Abandoned Mine Lands
Initial Investigation Report
Copper Queen Mine
Hurlbert, Washington

Prepared for
Washington State
Department of Ecology

December 28, 2006
17274-00(CQ)

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Rick Roeder, Project Manager

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Prepared by
Hart Crowser, Inc.

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EXPIRES 12/03/2007

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ABANDONED MINE LANDS INITIAL INVESTIGATION REPORT
COPPER QUEEN FRACTION MINE
HURLBERT, WASHINGTON

1.0 EXECUTIVE SUMMARY

Information obtained during this assessment is summarized in Table 1:

Table 1 – Copper Queen Fraction Mine Data Summary

Mine Name:	Copper Queen Fraction
Last Known Operation:	This is a patented claim on public land (BLM). Globex Nevada Inc. has partial ownership and can be contacted at: Globex Nevada Inc. c/o Jack Stoch 146 14th St. Rouyn Noranda Quebec CAN J9X2J3
Location:	1 mile northwest of Hurlbert, Washington Latitude, Longitude: 48.972, 118.560 Quadrangle Map: Curlew Quadrangle TRS: Township 40N, Range 34E, Section 18
Features Observed	One Waste rock pile (approximately 210,000 cubic yards) One Building (50 by 50 feet)
Results above Criteria	Waste rock samples exceeded ecological criteria for copper, lead, mercury, silver, and zinc. Waste rock samples exceed the direct contact criterion for human health for arsenic.
Work by Others	No previous site assessment information was identified.
Potential Receptors/ Degree of Hazard	Human health hazard limited to recreational users by way of ingestion or direct contact; potential hazard to ecological receptors.

2.0 INTRODUCTION

This report summarizes the results of the initial limited soil and surface water investigation at the Copper Queen Fraction Mine site located near Hurlbert, Washington (Figures 1 and 2). Hart Crowser performed this initial investigation for the Washington State Department of Ecology (Ecology) under Contract No. C06254 according to the Ecology Statement of Work (SOW) and project Sampling and Analysis Plan (SAP) prepared by Hart Crowser (Hart Crowser 2006).

The objectives of this initial investigation are to:

- Determine whether the site has released or has a potential to release hazardous substances to the environment at concentrations above Model Toxics Control Act (MTCA) human health or ecological screening levels, to identify sites that may require additional investigation and sampling;

- Identify and document waste source areas including estimates of waste mass and/or volume; and

- Identify and document the presence of potential waste transport pathways and receptors.

For this study, samples were collected of the soil-like fraction of waste rock, mine tailings, and/or natural soils that was potentially affected by mining. Analytical results were compared to the MTCA criteria for soils. Use of terms such as "soils" or "waste rock", etc. are for convenience only and do not indicate potential future designation in accordance with Chapter 173-350 WAC, or Chapter 173-303 WAC, or other regulatory criteria.

Subsurface openings observed for this study may include shafts, adits, prospect pits, collapsed stopes, and/or excavations completed for other purposes. The terms used in this report are based on visual interpretation in the field and may not fully characterize historic site use.

Prior to the site visit, Hart Crowser performed file reviews; evaluated aerial photographs, U.S. Forest Service and USGS maps; reviewed the Inventory of Washington Minerals; and reviewed county tax assessor records to:

- Identify the location of mines and associated features/structures;
- Identify property owners, mineral claimants, and mine operators; and
- Obtain contact information to gain permission for site access.

Table 2 presents the project team members and their roles and responsibilities for this investigation. A site visit was accomplished on July 13, 2006.

3.0 SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

3.1 Site Location

The Copper Queen Fraction Mine is located on BLM Spokane District property approximately 1 mile northwest of Hurlbert, Washington. Directions to the mine are as follows:

- From Republic, head north on Highway 21.
- Turn left (NW) onto upper Danville Road.
- Follow Upper Danville Road for 0.5 mile, then veer left (NW). Enter gated gravel drive of 0.6 mile from Highway 21. A second gate is located 0.8 mile from the first gate.
- At 1.5 miles from the first gate, turn right onto a grass-covered road. A locked gate is encountered at 1.7 miles from the first gate. This gate can be opened at the hinges.
- The Comstock Mine features are located 2.0 miles from the first gate. Continue on this road, heading up the hill and through some switchbacks for approximately 1 mile.
- Pass the Allis Mine waste rock pile, located on the left, and continue on the road, toward the right for approximately a quarter mile.
- The road leads directly to the Copper Queen Fraction waste rock pile.

The access description provided herein is based on observations at the time the site was visited for this work. References to roads do not reflect property ownership, and does not imply that public access is available.

The site is located on Ferry County Parcel No. 44007900001000.

3.2 Site Description

The Copper Queen Fraction Mine site is located just west of the Allis/Allis Fraction Mine site. The main feature of this site is a large crushed rock pile (Figure 3), WR-1, which is composed of a dry to moist, light brown, sandy Gravel and covers approximately 4.5 acres (Photograph 1). Cross sectional views of the crushed rock pile are shown on Figures 4 and 5. WR-1 is approximately 210,000 cubic yards in volume and has a thin row of grass near the western boundary. No other vegetation exists on the waste rock pile. Cattle were seen walking on the waste rock pile and grazing on the grass around it. Channels formed by erosion, either wind or water, were noted throughout the pile (Photograph 2).

Pieces of small black plastic hose were observed protruding from the platform of the waste rock pile at regularly spaced intervals approximately 15 feet apart, and in scattered locations throughout the pile (Photograph 3). The hose may have been used for dust control or served as part of a type of leaching system. A white plastic pipe was partially uncovered near the center of the northeastern face of the waste rock pile. This pipe appears to be installed in a northeast-southwest orientation, running from the top of WR-1 to the bottom. A broken piece of white plastic pipe was also observed lying on the northern face of the site (Photograph 4). Pieces of a torn woven plastic textile, white on one side and yellow on the other, was scattered around the base of the eastern side of the pile (Photograph 5). However, no sumps, ponds, or leach collection systems were present. No seeps or ponds were observed on the site.

A building lies just off the northwest corner of WR-1 (Photograph 6). Although the siding has been stripped, the building is either relatively new or newly remodeled. The metal roof is in good condition and the building has plastic drainpipes and metal garage doors. The interior of the building could not be observed and its use is unknown.

No pits, adits, or shafts were located on the site. An apparent gravel quarry is located nearby, approximately 2,000 feet northwest of the waste rock, but it could not be confirmed as the source of the waste rock.

3.3 Site Ownership and Operations History

Information on site ownership and operations is based on readily available public information and may not reflect all details of ownership and operations.

The mine is located on BLM Spokane District land. While the claim is currently owned by Globex Nevada, Inc., years of operation are unknown.

Year	Owner / Buyer	Seller	Notes
Current Land Owner	Bureau of Land Management (BLM), Spokane District		No Parcel Number
Current Claim Owner	Globex Nevada Inc. c/o Jack Stoch 146 14th St. Rouyn Noranda Quebec CAN J9X2J3		Parcel No. 44007900001000 Globex has been paying taxes on the claim since 2001.
10-07-2002	Morse Revocable Trust	Brooklyn Mining & Exploration	

Year	Owner / Buyer	Seller	Notes
12-09-1999	Morse Marjorie G RVCBL Trust	Morse Joseph D Revocable Trust	
2-16-1996	Degerstrom & Gold Express	Globex Nevada Inc.	
3-1-1994	Morse Forrest W & Laura	Morse Laura M RVCBL Trust	
3-1-1994	Morse Joseph D & Marjorie G	Morse Marjorie G RVCBL Trust	
3-27-1989	Vulcan Mountain Inc.	Gold Express Corporation	
4-25-1987	Vulcan Mountain Inc. & Herdrick	Gold Express Corporation	
4-27-1982	Heredrick Melvin & Ann	Vulcan Mountain Inc.	
4-27-1982	Morse & Morse & Morse	Heredrick Melvin & Ann	

4.0 SITE INVESTIGATION ACTIVITIES

The initial investigation of the Copper Queen Fraction Mine Site took place on July 13, 2006. GPS data and waste rock samples were collected and site photographs were taken. Mine features, sample locations, site photo locations and directions, and GPS waypoints are presented on Figure 3.

4.1 Soil and Waste Pile Sampling

Five crushed rock samples were collected from WR-1 on July 13, 2006. The samples were generally composed of a dry to moist, light brown, sandy Gravel. The five crushed rock samples were sieved through an ASTM No. 10 sieve.

4.2 Surface Water and Seep Sampling

No surface waters or seeps were observed on the site or in the vicinity of the site. No water samples were collected.

4.3 Sediment Sampling

Ephemeral drainage channels were observed throughout WR-1, but are probably due to erosion from heavy rain events. The channels did not extend beyond the crushed rock pile and, therefore, no samples were collected.

5.0 ANALYTICAL RESULTS AND ENVIRONMENTAL HAZARD ASSESSMENT

The nearest surface water is Shasket Creek, which drains into the Kettle River. The creek is approximately 0.25 mile downslope of the site. No residences or cabins were observed in the vicinity, but the Curlew Quadrangle Map and information from the Ferry County Tax Assessor's Office indicate that several cabins and barns are nearby, along Shasket Creek, about 0.5 mile from the site.

Soil and water quality data were compared to regulatory criteria for screening purposes as discussed below. Further analysis, including risk-based analyses may be appropriate in additional future site assessments.

5.1 Surface Water and Sediment

No surface water or sediment samples were collected at this site.

5.2 Soil

Soil and waste rock sample analytical results were compared with applicable MTCA Method A cleanup levels, MTCA Method B cleanup levels for soil ingestion, soil ingestion and dermal contact combined, and with criteria for ecological protection of plants, soil biota, and wildlife. The five samples collected exceeded MTCA Method B carcinogenic criteria for arsenic, but were at concentrations less than the Method A criteria. Those samples also exceeded the ecological criteria for copper and zinc. Sample Copper Queen-WR1-S1 also exceeded the ecological criteria for lead, Copper Queen-WR1-S2 and Copper Queen-WR1-S5 exceeded the ecological criteria for mercury and silver, and Copper Queen-WR1-S3 exceeded the ecological criteria for silver.

5.3 Air

No air monitoring was conducted. The waste rock at the Copper Queen Fraction Mine Site is fine-grained and exposed, and could potentially be a source of contaminated airborne dust, though no residences or cabins were observed in the vicinity.

5.4 Methodology for Threatened and Endangered Species Information

We contacted the Washington State Department of Natural Resources (DNR), the Washington State Department of Fish and Wildlife (WDFW), the U.S. Fish and Wildlife Service (USFWS), and the Colville National Forest – USDA Forest Service to obtain information on the presence of state and federal threatened or endangered terrestrial and aquatic species. We determined that the WDFW

maintained the most accurate and up-to-date information on species distribution in its Priority Habitats and Species (PHS) Database. We requested maps and narratives identifying documented species presence at the Copper Queen Fraction Mine. In addition, we contacted DNR and requested information on rare plants and high quality native wetland and terrestrial ecosystems within the vicinity of the Copper Queen Fraction Mine.

Our search ranges included a 4-mile radius for terrestrial species and a 15-mile radius for aquatic species.

We reviewed approximately 86 PHS maps and accompanying narratives to determine whether any threatened or endangered species were documented within our search ranges. We drew 4- and 15-mile radii around the Copper Queen Fraction Mine on a Colville National Forest Map. We then examined the PHS maps in relation to the search ranges for our project areas. All state and federal threatened and endangered species and habitats that occurred within our search ranges were recorded. Species and habitats that occurred on the edge of our search range were considered within the range and recorded.

A summary of the threatened and endangered species within our search ranges is provided in Table 5.

6.0 SUMMARY AND CONCLUSIONS

There are approximately 210,000 cubic yards of crushed rock and gravel at the Copper Queen Fraction Mine Site with the potential to exceed applicable MTCA and ecological protection criteria. The main contaminants of concern are arsenic, copper, and zinc. Some crushed rock may also contain elevated concentrations of lead, mercury, or silver.

Risks to human health are most likely limited to potential recreational users. MTCA Method A and B screening criteria may over estimate risk to recreational users since their exposure duration is less than the duration of a residential scenario.

Since it is possible that a leaching process may have been used at the site, additional sampling with analysis for cyanide may be appropriate.

7.0 USE OF THIS REPORT

Work for this project was performed, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed, in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of the Washington State Department of Ecology for specific application to the referenced property. This report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

The information in this report is intended to be used to determine whether the site has released or has a potential to release hazardous substances to the environment at concentrations above Model Toxics Control Act (MTCA) human health or ecological screening levels.

8.0 REFERENCES

Ecology 1990. Washington Ranking Method Scoring Manual. Ecology Publication 90-14. Revised April 1992.

Ecology 2001a. Model Toxics Control Act Cleanup Levels and Risk Calculations (CLARC II) Update. November 2001.

Ecology 2001b. Adopted Amendments. Model Toxics Control Act Cleanup Regulations. Chapter 173-340-WAC. February 2001.

Ecology 2006. "Water Well Log Viewer" at http://apps.ecy.wa.gov/welllog/.

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Hart Crowser 2006. Sampling and Analysis Plan, Abandoned Mine Lands Assessments, Washington State. Prepared for Washington State Department of Ecology. June 9, 2006.

Huntting, Marshall T., 1956. Inventory of Washington Minerals, Part II Metallic Minerals, 2 volumes. State of Washington Department of Conservation and Development, Bulletin No. 37, Washington State printing office, Olympia, Washington.

Henry Day, "The Records of the Aurum Mining Company," University of Idaho Special Collections, accessed on 6/26/06 by PLR, at http://www.lib.uidaho.edu/special-collections/Manuscripts/dmginv/mg235.htm

Mindat.org website http://www.mindat.org/index.php

J:\Jobs\1727400\Copper Queen\Copper Queen Report.doc

Table 2 - Project Team Roles and Responsibilities

Project Role	Personnel Assignment	Roles/Responsibilities
Ecology Project Manager	Rick Roeder Ecology (509) 454-7837	Client Project Manager
Program Manager	Mike Bailey Hart Crowser (206) 324-9530	Ensures that all work is carried out in accordance with contractual obligations and the Delivery Order statement of work. Assists the Project Manager as needed with technical decisions and in resolving issues. Final reviewer.
Project/Task Manager	Roger McGinnis Hart Crowser (206) 324-9530	Overall responsibility for execution of the Work Plan. Coordinate with Client, Field Manager and Program Manager as necessary to resolve issues.
Corporate Health and Safety Officer (HSO)	Mike Ehlebracht Hart Crowser (206) 324-9530	Overall responsibility for review and answering questions regarding H&S.
Field Manager and Site Safety Coordinators (SSC)	Abby Bazin/Pat Reed Hart Crowser (206) 324-9530	Ensures that explorations are conducted and samples are collected in accordance with project specifications. Coordinates field activities with Project and Program Managers.
Mine Information Research	Pat Reed Mike Swenson Hart Crowser (206) 324-9530	Determined location of mine, access route, and ownership
Project Chemist	Erin Breckel Hart Crowser (206) 324-9530	Performs laboratory coordination and data quality review to assure analytical methods and data are consistent with project needs and data quality objectives.
Laboratory Services	Harvey Jacky Columbia Analytical Services (360) 577-7222	Analyzes soil, sediment, and water samples.

Table 3 – Copper Queen Fraction Mine Sample Inventory

Sample Name	Sample Location	Sample Description
Waste Rock Samples		
Copper Queen - WR1 - S1	Center of top platform	Dry to slightly moist, light brown, sandy Gravel
Copper Queen - WR1 - S2	1/3 from top of south slope	Dry to slightly moist, light brown, sandy Gravel
Copper Queen - WR1 - S3	2/3 from top of eastern slope	Dry to moist, light brown, sandy Gravel
Copper Queen - WR1 - S4	Half way down north slope	Dry to slightly moist, light brown, sandy Gravel
Copper Queen - WR1 - S5	Half way down west slope	Dry to slightly moist, light brown, sandy Gravel

Table 4 - Analytical Results for Soil Samples - Copper Queen Mine

SDG Sample ID Sampling Date	MTCA Method A (a)	MTCA Method B Soil Ingestion (b)	MTCA Method B Soil Ingestion and Dermal Contact (b)	Ecological Protection (c) Plant/Soil Biota/Wildlife	K0606045 Copper Queen-WR1-S1 7/13/2006	K0606045 Copper Queen-WR1-S2 7/13/2006
Total Solids in %					96.7	98.1
Total Metals in mg/kg						
Aluminum	--	80,000	72,072	50 / -- / --		
Antimony	--	32	29	5 / -- / --	0.43	0.73
Arsenic	20	0.67	0.62	10[(d)] / 60 / 132	6.7	5.9
Beryllium	--	160	144	10 / -- / --	0.53	0.44
Cadmium	2	80	74	4 / 20 / 14	0.51	1.39
Chromium	2,000[e]	120,000[e]	44,571[e]	42 / 42 / 67	8.9	6.3
Copper	--	2,960	2,700	100 / 50 / 217	**104**	**65.2**
Iron	--	24,000	21,622	-- / -- / --		
Lead	250	--	--	50 / 500 / 118	**73.4**	25.9
Manganese	--	11,200	10,090	1,100 / -- / 1,500		
Mercury	2	24	18	0.3 / 0.1 / 5.5	0.08 J	**0.15** J
Nickel	--	1,600	1,441	30 / 200 / 980	10.8	12.3
Selenium	--	400	360	1 / 70 / 0.3	2.1 U	2 U
Silver	--	400	360	2 / -- / --	1.17	**4.94**
Thallium	--	5.6	5.0	1 / -- / --	0.04 U	0.04 U
Zinc	--	24,000	22,000	86 / 200 / 360	**93.8**	**118**

Table 4 - Analytical Results for Soil Samples - Copper Queen Mine

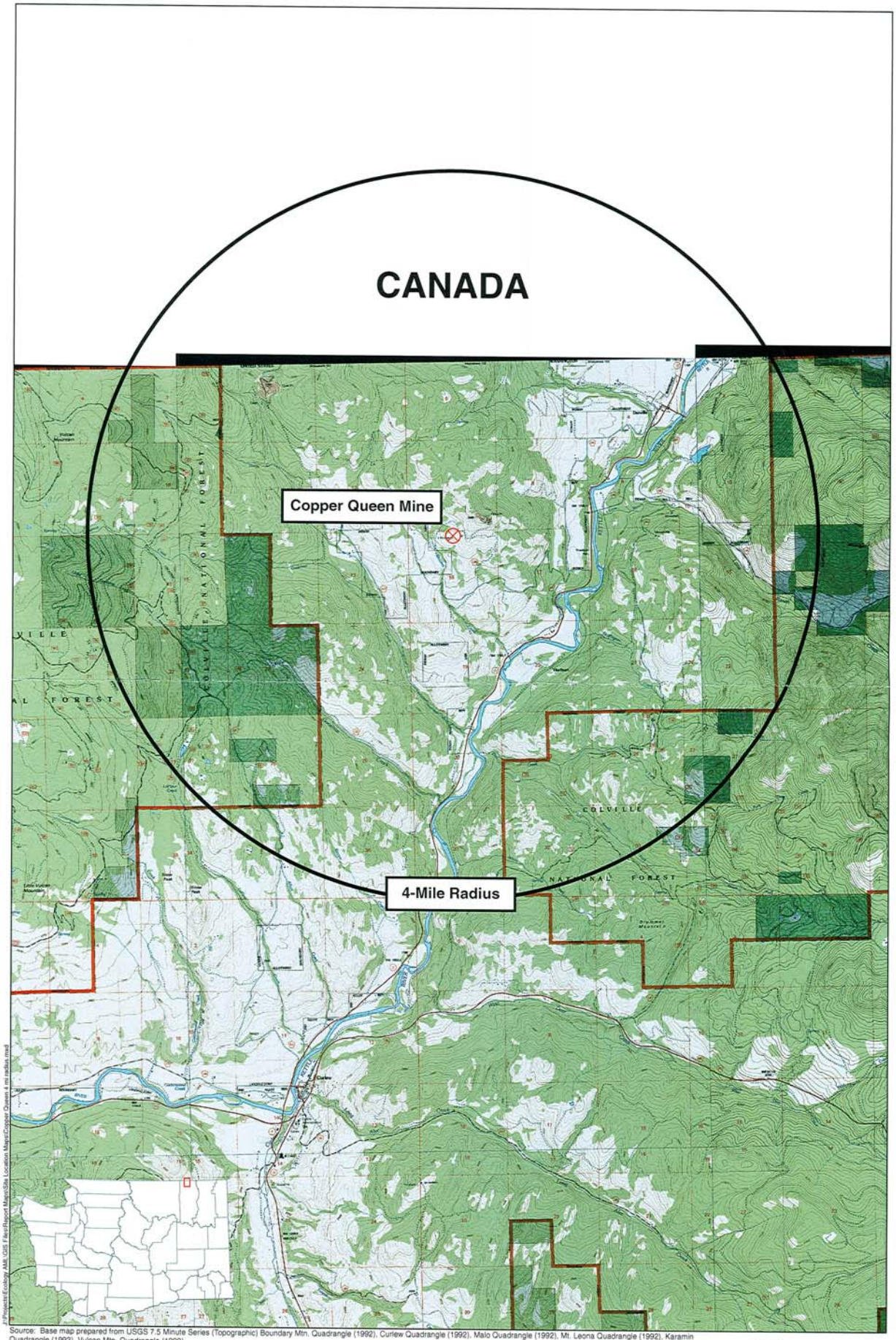
SDG	K0606045	K0606045	K0606045
Sample ID	Copper Queen-WR1-S3	Copper Queen-WR1-S4	Copper Queen-WR1-S5
Sampling Date	7/13/2006	7/13/2006	7/13/2006
Total Solids in %	96.6	98	96.7
Total Metals in mg/kg			
Aluminum			
Antimony	0.4	0.31	0.4
Arsenic	6.6	5.4	6.5
Beryllium	0.56	0.59	0.53
Cadmium	0.6	1.14	0.98
Chromium	7.6	13	8.4
Copper	**157**	**91.8**	**74.9**
Iron			
Lead	19.8	13.5	37.2
Manganese			
Mercury	0.05 J	0.04 J	**0.11** J
Nickel	12.4	13.2	14.2
Selenium	2.1 U	2 U	2 U
Silver	**2.05**	1.22	**2.84**
Thallium	0.04 U	0.05	0.04 U
Zinc	**107**	**86.6**	**147**

Notes:
U = Not detected at the detection limit indicated.
J = Estimated value.
-- Not established or Not applicable.
Bold - Concentration exceeds ecological criterion.
Box - Concentration exceeds MTCA Method A or Method B criterion.
(a) WAC 173-340-740(2), WAC 173-340-900 (Table 740-1). Model Toxics Control
(b) WAC 173-340-740(3). MTCA Method B Unrestricted land use soil cleanup standards. For carcinogenic constituents, the value presented is the lower of the non-carcinogenic and carcinogenic level calculated using Equations 740-1 and 740-2 for ingestion only. Equations 740-4 and 740-5 for ingestion and dermal contact. Information from CLARC 3.1 was used unless otherwise noted.
(c) WAC 173-340-740(3)(b)(ii)/WAC 173-340-749/WAC 173-340-900 (Table 749-3).
(d) Based on Arsenic V (10 mg/kg)
(e) Based on Chromium III

Table 5 - Threatened and Endangered Species

Species	Federal Status		State Status		Narrative
	T	E	T	E	
Bull trout (*Salvelinus confluentus*)	X				Lower reach of Boulder Creek – marginal 15 mi radius
Lynx (*Lynx canadensis*)	X		X		
Gray wolf (*Canis lupus*)		X		X	Lone Ranch Creek

Site Location Map
Copper Queen Mine



Source: Base map prepared from USGS 7.5 Minute Series (Topographic) Boundary Mtn. Quadrangle (1992), Curlew Quadrangle (1992), Malo Quadrangle (1992), Mt. Leona Quadrangle (1992), Karamin Quadrangle (1992), Vulcan Mtn. Quadrangle (1992).

0 0.5 1 2
Scale in Miles

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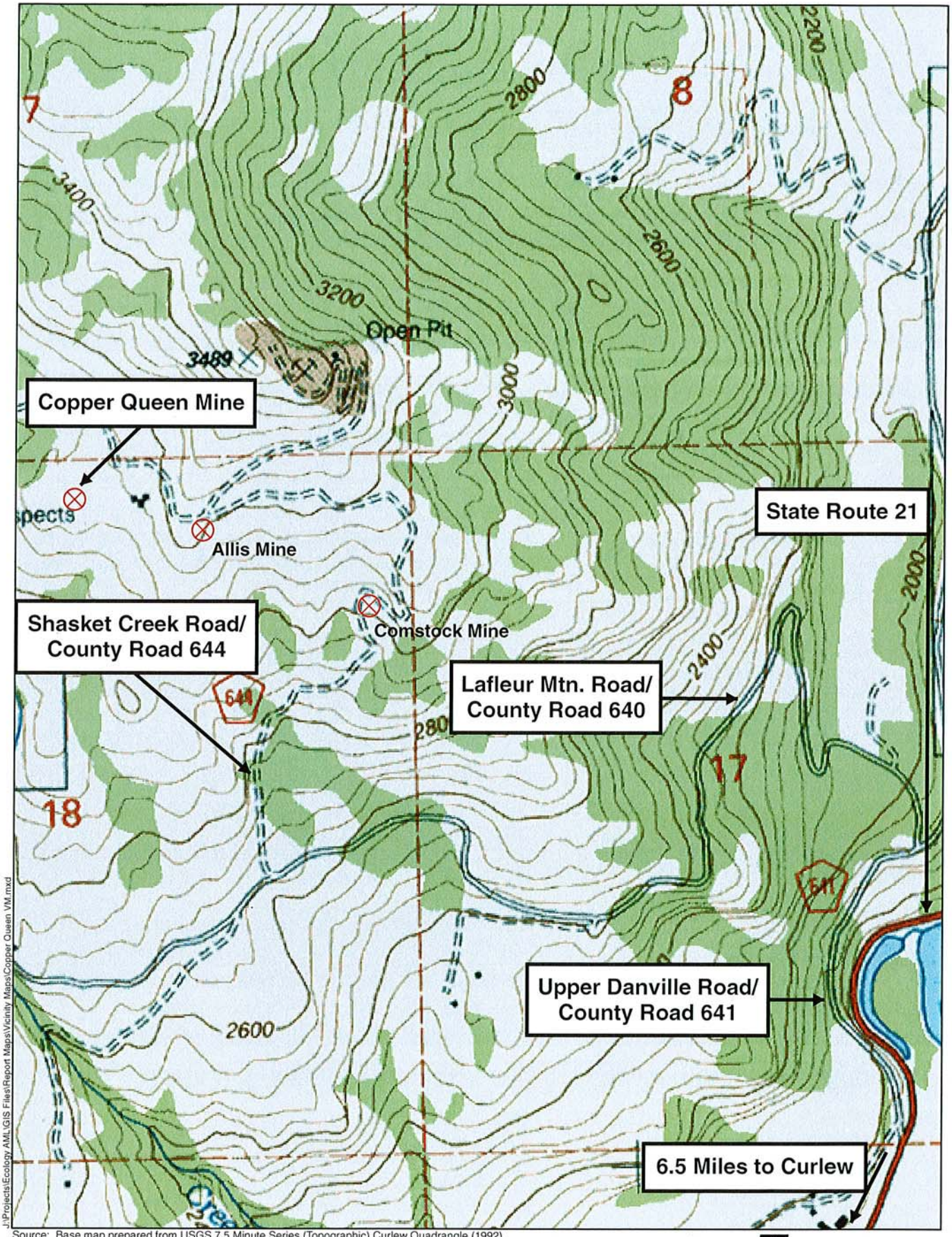
Figure 1

Vicinity Map
Coper Queen Mine



J:\Projects\Ecology AML\GIS Files\Report Maps\Vicinity Maps\Copper Queen VM.mxd

Source: Base map prepared from USGS 7.5 Minute Series (Topographic) Curlew Quadrangle (1992).

0 500 1,000
Scale in Feet

⊗ Mine Location Visited in Field

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Figure 2

Standard Key for Site Plan
Copper Queen Mine

G2	GPS Data Point Location and Number
WR1-S2	Soil or Waste Rock Sample Location and Number (Note: Site name prefix also part of sample number)
W1	Water Sample Location and Number
45	Composite Sediment Sample Location and Number
	Adit
	Shaft
	Prospect/Pit
	Building/Structure
	Seep
	Drainage Channel
	Intermittent/Seasonal Drainage Channel
	Wood Debris
	Metal Debris
	Soil or Seep Staining
	Other Feature
	Groundwater Well
10	Photo Location, Number and Direction
A **A'**	Approximate Cross Section Location and Designation

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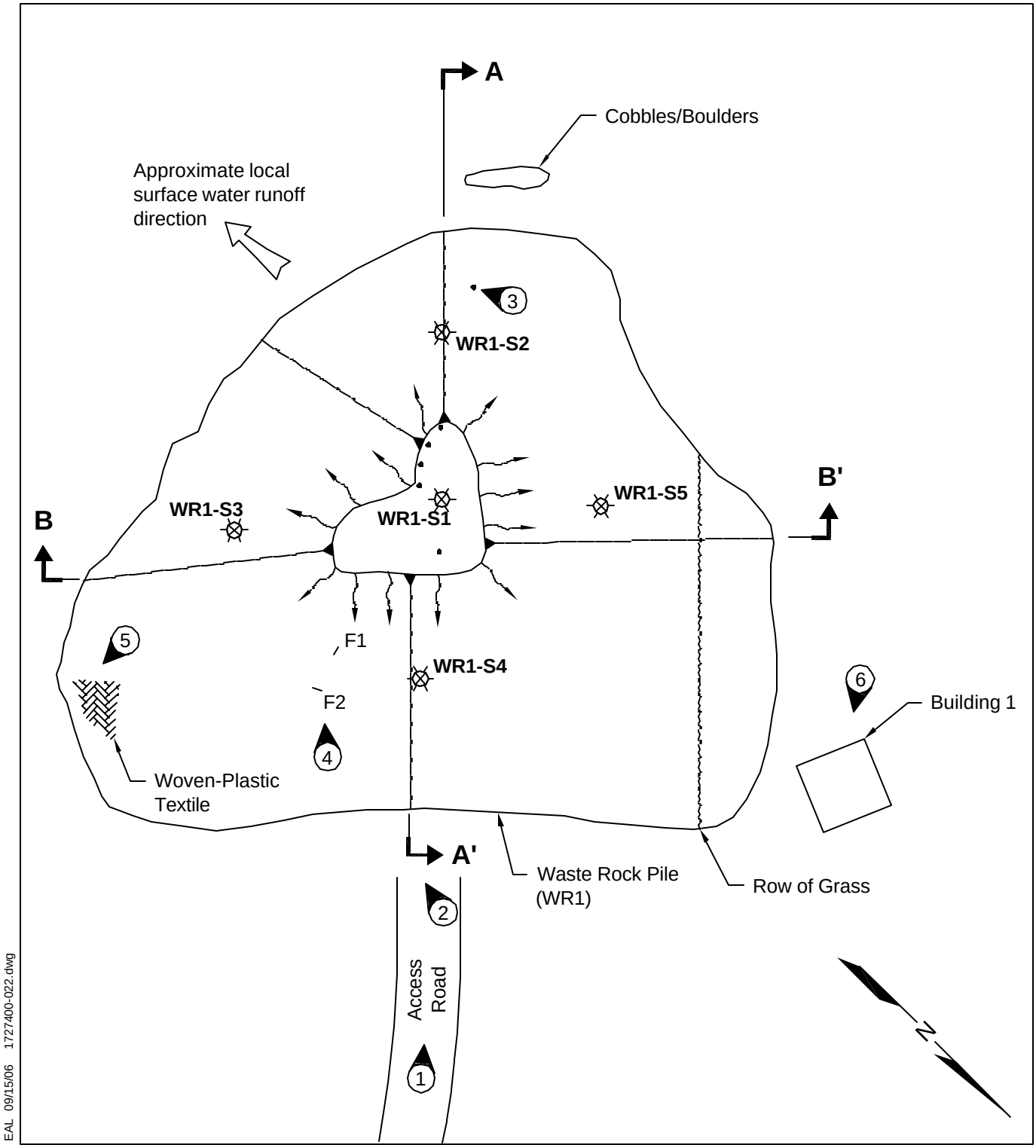
Site Plan
Copper Queen Mine



Notes: **Base map prepared from field notes.**

0 100 200
Scale in Feet

• 1-inch diameter black plastic hose protruding from pile (vent?)

F1 2-inch diameter white plastic pipe buried

F2 2-inch diameter white plastic pipe broken

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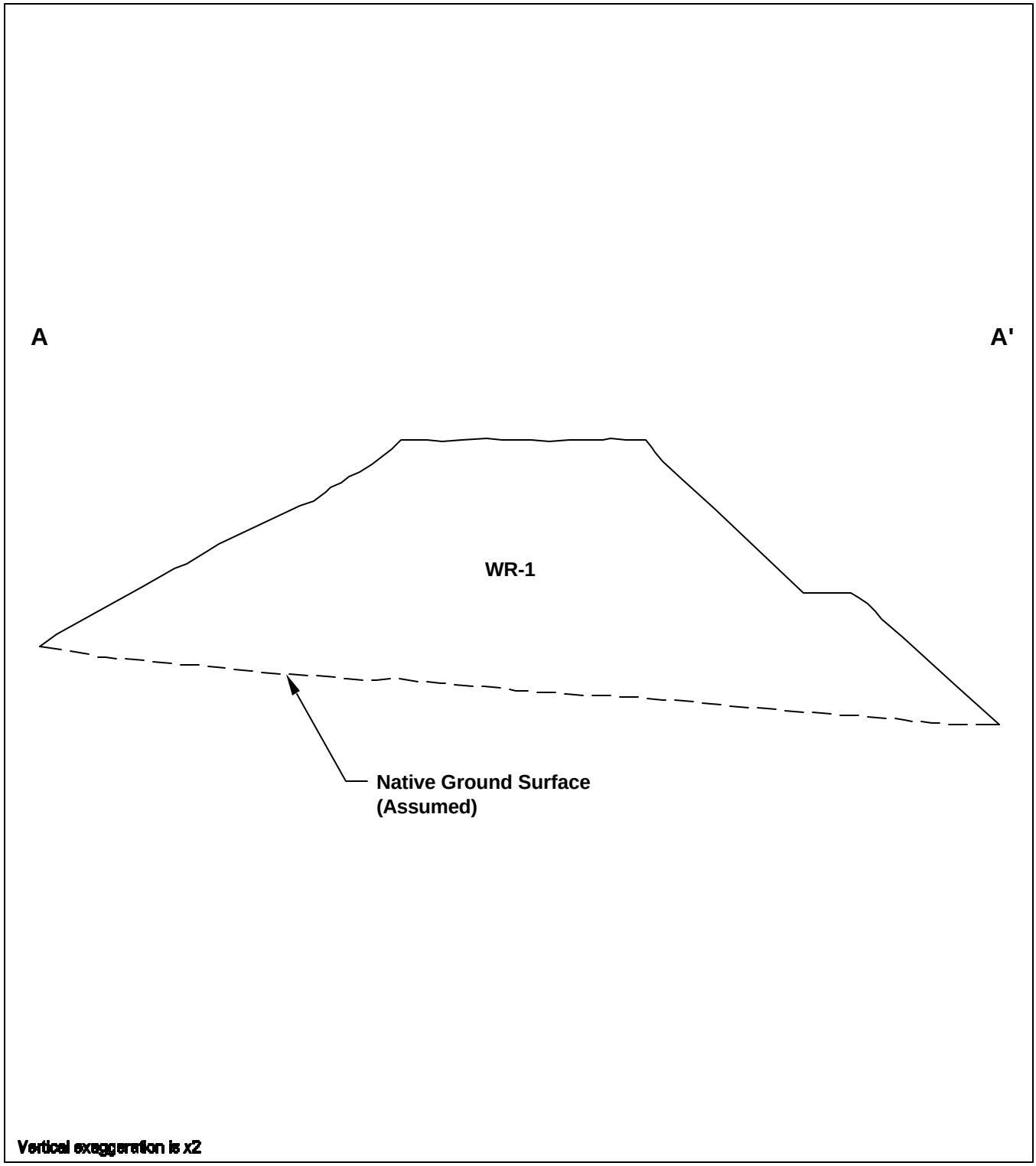
Figure 3

Cross Section A-A'
Copper Queen Mine



EAL 9/07/06 1727400-023.dwg

Source: Figure prepared from field notes 07/13/06

0 60 120
Scale in Feet

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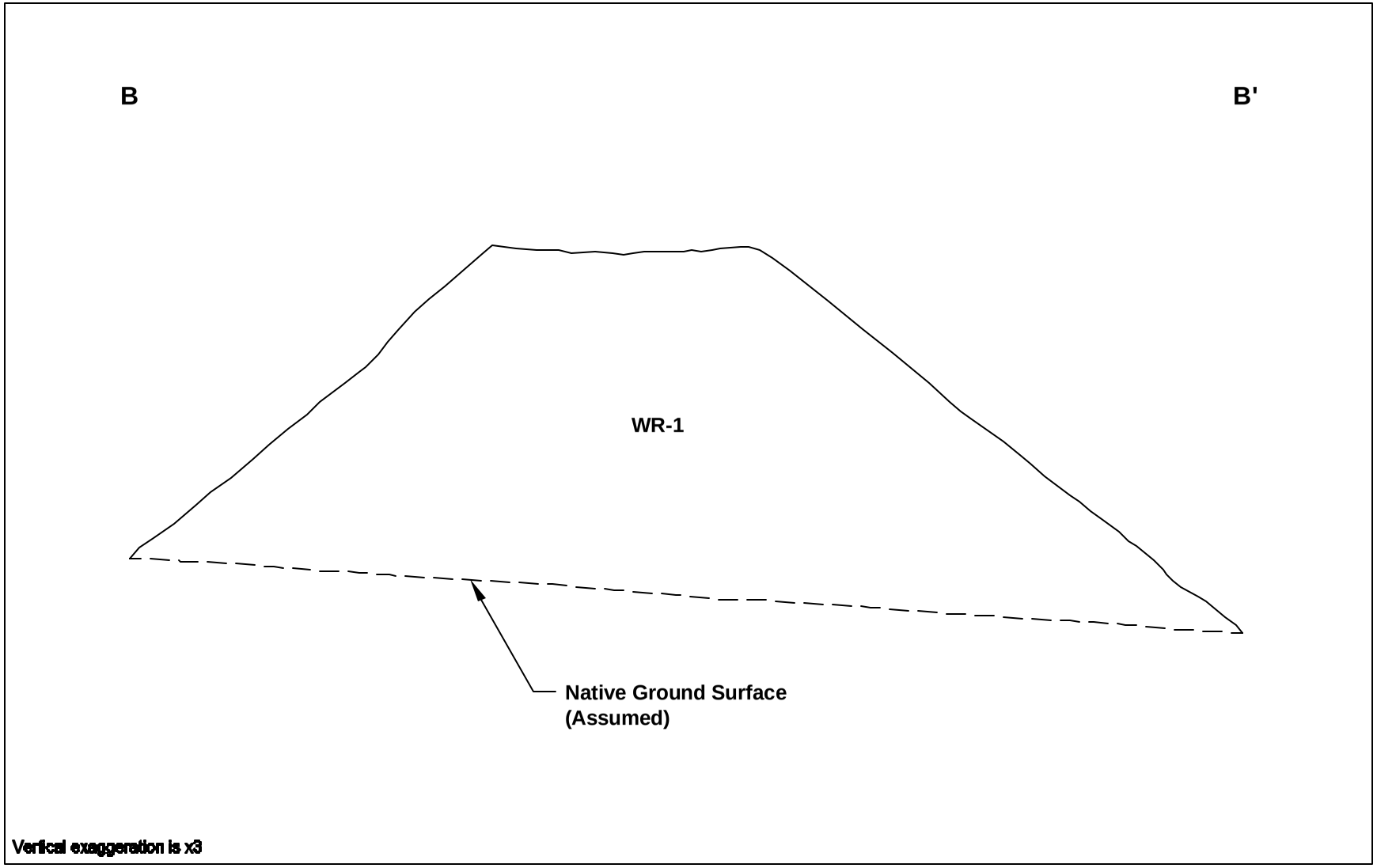
Figure 4

Cross Section B-B'
Copper Queen Mine



Source: Figure prepared from field notes 07/13/06

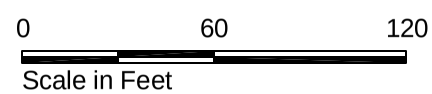


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Figure 5

Mine Waste Rock Conceptual Site Model for Human and Ecological Risk
Copper Queen

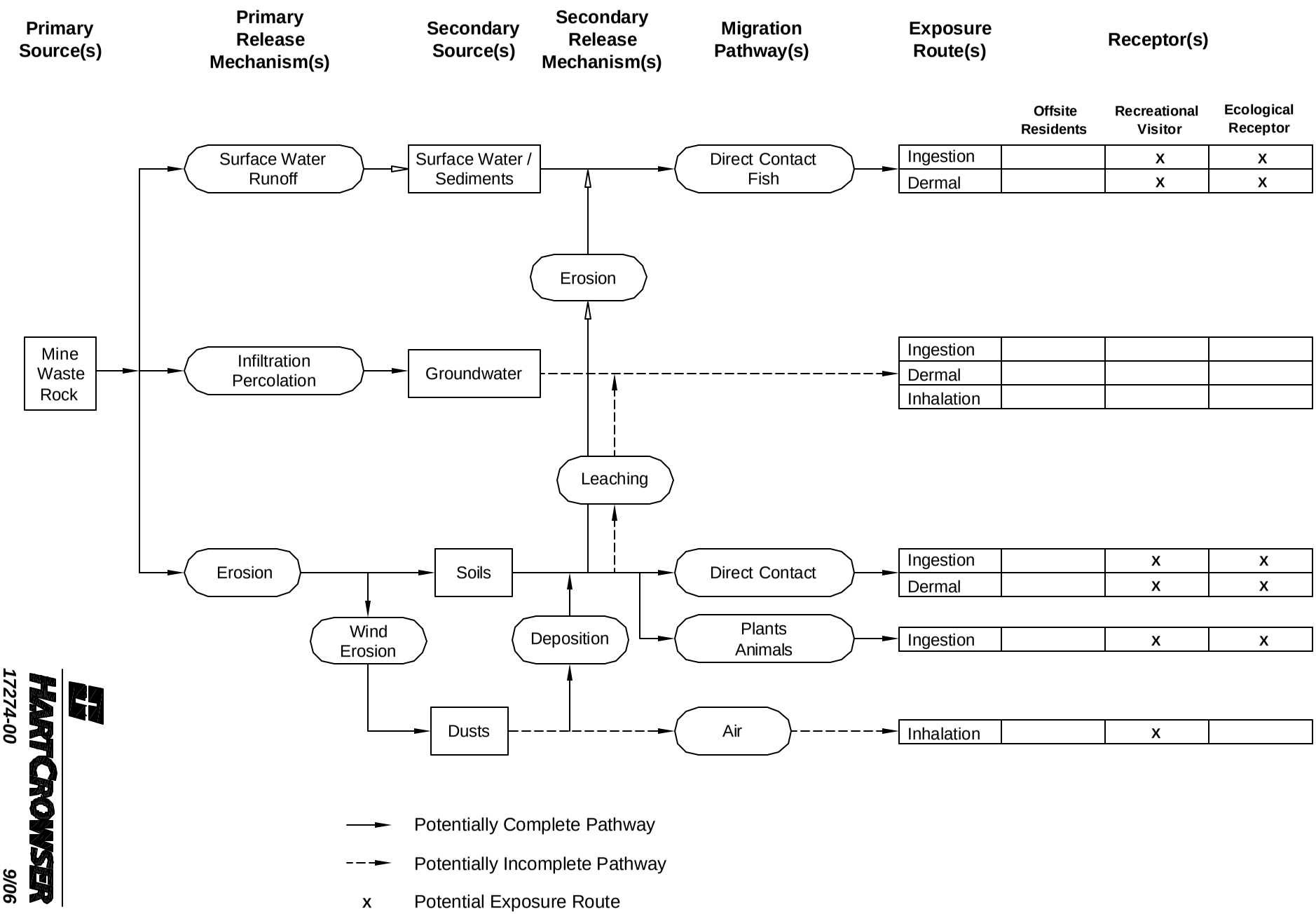

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Figure 6

SPN 09/19/06 1727400-037.dwg

APPENDIX A
FIELD DOCUMENTATION

AML Feature Inventory

Feature ID Copper Queen

Surveyor(s) ASB MJS

Survey Date 7/13/06

Physical Features / Sources (Continued)

Mining Activity-Related Ponds or Liquid Containment Structures: ☐ leach pond(s) ☐ tailings pond(s ☐ tailings impoundment(s) ☐ other (explain)

Pond Type / Count ID	Dimensions in ft (L x W x D)	Lined (Y / N)	Liquid Present (Y / N)	Parameters: pH	Cond in mS	Temp in C		Animals Present (e.g. bats, other)	Sample Name(s)	GPS
(i.e.) LP 1	50 x 30 x 4	N	N	-	-	-		N	Butte - LP1 - S1:S2	G5: 1278965, 476985
None										

☐ Seep(s) ☐ Creek(s) ☐ Pond(s) ☐ Lake(s)

Type / Count ID	GPS	Location	Sample Name		Flowrate in GPM	Parameters: pH	Cond in mS	Temp in C		Odor, sheen, discoloration?
(i.e.) Flume Creek	G3: 1278496, 479865	southern site border	Butte - Flume Creek 1		0.1	6.2	0.153	10.9		None
None										

☐ Soil Staining ☐ Seep Staining

Type / Count ID	Location	Color	Distance from Potential Contaminant Source to Receptor	Source & Receptor	Notes
(ie) Stain 1	soil downslope of Adit 1	orange/brown	100' upslope of Flume Creek	fish	ferricrete-like
None					

Seasonal Flow Paths or Channels

Count / ID	Water Present (Y / N)	Sample Name	GPS	Flowrate in GPM	Parameters: pH	Cond in mS	Temp in C		Distance from Potential Contaminant Source to Receptor	Source & Receptor
(ie) Drainage 1	N	Butte - Sed 1	G1: 1279645, 476985	-	-	-	-		discharges into Flume Creek	fish
Drainage	~	No sed, No water	Cover entire pile	—	—	—	—	—	—	—

Wetlands

Count / ID	GPS	Flowrate in GPM	Parameters: pH	Cond in mS	Temp in C		Distance from Potential Contaminant Source to Receptor	Source & Receptor
(ie) Wetland 1	G7: 127856, 476985	1 L/min	5.9	0.2	12.1		50' N of Pend Oreille River	None
None								

AML Feature Inventory

Feature ID Copper Queen

Survey Date 7/13/06

Surveyor(s) ASB MS

Physical Features / Sources (Continued)

Water Supply Structures: ☐ GW Well(s) ☐ SW Intake(s) ☐ Pit Toilet(s) ☐ Other (explain)

Type / ID	Inner Diameter	Depth	Soil Type	Population Served	Distance from Potential Contaminant Source	GPS	General Location
None							

	Mill Present (Y /N)	Mill Footprint in ft.^{2}	Waste Associated with Mill	Chemicals Assoc with Mill	GPS
Mill	N				

Buildings / Structures

	Count / ID	Bldg. Footprint in ft.^{2}	Suspected Bldg. Use	Bldg. Condition	GPS	Comments
Other Buildings	Bldg 1	50x50	unkn - recent use	good - Newer roof, tar paper, garage windows & doors intact		

Liquid or Waste Containment Structures: ☐ drum(s) ☐ tank(s) ☐ other (explain)

Type / ID	Coun	Volume in Gal.	Condition	Suspected Contents
(ie) drums	1	55	dry, rusted, no lid	unkwn
None				

Debris / Refuse: ☐ assay equip & retorts ☐ drum(s) ☐ scrap lumber ☐ scrap metal ☐ machinery ☐ other (explain)

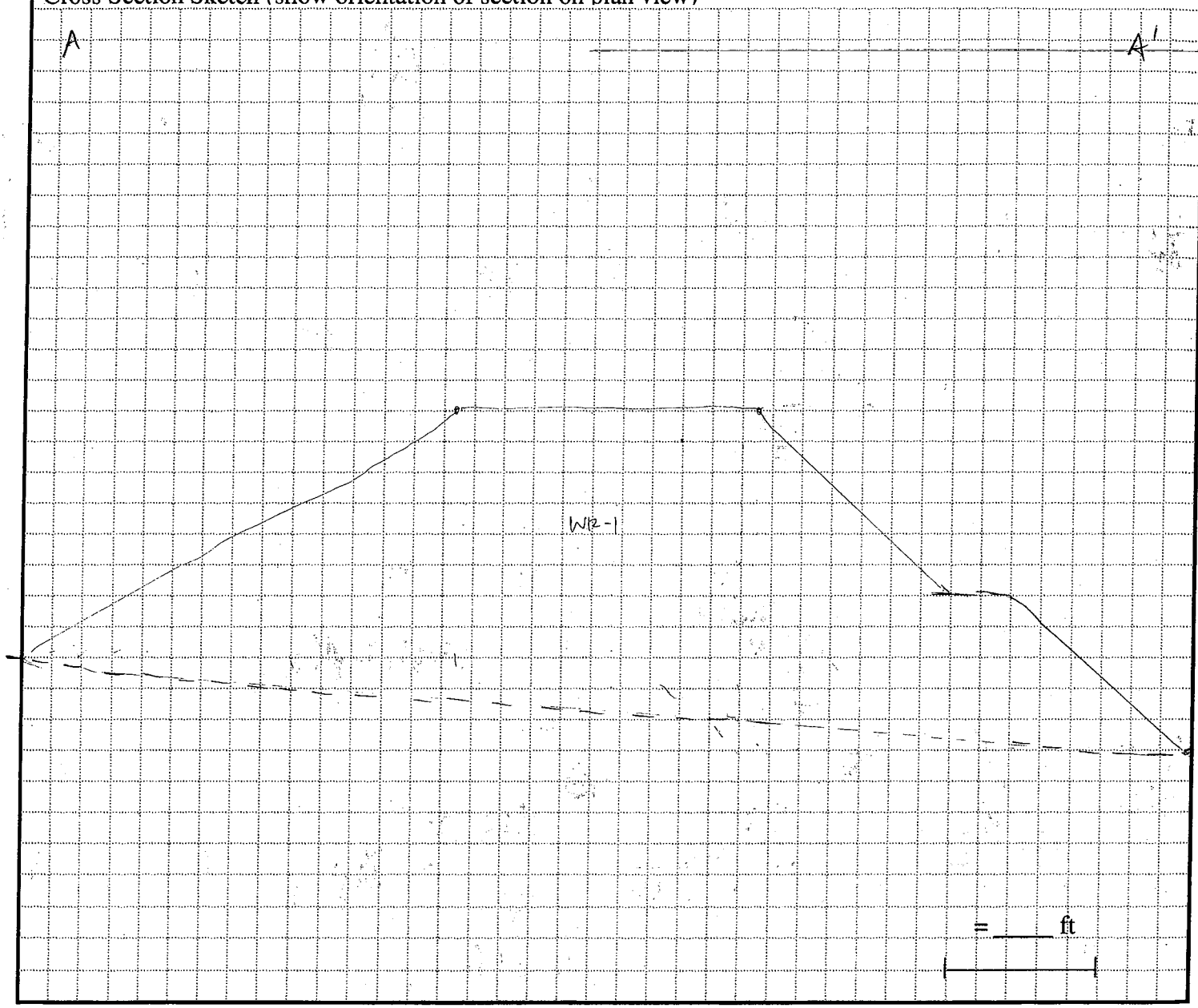
Type/ ID	Number	Size	Location	Description
(ie) scrap lumber & metal		5' x 10' x 1'	top of mill	timbers (some charred), rails, stakes, and sheet metal
black plastic pipe	2 visible	2" diam	Throughout wr 1	appears to be a type of vent (1 end buried, 1 end exposed)
white plastic pipe	2 visible	2" diam	N face of wr 1	buried in wr pile (drainage?)

Other Observations:

	Description	Quantity	Endangered / Threatened ?	Distressed Vegetation?	Comments
Ground Cover					
Vegetation	very little on pile abundant surrounding			N	
Evidence of Wildlife or Recent Human Activity	Cattle prints, cow patties	throughout			

Feature ID Copper Queen
Date 7/13/04
Weather overcast, ~65°F

Cross Section Sketch (show orientation of section on plan view)



☐ vert = 5'
☐ horiz. = 10'

INCLUDE THE FOLLOWING IN THE FIELD SKETCH FOR:

X - X' Cross Section Orientation
Scale Bar
Photo Location(s) and View Direction(s)
Sample Location(s) and ID(s):
- W-# Water
- S-# Soil
- T-# Tailings
- R-# Rock (Waste)
- O-# Ore
- S-# Other (Describe)

LOCATION(S) OF:
- MILLS
- BUILDINGS
- STRUCTURES
- MINING-RELATED PILES
- OTHER

SURFACE WATER (PONDS, SEEPS, ETC.)
GPS Collection Location ☼
Elevation (Topographic Variation)

Ecology AML

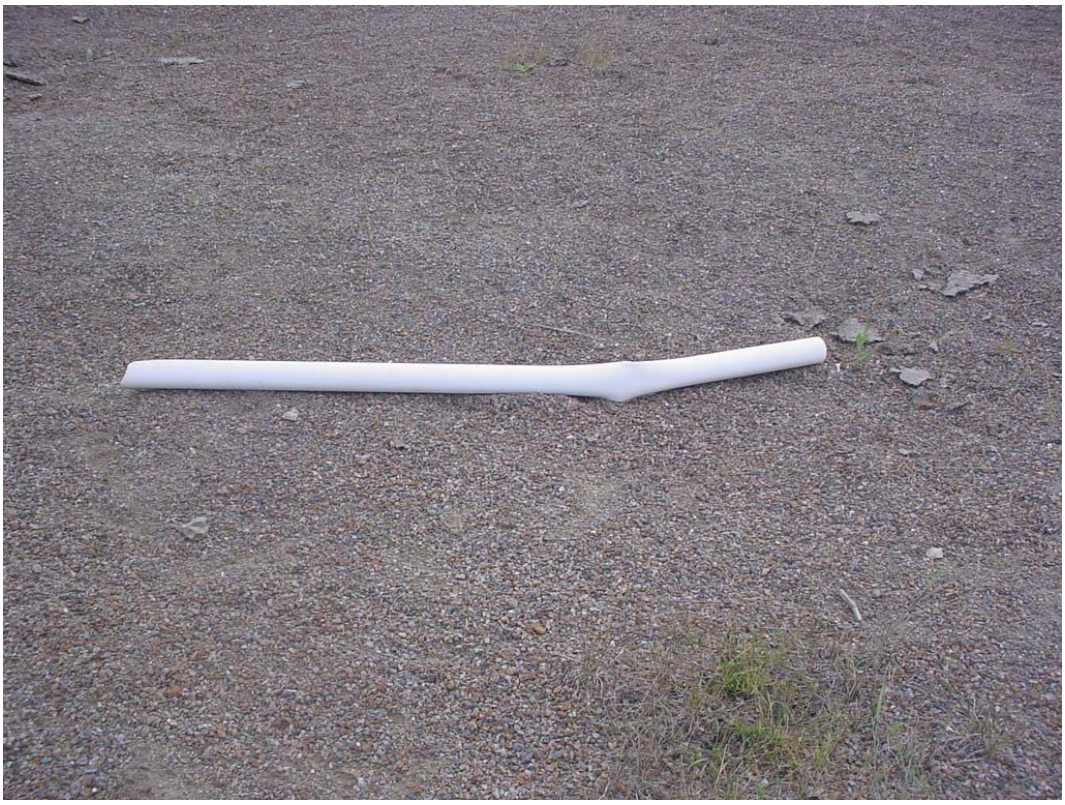
Copper Queen			
Coordinate Name	**Northing**	**Easting**	**Altitude**
COPPER QUEEN-WR1-S1	1333205	2106689	3178
COPPER QUEEN-WR1-S2	1333111	2106585	3162
COPPER QUEEN-WR1-S3	1333076	2106720	3146
COPPER QUEEN-WR1-S4	1333249	2106790	3159
COPPER QUEEN-WR1-S5	1333250	2106581	3159
Average	**1333178**	**2106673**	**3161**

Notes:
Northings and Eastings are reported in units of US Feet, relative to NAD 83 State Plane Coordinate System, Washington Zone South.

Photograph 1 - View of Waste Rock Pile 1 (WR-1).

Photograph 2 - Example of drainage channels on WR-1.

Photograph 3 - 1-inch-diameter, black plastic pipe scattered throughout WR-1.



Photograph 4 - 2-inch-diameter, broken, white plastic pipe.

Photograph 5 - Woven-plastic textile on WR-1.

Photograph 6 - View of Building 1.