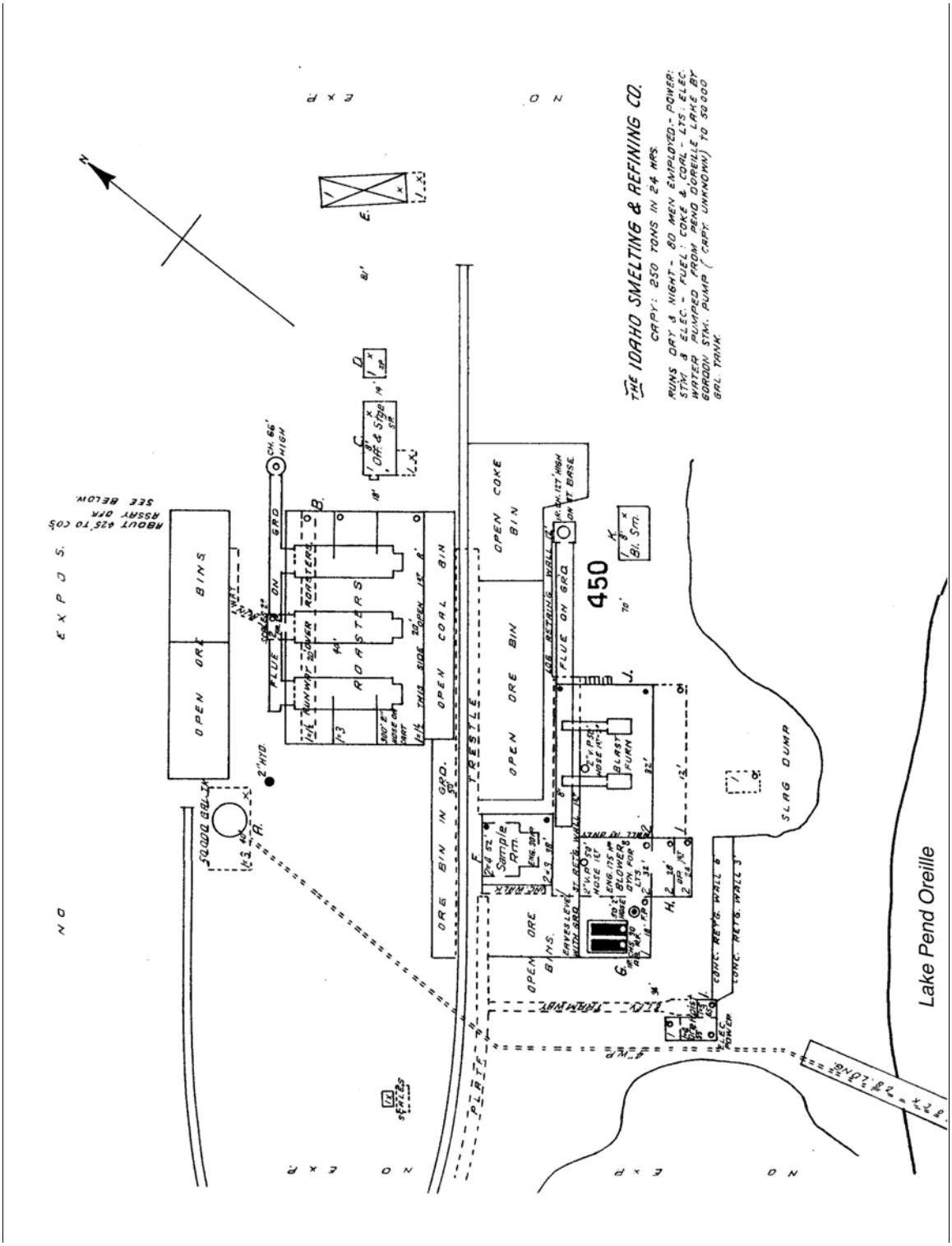


Figure 3. Map of the smelter from the 1909 Sanborn Fire Maps.

accommodate other commerce on the lake since there was no other dock with this capability at that time. The Ponderay Transportation Co. had been operating since ca. 1904, utilizing the steam tug *Ponderay* as well as a smaller steamboat, the *Belle*. It also had several barges and flat boats to transport ore or other goods on the lake. In 1905, the company had a contract to deliver mail to post offices around the lake (*Northern Idaho News,* Industrial Souvenir Edition, July 1905:13).

Operational Delays

While essentially complete, the smelter remained idle in 1905 as president Casseday tried to overcome financial difficulties. He went east in September 1905 to sell another $100,000 in smelter stock to raise capital to purchase ore. Evidently the ore contracted by the earlier company did not materialize and the company was working on closing contracts for ore from the Murray region of Idaho as well as Phillipsburg in Montana. It did not want to depend on local ore from the Lake Pend Oreille district, Casseday explained, because it was low grade. Casseday succeeded in raising the necessary money and he announced that the smelter would blow in by the end of October 1905. Once again the company extended this date, saying in early November that operations could not start until January 1906 since the furnace had not yet arrived. Despite this setback, chemicals were in place in the assay office and a company official left to close contracts for ore in Montana (*Pend d'Oreille Review*, 15 September 1905, 1:4, 6 October 1905, 1:5, 3 November 1905, 1:3, 10 November 1905, 1:5).

Financial concerns were not all that was causing delays in the start of the smelter. The company had been in court with drawn-out litigation over water rights on west Sand Creek. T. H. Tandy and Peter Johnson of Sandpoint located water rights on Sand Creek, known then as Mill Creek, in December 1902. Working for the smelter company, they posted the notice and filed a copy with the county recorder, as required by the Act of February 25,1899. The company began developing these rights in mid-January 1903. In September 1903, Sandpoint Water and Electric Company filed competing water rights on Sand Creek, following the Act of March 11, 1903, that required the applicant to get a permit from the state engineer; the smelter did not file with the state engineer until May 1904. The smelter company sued the water company and lost its case in district court. The water company then got an injunction against the smelter, forcing it to stop work on its flume. The litigation continued to the Idaho Supreme Court, where the smelter finally prevailed in November 1905 in the case of Sandpoint Water and Electric Co. v. Panhandle Smelting Co. The ruling noted that the two companies had filed claims under two different acts, causing the initial confusion. Despite the ruling, W. G. Malloy of the water company declared that the two companies were on good terms. He said that the smelter could now withdraw water above the company's dam on Sand Creek and he did not expect this to hurt the water supply. The smelter planned to build a power house below this dam and use the power for both the smelter and the town of Ponderay (Bonner County Deed Record, Book 11:503-504; *Pend d'Oreille Review*, 17 November 1905, 1:1).

With the litigation resolved, Panhandle Smelting Company announced the completion of its

smelter in December 1905. The ten-acre site on Lake Pend Oreille included essentially the same buildings and equipment described above. At that time, the smelter depended primarily on rail transportation. The Northern Pacific main tracks ran adjacent to the smelter, with side tracks into the grounds. In addition, the Great Northern ran just a mile away and had a spur line to join the Northern Pacific. The Spokane International, under construction in 1905, would give a connection to British Columbia and especially the coke ovens at Fernie. Along with the side tracks, the smelter grounds included railroad docks and wagon docks (*Northern Idaho News*, 15 December 1905, 29).

Despite periodic announcements that the smelter would blow in soon, the facility remained untested until mid-1907. Company management changed again in April 1906 when Frank W. Guilbert resigned as secretary and C. L. Pugh resigned as treasurer. They were replaced by George Heaton of St. Paul, who took over both jobs as well as the position of manager. J. Herbert Anderson, who had owned stock in the smelter from the beginning, began to quietly purchase additional shares until he had controlling interest by late 1906. This led to his election as president at the December 1906 meeting of stockholders, replacing George Heaton. Heaton then filed suit in District court claiming that the smelter company owed him $4,000 for his services rendered between May 1,1906 and January 1, 1907, along with $2,851.30 that he had advanced to the company earlier in 1906 (*Pend d'Oreille Review*, 16 May 1907, 1:3, 13 June 1907, 1:3; *Spokesman-Review*, 25 April 1906, 8:3).

The Smelter Blows

The smelter finally came to life under Anderson's direction. By June 1907, the St. Eugene mine at Trail, B.C., had sent two carloads of lead concentrates to the smelter in Ponderay and had signed a contract for another 2,000 tons. The smelter expected to receive two carloads a day for an indefinite time. It was not relying on any local ore from around Lake Pend Oreille since it was not rich enough to pay for transportation. Thus the company steamer, *Ponderay*, was tied up and officials said that local mines would have to deliver their ore to either Hope or the company dock in Ponderay. Anderson arrived from Chicago and announced that the smelter would be running soon, sending stock prices up several points in one week (*Pend d'Oreille Review*, 6 June 1907, 4:2). Crews at the smelter started fires in the furnace on June 6, 1907. Five days later, they put the lead concentrates in the furnace; the following day, June 12, they removed the first lead bars. The machinery worked "like a charm" on this first run. Anderson was still trying to hire experienced smeltermen, but he had three shifts of fifteen men each to keep the smelter running. Anderson said that with present market conditions, he had no plans to shut down "for years to come," especially since he had $40,000 worth of ore. In fact, Anderson had asked Allis-Chalmers Company to double the capacity of the smelter to 200 tons every 24 hours. The outlook for the smelter continued to look good through early July 1907 when it completed its largest run to date, producing 168 lead bars, weighing 115 pounds each, in 24 hours. Union Iron Works in Spokane was due to install a new furnace in 60 days, and rumors suggested that the company would order four more furnaces, increasing the smelter's labor force ultimately to 250 men (*Pend d'Oreille Review*, 13 June 1907, 1:3, 11 July 1907, 1:6).

All of this ended by mid-July when George Heaton's lawsuit brought a temporary halt to the smelting. In addition to his earlier claim, Heaton had filed a suit for $50,000. He said that he had loaned the smelter more than $8,600, at the company's request. In addition, he had invested more than $39,000 of his own money in ore and flux; such investors were to pay part of the expense of smelting and then receive a share of the profits, but Heaton claimed that the company had been using the raw materials without payment. The outcome of Heaton's lawsuits is not known. Company officials attempted to make the best of the situation and announced that crews would use the shutdown to make a few repairs. At that time, the foundation was in place for a second furnace, and the company planned to add a matte furnace to smelt copper. The closure continued into August, with this prolonged inactivity blamed on a lack of coke (*Pend d'Oreille Review*, 18 July 1907, 1:3, 22 August 1907, 1:6).

It was a continuing lack of capital more than lack of materials that caused problems for the smelter. A number of mines that shipped ore to the smelter were unable to get paid according to their agreements. The plant remained closed in the fall of 1907. S. B. Phillips, company manager and/or secretary, came to Ponderay early in November to pay bills for labor. He was "sanguine" that the smelter would continue, and he noted that company president Anderson would be there the following day to settle with other creditors. The company apparently did not recover, however, and was forced to reorganize. All assets were turned over to a trustee, W. W. Hindman, in January 1908. Within a couple of weeks, he turned everything over to a new company, Idaho Smelting and Refining Company. Stockholders got one share in the new company for every five they held in the former company. Two brothers, Thomas L. and Wilbur D. Greenough, purchased 753,000 shares of stock in Idaho Smelting and Refining Co. in June and July 1908 and they gained control of the company the following month. In an effort to get the smelter running, they advanced $50,000 to the company. In addition, Harry Day, manager of the famous Hercules mine in Burke, may have been involved at this time (Aiken 2000; Bell 1907:46; Bonner County Deed Record, Book 13:419-420, 448-449, 454-455; *Pend d'Oreille Review*, 7 November 1907, 1:5, 12 March 1909, 1:3-4)

New ownership and an influx of much needed capital brought a flurry of activity to the smelter in Ponderay. Construction of the new roaster building was nearly done by early October 1908, and the new stack was progressing well toward its completed height of sixty feet. The company had 2,500 tons of ore on hand, with more coming in daily. In contrast to earlier operations, much of this ore came from mines around Lake Pend Oreille; low transportation and smelting costs made it possible to process the low-grade ores that had previously been rejected. Local mines included the Blue Bird, Green Monarch, and Minerva; the last one, located on the east side of the lake at Granite Creek, shipped 25 tons of ore to the smelter in late October, with values over 1,000 oz. silver per ton (*Spokesman-Review*, 2 October 1908, 2:3, 21 October 1908, 10:3-4).

And Reblows

The rebuilt smelter was blown in on October 20, 1908, with great ceremony. The Montana Mine Owners Association ran a special train from Helena while other mining interests chartered a train from Spokane. So many came from Spokane that the local stock exchange closed for the day; they held a session aboard the train instead, trading 7,000 shares. Still others came by boat from around the lake, bringing more than 300 people to watch the first run at the smelter. The visitors got tours of the facility, watched the first slag tapped at noon, and then witnessed the tapping of the lead well to pour three bars (Figure 4). Several visitors dropped molten lead into sand to make a souvenir. At that time, the second furnace was not yet completed since crews were waiting for a shipment of firebrick. They expected to be done within three weeks, bringing the smelter's capacity up to 250 tons per day (*Spokesman-Review*, 18 October 1908, 2:1, 20 October 1908, 8:3, 21 October 1908, 10:3-4). It is not known when this second furnace was completed. In addition, it is not clear how long the smelter operated this second time. The local newspaper noted that the plant still had ore on its dump in March 1909 and planned to use this before shutting down, but it may have operated only sporadically after operations resumed in October 1908 (*Pend d'Oreille Review*, 12 March 1909, 1:3-4).

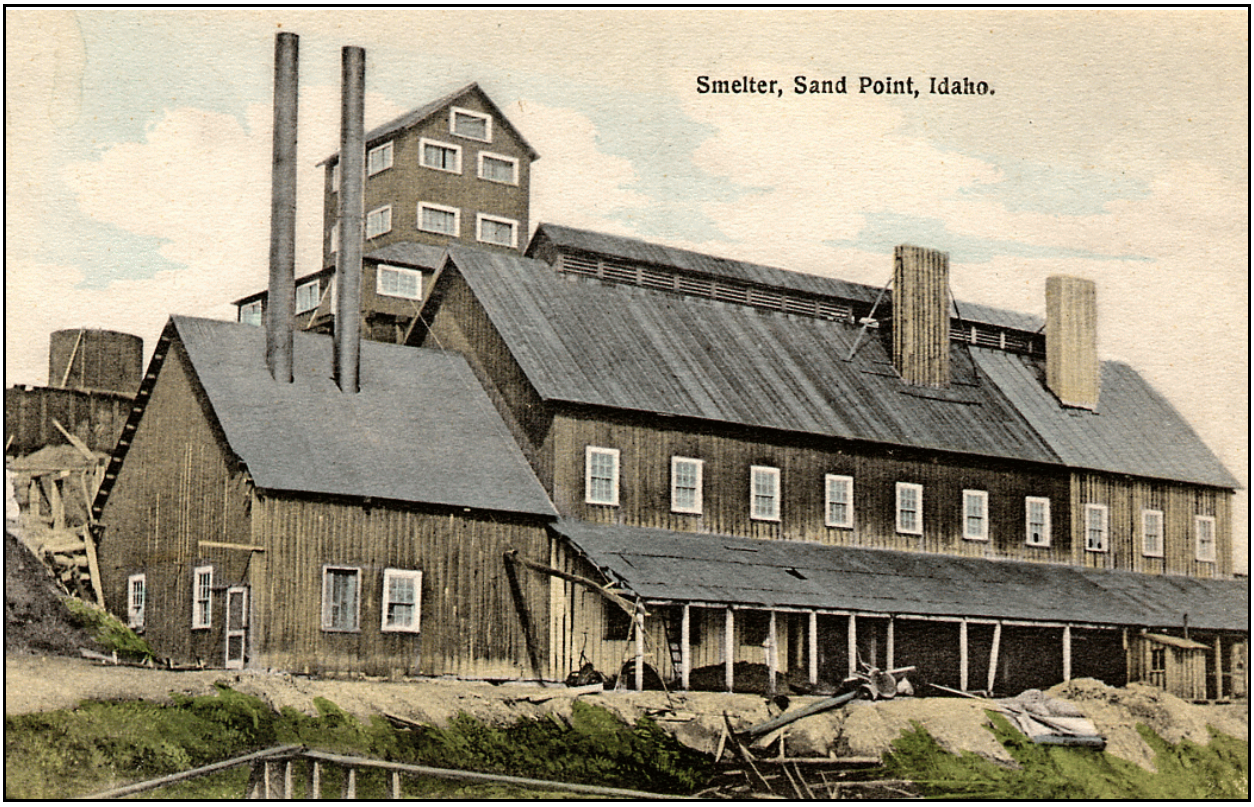


Figure 4. The Panhandle Smelter c. 1909.

Foiled Again!

Once again, a tangle of litigation brought work at the smelter to a halt. The Greenough brothers filed a suit in March 1909 against Idaho Smelting and Refining Co. and its president, J. Herbert Anderson, charging the company with over-issue of stock and Anderson with dishonesty. The district court responded by appointing John B. Mocine, an agent and employee of the Greenoughs, as receiver in the state of Idaho. A second suit against the smelter, presumably brought by the Greenoughs, was filed in Spokane, the company's principal place of business; this action resulted in the appointment of a second receiver for Washington state, A. Starke Oliver. W. A. Murphy, a stockholder and original vice president of Panhandle Smelting and Refining Co., filed a third lawsuit in Bonner County in April 1909 against the Greenough brothers and their agent, Mocine (*Pend d'Oreille Review*, 12 March 1909, 1:3-4, 23 April 1909, 5:1).

The Greenoughs' lawsuit had two major allegations. First, they claimed that they were given incomplete or inaccurate information concerning the smelter's creditors when they were investing heavily in the company. Second, they alleged that company officers issued 846,000 shares of stock more than the 5 million shares allowed, using these as security for their own private business deals. Anderson denied the charges. In explaining the over-issue of stock, he claimed that when stock in the new company was issued, approximately 800,000 shares of the old stock had been retained by attorney E. C. MacDonald instead of being canceled as required. Murphy, in his lawsuit, also denied most of the Greenoughs' allegations but admitted that smelter officials had not told the complete truth about company creditors. He asserted, however, that the Greenoughs had filed their lawsuit in an effort to close the company and force its sale, allowing them to take over (*Engineering and Mining Journal* 87, 24 April 1909:867; *Pend d'Oreille Review*, 12 March 1909, 1:3-4, 26 March 1909, 5:1-3, 23 April 1909, 5:1).

Allegations increased later that spring when smelter receiver Mocine charged Anderson with embezzlement. He claimed that company books indicated that Anderson had paid a Winnipeg firm $1,750 using a Panhandle Smelter check when the bill was personal and not related to smelter business. S. B. Phillips, former secretary and treasurer for the smelter company, testified at Anderson's hearing in May 1909. He said that there were a number of checks written for companies that were not on company books. He described a personal account for Anderson that was maintained on company books, with both deposits and withdrawals made by Anderson. While Mocine suggested that Anderson had taken as much as $50,000, Anderson's attorney claimed instead that his client had deposited $198,000 and withdrawn only $183,000. A witness for the state of Idaho claimed that Anderson had "insidiously and cunningly abstracted" $50,000 in corporate funds in a "studied, educated fraud." The judge, however, was unable to determine if the evidence was sufficient to hold Anderson, so he wasreleased. Anderson planned to sue Mocine for defamation of character as soon as charges were dismissed (*Engineering and Mining Journal* 87, 8 May 1909:970, 22 May 1909:1059; *Pend d'Oreille Review*, 7 May 1909, 1:1-3ff).

In defending himself against charges, Anderson countered that the Greenoughs were trying to

destroy the smelter company so they could buy it for the smelter trust. He said that while he was in New York having good success in raising money to keep the company going, Greenoughs applied for a receiver. Anderson believed they did this to hinder his fund raising and to keep him away from company affairs. With the company in receivership, investors did not want to provide capital. To stop the proceedings of both receivers, Anderson filed for bankruptcy. At that time, the company listed assets of $201,065.92 and liabilities of $498,952.18 (*Pend d'Oreille Review*, 7 May 1909, 1:1-3ff).

While the outcome of the charge of embezzlement is not known, the bankruptcy proceedings continued in U. S. District Court. Once the court found the company insolvent, it appointed Bruce Blake as receiver. All other actions against the smelter company were dismissed and Mocine was removed from his position of control. A trade journal wrote, "This is a virtual victory for President Anderson, who has, from the first, contended that those behind the previous actions brought against the company were actuated by personal motives." In July, Blake filed a report showing that the company's assets totaled $222,244 and its liabilities $501,559. The largest single debt was $71,280 owed to Fidelity National Bank of Spokane and First National Bank of Ponderay. Bankruptcy proceedings were finally dismissed on November 2, 1909 (*Engineering and Mining Journal* 87, 12 June 1909:1207; 88, 10 July 1909:187, 13 November 1909:994).

Settlement

After the acrimonious battles of spring, Anderson and the Greenough brothers reached agreement in August 1909 to end their legal disputes, allowing work to begin on restarting the smelter. By fall, Anderson was back raising money in the East. He secured an agreement with interests connected with James J. Hill to provide enough capital to triple the smelter's capacity and keep it running as long as Anderson could contract for enough ore. By mid-December, Anderson had raised $500,000 for operations. Prospects looked good for a while. J. J. Campbell, the new manager, arrived in Spokane in early December to begin work on ore contracts. Later that month he went to Ponderay to arrange for water for the smelter. A work crew was overhauling and repairing equipment at the facility (*Engineering and Mining Journal* 88, 14 August 1909:331, 28 August 1909:428, 9 October 1909:749, 25 December 1909:1288; *Spokesman-Review*, 6 December 1909, 8:3).

Stockholders of Idaho Smelting and Refining Co. held their annual meeting in January 1910 in Spokane. They elected Anderson as president, with the board of directors to include Anderson, Arthur B. Lee, E. K. Erwin, Thomas L. Greenough, W. J. C. Wakefield, W. W. Hindman, and J. L. Drumheller. The board announced that the creditors who furnished the $500,000 in capital would have their investment secured by a lien on all the ore treated at the smelter. In addition, any improvements to the plant would be funded through liens on the property. The company reported plans by early March to add two furnaces to the smelter and 70 men to the crew, enabling the smelter to increase its capacity from 250 to 600 tons per day. Manager Campbell had a crew of twenty men at work getting the facility in order so that smelting could begin by

mid-March. They were waiting Anderson's arrival to put fifty men to work installing two copper furnaces. At that time, the smelter had two furnaces but used only one, giving it a capacity of 250-300 tons per day. Once again, the company officials delayed the start of operations, saying that they expected to begin on April 1. Apparently this never happened. The Idaho mining inspector noted in 1911 that Lake Pend Oreille mines had obtained a favorable shipping rate to the East Helena smelter, suggesting that they had no alternative available locally (Bell 1911:26; *Engineering and Mining Journal* 89, 22 January 1910:238, 5 March 1910:530, 19 March 1910:629; *Spokesman-Review*, 1 March 1910, 8:7).

The End

Two sheriff's sales brought an end to the smelter at Ponderay. The court ordered the first sale following foreclosure proceedings by Union Trust and Savings Bank against Idaho Smelting and Refining Co. At the sale on May 2, 1913, Union Trust paid $250,000 for a block of properties including a number of townsite lots in Ponderay; Lot 2 and the W2NE of Section 11, T57N, R2W, with the "smelting plant, smelter, trackage and wharfage;" Lots 3, 5, and 8 in Section 4, T57N, R2W; E2NW of Section 11, T57N, R2W; associated water rights and flumes; steamboat and barges; and eight mining claims (Bonner County Deed Record, Book 31:583-585). A second sale of the same properties, on August 10, 1922, stemmed from a judgment against Ponderay Mining and Smelting Co. [*sic*] in favor of Union Trust Co. The sale took place on the courthouse steps and lasted just long enough for Attorney E. W. Wheelan to bid $70,000. (Although a newspaper account claimed the bid was $75,000, the deed record listed the amount as $70,000.) Wheelan noted that his client, Union Trust Co., held paper covering more than $53,000 in principal and $22,000 in interests and costs; other expenses brought the total to more than $80,000. He suggested that the smelter might be restored to use (Bonner County Deed Record, Book 42:157-161; *Pend d'Oreille Review*, 11 August 1922, 8:2).

The smelter did not return to use, however. Following the sheriff's sale, Union Trust Co. sold the facility to Union Iron Works of Spokane. Crews were busy by December 1922 dismantling the buildings and salvaging equipment like the Corliss engines. The crusher was sold to a road construction company, while brick from the roaster went to Humbird Lumber Co. for dry kilns and to Sandpoint Lumber and Pole Co. for its new sawmill at Troy, Montana. By that time, the town of Ponderay had fallen on hard times as well. The hotel had burned several years before, and buildings along two blocks of the main street were either collapsing or in poor repair. The bank building had been turned into a grocery store. Lots in town had lost value, with six lots selling for a total of $30, just $5 per lot. The big dreams hatched nearly twenty years before had come to naught (*Northern Idaho News*, 5 December 1922, 1:1).

EVALUATION

The goal of this study is to make a recommendation about the eligibility of the Panhandle Smelter. The criteria for evaluating eligibility are included in 36 CFR 60.4:

> The Quality of significance in American history, architecture, archaeology, 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 a 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.

For this historic site, research was conducted to develop an historical context as well to establish historical facts about construction and operation the Panhandle Smelter. The smelter is recommended as significant under Criterion A as the only example of an independent smelter operation in northern Idaho until the start of the Bunker Hill smelter in 1918. The site is also recommended eligible under Criterion D as an industrial archaeological site. The site retains the potential to inform about industrial construction and operation of a specialized process on a relatively small scale.

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