

**TIN CUP MINE & MILL  
PRELIMINARY ASSESSMENT REPORT  
LEMHI COUNTY, IDAHO**

**STATE OF IDAHO  
DEPARTMENT OF ENVIRONMENTAL QUALITY**

December 2002

Submitted To:  
U.S. Environmental Protection Agency  
Region 10  
1200 Sixth Avenue  
Seattle, WA 98101



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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
1200 Sixth Avenue  
Seattle, WA 98101

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MAY 15 2003  
D.E.Q. STATE WASTE  
MANAGEMENT & REMEDIATION DIVISION

May 7, 2003

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MAY 09 2003

DEPARTMENT OF  
ENVIRONMENTAL QUALITY  
BOISE REGIONAL OFFICE

Reply To  
Attn Of: ECL-115

Robert Simi  
P.O. Box 1049  
Salmon, ID 83467

Dear Mr. Simi:

The Idaho Department of Environmental Quality (DEQ) has completed a report summarizing the findings of a visit conducted at the Tin Cup Mine and Mill site in August, 2002. A copy of the report, called a Preliminary Assessment, is enclosed.

Based on a review of this assessment, EPA has determined that no further action is warranted at the site. A no further action designation means that no additional steps under the Federal Superfund Program will be taken at the site unless new information warranting further Superfund consideration is discovered. EPA's no further action designation does not relieve your facility from complying with appropriate Idaho state regulations.

In accordance with EPA's decision regarding the tracking of no further action sites, the above named site will be removed from the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) data base and placed in a separate archival data base as a historical record. Archived sites may be returned to the CERCLIS site inventory if new information necessitating further Superfund consideration is discovered.

We appreciate your cooperation during the site visit. If you have any questions, please feel free to contact me at (206)553-2782.

Sincerely,

Ken Marcy  
Site Assessment Manager

Enclosure

cc: Bruce Schuld, Idaho Department of Environmental Quality  
Monica Lindeman, US EPA, ECL-115  
Craig Conant, EPA SF Records Center, ECL-076



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STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706-1255 • (208) 373-0502

Dirk Kempthorne, Governor  
C. Stephen Allred, Director

January 7, 2003

Warren and Robert Simi  
P.O. Box 1049  
Salmon, Idaho 83467

RE: Preliminary Assessment of the Tin Cup Mine and Mill

Gentlemen;

The Department of Environmental Quality (DEQ) appreciates your cooperation during our inspection of the Tin Cup Mine and Mill (Site). The Preliminary Assessment Report (attached), which resulted from our visit, documents DEQ's findings relative to operations at the airport specifically dealing with the use, handling and disposal of hazardous or deleterious materials. In brief, DEQ did not find anything that poses a risk to human health or the environment, and I am, therefore, not recommending any additional site visits or actions at the Site.

Although DEQ did not find any problems related to the Site, I would greatly appreciate the opportunity to assist you if you have and questions or concerns which arise in the future. Thank you again.

Sincerely,

A handwritten signature in cursive script, appearing to read "Bruce A. Schuld".

Bruce A. Schuld  
Mine Waste Projects Coordinator  
Waste Management & Remediation Division

BAS:ab C:\My Documents\Bruce\Correspondence\PA Letter Tin Cup Mine and Mill January 7.doc

attachment

cc: Jim Johnston, Idaho Falls Regional Office  
Source File  
Reading File

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## LIST OF ACRONYMS

<u>Acronym</u>	<u>Definition</u>
amsl	above mean sea level
DEQ	Department of Environmental Quality
EPA	United States Environmental Protection Agency
gpm	gallons per minute
PPE	Probable Point of Entry
TDL	Target Distance Limit

## 1. INTRODUCTION

The Department of Environmental Quality (DEQ) was contracted by Region 10 of the United States Environmental Protection Agency (EPA) to provide technical support for completion of a preliminary assessment (PA) at the Tin Cup Mine and Mill site located near Challis, Idaho, in Lemhi County. DEQ completed PA activities in accordance with the goals listed below.

The specific goals for the Tin Cup Mine and Mill PA, identified by the DEQ, are to:

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

Conducting the PA included reviewing existing site information, collecting receptor information within the site's range of influence, determining regional characteristics, and conducting a site visit. This document includes a discussion of site background information (Section 2), a discussion of migration/exposure pathways and potential targets (Section 3), and a list of pertinent references. Photographic documentation is included in Appendix A and sample analyses are included in Appendix B.

2. SITE BACKGROUND

2.1 SITE LOCATION

Site Name: Tin Cup Mine and Mill

CERCLIS ID No.:

Location: Lemhi County, Idaho

Latitude: 44° 96' 71" N

Longitude: 114° 53' 20" W

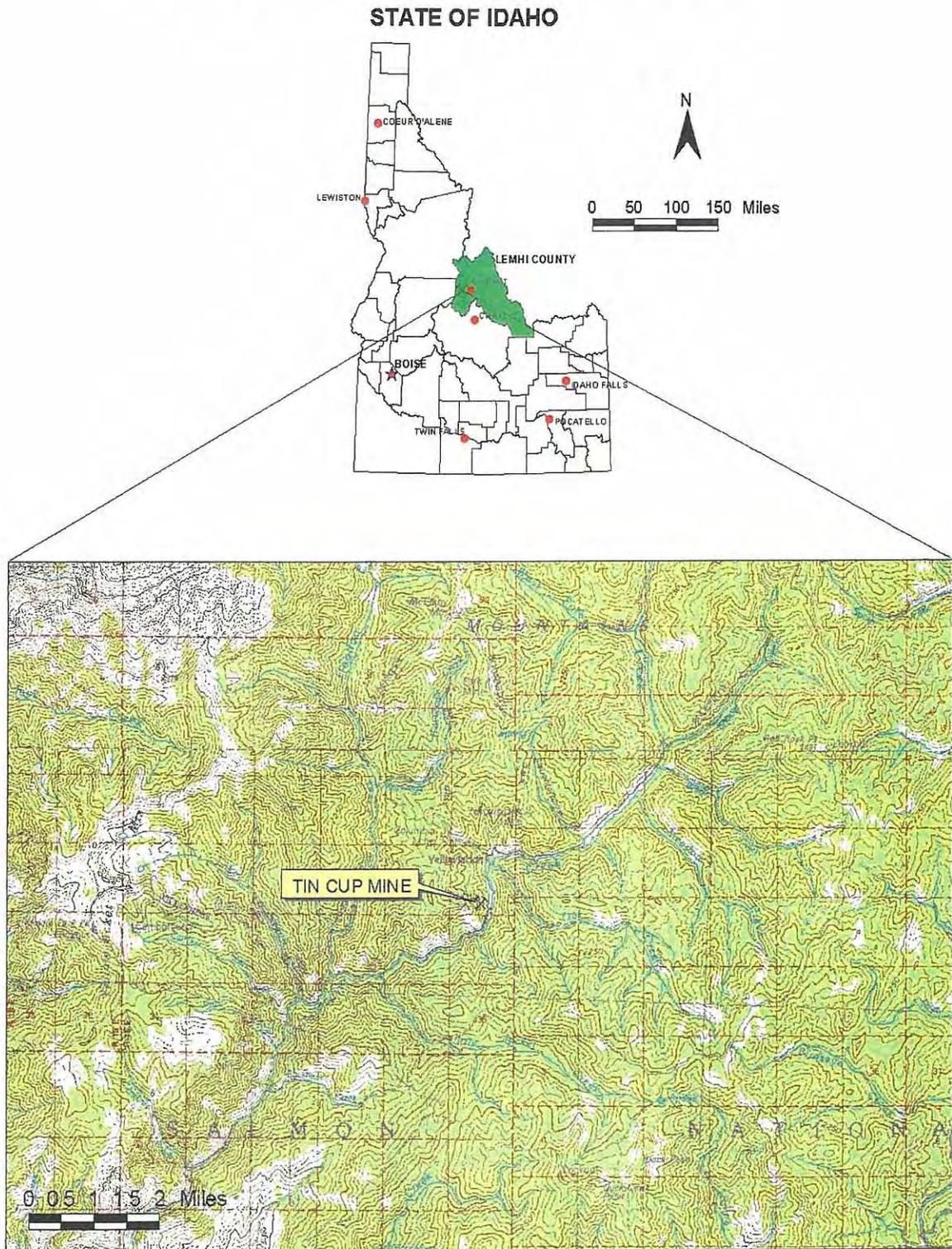
Legal Description: Section 24, Township 19N, Range 16E, Boise Meridian

Congressional District: Idaho

Site Contact: Robert and Warren Simi  
P.O. Box 1049  
Salmon, ID 83467

FIGURE 2-1

Fig. 2-1. Site Vicinity Map; Tin Cup Mine



## 2.2 SITE DESCRIPTION/OWNERSHIP HISTORY

The Tin Cup Mine and Mill are located in Lemhi County, Idaho, approximately 50 miles north-northwest of Challis, Idaho, 50 miles southwest of Salmon, Idaho, 21 miles southwest of the former townsite of Cobalt, Idaho (Figure 2-1), and 1.0 mile from the Yellowjacket townsite. The Tin Cup Mine consists of two adits. The upper adit appears to have been constructed during the late 1800s, at an elevation of 6,040 feet above mean sea level (amsl), while the lower adit appears to represent mid-1900 construction, at an elevation of 5,900 feet above mean sea level (amsl). The Tin Cup Mill (Mill) appears to have been constructed at the same time as the lower adit at an elevation of 5,860 feet amsl. The Tin Cup Mine and Mill, which are located in the Yellowjacket Mining District along the northwest side of Yellowjacket Creek, lie approximately 1.0 miles south of the Yellowjacket town site.

Little is known of the geology of the Tin Cup Mine (Mine) workings. Based upon DEQ field interpretation, however, outcrops and mine dump waste appear to indicate similarities to the Columbia Mine, although quartz veins containing sphalerite are prominent. Umpleby (1913) described the ore of the Columbia mine from a "specimen of altered calcareous schist from the northeast corner of the Columbia Mill contains many little veinlets of calcite, scattered quartz grains, pale-green hornblende, poikilitic scapolite (mizzonite), and a few flakes of biotite, each intergrown with or included in the other. Pyrite is sparsely distributed through the section" (p.167). "The principal veins strike N 50°-60° E. and dip northwest; other, of much less importance, strike almost at right angles to these. In places, as in the Black Eagle mine, the ore bodies follow the bedding, but more frequently, as in the Yellow Jacket and probably also the Columbia, they are independent of it" (ibid. p.169). The veins of the Columbia Mine occur "along breccia zones and the metallic contents" (ibid. p.169) "are carried not only in the interstitial quartz, but often in the fragments of the schists and slates themselves" (Eldridge, 1895, p.53). Umpleby (1913) suggests the pyrite encountered at the Columbia Mine is devoid of gold, but pyrite possibly carries gold in the other properties in the Yellowjacket District. The Columbia Mine contained base metals including "chalcopyrite, sphalerite, and galena, the latter two being nowhere abundant...In the Columbia chalcopyrite is more conspicuous and the gold may be included in it" (ibid. p. 169).

Ownership history of the Tin Cup Mine and Mill is vague. The Yellowjacket District was discovered in 1869. "The most productive period in history of the district is reported to have been from 1893 to 1897" (Ross, 1934 p. 107). No mention of the Tin Cup appears in any of the Idaho Inspector of Mines annual reports (1899-1970). Based upon limited information, the Upper adit was probably driven during the 1890s when district-wide activity was at its zenith. The Lower adit and Mill appear to be of later construction. Specifically, the Mill is equipped with a pug mill, grizzly and ball mill, which appear to be of 1940s manufacture.

At the time of the site visit, Mr. Robert (?) Simi and his family were vacationing at the Tin Cup claim site. Mr. Simi explained the Simi brothers worked the Tin Cup claims, but the

Mill was located on a separate claim operated by a Mr. Baker (Figure 2-2). According to the Lemhi County Assessors Office in Salmon, the Mine is not a patent claim. The Simis filed annual assessments on four claims, the Tin Cup 1, 2, 3 and 4, with the Lemhi County Clerk in 1987, 1988, 1993 and 2001. A thorough review of records by the County Clerk, however, did not reveal any claims by "Baker" near the Tin Cup.

### 2.3 SITE OPERATIONS AND WASTE CHARACTERISTICS

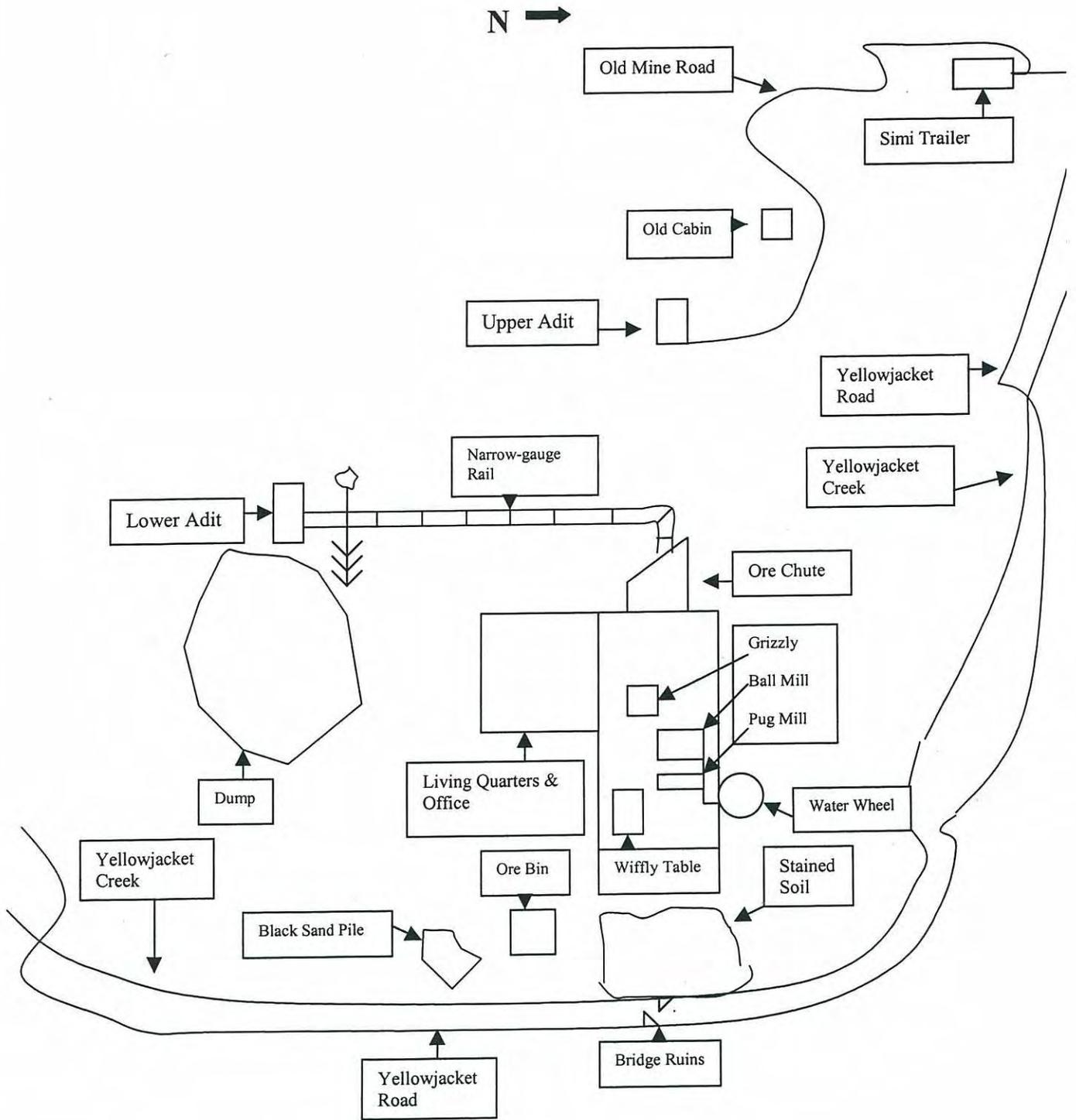
The mineral deposits of the Tin Cup Mine are relatively unknown. Based upon direct observation of mine dump waste rock and outcrops, it appears base metals including arsenopyrite, chalcopyrite, sphalerite, galena and pyrite are the primary ore constituents. Umpleby (1913) suggested gold values were probably associated with the chalcopyrite in the Columbia mine ore. Perhaps, similar associations occurred in the Tin Cup deposits. The Mill was equipped with a waterwheel powered ball mill and grizzly and a wiffly table was used to concentrate the ore. Living quarters of concrete block construction appear to have been subsequently added to the Mill.

Mill tailings from operations lie within the Yellowjacket Creek drainage. Mill operations slurried the tailings into Yellowjacket Creek; remnants of the tailings are visible on both banks of the creek, though these are not extensive. The Mill is located approximately 15 feet above Yellowjacket Creek.

### 2.4 DEQ ACTIONS

DEQ conducted a site visit on August 7, 2002. The claim holders of the Mine property are Robert and Warren Simi. Mr. Robert Simi was present during the site visit. The Simi family occupied a trailer on the northern portion of the Tin Cup claim. We introduced ourselves and asked permission to inspect the site. Mr. Simi provided approval, but did not accompany DEQ around the site.

Figure 2-2  
SITE MAP



The upper adit site was not fenced and easily accessible from the adjacent Yellowjacket Road, but access to the Simi's vacation property and to the old mine road (behind the Simi's trailer) was posted with "Private Property" and no trespassing signage. The adit could also be reached by climbing the steep hillside above the Mill. Site features include the old cabin in ruins (not pictured), an adit and a rudimentary smelter (Photo Mvc-001).



Mvc-001  
Upper Adit

The adit appeared caved a few yards beyond the portal, while the "smelter room" contained several black powder canisters of unknown quantity (Photo Mvc-003). The upper adit



Mvc-003  
Upper Adit Portal and Smelter Room

which appeared caved did not contain any standing water, nor was there evidence of drainage.

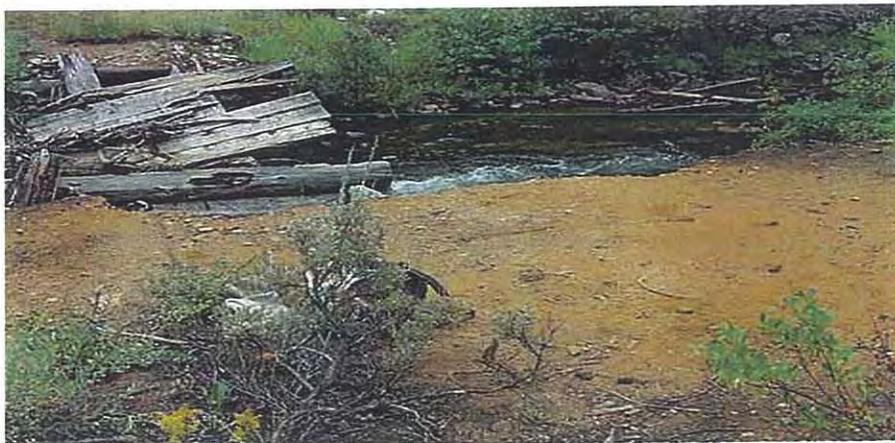
As the original bridge to the Mill had been dynamited (verbal communication, Mr. Simi), access to the site was gained by crossing Yellowjacket Creek at a Yellowjacket Road bridge, located approximately 0.25 miles downstream from the site. A trail (not maintained) led to the Mill. Remnants of placer activity could be found alongside the trail. Ross (1934) mentions the mining of gravel below the townsite of Yellowjacket by "hydraulic methods" (p.108).

A pile of black sand, located amid rusty barrels (Photo Mvc-006) was encountered at the south approach to the Mill. An ore bin located a few yards beyond the drums appeared to contain similar material. The sand was not identified elsewhere on the site.



Mvc-006  
Tailings Piles

The soil adjacent to the eastside of the Mill was stained a dark yellow color (Photo Mvc-005). Closer inspection, while collecting a soil sample (Appendix B), revealed the soil remained stained four inches beneath the surface.



Mvc-005  
Stained Soil (foreground), bridge ruins in Yellowjacket Creek

The lower adit appeared to be open, but safety concerns prohibited further inspection beyond the covered portal. Standing water was observed in the adit, but no discharge was noted. A narrow-gauge rail led from the lower adit to an ore chute at the apex of the Mill. Apparently, the ore cars were conveyed by block and tackle to the Mill. An uprooted fir had fallen across the rail at the portal. The Mill building appeared to have been built in stages over several years (Photo Mvc-007). The uppermost portion consists of rough-cut timbered ore chute; the middle portion, constructed of concrete blocks, housed the living quarters and office, while the lower portion housed the operations. The roof is covered with tin sheets and appears sound as the equipment inside had not rusted severely (Photo Mvc-004).



Mvc-004

Ball mill (right), pug mill (center),  
wiffly table (left center, beneath window)



Mvc-007

Covered portal of lower adit (top left), rail to ore chute (top), water wheel on right side of building (hidden by branches), stained soil (bottom center), ore bin (bottom left)

The upper waste rock dump was not well defined due to the steep slope. The lower dump, however, was clearly visible and contained at least 1,000 cubic yards. The black sands appeared to be concentrated in one pile and in an ore bin. The milling process appears to have been gravity separation and amalgamation with mercury. Sample analysis of the stained soil revealed the presence of mercury (Appendix B). The creek appears to be eroding the embankment beneath the stained soil, but discoloration of the water or creek bed is not evident.

### 3.0 MIGRATION/EXPOSURE PATHWAYS AND TARGETS

The following sections describe migration/exposure pathways and potential targets within the site's range of influence (Figures 3-1 and 3-2). Receptors in the area have been identified as summer residents, hunters and occasional tourists.

#### 3.1 GROUND WATER MIGRATION PATHWAY

The Mill lies approximately 15 feet amsl above and adjacent to the westside of Yellowjacket Creek, approximately 1.0 miles south of the town site of Yellowjacket. The stratigraphy of the surrounding ridges, composed of Hoodoo Quartzite, Yellowjacket Formation and numerous intrusive dikes, contributes to groundwater mobility. The country

rock is dark-gray quartzite containing calcareous beds belonging to the Yellowjacket Formation, a member of the Belt Group. The attitude of the beds varies markedly in different outcrops, but in general they strike west of north and dip northeast. A normal fault, which may have considerable displacement, passes a short distance west of the Yellowjacket mine strikes N. 30 ° E and dips northwest. The beds are crenulated, have numerous joints, and are probably broken by many smaller faults. Small dikes of granophyre, granite prophyry, kersantite, and other rocks are described as numerous in the workings. Most of the dikes are believed to be later the mineralization, but some described as brecciated and altered, may be older (Ross, 1934).

Due to regional metamorphism and structure within the Yellowjacket Formation, primary porosity is expected to be very low with groundwater flow controlled by fractures, joints, faults and bedding-plane surfaces related to folding. In the absence of groundwater monitoring wells in the area, ground water is assumed to exist within fractures and joints in the bedrock and within the unconsolidated deposits. The Mill foundation rests upon unconsolidated poorly sorted sediments, possibly glacial in nature.

No precipitation data is available for the Yellowjacket townsite. Therefore, precipitation data, maintained from 1951 through 1960, was used from the Blackbird Mine located 12 miles northeast and comparable in elevation to this site. The mean annual precipitation is 21.44 inches, and the 100-year, 24-hour event is 1.52 inches (WRCC, 2002).

There are not any drinking water or irrigation wells located within the 4-mile Target Distance Limit (TDL). The site is not located within a wellhead protection area (DEQ<sup>2</sup>, 2002).

### 3.1 AIR MIGRATION PATHWAY

The nearest permanent individual residence to the Tin Cup Mine and Mill is approximately 21 miles away in Cobalt, Idaho. There are two summer residences within 1.0 miles of the site. The Middle Fork lookout tower, located approximately 3 miles southwest of the site, is manned by one individual during the fire season which runs from June through October each year.

The site is comprised of unconsolidated alluvial material from the surrounding mountains and Yellowjacket Creek. Fine-grained black sands remaining adjacent to the Mill do not exhibit any binding characteristic, but appear to contain sufficient metal values as to make their aerial dispersion remote.

### 3.2 SOIL EXPOSURE PATHWAY

The site is easily viewed from the adjacent Yellowjacket Road and access to the Mill is unrestricted, though Yellowjacket Creek must be navigated. The lower adit and Mill site were not posted "Private Property" and no trespassing signage was apparent. The upper adit lies approximately 180 feet due west above the Mill. The only apparent soils of concern (stained area and black sands pile) are located adjacent to the Mill and would be easily

accessible. There are no workers or residences within 200 feet of the site. No schools or day-care facilities are located within 200 feet of the site.

The DEQ collected representative soil samples from the black sand and stained soil (Appendix B). Total metals analysis of the stained soil indicated risk levels of barium, cadmium, chromium, lead, selenium and silver are below  $1 \times E^{-6}$  (or 1 in 1,000,000), conservatively assuming an industrial exposure scenario, while risk from arsenic is approximately  $3.2 \times E^{-5}$ , and mercury is approximately  $5.8 \times E^{-5}$ , using the same exposure scenario. Total metals analysis of the black sand indicated risk levels of barium, cadmium, chromium, lead, selenium and silver are below  $1 \times E^{-6}$  (or 1 in 1,000,000), conservatively assuming an industrial exposure scenario, while risk from arsenic is approximately  $3.2 \times E^{-5}$ , using the same exposure scenario (EPA, 2002).

### 3.3 SURFACE WATER MIGRATION PATHWAY

The site slopes east toward Yellowjacket Creek. Soil survey data for the site is unavailable, but direct observation suggests glacial till is an integral component. Direct observation revealed a coarse-grained sandy loam underlain by characteristic glacial debris and placer gravel. Based upon observation during the site visit, moderate to high infiltration rates would be expected.

Commercial and subsistence fishing are not conducted within the surface water Target Distance Limit (TDL). Sport fishing occurs on Yellowjacket Creek around the old town site and down stream, as well as in Camas Creek and the Middle Fork of the Salmon River. Fish catch data, however, could not be determined.

Bull trout (*salvelinus confluentus*), listed as a threatened species (FWS<sup>1</sup>, 2002), are known to populate Yellowjacket Creek, Camas Creek and the Middle Fork of the Salmon River, and chinook salmon (*oncorhynchus tshawytscha*) in Camas Creek and the Middle Fork of the Salmon River all of which are located within the site's TDL. There are not any wetlands within the TDL (FWS<sup>2</sup>, 2002).

The use of surface water for watering of livestock has not been verified. However, livestock grazing may be prohibited due to the proximity of the Tin Cup to Wilderness boundaries. Black bear, elk and deer were noted by direct observation.

There are no drinking water intakes within the TDL. Traversing south and southwest, the surface water pathway is enjoined by Little Jacket Creek at 2.9 miles, Hoodoo Creek at 3.9 miles, Lake Creek at 4.4 miles, Camp Creek at 4.65 miles, Jenny Creek at 5.15 miles, Buckhorn Creek at 5.65 miles, Jackass Creek at 7.4 miles, and several unnamed creeks before Camas Creek merges at 9.15 miles. Camas Creek continues within the 15-mile TDL for another 3.65 miles to the west where it enjoins the Middle Fork of the Salmon River at 13.9 miles from the site. The Middle Fork of the Salmon River continues within the 15-mile TDL for another 1.10 miles from the site.

One Probable Point of Entry (PPE), erosion of the stained soil (tailings), is bisected by Yellowjacket Creek. Direct observation revealed the incising of the tailings by the creek. Though not observed, a second PPE could be drainage from the lower adit and a third PPE could be runoff across the mill site into Yellowjacket Creek.

**Fig 3-1 Tin Cup Mine Site 4-Mile Radius Map**

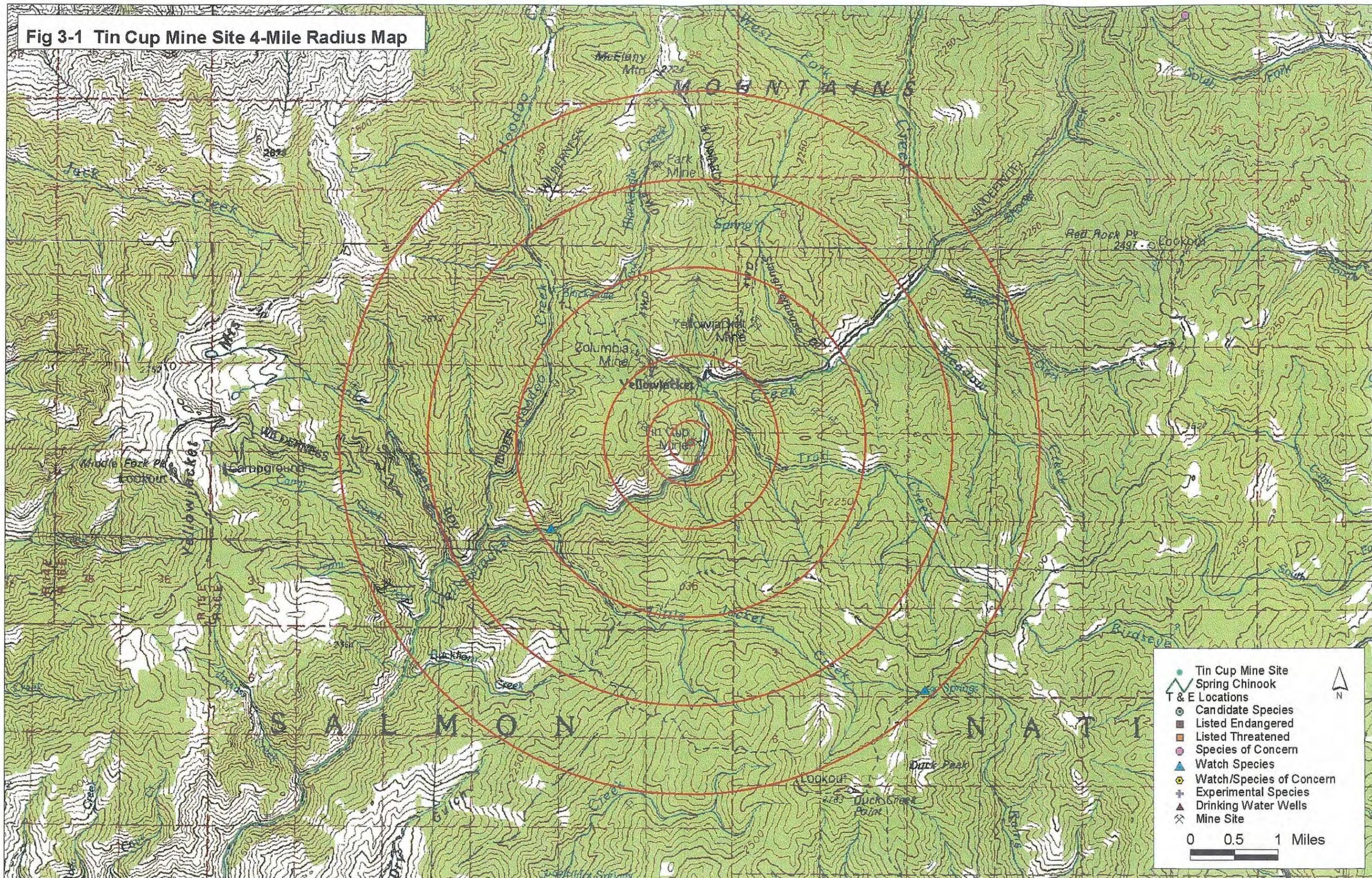
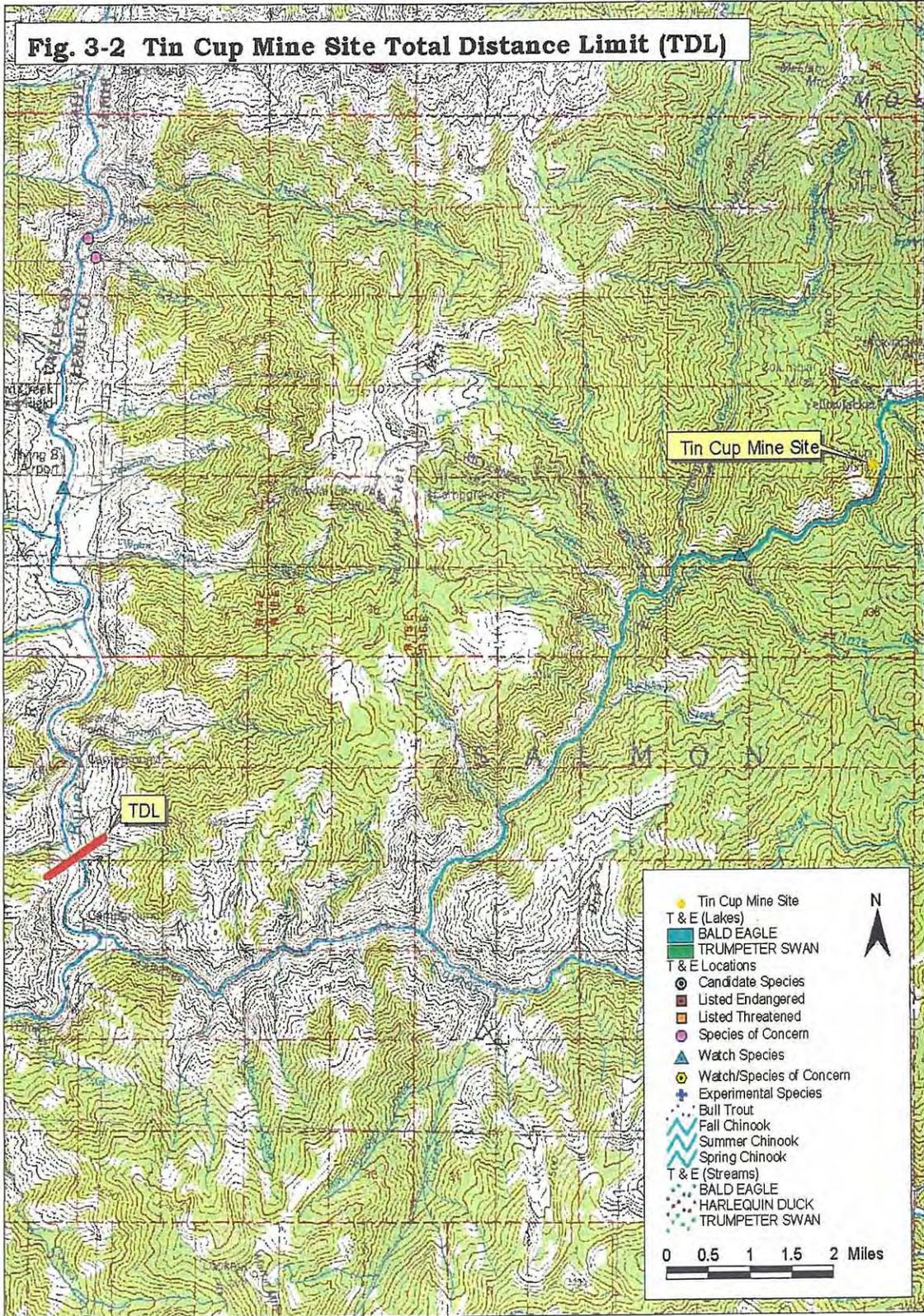


FIGURE 3-2



## REFERENCES

- DEQ<sup>1</sup> (Department of Environmental Quality), 2002, Personal Communication from M. Jeffers, Technical Services Division.
- DEQ<sup>2</sup> (Department of Environmental Quality), 2002, Personal Communication from R. Taylor, Technical Services Division.
- Eldridge, G.H., 1895, A geological reconnaissance across Idaho: U.S. Geological Survey, 16<sup>th</sup> Annual Report, Part 2, pp. 262-264
- EPA (U.S. Environmental Protection Agency), 2002, Region 9 Preliminary Remediation Goals. <http://www.epa.gov/region09/waste/sfund/prg/files/02table.pdf>
- FWS<sup>1</sup> (United States Fish and Wildlife Service), 2002.  
<http://ecos.fws.gov/servlet/TESSWebpageVipListed?code=V&listings=0#E>
- FWS<sup>2</sup> (United States Fish and Wildlife Service), 2002.  
<http://wetlands.fws.gov/>
- Ross, C. P., 1934, Geology and ore deposits of the Castro Quadrangle, Idaho: U.S. Geological Survey Bulletin 854, 135 p.
- Umpleby, J. B., 1913, Geology and ore deposits of Lemhi County, Idaho: U.S. Geological Survey Bulletin 528, 182 p.
- WRCC (Western Regional Climate Center), 2002.  
<http://www.wrcc.dri.edu/htmlfiles/id/id.ppt.ext.html>

## APPENDIX A

### PHOTO LOG

#### TIN CUP MINE AND MILL

- Mvc-001s View to west-southwest, Upper Tin Cup adit, rudimentary smelter stack (center right).
- Mvc-003s View to west, Upper Tin Cup portal, black powder canisters litter dirt floor of "smelter room".
- Mvc-004s View to southeast, inside Tin Cup mill, grizzly (upper right), ball mill (right), wiffly table (upper left beneath window)
- Mvc-005s View to east, stained soil below mill, bridge ruins lies in Yellowjacket Creek.
- Mvc-006s View to north, black sand pile (foreground), scrap drums, ore bin (left center) contains black sand, mill building (upper left).
- Mvc-007s View to west, from Yellowjacket Mine road, Yellowjacket Creek (foreground), stained soil (tailings), mill building, ore bin and black sand pile (left of mill by creek), narrow-gauge rail (upper center), covered Lower Tin Cup adit (upper left side of fallen tree), boarding house (ruins)

**APPENDIX B**

**ANALYTICAL DATA**



# IDAHO DEPARTMENT OF HEALTH & WELFARE

DIRK KEMPTHORNE - Governor  
KARL B. KURTZ - Director

BUREAU OF LABORATORIES  
RICHARD F. HUDSON, Ph.D., Chief  
2220 Old Penitentiary Road  
Boise, ID 83712  
PHONE 208-334-2235  
FAX 208-334-2382

**Attention:** Brian Gaber  
Dept. of Env. Quality - Boise Regional Office  
1445 N. Orchard Street  
Boise, ID 83706-2239

**Date Collected:** 8/7/2002  
**Time Collected:** 10:50 AM  
**Date/Time Received:** 8/9/2002 2:00:24 PM

**Lab Sample ID Number**

02 08 169

(Please refer to this number when contacting the lab)

DEQB / 4814

Site: Tin Cup 2

**Collected By:** Brian Gaber

**Matrix:** Soil

**Sample ID:** TC-1

**Type / Source:**

Test	Method	Result	Units	Date Completed	Analyst
Arsenic, Total	EPA 7060A	50.8	mg/kg	8/19/2002	stranskyj
	Duplicate sample	59.8 mg/kg . Spike recovery =102 %.			
Barium, Total	SM 3111D	29	mg/kg	8/22/2002	stranskyj
	Duplicate sample	29 mg/kg. Spike recovery = 91 %.			
Cadmium, Total	EPA 7130	<2	mg/kg	8/16/2002	stranskyj
	Duplicate sample	<2 mg/kg. Spike recovery = 90 %.			
Chromium, Total	SM 3111D	22	mg/kg	8/22/2002	stranskyj
	Duplicate sample	15 mg/kg. Spike recovery = 106 %			
Lead, Total	EPA 7420	1 450	mg/kg	8/16/2002	stranskyj
	Duplicate sample	1 606 mg/kg.			
Mercury, Total	EPA 7471A	58.2	mg/kg	8/23/2002	stranskyj
	Duplicate sample	48.0 mg/kg.			
Selenium, Total	EPA 7740	<1.5	mg/kg	8/20/2002	stranskyj
	Duplicate sample	<1.5 mg/kg, Spike recovery = 104 %.			
Silver, Total	SM 3111B	29.0	mg/kg	8/16/2002	stranskyj
	Duplicate sample	29.2 mg/kg . Spike recovery = 103 %			

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AUG 30 2002

DEPARTMENT OF ENVIRONMENTAL QUALITY  
BOISE REGIONAL OFFICE

Laboratory Supervisor

Reported: Wednesday, August 28, 2002

EPA Laboratory ID: ID00018



# IDAHO DEPARTMENT OF HEALTH & WELFARE

DIRK KEMPTHORNE - Governor  
KARL B. KURTZ - Director

BUREAU OF LABORATORIES  
RICHARD F. HUDSON, Ph.D., Chief  
2220 Old Penitentiary Road  
Boise, ID 83712  
PHONE 208-334-2235  
FAX 208-334-2382

**Attention:** Brian Gaber  
Dept. of Env. Quality - Boise Regional Office  
1445 N. Orchard Street  
Boise, ID 83706-2239

**Date Collected:** 8/7/2002  
**Time Collected:** 11:15 AM  
**Date/Time Received:** 8/9/2002 2:00:24 PM

### Lab Sample ID Number

02 08 170

(Please refer to this number when contacting the lab)

DEQB / 4814

Site: Tin Cup 2

Collected By: Brian Gaber

Matrix: Soil

Sample ID: TC-2

Type / Source:

Test	Method	Result	Units	Date Completed	Analyst
Arsenic, Total	EPA 7060A	35.9	mg/kg	8/19/2002	stranskyj
	Duplicate sample	28.0. Spike recovery = 91 %.			
Barium, Total	SM 3111D	21	mg/kg	8/22/2002	stranskyj
	Duplicate sample	21 mg/kg. Spike recovery = 97 %.			
Cadmium, Total	EPA 7130	<2	mg/kg	8/16/2002	stranskyj
	Duplicate sample	<2 mg/kg. Spike recovery = 96 %.			
Chromium, Total	SM 3111D	<15	mg/kg	8/22/2002	stranskyj
	Duplicate sample	<15 mg/kg. Spike recovery = 120 %.			
Lead, Total	EPA 7420	1 657	mg/kg	8/16/2002	stranskyj
	Duplicate sample	1 771 mg/kg .			
Mercury, Total	EPA 7471A	1.5	mg/kg	8/23/2002	stranskyj
	Duplicate sample	1.4 mg/kg. Spike recovery = 101 %.			
Selenium, Total	EPA 7740	<1.5	mg/kg	8/20/2002	stranskyj
	Duplicate sample	<1.5 mg/kg. Spike recovery = 85 %.			
Silver, Total	SM 3111B	<15	mg/kg	8/16/2002	stranskyj
	Duplicate sample	< 15 mg/kg . Spike recovery = 112 %			

# RECEIVED

AUG 30 2002

DEPARTMENT OF ENVIRONMENTAL QUALITY  
BOISE REGIONAL OFFICE

Laboratory Supervisor

Reported: Wednesday, August 28, 2002

EPA Laboratory ID: ID00018