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**Seafoam Mine  
Custer County, Idaho  
Preliminary Assessment  
TDD: 99-02-0010**

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Contract: 68-W6-0008  
October 1999

Region 10  
***START***

Superfund Technical Assessment and Response Team

Submitted To: Monica Tonel, Task Monitor  
U.S. Environmental Protection Agency  
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127660



**PRELIMINARY ASSESSMENT  
SEAFOAM MINE SITE  
CUSTER COUNTY, IDAHO**

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## LIST OF ACRONYMS

<u>Acronym</u>	<u>Definition</u>
amsl	above mean sea level
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cfs	cubic feet per second
EPA	U.S. Environmental Protection Agency
mg/L	milligram per liter
mm	millimeters
PA	Preliminary Assessment
START	Superfund Technical Assessment and Response Team
TDL	Target Distance Limit

**PRELIMINARY ASSESSMENT  
SEAFOAM MINE SITE  
CUSTER COUNTY, IDAHO**

**1. INTRODUCTION**

Ecology and Environment, Inc., was tasked by the United States Environmental Protection Agency (EPA) to provide technical support for completion of a Preliminary Assessment (PA) at the Seafoam Mine site in Custer County, Idaho. E & E completed PA activities under Technical Direction Document No. 99-02-0010, issued under EPA, Region 10, Superfund Technical Assessment and Response Team (START) Contract No. 68-W6-0008. The specific goals for the Seafoam Mine PA, identified by the EPA, are to:

- Determine the potential threat to public health and/or the environment posed by the site;
- Determine the potential for a release of hazardous constituents into the environment; and
- Determine the potential for placement of the site on the National Priorities List.

Completion of the PA included reviewing existing site information, collecting receptor information within the range of site influence, determining regional characteristics, and conducting a site visit. This document includes a discussion of background site information (Section 2), a discussion of migration/exposure pathways and potential receptors (targets; Section 3), and a list of pertinent references (Section 4).

## 2. SITE BACKGROUND

### 2.1 SITE LOCATION

Site Name:	Seafoam Mine
CERCLIS ID No.:	IDSFN1002115
Location:	Custer County, Idaho
Latitude:	44°31'45" North
Longitude:	115°07'41" West
Legal Description:	Sections 20 and 21, Township 14 North, Range 11 East, Boise Meridian
Site Owner:	Mr. Craig and Mrs. Ann Peters Box 196 Genoa, Nevada 89411
Site Contact:	Mr. Craig and Mrs. Ann Peters Box 196 Genoa, Nevada 89411

The Seafoam Mine site is located in the Seafoam Mining district in northwest Custer County, Idaho, approximately 45 miles north of Stanley, Idaho (Figure 2-1). The property is near the headwaters of Harlan Creek, which is a tributary to Float Creek, which in turn is a tributary to Rapid River. Elevation at the mine ranges from approximately 7,000 feet above mean sea level (amsl) at the lower end to 8,500 feet amsl on the upper ridge. The surrounding area of the Seafoam Mining District is designated as *Frank Church River of No Return Wildness* (USGS 1990).

Access to the site is by an unimproved gravel road open between late June and October.

### 2.2 SITE DESCRIPTION

The mining area is privately owned but is located entirely within the Salmon River Division of the Challis National Forest. The Seafoam Mine property covers approximately 450 acres (Peters 1999).

The major features of the site include two or three dilapidated bunkhouses built at approximately 7,000 feet amsl in the 1920s, remnants of a historical mill house, a tailings pile of approximately 270,000 cubic feet, and two rusted empty barrels and a boiler (scattered near the tailing pile; Figure 2-2). The mill house and tailings pile are located approximately 200 feet topographically above the bunkhouse. An open adit is located in the hill approximately 10 feet above the tailings pile. According to Mr. Peters, the property owner, four adits are located at the property. Two are open, and the other two have caved in. No surface water was observed flowing from the remaining adits (E & E 1999).

### **2.3 SITE OPERATIONS AND WASTE CHARACTERISTICS**

The Seafoam Mine was first owned by the United Metals and Power Corporation in the 1920s (Wheeler 1999). In 1926, the United Metals and Power Corporation personnel began development of the property. By 1928, they had installed a 50-ton amalgamation and concentration plant and during that year shipped some bullion to Boise, Idaho. Work was halted in July 1928 because of financial difficulties, and production in the district dropped (Treves et al. 1953). In 1929, little ore was mined. From 1928 to 1940, the mine was owned and operated for a short time by Seafoam Mining Company (Wheeler 1999). Between 1940 to 1973, the mine was owned by Mrs. Alex Swigerts and her husband. No mining operation was conducted by the Swigerts. In 1973, Mrs. Swigerts sold the property to Umont Mining Company. Umont Mining Company conducted some exploration work, but no mining operations were conducted (Wheeler 1999). In July 1998, Umont Mining Company sold the Seafoam Mine site to Mr. and Mrs. Peters.

The Seafoam Mine mainly produced gold ores. The mineralized zones consist of sheared and altered granitic material with quartz monzonite that was cut by dikes and stringers of aplite, pegmatite, and lamprophyre. Quartz and altered rock contain disseminated pyrite, which often carries some silver and gold (Ross 1956). The milling process consists of crushing and grinding the ore to fine sizes and then loading it to a flotation process where a surfactant was used to concentrate gold-rich ore. The remaining slimes were discharged as tailings.

The principal workings on the Seafoam Mine are four tunnels with a total length of approximately 600 feet. No mining operations have been conducted on site since 1940 (Peters 1999). The tailings pile appears to be the only waste of concern at the historical mill site. However, the pile appears to be stable and is located far above Harlan Creek.

## 2.4 SITE INVESTIGATIONS

In 1994, the Idaho Geological Survey, in cooperation with the University of Idaho, conducted an extensive review of 300 inactive or abandoned mines in the south side of the Salmon River. The Seafoam Mine was one of the reviewed sites. The review, sponsored by the United States Forest Service, started in 1994 and finished in 1995. The scope of work included geological surveys and site observations. According to the Site Inspection Report, open adits at lower and upper elevations were visible at the site. Dilapidated bunkhouse and kitchen facilities, as well as an ore bin and remnants of the mill, remained at the site. More than 500 cubic yards of mine tailings was estimated to be present at the site, but they were reported to be located far above Harlan Creek and stable (Moye 1994). No discharge from the adits was observed, and the potential of contamination from the mine was considered to be at a medium level (Moye 1994).

In January 1998, Mr. Peters collected a surface water sample from a location approximately 0.3 mile downstream of the tailings in Harlan Creek. The sample was analyzed for metals, but the analytical method is not known. The result shows no detection of heavy metals, with arsenic less than 0.025 milligram per liter (mg/L), barium less than 0.05 mg/L, copper less than 0.05 mg/L, manganese less than 0.05 mg/L, magnesium less than 0.1 mg/L, and lead less than 0.007 mg/L (Peters 1999). In July 1998, Mr. Peters collected two surface water samples from Harlan Creek and five samples from the tailings to determine whether contamination was present on the property. One water sample was collected from a small tributary (Craig Creek) of Harlan Creek, 0.3 mile downstream of the tailings pile. The sample was collected approximately 25 feet upstream of the tributary's confluence with Harlan Creek. The second water sample was collected from Harlan Creek approximately 15 feet above the confluence with Craig Creek. The water samples were analyzed for lead, mercury, and total cyanide by Alchem Laboratories, Inc., Boise, Idaho. No lead, mercury, or total cyanide were detected above the detection limits (0.002 mg/L for lead, 0.0002 mg/L for mercury, and 0.005 mg/L for total cyanide).

The five tailings samples were located from equidistantly spaced sample locations along a transect line placed lengthwise along the center. The samples were lettered *A* through *E*. Samples *A* and *D* were collected at 1.5 feet below ground surface (bgs), sample *B* was collected at 4 feet bgs, sample *C* was collected at 2 feet bgs, and sample *E* was collected at 1 foot bgs (Peters 1999). The samples were analyzed for metals by Alchem Laboratories, Inc.. Analytical methods were not provided. The results are shown in Table 2-1.

Table 2-1

JULY 1998 TAILINGS SAMPLE RESULTS  
 SEAFOAM MINE  
 CUSTER COUNTY, IDAHO  
 (mg/kg)

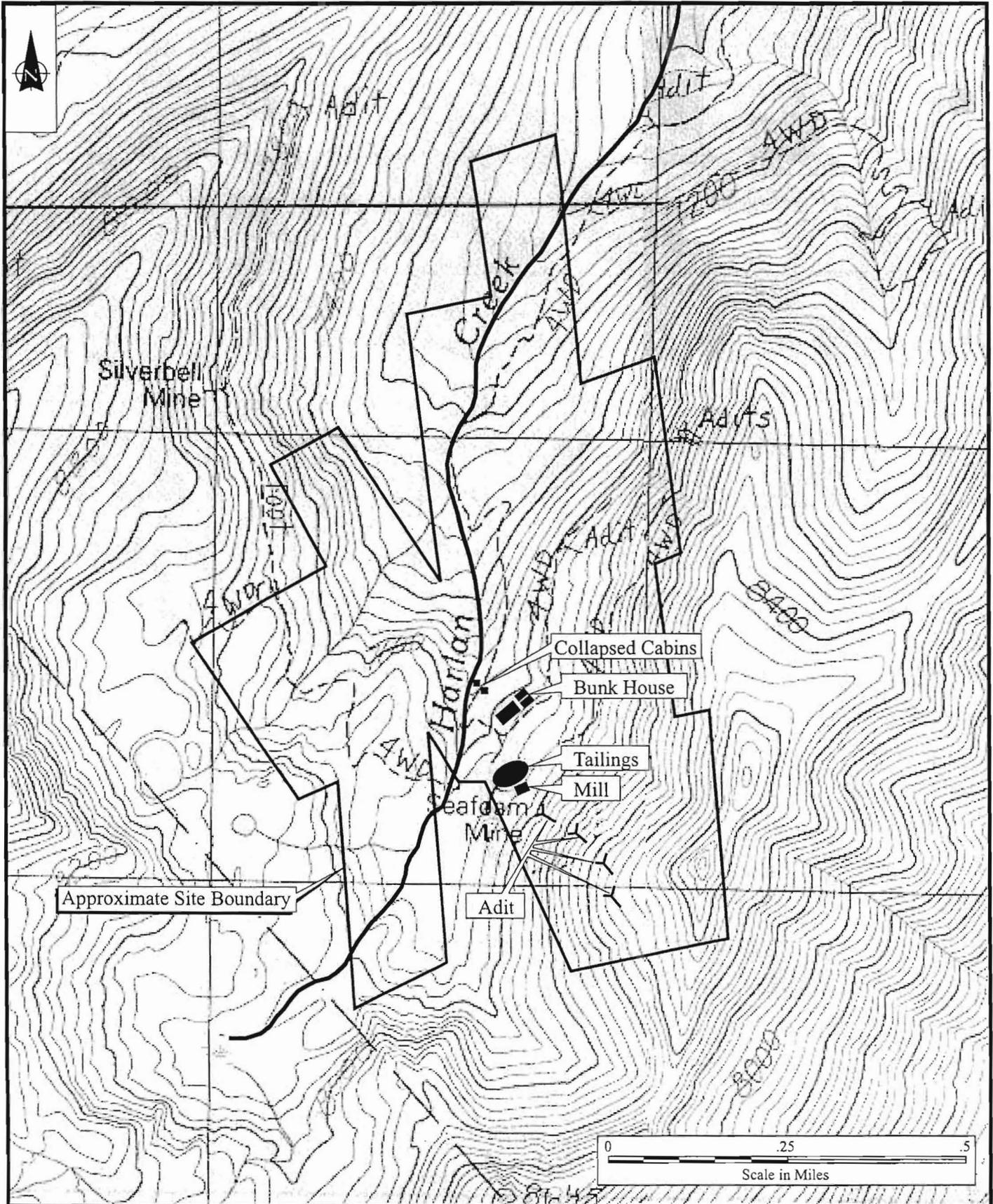
Sample ID	Lead		Mercury		Total Cyanide	
	Wet	Dry	Wet	Dry	Wet	Dry
A (1.5' bgs)	<b>669.0</b>	<b>738.0</b>	<b>0.121</b>	<b>0.133</b>	<0.25	<0.28
B (4' bgs)	<b>332.0</b>	<b>408.0</b>	<b>2.70</b>	<b>3.32</b>	<0.25	<0.31
C (2' bgs)	<b>311.0</b>	<b>412.0</b>	<b>0.276</b>	<b>0.366</b>	<0.25	<0.33
D (1.5' bgs)	<b>310.0</b>	<b>373.0</b>	<b>0.181</b>	<b>0.218</b>	<0.25	<0.30
E (1' bgs)	<b>459.0</b>	<b>598.0</b>	<b>0.517</b>	<b>0.674</b>	<0.25	<0.33

Source: Peters 1999. **Bold** indicates the analyte was detected above sample quantitation limit.

Key:

- bgs = below ground surface.
- ID = Identification.
- mg/kg = milligrams per kilogram.
- PA/SI = Preliminary Assessment/Site Assessment.





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 Custer County, Idaho

Figure 2-2  
 SITE LOCATION MAP

Source: USGS, Soldier Creek, Idaho, 1990

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### **3. MIGRATION/EXPOSURE PATHWAYS AND TARGETS**

The following sections describe migration/exposure pathways and potential targets within the site's range of influence (Figure 3-1).

#### **3.1 GROUNDWATER MIGRATION PATHWAY**

The Seafoam Mining district lies inside the eastern border of the Idaho batholith and is underlain mainly by quartz monzonite and granodiorite belonging to that mass. Dikes of aplite, lamprophyre, and rare pegmatite belonging to the same period of igneous activity are locally abundant (Ross 1956). The rock consisting of granodiorite is moderately dark gray and faintly gneissic, because of the sub-parallel orientation of biotite and hornblende. The average rock is a medium-grained phanerite. The average grain size is about 8 millimeters (mm), and the grain size range is 2 to 15 mm. The average mineral composition of the granodiorite includes 35% andesine, 28% quartz, 25% orthoclase-microcline, and 10% biotite. The rock consisting of quartz monzonite is light gray, weathering pale yellow-gray, or pale brown. This rock tends to be finer-grained than the granodiorite. The average rock of quartz monzonite is a medium-grained phanerite, which has an average grain size of about 3 mm. The average mineral composition of quartz monzonite includes 41% quartz, 27% orthoclase, 26% oligoclase, and 3% biotite (Treves 1953).

No hydrogeological survey has been done in the area. Because of the geologic formation, groundwater occurs only in joints and fractures. No groundwater wells or residents are identified within a 4-mile radius of the mine site (IDWR 1999a; EPA 1999).

#### **3.2 SURFACE WATER PATHWAY**

The historic tailings pile is located approximately 0.1 mile from Harlan Creek. The probable point of entry is located in Harlan Creek below the tailings pile (Figure 2-2). Harlan Creek flows approximately 2.1 miles northeast into Float Creek. Float Creek, in turn, flows 2.5 miles east into Rapid River. The course of Rapid River near the site is northbound, and then the river turns west to flow approximately 9 miles to its confluence with the Middle Fork of Salmon River. Figure 3-1 depicts the

15-mile target distance limit (TDL) downstream of the site. The flow rate of Harlan Creek is estimated to be less than 0.04 cubic foot per second (cfs), and the flow rate of Float Creek is estimated to be 0.1 cfs. The flow rate of Rapid River is approximately 121 cfs measured 100 feet upstream of the confluence with the Middle Fork of Salmon River (Ondrechen 1999), and the flow rate for the Middle Fork of Salmon River is approximately 768 cfs measured approximately 3.5 miles downstream of the confluence with Rapid River (Ondrechen 1999).

The tailings are not located on a flood plain. The average annual precipitation and the two-year, 24-hour rainfall event recorded at the nearest station (Stanley) are approximately 14.63 and 2 inches, respectively (WRCC 1998). The total drainage area is approximately 5 acres (Moye 1994).

No drinking water is drawn from Harlan and Float creeks, Rapid River, or the Middle Fork of Salmon River within the 15-mile TDL (IDWR 1999b). Since they purchased the property in 1998, Mr. and Mrs. Peters have camped at the site for approximately two months (July and August) each year. During that period, drinking water has been drawn from Craig Creek, a tributary of Harlan Creek. Within the 15-mile TDL, surface water is not used for commercial irrigation or livestock watering.

The Middle Fork of Salmon River and its tributaries support sport fishing, but mainly for catch and release. No fish are caught for consumption (Jodlowski 1999). The Idaho Department of Fish and Game (IDFG 1998) stipulates that all fish species in the Rapid River and its tributaries, if caught, must be released.

Within the 15-mile TDL, Rapid River and its tributaries are critical habitats for the federal-listed threatened Snake River spring/summer/fall Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*O. mykiss*), and for the federal-listed threatened fish species such as bull trout (*Salvelinus confluentus*). In addition, Rapid River and its tributaries are spawning areas critical for maintenance of resident fish species such as bull trout (*Salvelinus confluentus*), cutthroat trout (*O. clarki henshawi*), and Westslope trout (*O. clarki lewisi*; Jodlowski 1999). The Middle Fork of Salmon River is federally designated as a wild and scenic river (USGS 1990).

A National Wetlands Inventory map has not been produced for the area; therefore, whether there are wetlands within the 15-mile TDL is unknown (Block 1999).

### 3.3 SOIL EXPOSURE PATHWAY

The Seafoam Mine site is located in a remote mountainous area with little public access. No residents are located within a 4-mile radius of the site (EPA 1999). No federal- or state-designated

endangered or threatened terrestrial species were identified at the site (Stephens 1999).

Since they purchased the property in 1998, Mr. and Mrs. Peters have camped at the site for approximately two months (July and August) each year. During the site visit; the START was told by Mr. and Mrs. Peters that they plan to use the portion of the property near Harlan Creek for recreation.

No commercial agriculture, silviculture, or livestock production or grazing take place on the site.

### **3.4 AIR MIGRATION PATHWAY**

Little vegetation was observed on the tailings pile. No residents are located within a 4-mile radius of the site. No federal- or state-designated endangered or threatened species were identified within a 4-mile radius of the site (Stephens 1999). The Seafoam Mine is located 0.5 mile from the boundary of the federally designated Frank Church River of No Return Wilderness (USGS 1990).

Since they purchased the property in 1998, the Mr. and Mrs. Peters have camped at the site for approximately two months (July and August) each year. During the site visit, the START was told by Mr. and Mrs. Peters that they plan to use the property for recreation.

National Wetlands Inventory maps have not been produced for the area; therefore, whether there are wetlands within the 4-mile TDL is unknown (Block 1999). During the site visit, the START observed a swampy area of approximately 0.06 acre located upstream of Harlan Creek where emergent grass and willow grow.

No commercial agriculture, silviculture, or livestock production or grazing take place within 4-mile TDL.

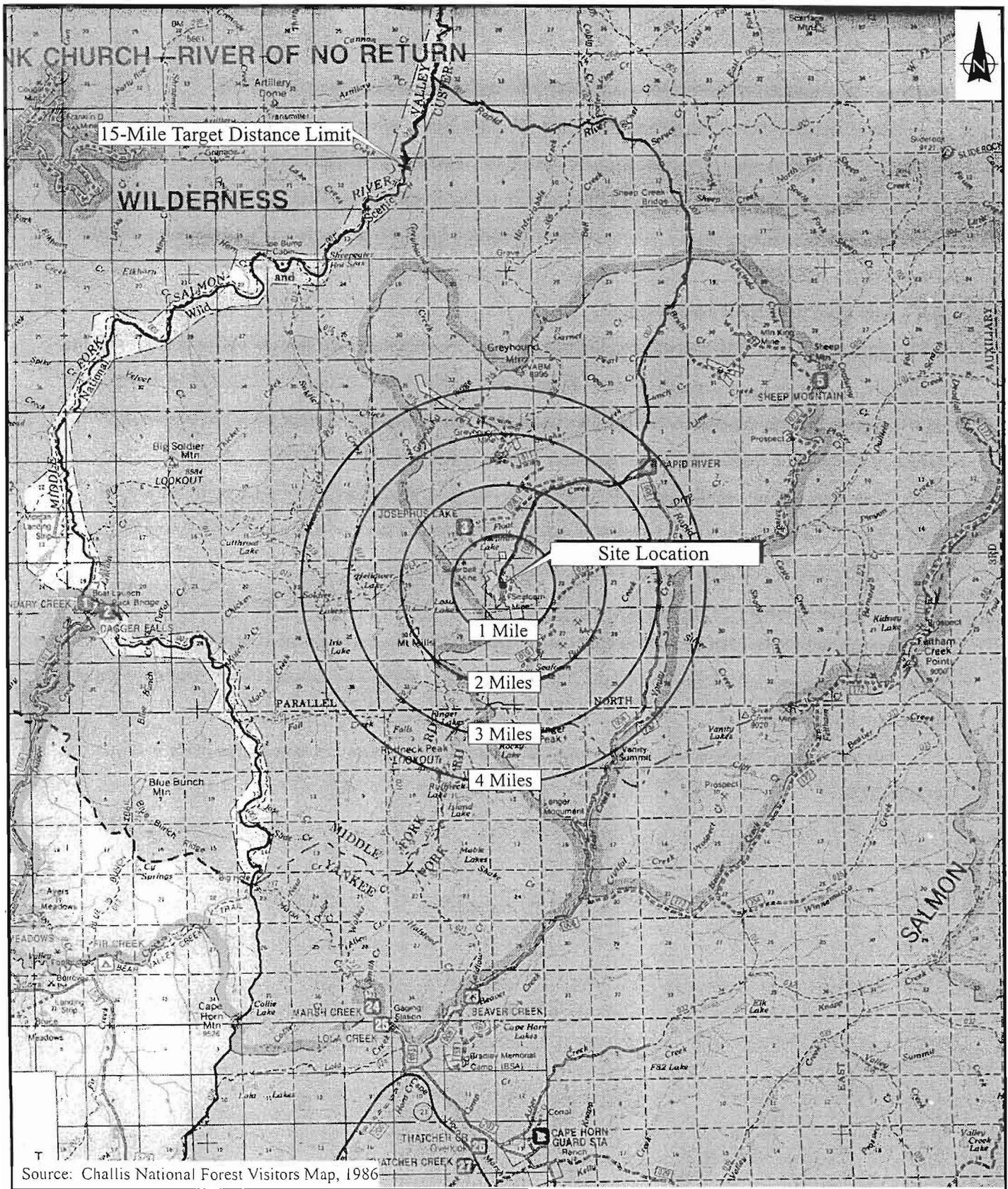
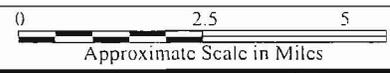


Figure 3-1

4-MILE RADIUS AND 15-MILE  
DOWNSTREAM MAP

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Custer County, Idaho



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#### 4. REFERENCE LIST

- Block, Elaine, August 19, 1999, personal communication, Wetland Specialist, United States Fish and Wildlife Service, Region 1, telephone conversation with Lilin Li, Ecology and Environment, Inc., Seattle, Washington.
- Ecology and Environment, Inc.(E & E), July 1999, Site observations and field logbooks for the Seafoam Mine site visit.
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- Peters, Craig, August 19, 1999, Owner Seafoam Mine property, data faxed to Lilin Li, Ecology and Environment, Inc., Seattle, Washington.
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- United States Geological Survey (USGS), 1990, Soldier Creek, Idaho, quadrangles, Provisional edition, 7.5-Minute Series topographic maps.

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Wheeler, Duly, August 18, 1999, personal communication, Former President, Umont Mining Company, telephone conversation with Lilin Li, Ecology and Environment, Inc., Seattle, Washington.

**ATTACHMENT A**  
**PHOTOGRAPHIC DOCUMENTATION**

**PHOTOGRAPH IDENTIFICATION SHEET**

Camera Serial #: N/A  
 Lens Type: Disposal Kodak Camera

TDD #: 99-02-0010

Site Name: Seafoam Mine, Custer County, Idaho

Photo No.	Dir.	Date	By	Time	Description
1	NE	07/15/99	LL	0745	Float Creek near the access road downstream of Seafoam Mine.
2	N	07/15/99	LF	0850	The 1940s mine bunkhouse below the tailings pile.
3	S	07/15/99	LF	0858	Remnants of a possible former outhouse near the bunkhouse.
4	NE	07/15/99	LF	0900	Remnants of the 1920s cabin below the tailings pile.
5	E	07/15/99	LF	0935	Tailings pile and former mill structure. Foreground shows an abandoned boiler.
6	N	07/15/99	LF	0940	Tailings and rock pile.
7	E	07/15/99	LF	0950	The lowest adit above the tailings pile.
8	W	07/15/99	LF	0951	Mill remains from behind the mill.
9	W	07/15/99	LF	0958	Panoramic view of the tailings pile, bunkhouse, and access road.
10	NE	07/15/99	LF	0959	Reddish-colored rock above the lowest adit showing the ore vein.
11	S	07/15/99	LF	1012	Common building below the tailings pile.
12	SW	07/15/99	LF	1015	Bunkhouse below the tailings pile.
13	NW	07/15/99	LF	1017	Bunkhouse
14	S	07/15/99	LF	1021	Partially collapsed cabin behind the common building.
15	W	07/15/99	LF	1022	Second cabin behind the common building.
16	S	07/15/99	LF	1025	Two completely collapsed cabins near the bunkhouse.
17	W	07/15/99	LF	1040	Harlan Creek at the probable point entry (PPE) from the bunkhouse area.
18	SW	07/15/99	LF	1042	Harlan Creek downstream of the bunkhouse.
19	E	07/15/99	LF	1053	Swampy level area upstream of the PPEs on Harlan Creek.
20	D	07/15/99	LF	1057	Close-up of vegetation around the swamp.
21	D	07/15/99	LF	1058	Vegetation around the swamp.
22	D	07/15/99	LF	1100	Close-up of vegetation around the swamp.
23	E	07/15/99	LF	1125	Mine tailings pile and mill structure from the opposite ridge. The small black dot in the background is the mill structure.

Key:

- D = Down.
- Dir. = Direction.
- E = East.
- LF = Linda Foster
- LL = Lilin Li
- N = North.
- N/A = Not applicable.
- NE = Northeast.
- NW = Northwest.
- S = South.
- TDD = Technical Direction Document.
- W = West